

# Czech Republic

IAEA Member State since September 1993

## Selected achievements

**2022:** New experimental equipment is installed, and applications of the VR-1 research reactor are implemented.

**2020:** Safety assessment methodologies are developed for the Computational Fluid Dynamics (CFD) simulation method at Czech NPPs.

**2018:** Safety assessment methodologies are developed for advanced reactor design concepts, focusing on molten salt reactor systems.



The International Nuclear Network is a four-week training in nuclear science and technology supported by the IAEA that brings graduates and young professionals in the nuclear field from around the globe. It is jointly organized by the Czech Technical University in Prague and University of Massachusetts, Lowell. (Photo: IAEA)

## National priorities

- Nuclear safety and security
- Radiation waste management and environmental monitoring
- Emergency preparedness and response
- Nuclear knowledge management

## Main areas of IAEA support

- Governmental and regulatory infrastructure for nuclear installations safety
- Radioactive waste management, decommissioning and remediation of contaminated sites
- Nuclear fuel cycle and materials
- Radioisotopes, radiopharmaceuticals production and nuclear medicine
- Safety of nuclear installations and research reactors
- Radiation protection of workers and the public
- Radiation protection in medical applications

## Project successes

### Nuclear safety and security

The Czech Republic has strengthened its nuclear safety infrastructure by focusing on accident simulation and computational simulation methods in its training programmes. The IAEA facilitated this training and knowledge transfer to ensure effective emergency preparedness and response mechanisms.

Long term, this will result in sustained preparedness, improved safety evaluations and a strengthened foundation for nuclear safety practices in the Czech Republic.

### Research reactors and advanced reactor designs

The Czech Republic has broadened its expertise after previously focusing on conventional ‘water-water energetic’ nuclear reactors.

Young Czech professionals undertook a research project to systematically analyse the state of molten salt reactors (MSR), deepening their understanding of salt chemistry and material characteristics.

This has resulted in the development of safety assessment methodologies applicable to MSR and other innovative reactor designs. It also triggered an expansion of experimental facilities and was an opportunity to showcase advancements in nuclear research.

## Environmental remediation

The Czech Republic Nuclear Regulatory Authority is responsible for the regulation of the environmental remediation of former uranium mining sites. The IAEA provided substantial training for the management of water treatment and waste rock dump sites, the remediation of tailings ponds, and to address problems caused by radon gas at mining sites through circulation studies and emission management in urban areas. The training also explored solutions to apply circular economy principles in the nuclear sector and promote recycling.

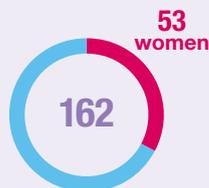


Participants in the 2018 International Nuclear Network training held partly in the Czech Republic receive practical and fundamental information pertaining to the safe, secure and sustainable generation of nuclear power. (Photo: IAEA)

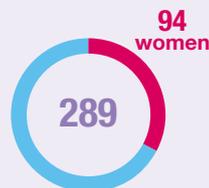
## IAEA support received in the 21st century

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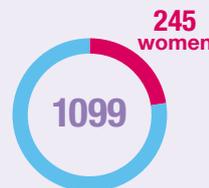
national  
TC projects  
implemented



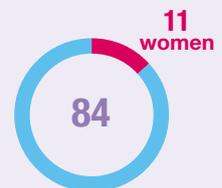
fellows and  
scientific visits



training  
participants

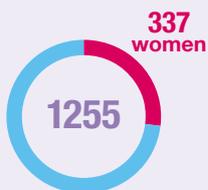


meeting  
participants

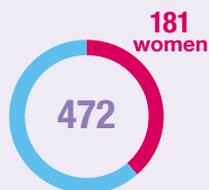


expert missions  
received

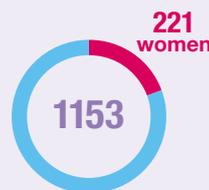
## Contributions to South-South and triangular cooperation



fellows and  
scientific visits  
hosted



meeting  
participants  
hosted



expert missions  
supported