



Ministry of Industry, Science, Technology & Innovation
National Institute of Science, Technology and Innovation



The Update on the Peaceful Uses of Nuclear Energy Situation in Cambodia

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Education:

2016 – 2018: Master of Medical Science in Disaster and Radiation Medical Science from Nagasaki University and Fukushima Medical University

2014 – 2015: Master of Public Health from Cambodian National Institute of Public Health

2008 – 2013: Bachelor of Science in Pharmacy from Cambodian University of Health and Science

Professional Experience:

2021 – current: a government official at Cambodian National Institute of Science, Technology and Innovation

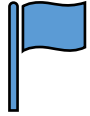
2018 – 2019: an assistant attached to Cambodian Ministry of Environment

Personal Involvement:

2013 – 2022: pharmacy, public health, nuclear medicine, radiation protection, climate change mitigation and adaptation, environmental code of Cambodia, and R&D in Science, Technology and Innovation



Nuclear power plant disasters



Cambodia's stand on nuclear power plant



Cambodia's preparedness toward peaceful uses of nuclear energy



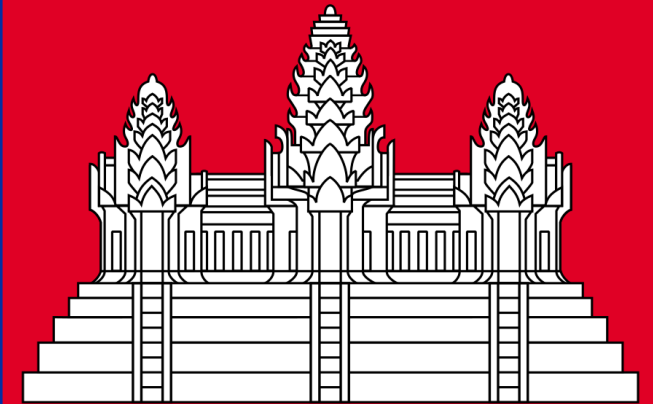
Cambodia's adoption of nuclear energy application



Potential collaboration in nuclear energy application



Recommendations for future roadmap of ASEAN
NPSR



Nuclear power plant disasters



Three Mile Island

First online: December, 1978

Date of incident: March 28, 1979

Chernobyl

First online: March, 1984

Date of incident: April 26, 1986

Fukushima Daiichi

First online: March, 1971

Date of incident: March 11, 2011

Radionuclides in the reactor core released to the environment.



Nuclear power plant disasters

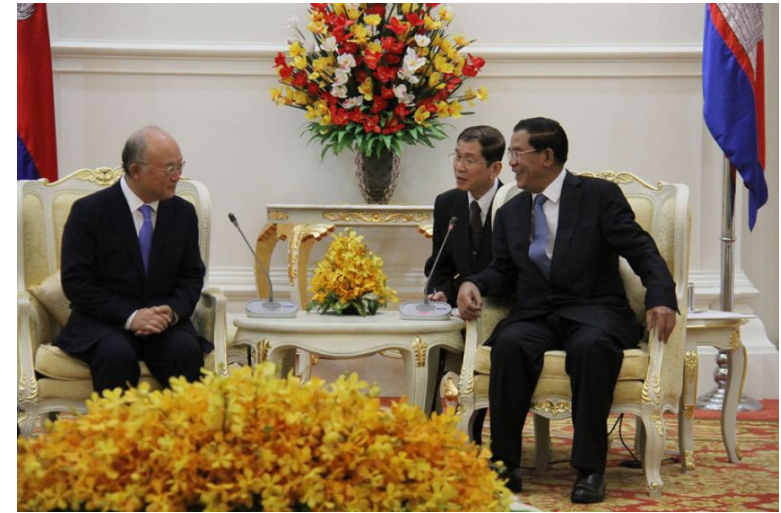
❖ Zaporizhzhia NPP

- Grave warning for a nuclear disaster¹
- Russian captured the plant since early March of 2022¹.
- Iodine tablets made available to residents as concern grows over a possible nuclear accident (Around 28th August 2022)¹.
- A group of 14 international nuclear inspectors, including the IAEA head Rafael Grossi, arrives at the plant following a dangerous journey (1st September 2022)¹.



Cambodia's stand on nuclear power plant

- In bilateral talks between Prime Minister Hun Sen and an IAEA representative in 2014, Prime Minister said there would be no nuclear power development in the Kingdom. However, he did want the IAEA to help develop human resources and any draft laws relevant to nuclear technologies, especially in agriculture and the health sector².
- Director-general of energy at the Cambodian Ministry of Mines and Energy, Victor Jona says: "From now until 2040, we don't have any plans for any civil nuclear power plant investments. Regarding whether or not we will need nuclear power to generate electricity after 2040, this will depend on current global trends"².



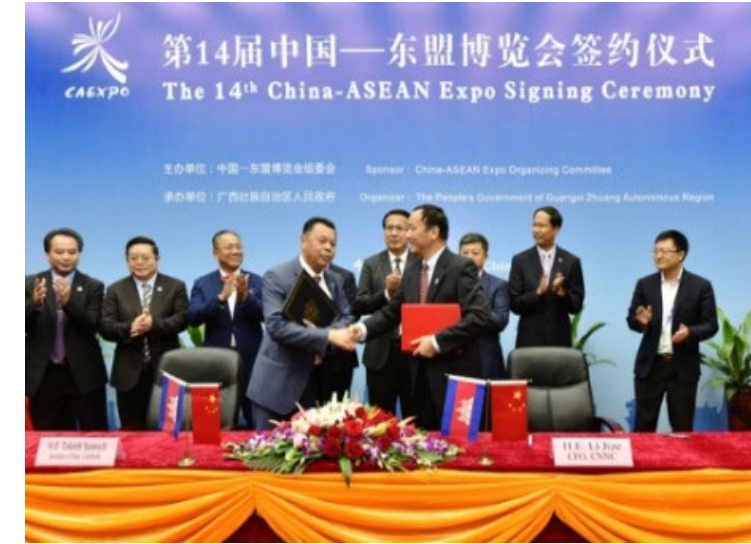
Cambodia's preparedness toward peaceful uses of nuclear energy

- In 2014, Cambodia government has asked IAEA for help drawing up laws on nuclear safety and radiation, environmental protection and controlling radioactive waste³.
- Environment Minister Say Samal said the government inked the agreement with the Russian Atomic Energy Corporation and the China National Nuclear Corporation³.
- In 2016, Cambodia signed an MoU with Russia to create the Nuclear Science and Technology Centre, and to promote human capacity building³.
- In 2017, Cambodia and China also reached agreement on nuclear energy cooperation, and human capacity building³.




Cambodia's preparedness toward peaceful uses of nuclear energy

- The government is also setting up an information centre, with China's assistance, to raise public awareness of the potential of nuclear power³.
- The MoU aims to boost cooperation on nuclear energy and the use of nuclear technology in priority areas such as industry, agriculture, food safety, energy, construction, the environment and medicine³.
- Ministry of Mine and Energy is currently drafting a nuclear energy law with 55% of completion².
- Ministry of Mine and Energy issued PRAKAS in 2021 on the Management of Import and Use of Radioactive Substances and Radioactive Sources⁴.



Cambodia's preparedness toward peaceful uses of nuclear energy

❖ Human Resource:

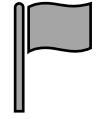
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- Two Cambodian students graduated from Russia with degrees in Nuclear Power Engineering⁴.
 - Two Cambodian students graduated from Japan with degrees in Disaster and Radiation Medical Science⁴.
 - One Cambodian students graduated from Korea with degrees in Nuclear Engineering⁴.
 - One Cambodian students graduated from China with degrees in Nuclear Energy and Nuclear Techniques Engineering⁴.
 - In health Sector, there are 2 nuclear technologists, 2 nuclear medicine physicians, 6 Medical physicist, 8 radiation therapists, and 8 radiation oncologists⁴.

Cambodia's adoption of nuclear energy application

❖ IAEA - Technical Cooperation Program Cycle 2024 – 2025

- Strengthening the Radiation Safety Infrastructure in Cambodia.
- Strengthening Fruit Fly Surveillance and Management by using Suppression of Fruit Flies in Cambodia.
- Establishment of Nuclear Technology Laboratory for Cultural Heritage and Industry.
- Improving the radiotherapy capacity for cancer treatment at Khmer Soviet Friendship Hospital.
- Strengthening National Capability for Antimicrobial Resistance Surveillance in Cambodia.





Potential collaboration in nuclear energy application



Medicine



Industry



Agriculture



Food safety



Construction



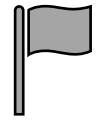

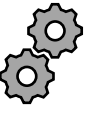
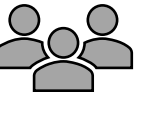

Environment



Cultural heritage



Recommendations for future roadmap of ASEAN NPSR

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- Establishing transboundary governance platform for the accident management in a Nuclear Emergency Preparedness and Response (EPR) and to be consistent with the IAEA Safety Standards.
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- Building co-dialogue platform with relevant stakeholders from all levels to raise public awareness and readiness toward future nuclear power plant in ASEAN.
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- Enhancing human capacity building in any domains relevant to the peaceful uses of nuclear energy as ASEAN regional competency development.
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- Promoting regional fellowship, scientific visit, expert visit, and meeting for greater understanding, trust and knowledge sharing.
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Reference:

- 1- CNN, 2022, Zaporizhzhia nuclear plant: History, control and key developments.
- 2- Chhut Bunthoeun, 2020, Khmer Times, Kingdom has 'no nuclear plans until 2040'.
- 3- Michael Firn, 2021, Khmer Times, Government signs nuclear power agreement with China and Russia
- 4- Official from Ministry of Environment, Ministry of Mine and Energy, and Ministry of Health, 2022.



Thank you for your kind attention!