"Towards Green and Sustainable Schools" Initiative

The Committee for the implementation of Sustainable Development Goals (SDGs) at the Arab Academy for Science, Technology and Maritime Transport (AASTMT) has launched an initiative in order to educate teachers and school students at different levels of the development of the SDGs set by the United Nations. This is within the framework of the Academy's social responsibility and its positive impact on the surrounding environment. This initiative can be summarized in three main stages:

1. Addressing 7 schools in Alexandria as a first stage this year to join training workshops for teachers and students to raise awareness of the SDGs.

2. Following up with the schools on the implementation of what has been learned in the workshops at the school level and supporting these schools financially and logistically to implement initiatives to save energy and water as a first stage.

3. Holding a competition among these schools at the Academy's headquarters in order to identify the schools that succeeded first in developing their institutional performance after implementing the SDGs and presenting success stories in each.

This initiative is closely related to achieving United Nations SDGs and Egypt's vision 2030. The initiative includes several axes and goals for sustainable development and aims to implement them in the schools participating in the initiative and with the participation of more than one group of society. First, the initiative improves the quality of education in schools,

introduces the smart component, and supports the application of students' ideas. One of the strengths in this regard is that the AASTMT is ranked first in the quality of education in Egypt, according to Times Higher Education Impact Ranking. Secondly, the ideas proposed and developed by the participating schools include water and energy fields, which are included in SDG 6 and SDG 7. Third, the initiative works on these two axes and applies them as this will have a great impact on reducing the risks of climate change and achieving sustainability in participating cities and communities, which is in line with SDG 11 and Goal 13. Finally, participation in cooperation between the AASTMT and various schools and institutions contributes to achieving and developing partnership with them and is directly related to SDG 17.

It is worth noting that the achievement of these goals is directly related to Egypt's Vision 2030, which states that by 2030, the environmental dimension will be the main focus in all development and economic sectors in a way that achieves the security of natural resources and supports fair use, optimal exploitation and investment in a way that guarantees the rights of future generations. It attempts to diversify production sources and economic activities, which contributes to supporting competitiveness, providing new job opportunities, eliminating poverty, and achieving social justice while providing a clean, healthy and safe environment for the Egyptian citizen. This is what the initiative seeks to implement at the school level. This initiative can be applied to other sectors in the future.

Background of the Initiative

This initiative is a social initiative undertaken by AASTMT in order to educate school students and teachers at different stages of the SDGs and work to implement them through some axes with innovative and competitive ideas, as Alexandria is one of the coastal cities that are most vulnerable to the impact of climate change. Therefore, the initiative focuses on creating and implementing competitive proposals to confront and mitigate climate change in schools participating in the initiative as a nucleus for a sustainable green society and achieving the goals of the United Nations and sustainable development for the year 2030. The initiative is also in line with Egypt's Vision 2030 and the new Egyptian state, whose main pillars include an integrated and sustainable environmental system, knowledge, innovation and scientific research, which the initiative addresses.

The initiative aims to develop smart, green and sustainable schools in Alexandria. It began in July 2022 by inviting 7 schools in Alexandria to join the initiative as a first stage, through which seminars and workshops are held to educate students and teachers about the United Nations SDGs and smart ways to save energy, and following this stage is the movement to schools to apply what has been learned from the workshops and follow-up through the initiative team in cooperation with the SDGs team at the Academy and to support these schools financially and logistically to implement the initiative through the smart saving of energy and water. At the end of the first stage,

a competition will be held between the participating teams at the Academy's headquarters which have succeeded first in developing their institutional performance after implementing the SDGs and presenting success stories in each school. The initiative is run with voluntary support from the AASTMT representatives and financial support for the schools through part of the SEACAP SDG 4 grant which is funded by the European Union.

Criteria of the Initiative

1. **Green Standard**

This standard refers to reducing energy consumption in school buildings through cost-effective proposals for energy renewal, integrating sustainable energy access and climate action plans and innovative smart mechanisms. The green component promotes capabilities to assess the resilience of buildings to global warming, energy optimization of renovated buildings, reducing carbon dioxide emissions and management costs. The ultimate goal is to have green schools that minimize environmental impacts and costs, improve student health and performance, environmental awareness and literacy and sustainability. It also creates learning experiences and environments that foster connection with nature, self-worth, and sustainable behaviors that make a meaningful difference. The initiative is based on Earth Charter principles, which provide a framework that encourages students to engage in actions that are peaceful and sustainable economically, socially and environmentally.

2. **Technology Standard**

Green smart schools are those that integrate new models of learning, smart sharing of resources, use of buildings and transportation in relation to different forms of education and energy efficiency. Digital transformation in the classroom, blended learning, e-learning and web classes are part of the new learning models that should enable more time and space for independent learning in terms of intelligent sharing of resources. Studies have shown that the best practices are

sharing IT storage capacity between schools, making educational resources freely available, and sharing information about classroom availability and possibilities for working together. Green smart schools must be energy-efficient. Thus, it should have a building energy management system that continuously monitors the energy performance of the buildings at schools so that the interior design of the buildings is more suitable for new forms of teaching and learning. The integrated concept enables smart green schools to reduce commuting to and from school. This is an important component, which is associated with a large percentage of the organization's CO2 footprint. Moreover, the school itself must be a subject of study by students and teachers, and sustainability must be an integral part of the position of all stakeholders associated with smart, green and sustainable schools. The initiative focuses on understanding the relationship between design, sustainability, pedagogy, and the use of information and communication technology (ICT) in innovative learning areas in the twenty-first century. Smart solutions include linking proposed solutions to the internet and smart mobile applications.

3. Repeatability Standard

Following the completion of the first phase, the initiative will be circulated on a larger scale in the governorate and all branches of the Academy in the various governorates, and other internal and external supporters of the initiative will be involved and transformed into a national initiative in cooperation with the relevant bodies, ministries and authorities. Best practices will also be shared and can be implemented through different institutions, and thus not only achieving a more sustainable environment but also changing the attitude of students (tomorrow's professionals), teachers and staff towards sustainability.

"Towards Green and Sustainable Schools" Initiative: The Event

The Arab Academy for Science, Technology and Maritime Transport (AASTMT) is committed to continuously raise awareness of the UN Sustainable Development Goals "17 SDGs" and to enhance its role in the advancement and service of society.

Accordingly, the committee for the implementation of the SDGs at AASTMT launched the initiative "Towards Green and Sustainable Schools", where the College of Engineering and Technology at AASTMT, hosted the event at the headquarters in Abu Qir in September 2022. The aim of the initiative was to open avenues of cooperation between the Academy and schools to educate students and educational institutions towards the development of the SDGs. Students and representatives from various schools in Alexandria participated in this event:

1. Harvard International School
2. Technical Industrial Secondary School for Drinking Water and Sanitation for Boys in Alexandria
3. Al-Nasr Boys School
4. Royalty Language School
5. Al-Riyadah Language School
6. Egyptian American School
7. Nile Modern Language School

They visited the solar power plant at the Faculty of Engineering, which is the largest plant in Egypt on the roof of an educational building and visited the Renewable Energy lab to explain the methods of producing energy from sustainable means such as wind and green hydrogen, how to measure vital indicators of climate and water and how to purify and desalinate water. The tour also included

a visit to the Aquaculture Center, where they were introduced to modern farming methods that use limited water resources and how to benefit from and recycle waste.

Please go to the event link to explore more about the event