



**Speech of
H.E. Dr. Khaled Toukan,
Chairman
Jordan Atomic Energy Commission**

**Ministerial Conference on Nuclear Science and Technology:
Addressing Current and Emerging Development Challenges**

28 November 2018

Mr. President

Your Excellences

Honored and Distinguished Guests

Ladies and Gentlemen

I am honored to be with you today in this important event addressing such a distinguished gathering of ministers and key officials in the nuclear science and technology sector. We meet here to address current and emerging development challenges related to nuclear technology and its contribution to sustainable development.

I would like to seize this opportunity to thank the International Atomic Energy Agency (IAEA) for organizing this important Conference and I would like to commend the Director General Yukiya Amano for his dedication and tireless efforts which have been translated over the last eight years into the Agency's many achievements and accomplishments. I seize this opportunity to wish him good health and continued success in his mission leading the Agency.

Ladies and Gentlemen:

Jordan realizes the essential role that nuclear science and technology holds for creating a better world and the great benefits that have been brought into human lives through the development of innovative solutions to meet and overcome the great challenges facing our world

today, specifically, generating clean energy and mitigating climate change.

As we consider these challenges, we find out that nuclear technology will be at the core of our ability to find solutions that are economically, socially, and environmentally sustainable.

In Jordan, we have strived for harmonized and synergetic efforts with the IAEA to harness nuclear technology in addressing basic socio-economic and human development needs, and to pursue through IAEA's technical cooperation programme a comprehensive course to address these needs.

Ladies and Gentlemen:

Jordan has been working to develop its national nuclear energy program which encompasses: the nuclear power plant project, the uranium exploration and mining project and the Jordan Research and Training Reactor. These efforts come within the context of the Jordanian National Energy Strategy which places nuclear energy in the framework of the local energy map as one of the key alternatives to face the challenge of ensuring reliable energy supplies, and combat the environmental impact associated with the use of conventional energy sources, affirming that nuclear power remains a firm option for generating clean electricity.

Today, the proposed project to build a nuclear power plant relying on Small Modular Reactors (SMRs) seems

to be the more appropriate in bridging the gap in the Jordanian electricity generation mix. To achieve our vision, we are now working on two parallel paths: the first a large nuclear reactor in the 1,000-megawatt range and the second encompasses SMRs for the production of electricity and water desalination, in addition to other industrial applications. Several cooperation agreements on joint feasibility studies have been signed between JAEC and SMR vendors, namely with CNNC, Rolls Royce, NuScale, X-Energy and ROSATOM.

To succeed in this endeavor, and based on the importance of SMR technology for Jordan and several Agency Member States, allow me to use this opportunity to call for IAEA's support on several fronts, especially in preparing the regulatory infrastructure to meet the challenges of licensing these reactors effectively and efficiently, and in exploring mechanisms to facilitate financing of nuclear projects that enable newcomer states to implement their projects under competitive financing conditions. We also urge the Agency to coordinate with international financing organizations to introduce nuclear power plant projects as main contributors to the reduction of greenhouse gas emissions.

Ladies and Gentlemen:

The successful commissioning of the Jordan Research and Training Reactor in December 2016 attained our

current vision of a Center of Excellence for Nuclear Science and Technology - established to serve as a model and a catalyst for exploring new directions of research and innovation in science and technology in Jordan and the Middle East region as a whole.

The reactor, since its entry into service in 2017 has been deemed as an anchor point for researchers to carry out their experiments through the operation of its various neutron beamlines and laboratories. The reactor will also provide services to medical, industrial, environmental, mining and other vital sectors, in addition to its utilization to qualify and train engineers and specialists in various fields of nuclear science and technology, and to produce medical radioactive isotopes. Towards this, work to construct two neutron beam lines is currently in progress and a license from the Jordan Food and Drug Administration has been issued.

We look with admiration to some of the successful projects that enhance research and development in the ME region, notably SESAME (Synchrotron-light for Experimental Science and Applications in the Middle East) a third-generation synchrotron light source as the first major international research center in the region. The construction of SESAME is a tribute to the successful collaboration on a governmental level and the collective effort of scientists from a wide range of disciplines and regions of the globe. Its construction is in itself a triumph and its anticipated value to academia and research in the ME will be immeasurable.

SESAME ushered in a new era of research in the Middle East, covering fields ranging from medicine and biology through materials science, physics, chemistry, environment and archaeology. SESAME's primary mission is the promotion of forefront scientific research, but as an intergovernmental organization, it is also a catalyst for regional collaboration.

SESAME was inaugurated in December 2016 and has witnessed the performance of 24 experiments using the XRF and IR beam lines during 2018. Work will continue on the construction of two additional beam lines, the Materials Science and the Macromolecular Crystallography, to be commissioned by 2020.

Hence SESAME and the JRTR represent a major opportunity to boost scientific research and technological advancement in the Middle East, covering neutron and photon applications and helping to promote scientific excellence and transform the region into a beacon of innovation.

Ladies and Gentlemen:

In light of the evolving needs associated with the significant industrial and economic growth involving nuclear science and technology, there is an emerging consensus on the need to develop human resources in the nuclear sector and to stimulate perceptions of young generations about nuclear energy. To achieve this, JAEC has exerted considerable efforts to raise awareness of the importance of nuclear science and technology and its role in socio-economic development.

To make this vision attainable, we have initiated a program in cooperation with the Agency that includes the organizing of a series of national workshops aimed at introducing the best teaching methods to introduce nuclear science and technology to secondary school students.

Ladies and Gentlemen:

Finally, I would like to emphasize my country's recognition of the Agency's role that seeks to harness nuclear science and technology in achieving global development, especially in meeting the global energy challenge, improving health, combating poverty, protecting the environment, managing water resources and rationalizing industrial processes, which will help in attaining the Sustainable Development Goals.