



The International Conference of the Institute of National Planning

Energy and Sustainable Development

Cairo, 11-12 April 2020


Concept Note



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Introduction

Energy is an essential prerequisite for economic activity. It is vital for all aspects of human life. Moreover, energy represents a strategic element in achieving economic, social, political, and environmental security. Therefore, lack of, or poor access to, energy negatively affects many socio-economic and political indicators. Hence the emergence of the concept of energy security and sustainability which refers to providing secure and reliable energy supplies for all regions, social groups and economic activities in quantities which satisfy domestic demand at affordable cost.

Energy security and sustainability is a serious challenge due to the scarcity, unsustainability of conventional/fossil fuels (oil, natural gas and coal), in addition to their uneven distribution among countries. Moreover, conventional energy produces negative environmental effects in the form of CO₂ and other greenhouse gases emissions which are major contributors to adverse climate change. Therefore, improving energy efficiency and shifting to renewable energy resources became a strategic and inevitable issue for all countries in their endeavor to meet the rapidly increasing energy needs of current and future generations, and to preserve the environment and reduce climate change.⁽¹⁾

Given the important role of renewable energy for achieving sustainable development, energy was included among the UN Sustainable Development Goals (SDGs) in the 2030 Agenda for Sustainable Development, namely the Goal#7 which urges countries to "*Ensure access to affordable, reliable, sustainable and modern energy for all*". This can be achieved through ensuring universal access to affordable, reliable and modern energy services, increasing the share of renewable energy in the global energy mix, doubling

⁽¹⁾ Renewable energy is defined as energy forms that are derived from renewable resources, i.e. energy resources which are not depleted when used and are naturally replenished on a human timescale, such as solar energy, wind energy, tides and waves energy, hydropower, biomass energy and geothermal heat.

the global rate of improving energy use efficiency, and enhancing international cooperation in energy investment, research and technology. Moreover, energy concerns are not confined to Goal # 7. They extend to Goal # 8: to "*Promote inclusive and sustainable economic growth, employment and decent work for all*", Goal #9: to "*Build resilient infrastructure, promote sustainable industrialization and foster innovation*", Goal # 12 which is concerned with "*Ensuring Sustainable Consumption and Production Patterns*", and the Goal # 13 which advised countries to "*Take urgent action to combat climate change and its impacts*".

Given the urgency of transitioning to renewable energy and the modest progress achieved in this direction over the past five years, the world is still far from attaining a share of new and renewable energy in the global energy mix which would make the goals of sustainable energy and sustainable development within reach.² According to the Statistical Bulletin of the British Company for Oil and Gas (BP), the share of new and renewable energy resources in total global primary energy consumption in 2017 was around 15% (7% for hydropower, 4% for other renewable energy, and 4% for nuclear energy), and it is expected to reach 22% by 2030.

Egypt depends mainly on fossil fuels to meet its energy needs. They contribute more than 90% to total primary energy production. Given this situation, Egypt has adopted ambitious energy strategies, which aim to increase the contribution of renewable energies to its total energy mix. The main strategic objectives for energy in Egypt's Sustainable Development Strategy (Egypt Vision 2030) include ensuring energy security, increasing the energy sector's contribution to GDP, maximizing utilization of domestic energy resources, promoting rational and sustainable management of the energy sector, reducing

² New energy is defined as non-conventional energy, i.e. non-fossil energy which may be renewable or non-renewable.

the intensity of energy consumption, and limiting the harmful environmental impacts of the sector's emissions.

Accordingly, a Strategy for Integrated and Sustainable Energy up to the year 2035 has been formulated and approved by the Supreme Energy Council in 2016. It focused on diversifying energy resources, applying appropriate policies to achieve energy sustainability, and ensuring an effective contribution of the energy sector to sustainable development. The strategy aims at raising the contribution of renewable energy to total primary energy production in 2035 to 14%, and that of nuclear energy to 5.5%. Moreover, the strategy aims to increase the contribution of renewable energy resources to electricity production to 37% (19.4% for solar energy, 14.6% for wind energy, and 3.2% for hydropower), and 8.8% for nuclear energy. In addition, the strategy aims to increase energy use efficiency so that about 18% of expected energy consumption would be saved by 2035.

Moreover, according to the updated estimates made in cooperation with the International Renewable Energy Agency (IRENA), by 2030 renewable energy may contribute about 22% to total energy supply, and about 53% to total electricity production. These estimates are predicated on the assumption that Egypt can successfully deal with the challenges of boosting production and consumption of renewable energy.

In view of the global and national goals for energy security and sustainability outlined above, and in order to reduce the impacts of climate change and achieve sustainable development, there is a pressing need to examine opportunities, potentialities, policies and mechanisms for creating a resilient, diversified and reliable energy system that is firmly based on new and renewable energy.

Objective of the Conference

The main objective of the conference is to discuss the emergent issues of energy and to explore their consequences for achieving sustainable development. Much emphasis will be placed on determining the opportunities, possibilities, and challenges of expanding the production and use of new and renewable energy, so as to improve policies, and mechanisms of planning and policy making regarding energy development and sustainability in Egypt. The discussion will be guided by the UN SDGs for 2030, Paris cop21, Egypt's Sustainable Development Strategy for 2030, and the other national strategies of relevance to energy issues.

Conference Themes

The conference research papers and panel discussions may deal with one or more than one of the several issues noted below, either by investigating energy concerns at the national level (Egypt), or by presenting relevant regional and international experiences.

1. Requirements of and challenges to achieving energy security and sustainability.
2. International and regional developments and their impacts on regulating energy markets and enhancing competitiveness, and achieving energy security and sustainability.
3. Energy planning approaches, and methods for selecting optimal energy mixes which would support efforts to achieve energy security and sustainability.
4. Alternatives methods of financing energy projects, and the opportunities for national and foreign private sector participation and international cooperation in financing sustainable energy projects.
5. Energy pricing and subsidization policies and mechanisms to ensure access to affordable energy for all.

6. Institutional framework for regulating energy markets and requirements and challenges of implementing good governance in the energy sector and in partnerships with the national and foreign private sectors.
7. Policies and mechanisms to rationalize energy use and raise its efficiency in various sectors and activities.
8. Policies and mechanisms to stimulate scientific research to achieve affordable energy and ensure energy sustainability, including manufacturing energy equipment.
9. Requirements and challenges of energy trade at the regional and global levels.
10. Policies to improve the interlinkages between energy security and water and food security.
11. Economic and social consequences of the transition to more secure and sustainable energy mixes.
12. Environmental impacts of the transition to more secure and sustainable energy mixes.

Participants

- Academics and researchers concerned with the issues of energy and sustainable development globally, regionally, and nationally.
- Representatives of international and regional agencies concerned with the issues of energy and sustainability.
- Representatives of the national ministries and agencies concerned with energy, environmental conditions and sustainable development.
- Representatives of the public and private sectors engaged in energy consumption and production activities.
- Representatives of NGOs interested in issues of energy, natural resources conservation, and the environment.

Expected Outcomes

- Proposals that may help in identifying alternatives for more secure and sustainable energy mixes and in determining their requirements.
- Suggesting appropriate policies and mechanisms to stimulate the use of new and renewable energy in various sectors.
- Proposing mechanisms to regulate and control energy markets and to foster the governance of their institutions.
- Proposing policies and other prerequisites for establishing a regional energy trading hub in Egypt.
- Proposing new mechanisms for financing renewable energy projects in general, and projects for manufacturing energy equipment in particular.