

Arab Academy for Science, Technology & Maritime Transport



Arab Academy
for Science, Technology & Maritime Transport



Report 2023 / 2024

SDG 7

Our Goal in 2023 -2024

Considering AASTMT vision of sustaining Clean and Affordable Energy for Everyone, 2023/2024 theme for sdg7 is “Towards Efficient, Clean and Renewable AASTMT: Save Energy, Cut Carbon and Empower with Renewables.” This emphasizes AASTMT commitment to responsible energy use and reducing carbon emissions through innovation and sustainability. By promoting renewable energy solutions, AASTMT aims to inspire a culture of environmental awareness, energy efficiency, and technological advancement—empowering communities to create a greener and more sustainable world. This is executed locally and beyond the university walls via relative initiatives and campaigns as well as relevant workshops, trainings, and consultancies, besides internal and governmental collaborations and support to startups and innovations, leading to cleaner and more efficient future.



SDG 7

AFFORDABLE AND CLEAN ENERGY

7 AFFORDABLE AND
CLEAN ENERGY



Key Milestones in 2023-2024

In accordance with [Green Energy and Energy Management Policy](#), 2023/2024 AASTMT Energy Management Committee puts forward several strategies towards energy usage rationalization, buildings' renovation/establishments as per energy efficiency standards, carbon emissions reduction and renewables' infrastructure expansion. The effectiveness of these measures is evaluated using AASTMT energy consumption and emissions insights in AASTMT Alexandria campus (featuring multiple branches as well as largest area, energy usage and number of staff and students), as discussed in [AASTMT 2023/2024 Energy Progress Report](#).



[Green Energy and Energy Management Policy](#) on AASTMT webpage
[AASTMT Annual Energy Progress Reports](#) on AASTMT webpage

I. 2023/2024 AASTMT Measures towards Affordable and Clean Energy

AASTMT 2023/2024 measures are discussed in details in [AASTMT 2023/2024 Plan towards Clean Sustainable Energy](#) which include regular processes as well as others updated annually as listed below;

❖ Towards Energy Saving and Efficiency

Regular	In 2024
- Smart building management systems and online regular monitoring to energy consumption for efficient energy management. - Data from local energy meters in each building are used to track building energy use during different times to identify periods of high and low demand, besides identifying potential overuse or unnecessary use. - Continuous checking for unnecessary use of energy in high energy wastage buildings. - Spreading instructions and directions towards energy saving and conservation. - Increasing awareness regarding energy rationalization and conservation plans among AAST staff, students, administrators and technicians through energy-related campaigns, initiatives and seminars.	- Buildings of high energy wastage are for internal audits to identify reasons of energy inefficiencies. - As per the above report, completing the replacement of lighting lamps and working with LED lamps, increasing Acs' operating efficiency, upgrading electricity outlets and accessories as well as installing power factor correction panels in areas with most wastage. - Applying motion-sensor lighting in common areas and energy-saving modes for conditioners to increase building efficiencies during unoccupied periods. 2023/2024 Renovations, stating building number and upgrading/maintenance procedure, at different branches of AAST Alexandria campus are detailed in 2024 Energy Conservation Report

❖ Towards Expansion in Renewable Energy Employment

The university fully utilizes its photovoltaic infrastructure where a solar power station with a capacity of 50 kilowatts is installed in 7th Engineering Building in Alexandria campus and another one of 150 kW in Aswan. Both work with net metering system. AASTMT efforts, to sustain investments in renewables employment, include the following consistent and annually updated measures;

Regular	In 2024
- 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. - Investments in Energy-related LABs installed 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 Engineering Building - Alexandria Headquarter Energy Research Unit LAB ➤ Energy LAB in Eletrical Energy Engineering Department - Smart Village Campus Electrical Energy Engineering LAB ➤ Environmental Monitoring and Climate Change Laboratory - Scientific Research & Innovation Centre Environmental Monitoring and Climate Change Laboratory - Encourage renewable energy-related events and activities (campaigns, initiatives, seminars, workshops, visits and trainings).	- Solar heaters have been installed in 2023 to replace the electric heaters in students' dorms – Alexandria and put into action in 2024 campus, besides the already applied solar heaters in Pharmacy college. - 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 - Addition of Renewable Energy Educational Lab in the Electrical and Control Eng. Dept- room G142 at AASTMT Alexandria - Abukir Renewable Energy Lab in EE Dept-AAST Abukir - The Renewable, Innovative and Integrated Water Treatment Unit designed in 2023 in the TREATMENT Project is implemented, tested and put into action in 2024. The end result is clean, potable water irrigation unit with 7kW PV system to serve as the sustainable energy source for three-phase pump. TREATMENT Project Water Treatment Unit Report-May2024 - Prioritize renewable energy projects in AASTMT Industry Service Complex to serve the industry and community effectively and resourcefully. AAST ISC 2024/2025 projects

❖ Towards Carbon Emissions Reduction

Measures to be taken by AASTMT in 2024 to contribute to emissions reduction are discussed in details in AASTMT 2024 Climate Action Plan as well as AASTMT Carbon Emissions Reduction and Sustainability Progress Report (2024) which can be summarized as follows;

[AASTMT Climate Action Plan 2024](#)

[AASTMT Carbon Emissions Reduction and Sustainability Progress Report \(2024\)](#)

Regular	In 2024
- Conduct regular assessments of carbon emissions to implement strategies for reduction. - Proceeding with the comprehensive recycling program implemented across all campuses, targeting paper, plastic, and electronic waste - Consistent and expanded use of digital platforms to reduce paper consumption. - Promote behavioral change among staff and students to reduce energy consumption, foster awareness, and encourage sustainable practices via initiatives, campaigns and workshops.	- Different Scopes of emissions are to be tackled in 2024 as follows, Scope 1 (Direct) is to be reduced by applying tighter refrigerant management and continued operational efficiency measures. Scope 2 (Purchased electricity) is reduced via AASTMT efforts by focusing on operational optimization and energy efficiency upgrades. In 2024, teams will prioritize BMS tuning (scheduling, set-points, and alarms), targeting HVAC, and light controls in high-use spaces, besides improvements and maintenance in on-site solar output to lower grid dependence Scope 3 (Selected categories) is reduced in 2024 as AASTMT plans to implement measurable waste minimization targets and standardized protocols for sorting and collection across campuses, including: (i) expanding labeled collection points in high-traffic areas, (ii) reinforcing operating procedures with facilities teams, and (iii) running term-start refreshers for staff and students. - Engage postgraduate students and faculty in conducting studies on climate adaptation, carbon footprint and decarbonization in AASTMT campuses, especially the largest AASTMT Alex. Campus. As per the latter, a study was conducted in 2024 and published in 2025 as shown in the link below. https://www.sciencedirect.com/science/article/pii/S0973082625001334

II. Energy Consumption and Emissions Insights

To assess AASTMT's progress in energy efficiency and rationalization as well as carbon emissions reductions, it is essential to establish a baseline using data from 2018 to 2021. This period serves as a foundation for future energy consumption and emissions and allows for a clear comparison with data from 2022, 2023 and 2024. Detailed AASTMT Insights are given in [AASTMT 2024 Energy and Carbon Insights](#)

❖ Energy Consumption

Energy consumption in all campuses of AASTMT Alexandria branch is first analyzed since this branch experiences the highest consumption due to its multiple campuses and largest number of staff and students. Figure1 shows the total energy consumption in the entire Alexandria Campuses within the period (2018-2024). It is clear that comparing the latest consumption in 2024 (10498097 kWh) by the baseline in 2018 (12698059 kWh) results in a total of 17.33% reduction in energy consumption.

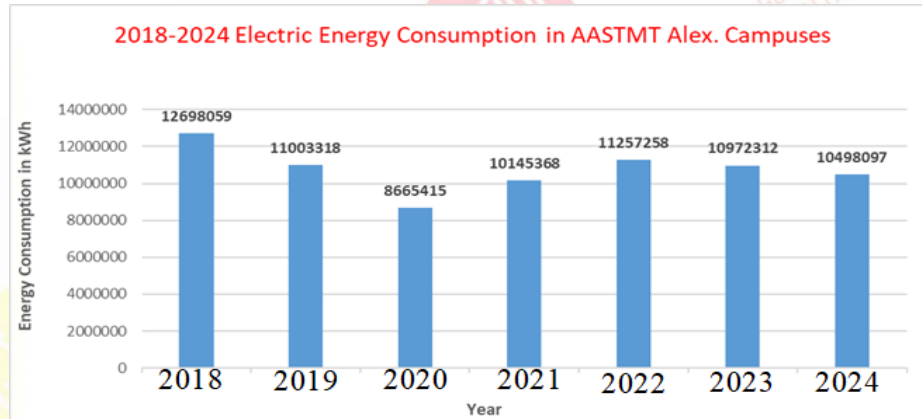


Figure 1. Total Electrical Energy consumption in kWh of AASTMT Alexandria campuses (2018-2024)

Within the period 2019-2021, AASTMT wasn't working at full capacity due to Covid19. However, after Covid19, AASTMT capacity gradually increased until all the branches returned to their full load in 2022 with a total value of 11,257,258 kWh. Following the yearly renovation and modernization plan implemented across all Alexandria branch buildings of the Academy, notable energy savings are achieved in electricity consumption in 2023 by 2.5% resulting in energy consumption of 10,972,312 kWh as shown in Fig. 2. **Proceeding in the energy saving yearly procedure, 2024 witnessed energy usage of 10,498,097kWh with a further decrease of 4.32% from 2023.**

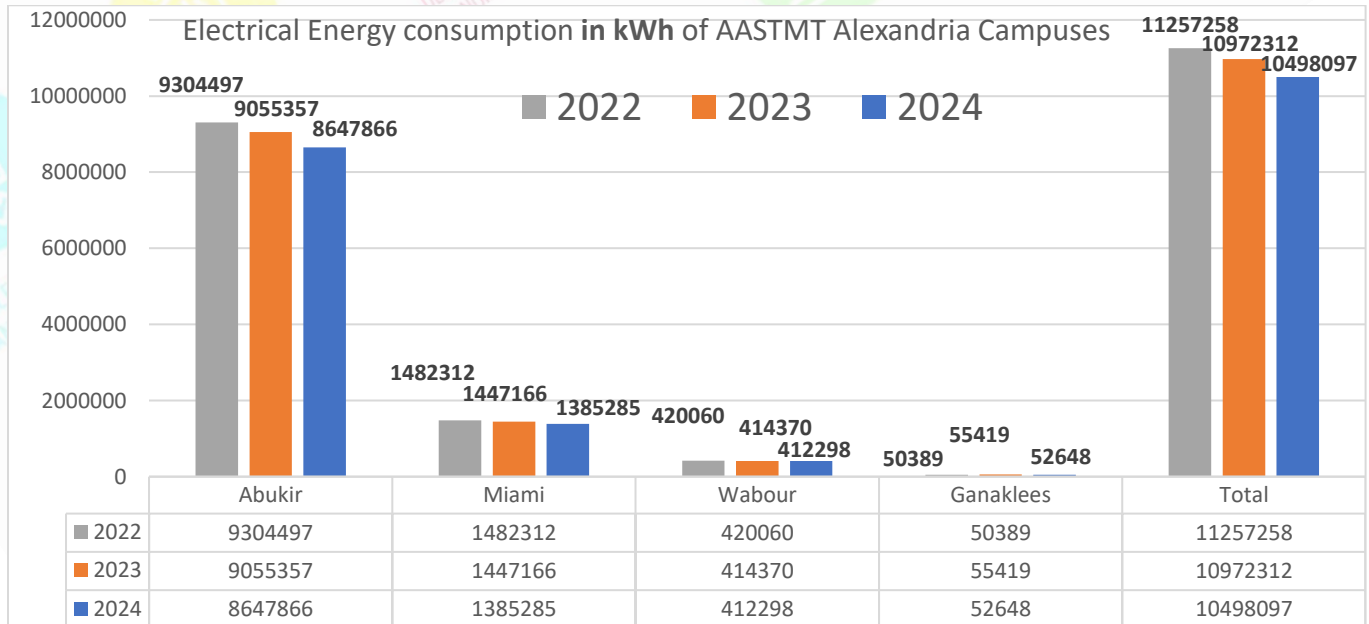


Figure 2. Electrical Energy consumption in kWh of AASTMT Alexandria campus (2022-2024)

❖ Renewable Energy Share Growth

AAST consumption is supplied mainly from the Egyptian national grid in which the renewable energy (RE) share has increased from 6.3GW in 2022 to 6.7Gw in 2023 till reaching 8.6GW in 2024 as per NREA Report 2024, achieving an increase by almost 6.3% from 2022 to 2023 and by 28.4% from 2023 till 2024 as shown in Fig.3. Besides renewable energy contributed in AASTMT from national grid, there is almost 230 kW solar energy installations on AASTMT campuses buildings, with production reaching almost 75989 kWh in 2024. The latter shows an increase of almost 1.3% from the 75000 kWh solar installations in 2023 as shown in Fig. 3. This reflects AASTMT efforts to divert to clean energy, energy efficiency, reduce emissions and sustain serving the Environment. Conclusively, AASTMT average renewable energy share in supplying its total energy demand (including RE share in national grid and its solar installations) reached above 25% in 2024 which is more than the 24% in 2023, reflecting AAST continuous efforts and investments to increase its RES installations.

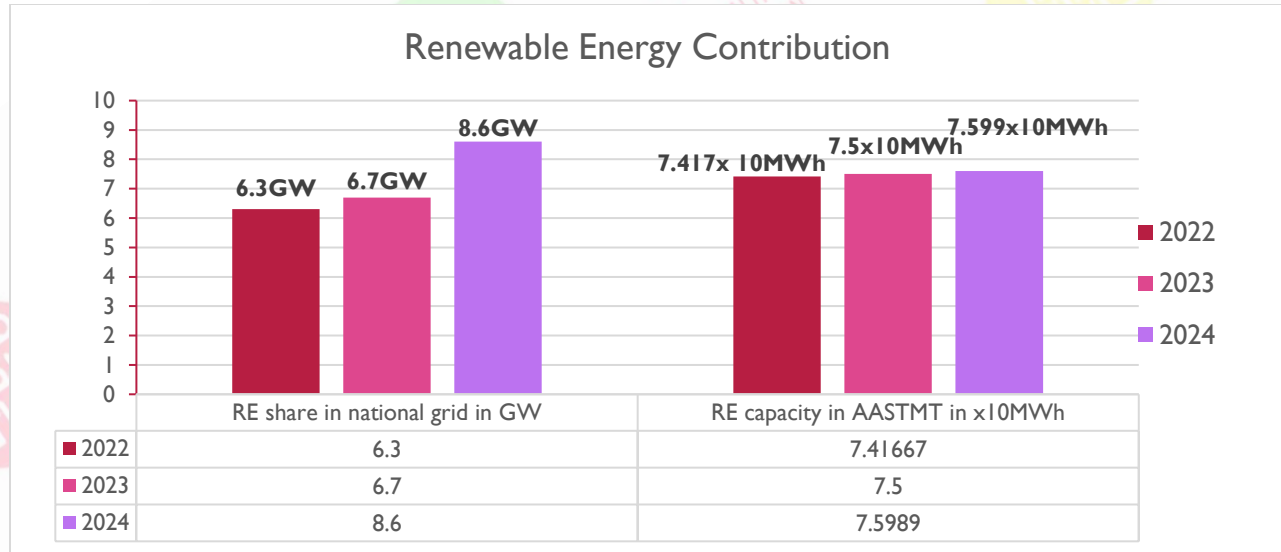


Figure 3. Renewable energy share in national grid [NREA Report 2024] and AAST RE installations

Regarding the entire AASTMT 2024 energy density for all branches all over Egypt, Table 1 shows AAST energy density, including energy from national grid and from AASTMT total solar installations, in kWh/m² and GJ/m² in 2024 compared to that of 2023. The calculated energy density reached about 0.09363GJ/m² in 2024 which is less than the 0.09785GJ/m² in 2023 by almost 4.3%, mirroring AASTMT continuous efforts towards electrical energy conservation and energy efficiency improvement. Also, it is worth noting that AASTMT total energy consumption from low carbon sources (summing up RE sources share in national grid and solar installation in AAST), has reached 17494GJ in 2024 which is more than the 17271GJ in 2023 by almost 1.29%, reflecting AAST support to transition to clean energy.

Table 1. Energy Density in GJ/m² for the entire AAST in 2024 compared to 2023

Year	Total Floor Area (m ²)	Total energy (kWh) (from Grid + AAST solar infrastructure)	Total energy (GJ) (from Grid + AASTMT solar infrastructure)	Density (GJ/m ²)	Energy from low carbon sources (GJ)
2023	735569.7	19,992,470	71972.892	0.09785	17271
2024	735569.7	19,131,865	68874.714	0.09363	17494

❖ Carbon Emissions

Table 2 presents the emissions across Scope 1, Scope 2, and Scope 3, as well as total carbon emissions, within the period 2018-2024, while Fig. 4 zooms into emissions insights within 2021-2024. Using the Greenhouse Gas Protocol's framework, insights are provided into direct and indirect emissions, to identify key areas for improvement. Scope 1 emissions, which encompass direct emissions from university-controlled sources, include fuel usage for the campus transport fleet and emissions from refrigerant leaks in air conditioning and refrigeration systems. On the other hand, Scope 2 emissions arise from indirect emissions due to purchased electricity, while Scope 3 emissions account for indirect emissions from activities as waste disposal, water usage, and paper consumption.

Analyzing these emissions insights, it is concluded that by year-end 2024, AASTMT's total carbon footprint is 103,862,750 kg CO₂e, a further -3.0% from 2023's 107,075,000 kg CO₂e. Against the 2019 base year (154,594,380.99 kg CO₂e), this equates to a -32.8% reduction, keeping AASTMT on track to maintain the ≥30% reduction by 2025 required by the Climate Action Plan and aligned with the longer-term -50% by 2040 goal.

Table 2: AASTMT-Alexandria campus- Carbon Emissions from 2018 to 2024 (kg CO₂-e)

Year	Scope 1 (kg CO ₂ -e)	Scope 2 (kg CO ₂ -e)	Scope 3 (kg CO ₂ -e)	Total Emissions (kg CO ₂ -e)
2018	1,244,230.50	1,240,286.52	98,997,739.78	101,482,256.80
2019	1,374,252.42	1,151,281.20	152,068,847.38	154,594,380.99
2020	972,551.04	869,471.36	87,130,328.87	88,972,351.27
2021	1,561,942.92	1,008,256.20	112,858,633.63	115,428,832.75
2022	1,300,000.00	950,000.00	110,000,000.00	112,250,000.00
2023	1,150,000.00	925,000.00	105,000,000.00	107,075,000.00
2024	1,092,500	897,250	101,873,000	103,862,750.00

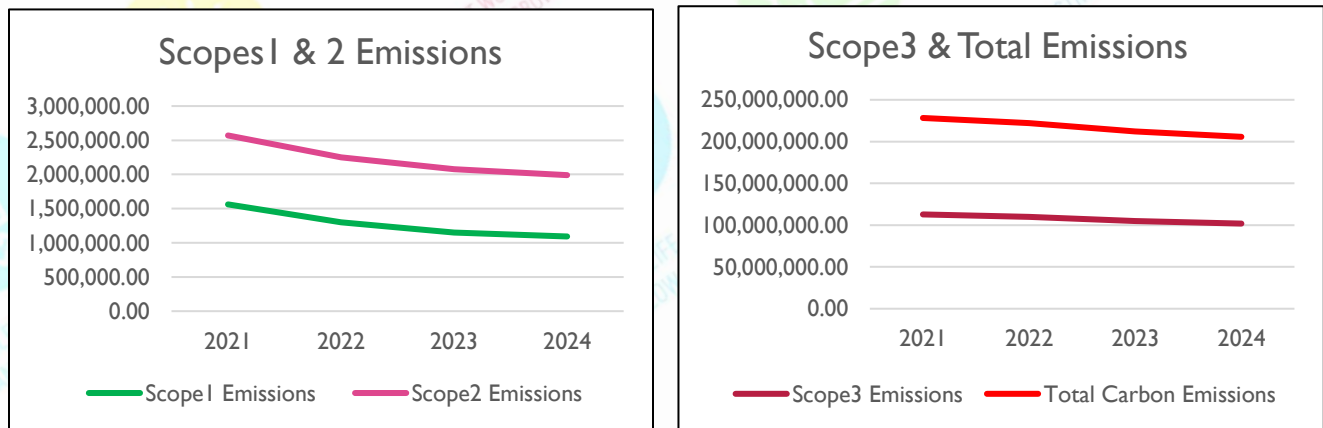


Figure 4: Zooming into AASTMT-Alexandria campus- Carbon Emissions (kg CO₂-e) within 2021- 2024

Community Engagement

AASTMT put a lot of efforts towards sustainable community development in 2023/2024. 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 2023 and 2024.

[Research Projects](#) on AASTMT webpage

[AASTMT RESEARCH PROJECTS](#) on AASTMT webpage

Project Name	Start date	End Date	Link
Promoting Integrated Green Competences for Sustainable Development in Architectural Education through Experimental Lab-based, Active Learning (PRO Green)	1/1/2024	30/12/2026	PRO Green Project
Climate smart, ecosystem-enhancing and knowledge-based rural expertise and training centres (RURALITIES)	1/10/ 2023	30/10/2026	RURALITIES Project
Strengthening education and research in Applied Informatics for Energy System Integration (AI-ESI)	1/1/2022	31/12/2026	AI-ESI Project
Green Shipping Pathways Towards a Clean Energy Transition in the Mediterranean (GreenMed)	1/10/2023	31/12/2025	GreenMED Project
Promoting the role of youth as active change-makers in addressing climate change in Egypt through education (Uni-Green)	1/9/2021	31/8/2024	Uni-Green Research Project
Integration of sustainable Development goals in universities for better climate change management" (INVOLVE)	15/1/2021	14/1/2024	INVOLVE Project
A Smart Public Parking System	1/1/2021	31/12/2023	A Smart Public Parking System
Monitoring, Assessment and Innovative Treatment Technology to Enhance Groundwater Quality for Irrigation toward Climate Change adaptation (TREATMENT)	1/10/2021	30/11/2023	TREATMENT Project

Moreover, in 2023/2024, a number of outcomes, that have significant impacts on industry, resulted from AAST collaboration in joint grants and funded projects.

Grant	Outcome
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	An 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	
Monitoring, Assessment and Innovative Treatment Technology to Enhance Groundwater Quality for Irrigation Purposes toward Climate Change Adaptation (TREATMENT)	In 2023, a Renewable, Innovative and Integrated Water Treatment Unit is designed to use energy harnessed from solar photovoltaic system to be used to lift water from a well, and subsequently, the water is directed through the four-stage nano-filter, where it undergoes a rigorous purification process. The end result is clean irrigation and potable water unit with a PV system, serving as the sustainable energy source for the three-phase pump. In 2024, the unit was successfully implemented and tested. The final report was released by May 2024 TREATMENT Project Water Treatment Unit Report-May2024 Project Details	 

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)

➤ 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 the following corporates.

- Elab
- Eprium
- ABB
- Arcas Egypt
- Suez Steel
- Wood Technology Company

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](#)

❖ 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



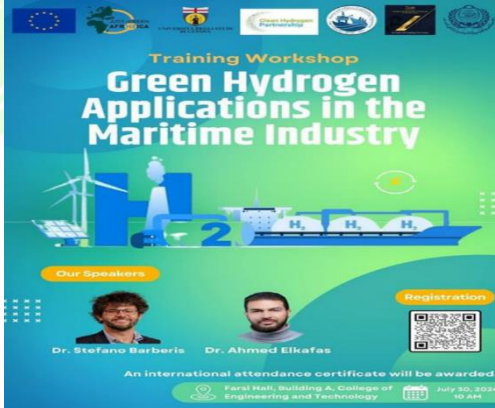
Also training courses offered by AASTMT- Energy Research Unit include

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. 2023/2024 Free services offered by AASTMT include;

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	
(30/7/2024) Green Hydrogen Applications in the Maritime Industry Workshop	AASTMT Department of Marine and Platform Engineering at the College of Engineering and Technology was pleased to organize the international workshop, "Green Hydrogen Applications in the Maritime Industry", through collaboration with the University of Genova and the Clean Hydrogen Partnership. Green Hydrogen Workshop	
(3/5/2024) Uni-Green Project Workshops	A 6-day bootcamp was organised at the AASTMT, as an outcome to Uni-Green Projects. In this workshop, participants will learn how to find innovative solutions to mitigate climate change effects locally and turn their ideas into business. Go-Green Workshop	

(1/1/2024) Energy Manag. Strategies for Marine Application: HOMER Pro-Renewable Energy Software Seminar	AASTMT Department of Marine and Platform Engineering at the College of Engineering and Technology announced the holding of a free seminar for graduate students under the title: "Energy Management Strategies for Marine Application: HOMER Pro Renewable Energy Software." It will be delivered by engineer Mayar Nabil Renewable energy and water desalination consultant at the Desert Research Center (Applied Research Center). Homer Software Seminar	
Dec. 2023 A collaborative Egypt-Germany workshop on environmental science	AASTMT Postgraduate Studies Institute hosted a collaborative Egypt-Germany workshop on meteorology and environmental science at its Abu Qir campus. The event brought together students and professors from Freie Universität Berlin and was supported by DAAD. Egypt-Germany Workshop in AASTMT	
(27/11/2023) Electric Motors for Electric Vehicles Seminar	Presented by Dr. Shaohong Zhu, Electric Machine Engineer in Accelera by Cummins, United Kingdom, this free seminar is prepared for AASTMT graduate students, final year students, and all those interested in the field of motors in electric vehicles towards green and clean energy.	
(27/11/2023) Tesla USA and how to apply for summer training in Tesla USA" Seminar	AASTMT hosted Engineer Jalal Salama (Senior Manufacturing Controls Engineer at Tesla, Texas USA and a graduate of the Mechanical Engineering Department at the Academy's main headquarters in Abu Qir) to inform about his experience at Tesla and how to apply for summer training in Tesla US Tesla Seminar	
(November 2023) Free-training scholarships for 90 trainees	In light of the continuous cooperation between AAST Industry Service Complex (ISC) and TCI Sanmar, free training scholarship for 90 trainees in Port Said Governorate are carried out at ISC. The training included fields of hydraulics fundamentals, electric and electronic maintenance at factories as well as PVs' fundamentals and renewable energy. Free Training by ISC	

IV. AASTMT Participation locally, Regionally, Nationally and Globally

In 2023/2024, 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
(26 Oct. 2024) Bilateral cooperation between Egyptian Ministry of Environment and AAST Cooperation with Egyptian Ministry of Environment	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. - Establishing a “Climate Change Information Center” to provide information and data related to climate change & efforts to confront it. - Organizing a celebration to hand over awards for best projects and research. Announcing a competition for the best ideas in the field of transition to green industry through reuse of waste. 
(5 Oct. 2024) 2024 World Maritime Day World Maritime Day 2024	AASTMT president participated in World Maritime Day 2024, which was held in Alexandria under the slogan of (New technology for more environmentally friendly maritime transport) to discuss developments towards green Maritime transport in Egypt. 
(27/8/2024) Workshop on “Waste Management” Waste Management Workshop	The workshop was organized by AASTMT in cooperation with the Alexandria Governorate, Nahdet Misr Company, and the German Retech Foundation under the auspices of the Ministry of Environment and the Waste Management Regulatory Agency to tackle waste management issue and its importance for decarbonization. 

(30 Oct. 2023)

RENEW – AAST
Joint event

[AAST-RENEW-
MENA](#)

With the importance of being effectively engaging in Energy – related organizations, conferences & events, a RENEW – AAST Joint event on “Enhancing Education and Gender Inclusion for Energy Transition and Climate Action in MENA” was organized and held in AAST - headquarter. Egyptian Gas Regulatory Authority (GasReg) has participated in this event to strengthen the engagement between the job market and academia on energy transition.



Moreover, 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

(27-28 Nov. 2024)

UniGreen
conference
"Shaping a
Sustainable
Future 2024"

[AASTMT in
UniGreen
Conference](#)

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.

Overview



(24-27 Nov. 2024)

5th Edition of
Arab
Sustainable
Development
Week

[AASTMT in Arab
Sustainable
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”

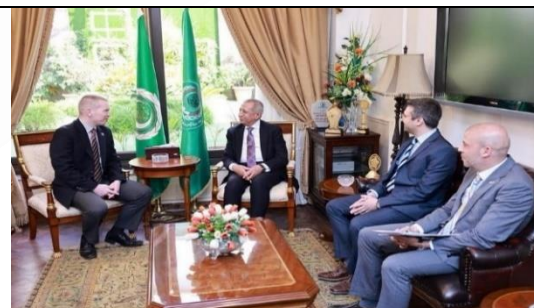


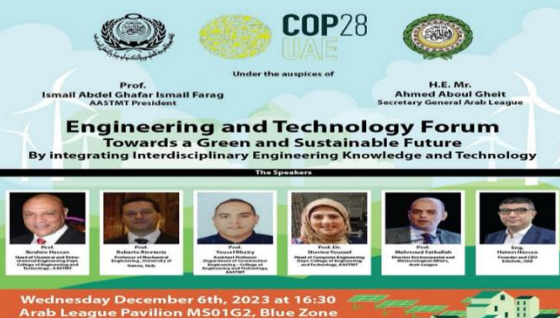
(11 Nov. 2024)

Texas A&M
University visit

[Texus 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.



(20 Oct. 2024) International Workshop on “The impacts of Climate Change on Coastal Cities” Climate Change International Workshop	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.	
(4 July 2024) Clean Energy Summit Clean Energy Summit	Ontario Tech and a key group of international partners brought together leading nuclear and clean technology experts from Africa and the Arab world in this summit which was held at AASTMT. They discussed strategies for future international collaboration on developing innovative and sustainable energy solutions and the challenges of capacity-building in the energy sector	
(14 March 2024) AASTMT - UAE Ministry of Energy and Infrastructure Agreement AASTMT- UAE Agreement	AAST president and Minister of Energy and Infrastructure at United Arab Emirates (UAE) signed a strategic partnership agreement to utilize AAST capabilities and staff expertise to develop UAE maritime and energy sector through research, training and development services	
(3 March 2024) MARLOG 13 – the 13th annual conference on Sustainable Green Blue Infrastructure MARLOG 13	AASTMT annually organizes MARLOG conference which brings together a diverse group of experts from the fields of ports, logistics, energy, sustainability, and technology to discuss the latest trends and innovations in sustainable infrastructure.	
(6 Dec. 2023) Conference of the Parties to the United Nations Framework Convention on Climate Change (COP28) AASTMT-COP28	AASTMT has participated in (COP28) which was held from the 30th of November – 12th of December 2023 in Dubai, United Arab Emirates. A group of AAST professors have shared discussions on their research in one of the conference sessions on the 6th of Dec. with the theme: Towards a Green and Sustainable Future by integrating interdisciplinary Engineering Knowledge	

V. Support to Startups by AASTMT Entrepreneurship Center

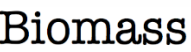
AASTMT Entrepreneurship Center is keen on supporting startups in the field of green economy, energy management, industry efficiency and sustainability, through trainings and spin-offs.

[Entrepreneurship Center on AASTMT webpage](#)

❖ Trainings

Training	Preview	Logo	Link
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. On another side, supporting existing startups through advanced trainings and technical, industry-related mentorship programs.		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.		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 strives to help AASTians start their career and find an opportunity that meets their passion.		AAST Grads to Business

❖ 2023/2024 Spinoffs

Spin-offs	Preview	Logo	Link
CarboCycle	A company that uses solar energy in the field of agriculture, such as lighting, heating, cooling and ventilation to facilitate the farmers for a period of one year.		Carbocycle Company - Entrepreneurship Center
Biomass	A Biogas production Company that converts any organic matter, disposed of in the fermentation of plant and animal residues and garbage in fermenters, to produce gas. This gas is used to ignite cooking stoves as an alternative to the petroleum product. This fuel is already used in countries such as the United States, Brazil and Germany.		Biomass - Entrepreneurship Center
IOT Smart Home	A system for converting homes or offices to smart homes for remote control, for enhancing operation efficiency and reducing energy consumption, at a competitive cost with similar service providers		IOT Smart Home - Entrepreneurship Center
Tanmia Wa Tatweer - TWT	A project to enhance and support entrepreneurship ecosystem in Egypt to enable empowerment of existing and potential entrepreneurs, particularly youth and women, to establish, manage and operate successful innovation-driven businesses in 3 priority sectors: 1. Agribusiness 2. Clean and Green 3. Creative Industries, with a focus on handicrafts and arts.		Tanmia Wa Tatweer- Entrepreneurship Center
Tatbeek	Provide digital Transformation and Integrated Business Solutions to enhance machines efficiency in all factories using IoT, cloud computing, and machine learning technologies, thus unlocking manufacturing excellence, maximize efficiency, and minimize Waste		Tatbeek - Entrepreneurship Center

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.

Innovation/Award	Overview
(May 2024) Research Grants from ASRT and Schneider Electric	Energy-related graduation projects which received Research Grants from Academy of Scientific Research and Technology (ASRT) and Schneider Electric. Energy include; • Energy Saving Multi-pumping Systems (grant from Shneider Electric) • Prototype of a Fast Charging Station of Electric Cars (grant from Shneider Electric) • Design and implementation of Modified Solar Still by Heat Pump (grant from ASRT) Graduation Projects Grants-Cairo branch
(May 2024) ITIDA Financial support for "Smart Green House" and "Smart Bin" Projects-	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

(Nov. 2023) Technical and Financial support for “Autonomous Electric Bus” Project from Valeo Egypt.	Students of AASTMT Mechanical Eng. and Computer Eng. departments are entitled to receive technical and financial support from Valeo Egypt, for their distinguished project “Autonomous Electric Bus”, which is considered an important addition in the field of green smart land transportation. Autonomous Electric Bus Fund 
---	---

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 and Symposiums

[Activities](#) on AASTMT webpage

Activity	Overview
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	
(21/2/2024) Visit to Egypt International Energy Exhibition “EGYPES 2024”	Students of AASTMT Chemical & Petrochemical Engineering department visited “ Egypt International Energy Exhibition EGYPES 2024” on the 21st of February 2024 EGYPES Exhibition 2024	
(2/10/2023) EGYPT-TEXAS Collaborative Workshop: ENERGY-WATER NEXUS	This free workshop was implemented within the framework of cooperation between AASTMT and the University of Texas to faculty members and graduate students. ENERGY-WATER NEXUS Workshop	

II. Campaigns, Initiatives and Competitions

[Events](#) on AASTMT webpage

Event	Overview	
(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	
19-20/4/2024 IEEE “Youth Endeavors for Social Innovation Using Sustainable Technology” Competition	AASTMT hosted the preliminary round of the IEEE “Youth Endeavors for Social Innovation Using Sustainable Technology” at the Abu Qir campus. The event showcased over 100 student projects focused on sustainability and innovation. IEEE Competition	

(2/3/2024) Electric Mobility Event	IEEE PES Egypt section organized an event under the theme of electric mobility and climate change in AASTMT-College of Eng.- Elsheraton branch. Electric Mobility Event	
(6/2/2024) TV interview: The Future of New and Renewable Energy in Egypt	The “Evening Talk” program on Channel 5 of Alexandria TV is hosting Professor Dr. Walid Ahmed Maher Ghoneim - Head of AAST Department of Electrical and Control Engineering at the main headquarters - and the episode will address the topic: “The future of new and renewable energy in Egypt: Sustainable economic transformations” TV interview: The Future of New and Renewable Energy in Egypt	
(22/12/2023) Launch of Uni-Green Climate Change Competition	AASTMT in operation with Life Makers Foundation and funded by the European union announced the launch of this competition in fields of small-sale renewable energy, greenhouse gas emissions mitigation, waste management and recycling, biodynamic agriculture and halting desertification. Uni-Green Climate Change Competition	
(16/11/2023) Toward a Green and Sustainable Future - School Initiative: Competition Finals (Phase 3)	This initiative included three stages; - Awareness sessions at AAST for school students and teachers about sdgs - Physical visits of the AAST sustainability team to schools and online interactions - Implementing innovative ideas by school students and guiding them through development Finally, this was concluded by a competition, held at AAST headquarter, among these innovative ideas presented by school students. School Initiative: Competition Finals	

Summary and Upcoming Goals

In 2024, AASTMT continues its progress towards energy sustainability and carbon emissions reduction based on insights of 2024. By the end of 2024, the university has achieved the following:

- Energy consumption reduction in 2024 by almost 4.3% from 2023 and total 17.33% from 2018
- Total carbon emissions reduction in 2024 by 3% from 2023 and total of 32.8% from 2019.
- Increasing the RES share of AASTMT energy demand to over 25% in 2024.

These achievements were driven by key measures taken by AASTMT in 2023/2024, including continuous infrastructure renovations to adopt energy-efficient technologies, increase of renewable energy sources' share, besides improvements in waste management and recycling programs as well as related initiatives and awareness campaigns.

All this reflects AASTMT progress **Towards Efficient, Clean and Renewable AASTMT**, keeping in track with its short-term goal and progressing towards its long-term sustainability goals, as follows;

- **Short-term Goal by 2025:** AASTMT has already succeeded to exceed the 2025 goal of achieving 30% carbon reduction compared to 2019 and depending on 25% renewable energy in its supply.
- **Long-term Goal by 2040:** By 2040, AASTMT aims to achieve a 50% reduction in carbon emissions compared to 2019 levels and increase its reliance on renewables in its energy supply to almost 40%. Analyzing AASTMT progress in this context through the years 2022, 2023 and 2024, AASTMT has proved determination and capacity to meet its ambitious energy and carbon related long- term goals.

Continuous progressing towards these goals will push AASTMT to eventually reach its
ULTIMATE GOAL of: Zero Emissions and 100% Renewable Energy