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Contribution by Egypt

**to the CSTD 2022-2023 priority theme on “Technology and innovation for cleaner
and more productive and competitive production”**

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Answering the questions of United Nations Commission On Science and Technology for Development

Q2- what are the national strategies, policies and laws concerning green technology and innovation for cleaner and more productive and competitive production in Egypt?

- The global community is collectively working to build back better post the COVID-19, and towards a green and inclusive future. In this context, the political leadership in Egypt continuously affirms the country's commitment to promote both private sector engagement and climate agenda. the urgency of addressing climate change challenges and the critical role that the private sector can play in this arena.

-This vision has been translated in multiple sectors through the 2015 Integrated Sustainable Energy Strategy (ISES), which aims to produce 20% of Egypt's power from renewable resources by 2022, and 42% by 2035. Today, around 20% of our energy production comes from wind and solar energy, as well as hydropower.

- Moreover, the country pushed forward the development of sustainable and green transportation networks through the development of the monorail and the upgrading and expanding of the metro lines; connecting people through inclusive transportation while reducing carbon emissions.

- Egypt's Vision 2030 is a national agenda launched in February 2016 that reflects the country's long-term strategic plan to achieve the principles and goals of sustainable development in all fields, and to resettle them in the various Egyptian state agencies. Egypt's Vision 2030 is based on the principles of "comprehensive sustainable development" and "balanced regional development." Egypt's Vision 2030 reflects the three dimensions of sustainable development: the economic dimension, the social dimension, and the environmental dimension.

- The Ministry of Planning and Economic Development launched the "Guide to Environmental Sustainability Standards: The Strategic Framework for Green Recovery", in cooperation with the Ministry of Environment and in coordination with relevant government agencies. It is the first guide of its kind that aims to raise awareness of sectors and interventions that have a direct positive impact on the environment, and directs the public sectors. And the private sector towards investing in it, as well as the performance indicators that measure progress in achieving that goal, to make way for serious and ambitious steps towards achieving sustainable development, of which the "green economy" is one of its basic pillars

- Prime Minister's Decision No. 983 of 2022, to define the proposed investment projects to be granted additional incentives, including the following:

1 - Green economy projects that take into account the environmental dimension in a way that achieves the sustainability of natural resources.]

2 - Advanced technology transfer projects and the use of artificial intelligence in line with the Fourth Industrial Revolution.]

3 - Innovation and development support projects and scientific research projects appropriate to the nature of each project, in accordance with the provisions of Article (13) of the Investment Law.

- Also There are many national target in the Egyptian Biodiversity Strategy and Action plan (2015-2030) addressed the green technology and economy concept for conservation of biodiversity such as:

1- National Target 1; By 2030 PAs network secured and expanded to cover 17% of total terrestrial and inland water and at least 5% of coastal and marine representative areas especially priority sites of particular importance for biodiversity and key ecological processes and effective management of PAs (Aichi target 11) through implement the green economy instruments in the protected Areas (PAs) of Egypt

2- National Target 14; By 2025 investigate and monitor all the effects of climate change on biodiversity and ecosystem services (Aichi target 15)

3- National Target 16: By 2020 enhancing environmental awareness of Egyptians of the importance of biodiversity and ecosystem services through integrating environmental themes into university and school curricula promoting green media and supporting youth clubs and eco-industry (Aichi target 12)

Q3- What are the key industries that are pioneering green innovation in the country?

- Egypt also finalized its “National Climate Change Strategy 2050” which focuses on lowering carbon emissions, increasing reliance on clean energy, and enhancing scientific research.

- As the first in the MENA region, Egypt also issued 5-year sovereign green bonds worth \$750m which are dedicated to funding green projects. In 2021, the Ministry of International Cooperation announced that the International Finance Corporation (IFC) will invest \$100m in Egypt’s first private sector green bond issuance.

As for private sector engagement, the government is committed to adopting regulatory reforms that enhance private sector engagement, particularly in moving towards a green transformation.

For example, since the issuance of the Renewable Energy Law, the private sector has been encouraged to play a role in the country’s green transformation strategy and produce electricity from renewable resources through several partnerships. KarmSolar was the first private solar integrator in Egypt to obtain a license from the Egyptian Electricity Regulatory Agency. This helped Egypt become one of the leading countries in renewable energy in the MENA region, according to the 2020 Solar Outlook Report.

- Moreover, a new law was issued to allow the National Authority for Tunnels (NAT) to establish public-private partnerships to manage and operate electric railways. Also, the Water Resources and Irrigation Law aims to improve the water management, support the recently approved water resources strategy, and encourage private sector participation. The government is now partnering with the private sector to design, build, operate and finance 19 water desalination plants between 2020 and 2025. In addition, the Ministry of International Cooperation secured a total of \$4.76bn in finance for the private sector; \$3.19bn in 2020 and \$1.57bn in 2021.

- Moreover, in terms of climate action, the Ministry secured \$1.4bn in electricity, renewable energy, and petroleum sectors, and \$230m for the environment sector last year, reflected through projects in clean and sustainable transport, and sustainable infrastructure.

- Within the Ministry’s current portfolio, there are 28 adaptation projects worth \$2.85bn in development financing. These projects are deploying environmentally

friendly principles and practices in several sectors; the most prominent of which being the environment, water, agriculture, and irrigation sectors, by enhancing climate-smart agricultural practices and investing in water desalination and wastewater management projects. Also, in the Ministry's portfolio, there is currently \$7.83bn in development financing contributing to 46 mitigation projects. These projects are also incorporating environmentally friendly practices across sectors, particularly energy and transport, such as solar power stations and wind farms, as well as renovating and constructing new metro lines and electric trains to establish a sustainable transport system.

Q4- What are the challenges that your gov. has faced on may face in promoting green tech and innovation in your country to contribute to national development priorities and accelerate the progress towards the SDGs?

- Political will creates the DNA for going green. It is the most important step to turn promises into realities. The government of Egypt has been committed to achieving an environmentally sustainable future through pushing ahead with homegrown structural reforms, which focus on achieving a more sustainable, inclusive, green and private sector-led economy.
- Access to finance and sustainable green technology operational are the two main challenges which face Egypt and may face in the future.
- Integration and coordination between agencies, bodies and research centers with the applied agencies and sectors to achieve technology and innovations towards cleaner production, resources conservation and sustainable development.
- The costs and technology transfer which required transforming traditional production systems to advanced and more efficient one that achieve cleaner and more sustainable production standards.
- The need for employee capacity building programs to achieve cleaner technology and resources sustainability.

Q5- What should governments, the private sector, do so that developing countries can benefit from these technologies?

- In cooperation with Ministry of International Cooperation, we have put all supports behind the push for cooperation around a green and circular economy, as we push the frontiers of international cooperation by building back greener through public-private partnerships.
- An important lesson to take from Egypt's reform experience is its ability to create a predictive policy environment that helped pave the way for a more transparent macroeconomic framework, which in return creates a stable environment for the private sector and strengthens private-public dialogue.
- To reinvigorate green growth, Egypt was able to forge ahead through public-private dialogue and international cooperation. This approach ensures that public leadership meets national priorities and objectives and at the same time engages the private sector to encourage innovation and growth according to the environmental, social and governance (ESG) principles.

Q6- What are some examples of international cooperation mechanisms,...in green tech and innovation that Egypt part of it?

We no longer have the luxury of paying lip-service to environmental initiatives. We must plan, act and push for progress. We stand at the precise moment of a transformational period in human history—a moment that requires scaling up interventions and solidarity to change our world for the better.

To foster dialogue, we mobilize the international community through Multi-Stakeholder Platforms, launched in April 2020. This strengthens partnerships for achieving values-centered results through regular interactive and participatory consultations with all development partners.

Since the launch of the platform, a number of participatory workshops have been organized to engage with development partners and persistently monitor the progress of projects, which include an agreement with the Agence Française de Développement for funding allocated to the Energy Sector Budgetary Support Program, as well as the African Development Bank's financing of **Egypt's Electricity and Green Growth Support Program**, which aims to enhance the financial sustainability, improve the management and the operational efficiency of the energy sector.

All projects are streamlined and harmonized under our Global Partnerships Narrative: People at the Core, Projects in Action, and Purpose as the Driver, which aims to ensure that no crisis derails us from pushing forward with the Sustainable Development Goals, and transparently showcases the impact of our projects in boosting inclusive growth and bolstering credibility for the SDGs.

We are currently seeing a shift in the conversation on ways to achieve a green future, with the introduction of new concepts such as the 'people first' or 'people-centered' approach to ensure that people gain the most among all the other stakeholders in a project. A people-first approach essentially pushes for inclusivity to protect the most vulnerable and ensure that 'green' and 'growth' go together hand-in-hand, striking a balance between expanding economic opportunities and addressing environmental pressures.

The approach achieves these goals through: unlocking social and economic benefits; delivering these benefits to rural or vulnerable populations; and restoring ecosystems in parallel with raising people's incomes and improving their well-being.

This is reflected in our Global Partnerships Narrative, which focuses on putting people at the core of every project to push Egyptians towards realizing their full potential and identifying the direct impact that our projects have on people.

Egypt's long-standing partnership with the European Investment Bank (EIB) includes several projects that address climate change. These include the renovation of **Cairo Metro Lines 1 and 3**, which reduce the number of cars on the road and thereby help reduce traffic congestion and pollution. On top of that, the project impels us towards a more inclusive economy, because it connects remote or rural districts with cities and business districts.

In addition, recently the Board of the European Investment Bank approved a €1.1 billion loan to part-finance the restoration of the Alexandria tram network, the electrification of the Abu Qir-Alexandria railway and the extension of Cairo Metro Line 2.

Another important success story in the partnership with the EIB includes the construction of a **200 MW wind farm on the west coast of the Gulf of Suez**. This will contribute to supporting Egypt's energy reforms that aim to increase the share of renewable energy to 30% by 2030 and promote sustainable growth in Egypt's economy.

To integrate coastal restoration with other national development plans, Egyptian-Dutch cooperation includes the project '**Enhancing Climate Change Adaptation on the North Coast of Egypt**', which helps the construction of dikes to prevent the flooding of people's homes and farmland due to rising sea levels and extreme weather changes.

Touted to become the world's largest solar park upon completion, the **Benban** solar park is being implemented in partnership with the European Bank for Reconstruction and Development and the International Finance Corporation. It is an illustrious example of how we can put people at the heart of sustainable and clean energy projects. Currently, more than 10 000 Egyptians work at the site during construction. It will employ 4 000 people once the park is fully operational.

Overall, there are also more than 1000 companies and nearly two million Egyptian workers currently working on national megaprojects, which include 23 projects in the electricity and energy sector with a total investment of \$4 896 million and 10 projects in the irrigation and water resources sector for a total of \$982 million in investment.

To protect the health of Egyptians and improve their productivity, we also recently signed a \$200 million project with the World Bank to support Egypt's initiatives to reduce air and pollution from critical sectors and to increase resilience to air pollution in Greater Cairo. It is part of the six-year Greater Cairo Air Pollution Management and Climate Change Project, which supports Egypt's efforts to reduce both air pollution and pollutant emissions in line with the country's Sustainable Development Strategy.

We are going even further by supporting Egypt's adaption to climate change, prioritizing integrated solutions that strengthen resilience from future shocks.

For example, Egypt adopted a comprehensive water strategy in 2018 to mitigate water scarcity resulting from climate change and growing consumption. The European Development Partners contribute to the financing of the water and wastewater projects to adapt to climate change. This includes the Kafr El Sheik Wastewater Treatment Plan to which the EIB provided €77 million, the Fayoum Wastewater expansion project with an EIB contribution of €126 million, and the Kitchener Drain project, to which the EIB provided €214 million.

Resilience is at the heart of our project to support one million farmers in 500 villages in partnership with the World Food Programme. This successful partnership helps smallholders face future environmental threats through the use of solar power plants and promoting sustainable water management and efficiency through irrigation water supply modalities.

To promote food security, a number of development programmes are being implemented in partnership with USAID, which includes **the new Luxor wastewater stabilization and treatment plant**. This has the capacity to serve up to 332 000 people through 2037 and uses energy-efficient technologies, as well as learning centers that train farmers on how to increase their productivity through applying smart farming technologies.

Harnessing the opportunities

It is time to recognize the opportunities that exist in going green. We are shifting our narrative from one that focuses on threats to one that puts emphasis on the opportunities of growth, collaboration and implementation of successful projects. We have to turn the risks into the impetus for radical change, a change to promote a cleaner environment, healthier citizens, a productive and an inclusive economy and choose our people and planet as the main stakeholders.

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1. What are some specific examples (from the public and private sectors) of green technology and innovation for cleaner and more productive and competitive production in your country? Please include contact, website, link to reports and any other relevant information concerning these projects and initiatives.

- The government of Egypt began to activate its plans to enhance the use of green technology through several national projects, legislations, and laws, which emerged through the expansion of metro networks, trains and electric cars and the preparation of the necessary infrastructure for this, as well as the establishment of smart and sustainable cities.
- Egypt is implementing projects to rationalize water use, line canals, integrate coastal zone management, and a huge project to reclaim 1.5 million feddans in the Western Desert and other governorates, which will have a significant impact in combating climate change and reducing CO2 emissions. The whole project is using green technology for implementation.
- Egypt owns Benban Solar Park which is a photovoltaic power station with a total capacity of 1650 MW. It is in Benban (Aswan Governorate) in the western desert, approximately 650 km south of Cairo Benban is currently the 4th largest solar power plant in the world.
- Egypt now owns the biggest research, development, and innovation (RDI) and pilot plants facilities in renewable energy in the region belonging to ASRT; such as: MATS station for concentrated solar power and water desalination in Borg El Arab and China-Egypt Joint Lab for PV in Sohag.
- National Green Funds: Ministry of Planning, through ASRT and STDF, and in coordination with the Ministry of Higher Education and Scientific Research, allocated generous fund for RDI projects to support Egypt's climate change adaptation efforts. Both ASRT and STDF launched targeted calls and new initiatives to materialize these strategic objectives within MHESR action plan: Road to COP27
- ASRT in collaboration with SADC (company representing the private sector) signed a protocol with the aim to develop the national industry in the production of biodegradable, environmentally friendly plastic, an initiative adopted by the Academy to preserve the environment within the strategy of the Ministry of Higher Education and Scientific Research to confront climate change.
- Another good example is the agreement signed between the ASRT and the Egyptian Reef Company, to establish a model farm in Moghara that depends on the applications of clean and sustainable technologies in agriculture and fish farming.

2. What are the national strategies, policies, and laws concerning green technology and innovation for cleaner and more productive and competitive production in your country?

All current national policy documents in Egypt consider science and technology to be vital for the sought prosperous future of the country.

The constitution adopted in 2014 mandates the state to allocate 1% of GDP to R&D and stipulates that the state guarantees the freedom of scientific research and encourages its institutions as a mean towards achieving national sovereignty and building a knowledge economy that supports researchers and inventors (Article 23).

Egypt's Science, Technology, and Innovation strategy (Egypt STI 2030) revolves around nurturing enabling environment for STI and improving its capabilities to produce knowledge efficiently and effectively, increase the rate of growth of the national economy, achieve sustainable development of the society and elevate the quality of human life.

The STI strategy also addresses important strategic pillars for the production of a knowledge-based society, with a focus on developing human resources, diversifying sources of income, intellectual property, and basic and digital infrastructure, as well as issuing and activating legislations and laws

that regulate the administration of scientific research and boost technology production, transfer and localization. The MHESR of Egypt set strategic objectives and policies aiming at directing RDI projects toward supporting Egypt's efforts to reduce carbon emissions.

The plan dates back to early 2017 and pays too much attention to nurturing enabling environment for RDI and allocating the needed public fund to Egyptian higher education and scientific research institutions in collaboration with Int. counterparts and Egyptian Expatriates, to boost green innovation, and RDI in renewable energy, water desalination, recycling research, saline, and dryland agriculture, biodiversity, more crops per drop, and the environment.

3. What are the key industries that are pioneering green innovation in the country? List the key actors in the national ecosystem of innovation related to green innovation in your country (firms, universities, financial institutions, regulators)? What are the key networks of the ecosystem in your country (including online networks, innovation hubs, forums, etc.)?

https://idsc.gov.eg/Upload/DocumentLibrary/Attachment_A/5903/13-Green%20Economy%20Policies%20and%20Sustainable%20Development%20in%20Egypt.pdf

Several parties are involved in efforts to implement the development policies of the green economy, which are mandated to execute the sustainable development goals and can be clarified as follows:

Concerning energy: As specified in the Integrated Sustainable Energy Strategy (ISES) to 2035, the Ministry of Electricity has set renewable energy targets of 20% of the electricity mix by 2022 and 42% by 2035. The Ministry of Investment is also interested in exploiting the Egyptian desert economically and intensifying investment in it to generate electricity from the solar energy, whether by investing in biofuels, or by executing solar energy projects, to generate the electricity that Egypt needs and which can be exported to North African and Central Europe, in order to achieve great development for this territory, while correcting the price structure of petroleum products and restructuring the energy sector to ensure that the support reaches its beneficiaries.

Concerning transportation: The Ministry of Environment, in cooperation with the Ministry of Finance and Nasser Bank, has implemented a project to replace the taxi in Greater Cairo, which aims to reduce CO2 emissions, as well as the economic and social return of this project. The Ministry of Environment is also implementing a program to convert government cars to run on natural gas instead of gasoline; and in cooperation with the Ministry of Trade and Industry, the production and import of two-stroke motorcycles will be banned and replaced with four-wheelers to reduce the pollution released by them. The state also supports mass transit systems, as the third metro line was established with a participation support of the public and private sectors in infrastructure projects, to attract more investments in energy sector, allowing adaptation to the effects of climate change.

Concerning industry: The Ministry of Environment executes industrial pollution control and environmental protection programs for the private and public industrial sectors. It also encourages- in cooperation with the Ministry of Industry- the shift towards rational industries consuming natural resources, energy, and water, redistributing the industrial map of Egypt, settling industries in new cities, and expanding support for small and medium industries in the field of environment, water reusing, and industrial wastewater controlling.

Concerning agriculture: The Ministry of Environment and the Ministry of Agriculture are sharing the goal of achieving sustainable use of natural agricultural materials, focusing on integrated agricultural management methods to raise the efficiency of water uses in agriculture, improving irrigation and sanitation systems, adjusting crop composition for less water-consuming agricultures, and reusing of agricultural water and sanitary systems.

Regarding institutional measures: Environmental legislation has been amended, environmental management systems have been developed, and concern has been focused on green economic development that is less carbon dependent. Completing the institutional framework for managing national efforts to adapt to the effects of climate change, the environmental dimension has been included in all development projects, with an adoption of financial policies.

Completing the institutional framework for managing national efforts to adapt to the effects of climate change and the environmental dimension have been included in all development projects, with the adoption of stimulating and supportive internal financial policies for eco-friendly facilities and increasing penalties against environmental malpractices. Consequently, the Ministry of Investment has launched the Egyptian Index of Social Responsibility for the 100 corporates listed in the stock market, including environmental and social aspects, which will force these companies to reduce their thermal emissions to fulfil environmental laws and standards.

4. What are the challenges that your government have faced or may face in promoting green technology and innovation in your country to contribute to national development priorities and accelerate the progress towards the SDGs?

Egypt Needs to Proactively Build the Clean Tech Ecosystem

General local challenges include:

- Lack of human cadres able to follow up the implementation of green tech for SDGs in all ministries and agencies entrusted with such tasks.
- Lack of a coordination framework among the concerned bodies in a way that allows the implementation of green tech more effectively.
- Lack of data and information necessary to measure progress towards the achievement of green tech for SDGs goals.

5. What should governments, the private sector, organized civil society, and other stakeholders do so that developing countries can benefit from these technologies?

[https://documents.aucegypt.edu/Docs/GAPP/Public%20Policy%20Hub%20Webpage/7-Sustainable%20Development%20Strategy%20\(SDS\)%20Egypt%202030%20Policy%20Paper.pdf](https://documents.aucegypt.edu/Docs/GAPP/Public%20Policy%20Hub%20Webpage/7-Sustainable%20Development%20Strategy%20(SDS)%20Egypt%202030%20Policy%20Paper.pdf)

Stakeholders' coordination at the national and sub national levels requires a sustainable mechanism that enables ministries relevant to the sustainable development strategy and the use of green technologies to convene together, exchange information, coordinate plans and actions, and network with the private sector and non-governmental partners. This mechanism can also be the platform on which central-local government coordination takes place by inviting governors and government officials to discuss green technology for sustainable development goals and objectives. Set programs and plans of actions in their respective governorates at a sub national level.

The described mechanism can take the form of a National Council The council should work to link the projects to the SDGs through the designing a KPI system for any project that can measure the percentage of the project reaching its sustainable goals as well as KPI's for the project mode of operation to ensure its permanent sustainability. Widening the scope of the council from projecting a national strategy to also integrating the sub national level on a regional and governorate basis. The council should also include representatives of non-governmental actors such as CSO (Umbrella NGOs, universities and research centres, syndicates, etc.) and private sector (business associations, CSR committees, etc.). The council can form working groups on specific issues, including a development partner working group to provide for relationships among the stakeholders, and an engagement strategy for each issue through inclusion and good governance.

For integrating the work between the stakeholders, alliances should be generated in which it considers: Institutional regulated dependency, ongoing information exchange, coordinated action and co-production with common resource.

6. What are some examples of international cooperation mechanisms, projects, programmes or strategies, including triangular and South-South cooperation, in green technology and innovation that your country is part of?

In partnership with the European Investment Bank (EIB), Egypt is renovating Cairo Metro Lines 1 and 3, reducing the number of cars that use the roads. The project aims to connect cities with surrounding rural districts.

Additionally, the partnership with EIB includes the creation of a 200 MW wind farm on the west coast of the Gulf of Suez. This project contributes to supporting Egypt's reforms on energy and aims to increase shares of renewable energy to approximately 30% by 2030 and promote sustainable growth in the economy of Egypt.

Egypt and the US announced the launch of a high-level Joint Economic Commission, formation of a joint US-Egypt Climate Working Group, plans for a green economy trade mission, and a new USAID trade reform programme.

7. Could you suggest some contact persons of the nodal agency responsible for projects/policies and international collaboration in this context as well as any experts (from academia, private sector, civil society, or government) dealing with projects in this area? We might contact them directly for further input or invite some of them as speakers for the CSTD inter-sessional panel and annual session.

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Scientific Coordinator for the Ministry of Higher Education and Scientific Research for COP27.