

Thailand

IAEA Member State since October 1957

Selected achievements

2022–2024: Thailand enhances its capabilities in diagnostic radiology, nuclear medicine and radiotherapy through training, the implementation of programmes such as QUAADRIL and QUANUM, and advancements in proton therapy and neuroimaging practices.

2022–2024: National capacity in the field of water resource management is strengthened through the procurement of specialized equipment, including radon detectors and hotplate stirrers. Additionally, an extensive HR development programme is implemented with 10+ fellowships and scientific visits.

2020–2023: The use of E-beam technology is streamlined, and a Synchrotron upgrade is implemented for R&D activities and industrial applications.

National priorities

- Diagnostic radiology, radiotherapy and nuclear medicine
- Water and soil management
- Food safety
- Controlling plastic pollution
- Regulatory capacities and national infrastructure for radioactive waste management
- Capacity building in establishing a SMR and its utilization

Main areas of IAEA support

- Diagnostic radiology
- Nuclear medicine and radiotherapy
- Emergency preparedness and response
- Radiation technologies in material applications
- Food safety



Staff from Thailand's Office of Atoms for Peace measure radiation as part of an IAEA workshop exercise in the evacuated zone around TEPCO's Fukushima Daiichi Nuclear Power Station in May 2013. (Photo: S. Löff/IAEA)

Project successes

Human health

Thailand significantly advanced its national capacity in diagnostic radiology, nuclear medicine and radiotherapy with IAEA support.

In 2022, the IAEA facilitated the procurement of a web-based Radiation Dose Management Software/System (DMS) to enhance data sharing among nine hospitals.

This enabled dose rates to be sent to the central server at the Office of Atoms for Peace as the National Dose Registry, and enhanced capabilities in managing radiation doses for improved healthcare practices in Thailand.

Industrial applications

With support from the IAEA, Thailand has enhanced its capabilities for industrial applications of nuclear technology, particularly by utilising E-beam technology and upgrading the synchrotron for R&D activities.

This collaboration resulted in the procurement of an electro-spinning machine and rheometer for the national programme.

Expert missions organized in 2022 have strengthened national capacity in electron accelerator design principles and E-beam applications for food and packaging.

These achievements have contributed to the broader adoption of nuclear technology in the national industry, positioning it as an innovative, green and sustainable element in Thailand's socioeconomic development.

In addition, Thailand conducted collaborative research on PM2.5 filters which further demonstrated its research capabilities.

Cyclotron facility

A cyclotron facility for radioisotope production and industrial research was established in order to enhance the sustainability and self-sufficiency of the national cancer control programme and contribute towards increasing the economic competitiveness of the Thai industry.

Discussions between stakeholders in 2022 identified gaps and needs for the existing scientific infrastructure and human capacity, leading to the procurement of essential laboratory equipment, including a frequency counter.



COVID-19 equipment donated by the IAEA to Thailand in June 2020 to help scientists in the country to rapidly detect the coronavirus that causes COVID-19.
(Photo: P. Phruksarojanakun /Office of Atoms for Peace)

Additionally, a fellowship training on the quality control of radiopharmaceuticals was implemented.

Participation in the major initiatives

- NUTEC Plastics
- ZODIAC

IAEA support received in the 21st century



Contributions to South-South and triangular cooperation

