

---

# **IAEA Annual Report 2019**

**Article VI.J of the Agency's Statute requires the Board of Governors to submit  
"an annual report to the General Conference concerning the affairs of  
the Agency and any projects approved by the Agency".**

**This report covers the period 1 January to 31 December 2019.**

# Contents

<i>Member States of the International Atomic Energy Agency</i> .....	v
<i>The Agency at a Glance</i> .....	vi
<i>The Board of Governors</i> .....	viii
<i>The General Conference</i> .....	ix
<i>Notes</i> .....	x
<i>Abbreviations</i> .....	xi

---

Overview .....	1
----------------	---

## **Nuclear Technology**

Nuclear Power .....	25
Nuclear Fuel Cycle and Waste Management .....	30
Capacity Building and Nuclear Knowledge for Sustainable Energy Development .....	35
Nuclear Science .....	37
Food and Agriculture .....	47
Human Health .....	50
Water Resources .....	53
Environment .....	55
Radioisotope Production and Radiation Technology .....	58

## **Nuclear Safety and Security**

Incident and Emergency Preparedness and Response .....	65
Safety of Nuclear Installations .....	69
Radiation and Transport Safety .....	73
Radioactive Waste Management and Environmental Safety .....	77
Nuclear Security .....	80

## **Nuclear Verification**

Nuclear Verification .....	87
----------------------------	----

## **Technical Cooperation**

Management of Technical Cooperation for Development .....	99
---	----

---

<b>Annex</b> .....	107
<b>Organizational Chart</b> .....	153

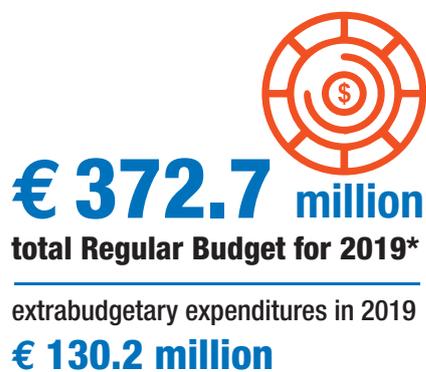
# Member States of the International Atomic Energy Agency

(as of 31 December 2019)

AFGHANISTAN	GERMANY	NORWAY
ALBANIA	GHANA	OMAN
ALGERIA	GREECE	PAKISTAN
ANGOLA	GRENADA	PALAU
ANTIGUA AND BARBUDA	GUATEMALA	PANAMA
ARGENTINA	GUYANA	PAPUA NEW GUINEA
ARMENIA	HAITI	PARAGUAY
AUSTRALIA	HOLY SEE	PERU
AUSTRIA	HONDURAS	PHILIPPINES
AZERBAIJAN	HUNGARY	POLAND
BAHAMAS	ICELAND	PORTUGAL
BAHRAIN	INDIA	QATAR
BANGLADESH	INDONESIA	REPUBLIC OF MOLDOVA
BARBADOS	IRAN, ISLAMIC REPUBLIC OF	ROMANIA
BELARUS	IRAQ	RUSSIAN FEDERATION
BELGIUM	IRELAND	RWANDA
BELIZE	ISRAEL	SAINT LUCIA
BENIN	ITALY	SAINT VINCENT AND THE GRENADINES
BOLIVIA, PLURINATIONAL STATE OF	JAMAICA	SAN MARINO
BOSNIA AND HERZEGOVINA	JAPAN	SAUDI ARABIA
BOTSWANA	JORDAN	SENEGAL
BRAZIL	KAZAKHSTAN	SERBIA
BRUNEI DARUSSALAM	KENYA	SEYCHELLES
BULGARIA	KOREA, REPUBLIC OF	SIERRA LEONE
BURKINA FASO	KUWAIT	SINGAPORE
BURUNDI	KYRGYZSTAN	SLOVAKIA
CAMBODIA	LAO PEOPLE'S DEMOCRATIC REPUBLIC	SLOVENIA
CAMEROON	LATVIA	SOUTH AFRICA
CANADA	LEBANON	SPAIN
CENTRAL AFRICAN REPUBLIC	LESOTHO	SRI LANKA
CHAD	LIBERIA	SUDAN
CHILE	LIBYA	SWEDEN
CHINA	LIECHTENSTEIN	SWITZERLAND
COLOMBIA	LITHUANIA	SYRIAN ARAB REPUBLIC
CONGO	LUXEMBOURG	TAJIKISTAN
COSTA RICA	MADAGASCAR	THAILAND
CÔTE D'IVOIRE	MALAWI	TOGO
CROATIA	MALAYSIA	TRINIDAD AND TOBAGO
CUBA	MALI	TUNISIA
CYPRUS	MALTA	TURKEY
CZECH REPUBLIC	MARSHALL ISLANDS	TURKMENISTAN
DEMOCRATIC REPUBLIC OF THE CONGO	MAURITANIA	UGANDA
DENMARK	MAURITIUS	UKRAINE
DJIBOUTI	MEXICO	UNITED ARAB EMIRATES
DOMINICA	MONACO	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND
DOMINICAN REPUBLIC	MONGOLIA	UNITED REPUBLIC OF TANZANIA
ECUADOR	MONTENEGRO	UNITED STATES OF AMERICA
EGYPT	MOROCCO	URUGUAY
EL SALVADOR	MOZAMBIQUE	UZBEKISTAN
ERITREA	MYANMAR	VANUATU
ESTONIA	NAMIBIA	VENEZUELA, BOLIVARIAN REPUBLIC OF
ESWATINI	NEPAL	VIET NAM
ETHIOPIA	NETHERLANDS	YEMEN
FIJI	NEW ZEALAND	ZAMBIA
FINLAND	NICARAGUA	ZIMBABWE
FRANCE	NIGER	
GABON	NIGERIA	
GEORGIA	NORTH MACEDONIA	

The Agency's Statute was approved on 23 October 1956 by the Conference on the Statute of the IAEA held at United Nations Headquarters, New York; it entered into force on 29 July 1957. The Headquarters of the Agency are located in Vienna.

# The Agency



\* At the United Nations average rate of exchange of US \$1.12 to €1.00. The total Regular Budget was €378.0 million at the US \$1.00 to €1.00 rate.

**141** 

## Revised Supplementary Agreements

governing provision of technical cooperation

**122** 

## active coordinated research projects

**75** Research Coordination Meetings

**184** 

States with safeguards agreements in force of which

**136** States had additional protocols in force

**43** 

## active IAEA Collaborating Centres

**11 institutions** newly designated    **1 centre** redesignated

**700 000** 

visitors a month to [iaea.org](http://iaea.org) up **17%** since 2018

**4.8 million** 

per month **social media reach** up **25%** since 2018

 over **1 million** materials available in the IAEA Library

over **8000 visitors** in 2019

**137** 

IAEA publications

# The Board of Governors

The Board of Governors oversees the ongoing operations of the Agency. It comprises 35 Member States and generally meets five times a year, or more frequently if required for specific situations.

As a consequence of the passing away of Director General Yukiya Amano in July 2019, the Board designated Cornel Feruta as acting Director General, until a Director General assumed office. In October 2019, the Board appointed Rafael Mariano Grossi by acclamation to the post of Director General of the Agency for a term of office of four years, from 3 December 2019 to 2 December 2023.

In the area of nuclear technologies, in the course of 2019 the Board considered the *Nuclear Technology Review 2019*.

In the area of safety and security, the Board discussed the *Nuclear Safety Review 2019* and the *Nuclear Security Report 2019*.

As regards verification, the Board considered the *Safeguards Implementation Report for 2018*. It approved one safeguards agreement and three additional protocols. The Board considered the Director General's reports on verification and monitoring in the Islamic Republic of Iran in light of United Nations Security Council resolution 2231 (2015). The Board kept under its consideration the issues of the implementation of the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) Safeguards Agreement in the Syrian Arab Republic and the application of safeguards in the Democratic People's Republic of Korea.

The Board discussed the *Technical Cooperation Report for 2018* and approved the Agency's technical cooperation programme for 2020–2021.

The Board approved the recommendations contained in the *Proposal to the Board of Governors by the Co-Chairs of the Working Group on the Programme and Budget and the Technical Cooperation Fund Targets for 2020–2021*.

## Composition of the Board of Governors (2019–2020)

Chair:

HE Ms. Mikaela KUMLIN GRANIT

Ambassador

Governor from Sweden

Vice-Chairs:

HE Mr. Galib ISRAFILOV

Ambassador

Governor from Azerbaijan

HE Mr. Omar Amer YOUSSEF

Ambassador

Governor from Egypt

Argentina  
Australia  
Azerbaijan  
Belgium  
Brazil  
Canada  
China  
Ecuador  
Egypt  
Estonia  
France  
Germany

Ghana  
Greece  
Hungary  
India  
Italy  
Japan  
Kuwait  
Mongolia  
Morocco  
Niger  
Nigeria  
Norway

Pakistan  
Panama  
Paraguay  
Russian Federation  
Saudi Arabia  
South Africa  
Sweden  
Thailand  
United Kingdom of Great Britain  
and Northern Ireland  
United States of America  
Uruguay

---

# The General Conference

The General Conference comprises all Member States of the Agency and meets once a year in regular session.

The Conference adopted resolutions on the Agency's financial statements for 2018 and budget for 2020; on nuclear and radiation safety; on nuclear security; on strengthening the Agency's technical cooperation activities; on strengthening the Agency's activities related to nuclear science, technology and applications, comprising non-power nuclear applications and nuclear power applications; on strengthening the effectiveness and improving the efficiency of Agency safeguards; on the implementation of the NPT Safeguards Agreement between the Agency and the Democratic People's Republic of Korea; on the application of Agency safeguards in the Middle East; and on personnel matters, comprising the staffing of the Agency's Secretariat and women in the Secretariat. The Conference also adopted decisions on the progress made towards the entry into force of the amendment to Article XIV.A of the Statute of the Agency, approved in 1999; on the report on the promotion of the efficiency and effectiveness of the Agency's decision making process; and on the progress made towards the entry into force of the amendment to Article VI of the Statute of the Agency, approved in 1999.

The Conference paid tribute to the late Director General Yukiya Amano. In December 2019, the Conference in special session approved by acclamation the Board's appointment of Rafael Mariano Grossi as the new Director General of the Agency for a term of office of four years from 3 December 2019 to 2 December 2023.

# Notes

- The *Annual Report 2019* aims to summarize only the significant activities of the Agency during the year in question. The main part of the report, starting on page 21, generally follows the programme structure as given in *The Agency's Programme and Budget 2018–2019* (GC(61)/4). The objectives included in the main part of the report are taken from that document and are to be interpreted consistently with the Agency's Statute and decisions of the Policy-Making Organs.
- The introductory chapter, 'Overview', seeks to provide a thematic analysis of the Agency's activities within the context of notable developments during the year. More detailed information can be found in the latest editions of the Agency's *Nuclear Safety Review*, *Nuclear Security Report*, *Nuclear Technology Review*, *Technical Cooperation Report* and the *Safeguards Statement and Background to the Safeguards Statement*.
- Additional information covering various aspects of the Agency's programme is available, in electronic form only, on [iaea.org](http://iaea.org), along with the *Annual Report*.
- The designations employed and the presentation of material in this document do not imply the expression of any opinion whatsoever on the part of the Secretariat concerning the legal status of any country or territory or of its authorities, or concerning the delimitation of its frontiers.
- The mention of names of specific companies or products (whether or not indicated as registered) does not imply any intention to infringe proprietary rights, nor should it be construed as an endorsement or recommendation on the part of the Agency.
- The term 'non-nuclear-weapon State' is used as in the Final Document of the 1968 Conference of Non-Nuclear-Weapon States (United Nations document A/7277) and in the Treaty on the Non-Proliferation of Nuclear Weapons (NPT). The term 'nuclear-weapon State' is as used in the NPT.
- All the views expressed by Member States are reflected in full in the summary records of the June Board of Governors meetings. On 15 June 2020, the Board of Governors approved the *Annual Report for 2019* for transmission to the General Conference.

# Abbreviations

AFRA	African Regional Co-operative Agreement for Research, Development and Training Related to Nuclear Science and Technology
ALMERA	Analytical Laboratories for the Measurement of Environmental Radioactivity
AP	additional protocol
ARASIA	Co-operative Agreement for Arab States in Asia for Research, Development and Training related to Nuclear Science and Technology
ARCAL	Regional Co-operation Agreement for the Promotion of Nuclear Science and Technology in Latin America and the Caribbean
ARTEMIS	Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Remediation
CLP4NET	Cyber Learning Platform for Network Education and Training
CNS	Convention on Nuclear Safety
CPF	Country Programme Framework
CPPNM	Convention on the Physical Protection of Nuclear Material
CRP	coordinated research project
CSA	comprehensive safeguards agreement
DIRAC	Directory of Radiotherapy Centres
DSRS	disused sealed radioactive source
EPR	emergency preparedness and response
EPREV	Emergency Preparedness Review
EPRIMS	Emergency Preparedness and Response Information Management System
Euratom	European Atomic Energy Community
HEU	high enriched uranium
IACRNE	Inter-Agency Committee on Radiological and Nuclear Emergencies
ICERR	IAEA-designated International Centre based on Research Reactor
ICTP	Abdus Salam International Centre for Theoretical Physics
iNET-EPR	International Network for Education and Training on Emergency Preparedness and Response
INIR	Integrated Nuclear Infrastructure Review
INIS	International Nuclear Information System
INIT	Integrated Nuclear Infrastructure Training
INLEX	International Expert Group on Nuclear Liability
INMA	International Nuclear Management Academy
INPRO	International Project on Innovative Nuclear Reactors and Fuel Cycles
INSSP	Integrated Nuclear Security Support Plan
IPPAS	International Physical Protection Advisory Service
IRIS	Integrated Review of Infrastructure for Safety
IRRS	Integrated Regulatory Review Service

---

IRRUR	Integrated Research Reactor Utilization Review
JCPOA	Joint Comprehensive Plan of Action
LEU	low enriched uranium
MUPSA	Multi-Unit Probabilistic Safety Assessment
NDT	non-destructive testing
NEA	Nuclear Energy Agency (Organisation for Economic Co-operation and Development)
NEM School	Nuclear Energy Management School (IAEA)
NKM School	Nuclear Knowledge Management School (IAEA)
NPT	Treaty on the Non-Proliferation of Nuclear Weapons
OMARR	Operation and Maintenance Assessment for Research Reactors
PACT	Programme of Action for Cancer Therapy (IAEA)
QUATRO	Quality Assurance Team for Radiation Oncology
RANET	Response and Assistance Network
RASIMS	Radiation Safety Information Management System
RCA	Regional Co-operative Agreement for Research, Development and Training Related to Nuclear Science and Technology
ReNuAL/ReNuAL+	Renovation of the Nuclear Applications Laboratories
RSA	Revised Supplementary Agreement Concerning the Provision of Technical Assistance by the IAEA
SDG	Sustainable Development Goal
SIT	sterile insect technique
SMR	small and medium sized or modular reactor
SQP	small quantities protocol
SRIS	Spent Fuel and Radioactive Waste Information System
TSR	Technical Safety Review
USIE	Unified System for Information Exchange in Incidents and Emergencies
VETLAB Network	Veterinary Diagnostic Laboratory Network
WHO	World Health Organization