IAEA International Ministerial Conference

Nuclear Power in the 21st Century

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Mr. President,

Your Excellences,

Honored and Distinguished Attendees,

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 energy sector. We meet here to discuss the sustainable role of nuclear power in contributing to sustainable development goals and mitigation of climate change. I would like to seize this opportunity to thank the International Atomic Energy Agency (IAEA) and the OECD Nuclear Energy Agency for organizing this important Conference and would like to extend my appreciation to its host, the Government of the United States of America.

Ladies and Gentlemen,

Jordan realizes the essential role that nuclear energy holds for creating a better world and the great benefits it has brought into human lives through the development of innovative solutions to meet and overcome the great challenges facing our world today, specifically those related to clean energy generation and climate change mitigation.

In order to meet this goal, Jordan has been keen to attain its national vision in promoting the peaceful uses of nuclear energy in pursuit of its sustainable development goals. Hence, and in light of successive and successful achievements accomplished towards the development of Jordan's nuclear energy program, kindly allow me to shed light on recent progress, starting with the Jordan Research and Training Reactor (JRTR), where a considerable amount of radiopharmaceutical Iodine-131 is being supplied to all fifteen Jordanian nuclear medical centers and work is underway to supply neighboring countries with this isotope. Additionally, the JRTR has been producing ^{166}Ho, which is used in the diagnosis and treatment of liver cancer, while work is underway to

license the production of ^{99m}Tc. Work is already in progress to study the feasibility for producing ^{90}Y and ^{161}Tb (Terbium).

With regard to industrial applications, the radioisotope production unit has obtained the ISO 9001 certification for the production of the Iridium-192 isotope, used in Non-Destructive Testing (NDT). In parallel, JAEC is working on the deployment of JRTR's neutron transmutation doping capability in support of the international semiconductor industry. This scientific and industrial complex has become a center of excellence in the Middle East manifested by hosting the International Conference on Research Reactors: Addressing Challenges and Opportunities to Ensure Effectiveness and Sustainability, which is being organized by the International Atomic Energy Agency (IAEA) to take place in November 2023, at the Dead Sea.

Presently, the project to build a nuclear power plant relying on Small Modular Reactors (SMRs) seems to be the more appropriate technology for electricity generation and water desalination in Jordan; accordingly, the technical and economic evaluation has been completed for several advanced SMR technologies. Furthermore, JAEC is currently preparing for the performance of a technical and economic study of different

options for electricity generation and water desalination through its SMR Integrated Work Plan in consultation with IAEA experts.

In another aspect related to the achievements reached in the implementation of uranium extraction from Jordanian ore in the central region of Jordan, the Jordan Uranium Mining Company (JUMCO) has initiated the necessary engineering works, since the beginning of this year, to successfully commission its pilot plant to extract yellowcake from uranium ores. JUMCO is planning to proceed with the commercial production of yellowcake in a sustainable and environmentally friendly manner and in accordance with international best practice.

Another outstanding milestone is related to the Synchrotron-light for Experimental Science and Applications in the Middle East (SESAME), which has witnessed the construction of three beamlines: X-ray Absorption Fine Structure/X-ray Fluorescence spectroscopy (XAFS/XRF), Infrared spectro-microscopy (IR), and Materials Science (MS) beamlines. On June 12th of this year, SESAME celebrated the inauguration of its fourth beamline (HESEB), noting that its fifth beamline BEATS, is planned to be commissioned by the beginning of 2023. So far, more than 134 research projects have been successfully completed using SESAME beamlines and facilities, which have led to

57 peer-reviewed publications in prestigious international scientific journals, since its opening to users in 2018.

On this occasion, I would like to point out that the Energy and Minerals Regulatory Commission (EMRC), the Jordanian regulator, has played a crucial role in ensuring the safe and secure operation of nuclear and radiological facilities in Jordan in conformity with the national regulations, IAEA safety standards, IAEA nuclear security recommendations, and global best practices.

Ladies and Gentlemen,

We hope that the deliberations of this conference will be a major pillar in the course to fulfill our shared goals of transitioning to a sustainable and clean energy mix through nuclear power, and look forward to achieving concrete and positive outcomes from this Conference. Finally, I would like to emphasize my country's recognition of IAEA's role that seeks to accelerate the contribution of atomic energy to clean energy, water, and health, thus bringing prosperity to human societies throughout the world.

Thank you