Arab Academy for Science, Technology & Maritime Transport

Arab Academy
for Science, Technology & Maritime Transport



Report 2024 / 2025

SDG 7

Our Goal in 2024 -2025

In 2024/2025, AASTMT is committed to "Powering Green Sustainability, Cleaning the Future" through an integrated approach that involves seven main pillars. This approach promotes smart energy monitoring, energy conservation and efficiency, renewable energy employment, and carbon reduction. This is further supported by innovative academic programs and laboratory facilities, research and funded projects, and strategic agreements and initiatives. Together, these pillars aim to accelerate transition toward a cleaner, energy-efficient, and sustainable future, reinforcing AASTMT's contribution to SDG 7

Powering Green Sustainability, Cleaning the Future

"We Pledge to Advance Clean Energy, Enhance Efficiency, Foster Innovation, and Reduce Carbon Footprint for a Sustainable, Greener Future"

THE IMPACT RANKINGS

SDG 7

AFFORDABLE AND CLEAN ENERGY



Key Milestones in 2024-2025

In accordance with Green Energy and Energy Management Policy, AASTMT Energy Management Committee puts an integrated seven-pillar plan towards improving energy efficiency and conservation, increasing renewable energy utilization, reducing carbon footprint, and advancing sustainable energy practices across its different branches and campuses during. The effectiveness of AASTMT 2024/2025 Plan towards Clean Sustainable Energy, is assessed using AASTMT 2024/2025 Insights in different AASTMT branches as discussed in AASTMT 2024/2025 Energy Progress Report, to confirm its goal of reflecting AASTMT's integrated approach to powering green sustainability and cleaning the future.



Green Energy and Energy Management Policy on AASTMT webpage
AASTMT Annual Energy Progress Reports on AASTMT webpage

1. 2024/2025 AASTMT Measures towards Affordable and Clean Energy

In 2024/2025, AASTMT has put a **seven-pillar plan** as discussed in AASTMT 2024/2025 Plan towards Clean Sustainable Energy towards green sustainable energy. This can be summarized as follows;

1. **Smart Monitoring and Energy Management:** AASTMT establish effective energy smart monitoring and data-driven plans (ranking of loads guides lighting, HVAC and utility actions) as well as assessment mechanisms to track electricity consumption, perform energy audits and analyze performance indicators. This supports identification of energy-saving opportunities, informed decisions, rationalizing energy consumption and realizing optimized energy management across AASTMT campuses.

2. **Higher Energy Efficiency and Conservation:** AASTMT takes consistent measures that are continuously carried out, besides infrastructure upgrading and renovation plans that are updated yearly. This is reflected in reduction in the energy consumption among all its branches. Check the AASTMT 2024/2025 Renovation and Upgrading Plan which discusses renovations and upgrading procedures of different AASTMT Alexandria Campuses in in 2025 along with photos of upgrading 2024/2025. Among different AASTMT campuses the following measures are taken:
   - **LED Lighting Technology:** AASTMT has replaced conventional lighting with energy-efficient LED lamps. Approximately 97% of the lighting installations have been converted to LED technology, with the objective of achieving full conversion to LED lighting.
   - **Energy-Efficient Air-Conditioning Systems:** AASTMT has introduced and upgraded air-conditioning systems to improve cooling efficiency and reduce electricity consumption. These measures include the use of Variable Refrigerant Flow (VRF) technology and Variable Speed Drives (VSDs), which allow equipment operation to be adjusted according to cooling demand.
   - **Upgrading Central Air-Conditioning Systems:** Improvements to central air-conditioning infrastructure have included the adoption of more energy-efficient equipment and control strategies to reduce unnecessary operation and improve overall system performance.

- **Energy Monitoring and Consumption Analysis:** The Energy Management Team monitors electricity consumption across the different campuses to identify consumption patterns, assess energy-saving opportunities, and evaluate the effectiveness of implemented conservation measures.
- **Continuous Energy Conservation Planning:** AASTMT continues to assess existing electrical installations and appliances to identify opportunities for upgrading equipment, improving operational control, and reducing energy waste.
- **Regular Instructions and Directions:** These are addressed from AASTMT president to all AASTMT campuses towards energy saving and conservation as per the letter given below.
  Letter addressed to all AASTMT institutes from AASTMT president regarding energy saving
- **Increasing awareness regarding energy rationalization and conservation plans:** This addresses AAST staff, students, administrators and technicians via energy-related campaigns, initiatives and seminars as shown in the Events Section found in the following link:
  Energy-related Events

3. **Renewable Energy Deployment:** To support expansion in renewables employment within its campuses, AASTMT takes consistent measures that are continuously carried out, besides yearly updated ones. This is reflected in the increase of low-carbon sources' share in AASTMT total energy supply. This includes:

- **Continuous maintenance, routine cleaning and improvements** in the existing solar installations, to maintain and even improve their output power, thus enhancing its energy share in 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), and the total renewable share including the renewable share of the national grid — with availability, downtime and performance notes.
  - O&M: 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.
- **Expanding renewable infrastructure** among different AASTMT campuses:
  - **2kW Vertical Axis Wind Turbine (VAWT):** The Renewable Energy Unit is planning to further expand AASTMT's renewable energy infrastructure through the installation of this wind turbine, funded by an internal AASTMT research grant and to be integrated with the existing PV Plant in Abukir Campus.
    Energy Research Unit
  - A proposal to establish **a solar power plant** and **two electric vehicle charging units** at Alamein Campus
    2024/2025 Study and Proposal for establishing PV station and EV charging units in Alamein Branch

4. **Carbon Reduction:** AASTMT has put a Climate Action Plan 2025-2030, towards reducing Scope 1, 2 and 3 emissions and assessing Carbon Footprint based on GHG Protocol and ISO 14064-1. The measures can be summarized as:

- **For Scope 1 emissions reduction:** Refrigerant management and Optimize fuel use
- **For Scope 2 emissions reduction:** Operate and expand on-site PV, Metered reporting, LED persistence, BMS optimization, HVAC O&M, Operational guidelines
- **For Scope 3 emissions reduction:** Standardized sorting, Organics program, Paper-use controls, Sustainable procurement, E-waste stewardship, Water efficiency, Data and logistics, Green commuting, Fleet, cooling and refrigerants assessment Sustainable food and wider Scope 3

5. **Innovative Programs and Lab Facilities:** AASTMT is committed to strengthen practical education, technical training, and students' projects involving innovative clean-energy programs and laboratory facilities. In this regard, the following is achieved in 2025.

- 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.
- Encourage renewable energy and decarbonization-related educational events and activities (seminars, workshops, visits and trainings) in 2024/2025.
  Energy-related Events
  Energy-related Activities
- Prioritizing fields of decarbonization and clean energy in graduation projects and Industry Service Complex projects
  Energy-related Graduation Projects
  AAST ISC 2024/2025 projects

6. **Research and Funded Projects:** Advance AASTMT's research and innovation capabilities through national and international funded projects addressing clean energy, energy efficiency, and industrial decarbonization.

- Encourage Staff to Prioritize fields of decarbonization and clean energy in research 2024/2025.
  Scientific Research & Innovation-Alexandria | AASTMT
- 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
- Prioritize **renewable energy and decarbonization research projects**
  Renewable Energy Research Projects
- Start preparing for the implementation of the pilots of **Interreg NEXT MED projects (RESt4GREEN and GREENOLIVE)**
  RESt4GREEN and GREENOLIVE
- As per **NORPART- AI-ESI** Project outcomes, postgraduate students are engaged to conduct AI studies in the fields of renewable energy and decarbonization, by offering opportunities of Fully funded MSc and PhD degrees and mobility in University of Stavanger.
  Fully funded MSc and Phd degree-NORPART AI-ESI for AASTMT postgraduate students
  Fully funded MSc Mobility- NORPART AI-ESI for AASTMT postgraduate students

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

- Put **Government Partnership** towards renewable energy and climate change measures a priority, especially with Ministries of Environment, Local Development and Finance.
  - AASTMT president with Minister of Local Development and Acting Minister of Environment reviewed future plans in waste management, renewable energy and climate change in October 2025.
    Meetings with ministries of Environment and Local Development
  - AASTMT College of Engineering and Technology - Main Campus welcomed a delegation from Egypt's Ministry of Finance to explore opportunities for enhancing collaboration in energy auditing, energy management systems, energy efficiency, and sustainable resource utilization.
    Meetings with ministry of Finance

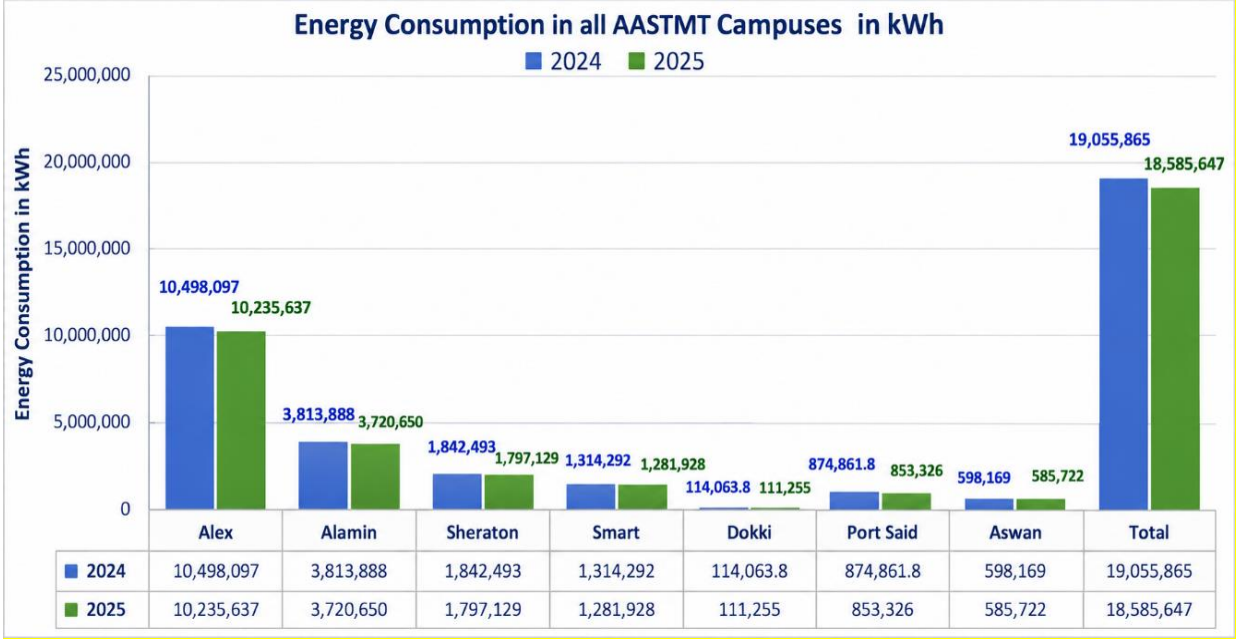
- Activate partnerships and MOUs signed or renewed with industry, in fields of consultancy, trainings and technical cooperation within **AAST Industry Advisory Council annual sessions** and services offered by **AASTMT Productivity and Quality Institute (PQI)** and **Industry Service Complex (ISC)**
  Industry Advisory Counsil Session 2025
  AASTMT Industrial Service Complex
  AASTMT Power and Quality Institute
- 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 beyond AASTMT walls and encourage community to engage with sustainable practices via **initiatives, campaigns** and **workshops**.
  Energy-related Events
  Energy-related Activities

II. Energy Consumption and Emissions Insights

To assess AASTMT's the previously discussed 2024/2025 measures and verify their effectiveness on energy consumption and carbon emission, detailed AASTMT energy and carbon insights are given in AASTMT 2024/2025 Insights

❖ Energy Consumption

Measures, supporting AASTMT's commitment to improving energy efficiency and reducing electricity consumption across different AASTMT branches, are reflected in the reduction in electricity consumption of each branch, as shown in **Figure 1**, with total consumption reduction by around **2.47%,** from **19,055,865 kWh** in **2024** to **18,585,647 kWh** in **2025**.



	Alex	Alamin	Sheraton	Smart	Dokki	Port Said	Aswan	Total
2024	10,498,097	3,813,888	1,842,493	1,314,292	114,063.8	874,861.8	598,169	19,055,865
2025	10,235,637	3,720,650	1,797,129	1,281,928	111,255	853,326	585,722	18,585,647

Figure 1. Comparison between 2024 and 2025 energy consumption in all AASTMT branches

❖ Renewable Energy Share Growth

According to the New and Renewable Energy Authority (NREA), Egypt's total installed renewable energy capacity reached approximately **8.6 GW** by the end of **2024/2025**, compared with approximately **6.8 GW** in **2023/2024**, reflecting an increase of around **26%** [NREA 2025].
https://nrea.gov.eg/test/en/Media/New/2999

Since AASTMT's electricity consumption is supplied mainly by the Egyptian national grid, this growth is reflected on AASTMT energy usage from low carbon sources, as shown in **Figure 2**, where the **average renewable energy share** in supplying AASTMT total energy demand from **national grid** reached almost **26 %** in **2025** which is more than the **25.1%** in **2024**. Besides renewable energy contributed in AASTMT from national grid, energy from **solar energy installations** across different AASTMT campuses buildings, has increased from **273.6GJ (75989kWh)** in **2024** to **286.7GJ (79632kWh)** in **2025** i.e. an increase of almost **4.78%** from **2024** to **2025.** This results in an increase of almost **1.08%** in AASTMT total energy usage from low carbon energy sources (from national grid and solar installations) in **2025** compared to that in **2024.**

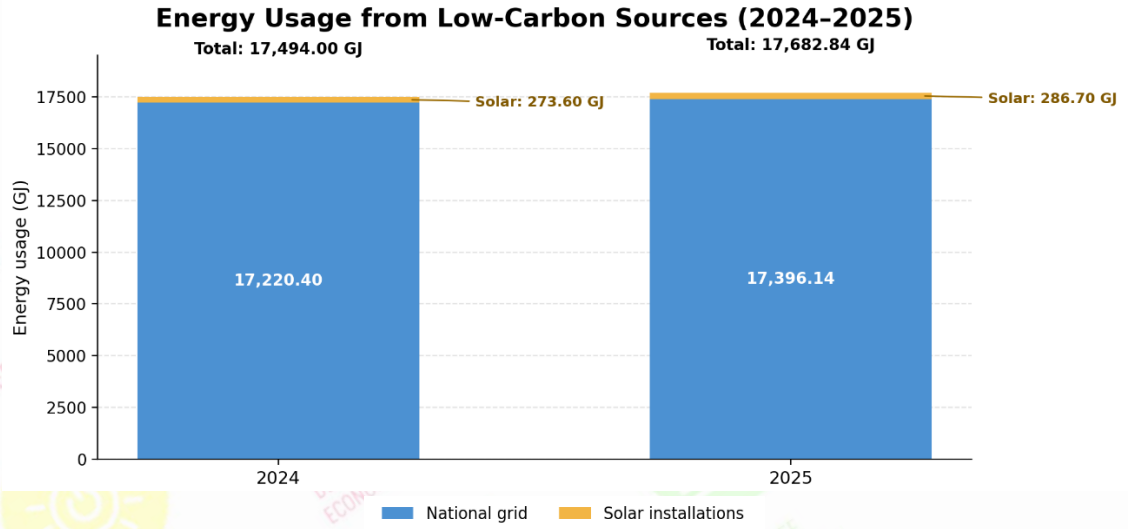


Figure 2. AASTMT Energy usage from low carbon sources in 2024 and 2025

Finally, **Table 1** summarizes **entire AAST energy supply** from national grid and from AASTMT total solar installations, in kWh/m² and GJ/m² from **2024-2025** and **the relative energy density** in **GJ/m²**. The latter reached about **0.09135GJ/m² in 2025** which is less than the **0.09363GJ/m² in 2024** by almost **2.43%,** mirroring AASTMT continuous efforts towards electrical energy conservation and energy efficiency improvement, besides the increase in total energy consumption from low carbon sources by almost **1.08%,** reflecting AASST support to transition to clean energy.

Table 1. Energy Density in GJ/m² for the entire AAST in 2024 - 2025

Year	Total Floor Area (m²)	Total energy (kWh) (from Grid + AAST solar infrastructure)	Total energy (GJ) (from Grid + AASTMT solar infrastructure)	Density (GJ/m²)	Energy from low carbon sources (GJ) (from national grid and solar infrastructure)
2024	735569.7	19,131,865	68874.714	0.09363	17494
2025	735569.7	18,665,279	67195	0.09135	17682.84

❖ Carbon Footprint

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** as given by AASTMT Carbon Footprint Report 2024/2025 . 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.
https://aast.edu/en/about/co2-footprint.php

Compared to 2019–2024 figures which covered only AASTMT Alexandria branch campuses; the **2024–2025** figures cover four AASTMT branches and a wider set of Scope 3 sources, including commuting, business travel, food and other purchased goods and services. The breakdown by campus is given by **Table 2** and **Figure 3.** It is worth noting that **Scope 3** makes up **65%** of the footprint of the four campuses, **Scope 2** up to **27%** and **Scope 1** up to **8%**. Emissions are 1.73 t CO_2e per student, below the global average of 2.67 t CO_2e per student cited in the report. The main sources are commuting, the Abu Qir vehicle fleet, outsourced cooling at Smart Village, food at Abu Qir and refrigerant leakage at South Valley.

Table 2. Breakdown of Carbon Footprint Report 2024/2025 by campus

Campus	Scope 1 (t.CO_2e)	Scope 2 (t.CO_2e)	Scope 3 (t.CO_2e)	Total (t.CO_2e)
Abu Qir	2,470	4,361	10,767	17,598
Misr El-Gedida	177	1,391	8,859	10,427
Smart Village	88.9	4,380	3,695	8,164
South Valley	119.2	307.8	1,637	2,064
Total, four campuses	2,855	10,440	24,958	38,253

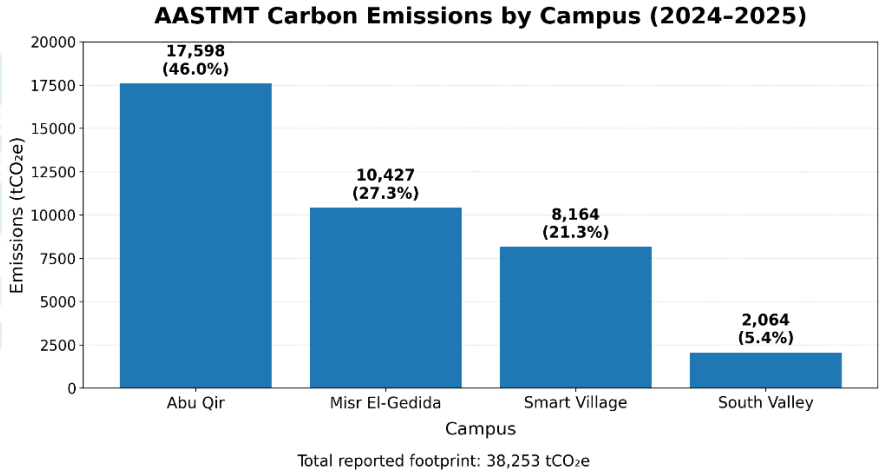


Figure 3. Breakdown of Carbon Footprint Report 2024/2025 by campus

Finally, 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.

Community Engagement

AASTMT put a lot of efforts towards sustainable community development in 2024/2025. This is reflected in its participation in related research projects and grants, besides its national, regional and international collaborations towards green sustainable energy. Moreover, the university offers paid and free training and consultancy services to government and industry as well as support to startups and innovation.

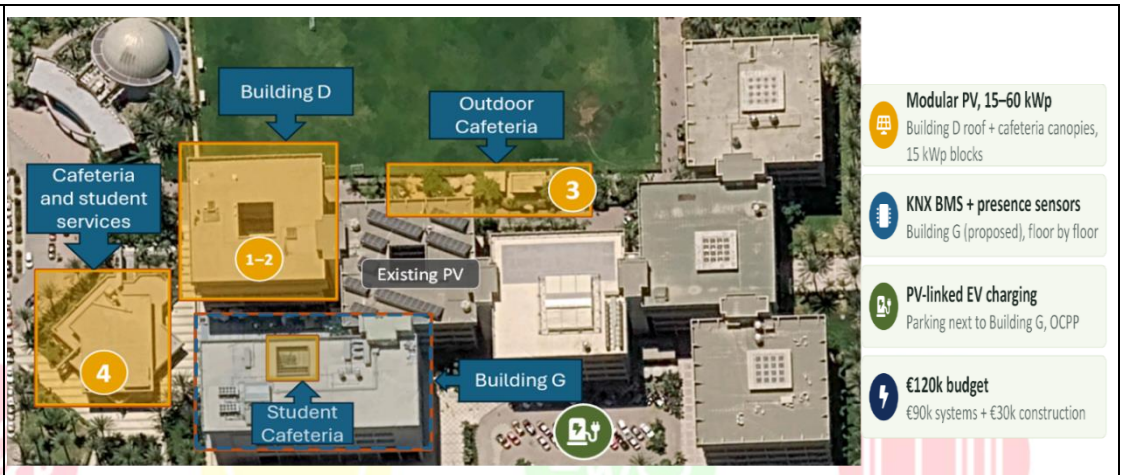
I. Research Projects and Grants

AASTMT has participated in a number of related Funded Projects within the years 2024 and 2025.
Research Projects on AASTMT webpage
AASTMT RESEARCH PROJECTS on AASTMT webpage

Project Name	Start date	End Date	Link
RESt4GREEN Energy efficiency, Renewable Energy Sources and smarT energy conservation for improved quality of life and a GREENer Mediterranean	16/07/2025	15/7/2028	RESt4GREEN
GREENOLIVE Solar-driven Decarbonization for Mediterranean Industries	01/09/2025	31/08/2028	GREENOLIVE
PRO-Green-LABs Promoting Integrated Green Competences for Sustainable Development in Architectural Education through Experiential Lab-based, Active Learning	April 2024	March 2026	Pro-GREEN-LABs
RURALITIES Climate smart, ecosystem-enhancing and knowledge-based rural expertise and training centres	01/10/ 2023	30/10/2026	RURALITIES
AI-ESI Strengthening education and research in Applied Informatics for Energy System Integration	01/01/2022	31/12/2026	AI-ESI Project
GreenMED Green Shipping Pathways Towards a Clean Energy Transition in the Mediterranean	01/10/2023	31/12/2025	GreenMED Project

Moreover, in 2024/2025, a number of projects prototypes and pilots, which significantly impact industry, research are innovation, are to be implemented or have been implemented as follows

Project	Outcome
REST4GREEN Project PILOT RESt4GREEN	**Proposed AASTMT Pilot as an Outcome of the REST4GREEN Project** A system that integrates renewable energy, smart building technologies, and sustainable mobility within a campus environment. The pilot combines modular solar PV installations with a capacity of 15–60 kWp on Building D and cafeteria canopies, KNX-based building management and occupancy sensors in Building G, and solar-linked electric vehicle (EV) charging infrastructure. These technologies will be integrated into a unified monitoring framework using the campus SCADA system and the REST4GREEN dashboard to monitor PV generation, building electricity consumption, EV charging, and weather conditions. The Energy Research Unit will support simulation, commissioning, performance evaluation, and staff and student training. This pilot will translate the project's objectives into a demonstrable, replicable solution for improving campus energy performance and accelerating the transition towards smart, low-carbon university campuses.

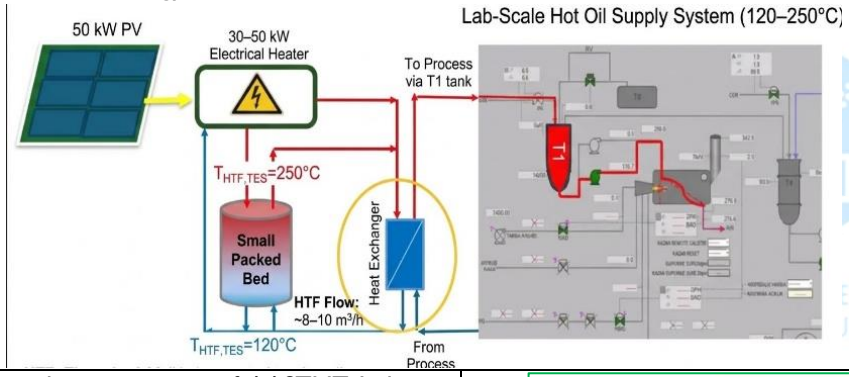


Amber = PV zones, blue = KNX zone, green = EV charger. Locations indicative

GREENOLIVE Project PILOT
GREENOLIVE

Lab-Scale Solar-Powered Hot Oil Supply and Thermal Energy Storage Pilot

The proposed pilot consists of a 50kW photovoltaic (PV)-powered hot oil supply system, integrated with a 30–50 kW electrical heater and a small packed-bed thermal energy storage (TES) unit operating at temperatures ranging from 120°C to 250°C. A heat exchanger connects the storage system to an industrial process, demonstrating the potential for supplying renewable heat for industrial applications. Implementing this pilot at AASTMT will directly support clean sustainable energy by providing an advanced educational and research platform for solar energy integration, thermal energy storage, and energy efficiency. It will enable students and researchers to gain hands-on experience, investigate high-temperature heat storage performance, develop innovative renewable heating solutions, and explore alternatives to fossil-fuel-based industrial heating. Furthermore, the pilot will support graduation projects, postgraduate research, professional training, and scientific publications, strengthening AASTMT's contribution to clean energy innovation, technology transfer, and the development of sustainable industrial energy solutions.



Smart Solar Waste Compactor

2024/2025 graduation project of AASTMT Industry Service Complex- **Smart Solar Waste Compactor** - aims to develop an intelligent device for compacting plastic waste in various institutions such as schools, hospitals, and factories, relying primarily on solar energy as its main power source.
Smart Solar Waste Compactor



Solar Agricultural Robot	2024/2025 graduation project of AASTMT Industry Service Complex- **Solar Agricultural Robot** - aims to develop an intelligent device for compacting plastic waste in various institutions such as schools, hospitals, and factories, relying primarily on solar energy as its main power source. Solar Agricultural Robot	
The liquid tree	A environmental photobioreactor that uses marine algae to purify the air and produce oxygen. The project is a **low-cost version** of a model used in the UAE, which costs around **$10,000**, while the students managed to build the unit in **Egypt for less than 15,000 EGP**. The **amount of oxygen** produced by this system is **equivalent to that of ten mature trees**, making it suitable for use in **parks, schools, and crowded urban areas**. The Liquid Tree	

II. Paid Services by AASTMT

AASTMT offers Paid training and consultancy services through AASTMT different entities as follows; TRAINING - Affordable and Clean Energy on AASTMT webpage.

❖ Productivity and Quality Institute (POI)

AASTMT Power and Quality Institute

➢ Energy and Environmental Management Training

Paid Energy and Environmental Management Courses offer Specialized Paid Training in the principles and practices essential for addressing the complex challenges of energy consumption and environmental sustainability. Local and international **Energy and Environmental Management Certified Training Courses** offered by PQI enhance businesses sustainability and reduces an organization's impact on the environment while improving its operating efficiency by controlling its energy consumption which helps in reducing product manufacturing.
Energy and Environmental Management Training Courses-AASTMT PQI

➢ ISO 50001 Energy Management System Consultancy (EnMS)

AASTMT PQI offers Paid Consultancy service in the form of ISO 50001 Energy management Systems Consultancy Service (EnMS) to a number of corporates. The purpose of the EnMS is to enable organizations to establish or re-structured the systems and processes necessary to improve energy performance, including energy efficiency, use, consumption and reduce running cost.
ISO 50001 Energy management Systems Consultancy Service-AASTMT PQI on AASTMT webpage.

❖ Oil and Gas Certification (OPITO)

OPITO certification is internationally recognized and vital for professionals in oil, gas, maritime, and renewable energy industries. The Arab Academy for Science, Technology and Maritime Transport (AASTMT), College of Engineering and Technology (CET) is the only center in Egypt and North Africa offering this prestigious qualification.
OPITO Certification

❖ Industry Service Complex (ISC)

AASTMT Industrial Service Complex

AASTMT ISC is a specialized entity established in 2005 to bridge academia and industry. It fosters long-term partnerships that drive technology transfer, applied research, and workforce development. Through advanced industrial solutions, customized professional training programs, and accredited technical education that meet international standards. ISC supports Egypt's industrial sector, enhances local capabilities, and promotes innovation - ultimately creating jobs, reducing reliance on imports, and contributing to sustainable economic development.

➢ 2025 ISC Agreements

A cooperation agreement was signed between with **Smart Factory for Industrial Projects** to equips industrial professionals with skills in AI, automation, data management, and smart manufacturing, optimizing energy consumption, reducing operational waste, and enhancing productivity through digital technologies i.e. supporting sustainable, energy-efficient industries in line with the principles of Industry 4.0.

ISC Agreement 2025

➢ Electrical Maintenance Training Courses

Electrical Maintenance Training Courses were delivered for factory personnel in cooperation with Caritas Egypt and funded by Caritas Austria for the learning and employment opportunities of refugees, asylum seekers and migrant youth in Egypt. The training provided participants with practical, hands-on experience in electrical maintenance to support sustainable industrial development, promoting efficient maintenance practices, reduce equipment failures, and extending the operational life of industrial assets.

ISC Electrical Maintenance Training Courses 2025

❖ Energy Research Unit

AASTMT IOSS is an entity, related to AASTMT energy research unit, that provides many services in the field of innovative renewable energy, all under one roof. Its goal is to provide industry and startups with technical assistance, consulting and networking opportunities required to run a successful and innovative renewable energy project in Egypt.

Energy Research Unit

Services:

1. Technical services
2. Business consultancy
3. Technical and business training and capacity building
4. Identifying potential innovative projects for funding
5. Cooperation and open innovation among regional players

Also training courses offered by AASTMT- Energy Research Unit include

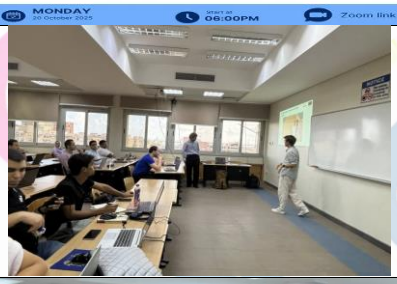
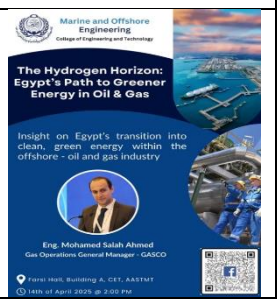
1. Renewable Energy System
2. Solar energy
3. Practical fundamental solar energy
4. Wind Energy System
5. Energy Management and Auditing (EMA)
6. Building Management system (BMS)

TRAINING COURSES on the AASTMT news page



III. Free Services by AASTMT Energy Research Unit

Different AAST institutes offered free trainings, workshops and seminars to industry and graduate students. Examples of 2024/2025 Free services offered by AASTMT include;

13/10/2025 Volvo **Session**	An online session was given, for College of Engineering students, graduates and staff as well as professionals, about Volvo Group's roadmap toward the electrification of commercial vehicles (trucks, buses, construction equipment, and marine propulsion)— targeting 30% Battery Electric Vehicle (BEV) sales by 2030 and achieving completely fossil-free operations by 2040. Volvo Session	
9/10/2025 From Data to Decarbonization: PyPSA-Earth **Workshop**	A hands-on workshop trained students and young researchers in energy-system modelling, grid simulation and scenario analysis to support decarbonization and energy transition planning. From Data to Decarbonization: PyPSA-Earth	
1/8/2025 Advancing Green Hydrogen Technologies and Applications **Workshop**	Port Said Campus hosted an EU-funded GREEN Project workshop addressing green hydrogen technologies, higher education, technical research and academia–industry collaboration. Advancing Green Hydrogen Technologies and Applications	
June 2025 Solar Energy **Training** for Sudanese Students	A solar energy training was organized by AASTMT ISC in collaboration with Caritas Egypt for Refugee trainees from Sudan in the field of solar energy. Solar Energy Training for Sudanese Students	
14/4/2025 The Hydrogen Horizon **Workshop**	The workshop explored green hydrogen applications in the oil and gas industry, emerging technologies and the transition towards cleaner energy. The Hydrogen Horizon: Egypt's Path to Greener Energy in Oil & Gas	

2/12/2024 Egypt Energy Transition **Workshop**	AASTMT organized a workshop titled: "Towards Egypt's Energy Vision 2030: Egypt's Just Energy Transition: Decarbonization, Electrification, Education, and Access" which was attended a number of faculty members from Egyptian colleges and universities, in addition to industry figures, governmental and advisory bodies. This workshop stems from a collaboration between the Faculty of Engineering & Technology at AASTMT and the Texas A&M University (USA), specifically the Institute of Energy at Texas A&M. Egypt Energy Transition Workshop	

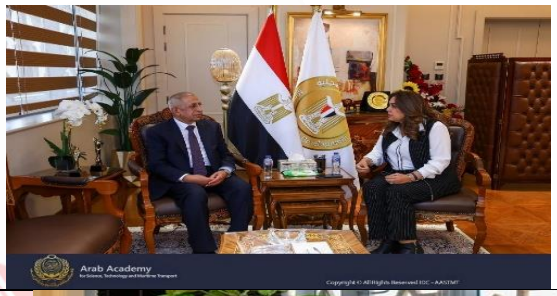
IV. AASTMT Participation locally, Regionally, Nationally and Globally

In 2024/2025, AASTMT participated nationally, regionally and internationally through joint co-operations, summits, conferences and events to develop policies, agreements and plans towards energy sustainability and green environment.

❖ AASTMT Cooperation with the Government

With the necessity of being effectively engaging and participating in EGYPT Ultimate Goal of Sustained Transition to Green Energy, AASTMT is keen on the continuous cooperation with different governmental entities in the fields of energy and the environment. Such partnership mirrors AAST key role in supporting community service in such field and sharing its academic knowledge and research capabilities to develop policies and practical solutions that benefit society, such as promoting renewable energy use, improving energy efficiency, and encouraging environmental sustainability.

Participation		Overview
Prepared in 2025 and launched in 2026 Launching "Our Energy, Our Responsibility" Campaign	AASTMT College of Engineering and Technology, and the Energy Research Unit at AASTMT, produced and published an awareness video, launching the "Our Energy, Our Responsibility" initiative. This video was dedicated to **the Ministry of Finance** to highlight the importance of strengthening partnerships between academic institutions and government entities in promoting energy conservation, raising public awareness, and fostering a culture of sustainability and social responsibility. Campaign dedication to Ministry of Finance	Watch the awareness video of AASTMT initiative campaign "Our Energy, Our Responsibility": Our Energy, Our Responsibility Video 
(14 Oct. 2025) Delegation from Nucleur power plants Authority	(AASTMT) received a high-level delegation from the Egyptian Nuclear Power Plants Authority at its headquarters in Abu Qir to discuss ways of future joint cooperation. Delegation from Nuclear Power Plants Authority at AAST	

(8 Oct. 2025) Meeting with Minister of Local Development and Acting Minister of Environment.	A meeting between AASTMT President – Minister of Local Development and Acting Minister of Environment. The meeting reviewed future cooperation and plans in waste management, renewable energy, climate change mitigation, scientific research and capacity building. Meeting with Ministries of Local Development and Environment	
(26 Oct. 2024) Bilateral cooperation between Egyptian Ministry of Environment and AAST	The Minister of Environment meets AAST President to discuss joint cooperation and future plans to support environmental initiatives and enhance integration between research and sustainable development. Cooperation with Egyptian Ministry of Environment	

Moreover, in 2024/2025 AASTMT participates in joint co-operations, summits, conferences, workshops and events at the national, regional and international side to develop policies, agreements and plans towards energy sustainability and green environment.

Participation	Overview	
(27-28 Nov. 2024) UniGreen conference "Shaping a Sustainable Future 2024"	AASTMT participated in the activities of this international scientific conference to present the final results of the UniGreen project that was held during at the Ramses Hilton Hotel, organized by the Academy in cooperation with the Life Makers Foundation. AASTMT in UniGreen Conference	
(24-27 Nov. 2024) 5th Edition of Arab Sustainable Development Week	AASTMT participated in the 5th Edition of Arab Sustainable Development Week showcasing its commitment to regional collaboration and climate resilience. The event's theme was "Sustainable Solutions for a Better Future – Resilience and Adaptability in an Evolving Arab World" AASTMT in Arab Sustainable Week	
(18 Nov. 2024) Climate Summit in Baku, Azerbaijan	Dean of AASTMT Port Training Institute and Maritime Research and Consultation Center participated at the Climate Summit in Baku, Azerbaijan, delivering a keynote on education and climate change. His participation highlighted AASTMT's leadership in sustainable development & international cooperation. AASTMT participation in the Climate Summit	

(11 Nov. 2024) Texas A&M University visit	AASTMT President received a delegation of representatives of the Texas A&M University's Energy Institute to discuss possible cooperation in energy sustainability fields. Texus A&M University Visit	
(20 Oct. 2024) International Workshop on "The impacts of Climate Change on Coastal Cities"	AASTMT President Participation this international workshop to discuss the impacts of climate change on coastal cities, and AASTMT's role in addressing major challenges—especially as part of preparations for the upcoming United Nations Ocean Conference scheduled in Nice, France in 2025. Climate Change International Workshop	

V. Support to Startups by AASTMT Entrepreneurship Center

AASTMT Entrepreneurship Center is keen on supporting startups in the field of green economy, energy management, industry efficiency and sustainability, through trainings and spin-offs.

Entrepreneurship Center on AASTMT webpage

❖ Example of Trainings offered by AAST Entrepreneurship Centre for Startups

Training	Preview	Logo	Link
RIPPLE	A new program for Entrepreneurship Centers and Incubator Managers in Egyptian Universities that aims at building their capacity as well as providing knowledge and resources that enables them to plan successful and sustainable Entrepreneurship Support programs.	**Partners**	RIPPLE
Goodwill Incubator	The 1st Business Incubator for entrepreneurs with disabilities, established in cooperation and sponsorship between Rowad 2030, project of the Ministry of Planning and Economic Development and the Entrepreneurship Center at AASTMT..	GOODWILL INCUBATOR AASTEC	Goodwill Incubator
AAST Startup School	AAST Startup School acts as the educational arm of the center. The main objective of this program is equipping early-stage entrepreneurs with the essential, substantial, and core knowledge & skills. Also, supporting existing startups through advanced trainings and technical, industry-related mentorship programs.	STARTUP SCHOOL AASTEC	AAST Startup School
Advanced Pre-Incubation Program	This is an advanced pre-incubation training program for AAST students & alumni to provide them with the necessary knowledge & support to put their ideas into action. The program starts with a validation exercise, then during this pre-incubation journey, students learn how to assess their business, compare between ideas to choose the best and develop a business model.	YALLA STARTUP AASTEC	AAST YALLA Startup
Inspire AAST Fresh Grads find their Passion	Grads to Business is a program dedicated to all AAST fresh graduates. Through this program AAST EC thrives to help AASTians start their career and find an opportunity that meets their passion.	GRADS TO BUSINESS AASTEC	AAST Grads to Business

❖ 2024/2025 Spinoffs

https://ec.aast.edu/contenttemp.php?page_id=48200446

Spin-offs	Preview	Logo	Link
Photon Smart	A fabless IoT manufacturer that specializes in Smart Homes enabling them to be accessible, user-friendly and affordable enough to become mainstream as well as enhancing energy efficiency in Homes.		Photo Smart
NABTAX	Transforms unused urban spaces — rooftops and hangars — into fully connected smart farms, powered by AI + IoT to support sustainability and efficiency. Sensors monitor every growth factor — light, humidity, water, and nutrients — and the AI platform automatically adjusts conditions for maximum yield and minimum waste.	NABTAX INNOVATION IN AGRICULTURAL TECHNOLOGY	NABTAX
P-Vita	For Green Intelligence Technology, Patented AI and IoT-driven bioconversion technology turning algae and agricultural waste into high-value natural raw materials, reducing wastes and enhancing sustainability	P-Vita	P-Vita
Schoolz	An AI-powered platform that revolutionizes school and corporate transportation - making it safer, smarter, and sustainable, thus optimizing routes in real time, providing live safety tracking, and cutting carbon emissions by 600K+ tonnes, all while reducing transport costs by 30% .	schoolz	Schoolz
Agrona	A startup company manufacturing particleboard wood out of agri-residues without cutting a single tree; fighting climate change and unleashing the economic potentials of the rural societies.	Agrona Sustainable Materials	Agrona
Viridi	Tackles the problem of inadequate and inflexible EV charging infrastructure by introducing portable EV chargers with high power capacity, adjustable amperage, and wide compatibility, ensuring versatile and efficient charging for various EV models. This supports the EV market, thus contributing in green energy efforts emissions reduction	VIRIDI	Viridi
Techno Masters	An innovative startup working to transform the smart home experience by making advanced home automation more affordable, accessible, and tailored to the needs of the mass market, reducing consumption and enhancing sustainability	Techno Masters Smart Home	EC-AASTMT Page
Tatbeek	Hardware and platform to measure and enhance manufacturers' productivity using latest technologies including IoT, Cloud computing, data analysis, machine learning, and image processing to maximize efficiency and minimize waste.		Tatbeek

VI. Support to Innovation by AASTMT Scientific Research & Innovation Centre

In light of AASTMT concentration on Environmental Impacts, Sustainability and green energy, a number of programs are implemented by this center to support energy-related research and innovation. Scientific Research & Innovation Centre on AASTMT webpage

❖ Energy Conservation Program

Energy Conservation Program on AASTMT webpage

❖ Energy-related Policies & Reports

Policies & Reports on AASTMT webpage

❖ Environmental Monitoring and Climate Change Laboratory - Scientific Research & Innovation centre

Environmental Monitoring, Modelling and Training Research Facilities at AASTMT at Scientific Research & Innovation Centre are advanced and fully- equipped facilities dedicated for comprehensive study of environmental, energy and climate change research parameters. These facilities foster collaboration with national and international research institutions, government bodies, and industry stakeholder to support innovation and startups, encourage information exchange, generate solutions to global environmental issues and energy aspects and promote sustainable practices within and beyond the AASTMT community. They also carry related research studies and consultations as well as training.

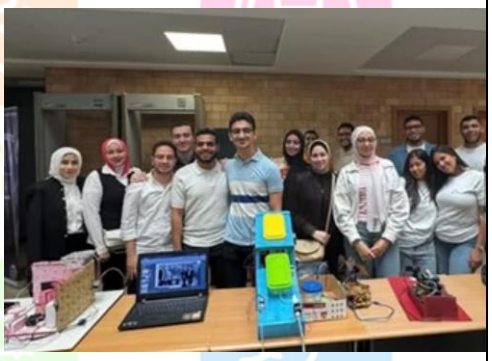
Environmental Monitoring and Climate Change Laboratory

❖ Innovation Awards

AASTMT students and staff are distinguished for their ability to design and implement innovative ideas in prototypes and projects.

<table>
<tr><th>Innovation/Award</th><th>Overview</th></tr>
<tr><td>9/5/2025

Runner-Up Awards in IEEE YESIST12 Competition</td><td>AASTMT hosted the preliminary round of the IEEE YESIST12 (Youth Endeavors for Social Innovation using Sustainable Technology) international competition at the College of Engineering and Technology, Abu Qir Main Campus. The event provided a platform for students to showcase innovative technological projects addressing real-world challenges, including renewable energy, solar applications, and sustainable resource management.
IEEE YESIST12 Competition



A team of Electrical Eng. Department received the Runner-Up Awards in for the project:
Smart Water Treatment and Sustainable Irrigation Project – Runner-Up Award</td></tr>
<tr><td>(May 2024)

ITIDA Financial support for “Smart Green House” and “Smart Bin” Projects-</td><td>Energy-related graduation Projects, which received financial prize from ITIDA, are; “Smart Green House” and “Smart Bin” projects
ITIDA 2024 Awards

Smart Green House

Smart Bin</td></tr>
</table>

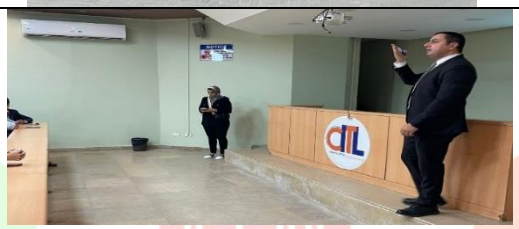
Events

AASTMT is keen on promoting Green Energy Sustainability within and beyond university walls through organizing related symposiums and visits as well as launching related campaigns, initiatives, and competitions.

I. Visits, Symposiums and Talks

Activities on AASTMT webpage

Activity	Overview	
20/12/2025 BIM (Building Information Modeling) **Seminar**	AASTMT organized a specialized BIM seminar at the College of Engineering and Technology, Abu Qir, in collaboration with CAD Masters and relevant engineering departments. The seminar demonstrated how digital modeling and MEP Revit enhance building energy efficiency, integrate renewable energy systems, reduce energy losses, and promote sustainable building design. BIM Session	
9/11/2025 PVs and E-Mobility in Egypt **Dialogue**	AASTMT hosted Egyptian and German experts to discuss PV technologies, battery energy storage, energy communities and electric mobility. Photovoltaics and E-Mobility in Egypt	
18/2/2025 **Visit** to EGYPES Exhibition – Egypt Energy show	Chemical and Petrochemical Eng. and Marine Eng. Departments organized a visit for its students to the Egypt Energy show (EGYPES) Exhibition at the Egypt International Exhibition Center in Cairo. Visit to EGYPES Exhibition	
10/12/2024 Nuclear energy **Symposium**	AASTMT's El Alamein campus hosted a symposium in collaboration with the Dabaa Nuclear Energy Agency and the Russian Cultural Center, focusing on nuclear energy cooperation and sustainability. Nuclear Energy Symposium	
27/11/2024 **Visit** to Egypt Energy & Firex 2024 Exhibition	AASTMT Electrical and Control Eng. Dept. as well as AASTMT Mechanical Eng. Dept, organized a joint technical student Visit to Egypt Energy & Firex 2024 Exhibition. Visit to Egypt Energy & Firex 2024 Exhibition	

25-26/ 11/2024 Siemens Energy **Visit**	AASTMT electrical and Control Eng. Dept. organized a technical trip to Siemens Energy Centre in ElAin ElSokhna. Siemens Energy Visit	
(21/10/2024) Moving towards the future: Innovations in energy" **Symposium**	AASTMT Energy and Petroleum Logistics Management Dep., College of International Transport and Logistics, hosted, Dr. Walid Al-Khadrawi, an expert in the field of hydrogen energy sustainability in the oil and gas sector, to present a scientific symposium entitled "Moving towards the future: Innovations in energy". Innovations in energy" Symposium-2024	

II. Campaigns, Initiatives and School Visits

Events on AASTMT webpage

Event	Overview
Our Energy, Our Responsibility **Campaign**	The Energy Research Unit, AASTMT, prepared for the awareness campaign "Our Energy, Our Responsibility", in 2025 and launched it on 22 April 2026 in alignment with Egypt Vision 2030 and the Academy's commitment to sustainability. The campaign promotes responsible energy consumption, reducing waste, and improving energy efficiency through simple daily practices. It aims to strengthen individual and institutional responsibility, encourage a culture of sustainability, support efficient use of resources for a greener future. Our Energy, Our Responsibility Campaign Watch the campaign video on: Our Energy, Our Responsibility Video
12-13/ 8/2025 **Summer Camp**	A two-day summer camp for high school students organized by the Electrical and Control Engineering dept. – AAST Abukir staff and students. The camp is designed to engage school students in **practical, interactive STEM-activities**, particularly in electrical engineering, renewable energy and industrial control. EE Dept. Summer Camp 
25/5/2025 BSA **School Visit**	BSA School Visit to Electrical and control engineering dept. – AAST abukir campus for Sparking Curiosity in Young Minds Through Electrical Engineering & Renewable Energy. BSA School Visit  

11/5/2025 International **Exhibition** of Eco-Smart Innovations	International Exhibition of Eco-Smart Innovations was organised by AASTMT-abukir campus to showcase the works of college and high school students, encourage creative young people and supporting innovations in technological and energy fields that serve the environment . (IC-ESI'2025) Exhibition	
(27/10/2024) Car Pooling **Initiative**	One day "Car Pooling" can lead to: * Less Emissions * Less Greenhouse Effect * Less Traffic * Less Fuel Consumption * Less Transportation Cost and above all it fulfills minimum four Sustainable Development Goals such as SDG3, SDG7, SDG11 and SDG13. Car Pooling Initiative	

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. The measurable reductions in electricity consumption, improvement in energy intensity, and growth in on-site solar generation demonstrate progress towards more sustainable campus operations as given by key performance indicators in Table 3. At the same time, international research projects and institutional cooperation provide opportunities to transform scientific innovation into practical clean-energy solutions. Ultimately, the plan reinforces AASTMT's pledge to Power Green Sustainability, Cleaning the Future, while supporting its long-term 2040 Goal: Achieving a 50% reduction in carbon emissions and a 40% renewable energy share by 2040.

Table 3. Key Performance Indicators 2024–2025

KPI	2024	2025	Achievement
Total electricity consumption	19,055,865 kWh	18,585,647 kWh	-2.47%
Alexandria electricity consumption	10,498,097 kWh	10,235,637 kWh	-2.50%
Energy density	0.09363 GJ/m²	0.09135 GJ/m²	-2.43%
Renewable share in national grid	25.1%	26%	+0.9 %
On-site solar electricity generation	273.6 GJ	286.7 GJ	+4.78%
Energy from low-carbon sources	17,494 GJ	17,682.84 GJ	+1.08%
Carbon emissions		38,253 t.CO_2e	New Measurement methodology Evaluation will be in 2025/2026