# **IAEA Annual Report 2015**

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 2015.

GC(60)/9

## Contents

Member States of the International Atomic Energy Agency	iv
The Agency at a Glance	v
The Board of Governors	vi
The General Conference	vii
Notes	viii
Abbreviations	ix

Overview	· · · ·										•••										• •			•					1
----------	---------	--	--	--	--	--	--	--	--	--	-----	--	--	--	--	--	--	--	--	--	-----	--	--	---	--	--	--	--	---

#### **Nuclear Technology**

Nuclear Power	27
Nuclear Fuel Cycle and Materials Technologies	35
Capacity Building and Nuclear Knowledge Maintenance	
for Sustainable Energy Development	38
Nuclear Science	42
Food and Agriculture	48
Human Health	52
Water Resources	57
Environment	61
Radioisotope Production and Radiation Technology	65

#### **Nuclear Safety and Security**

Incident and Emergency Preparedness and Response	71
Safety of Nuclear Installations	76
Radiation and Transport Safety	81
Management of Radioactive Waste	85
Nuclear Security	88

#### **Nuclear Verification**

Nuclear Verificati	on	 	 	95

#### **Technical Cooperation**

Management of Technical Cooperation for Development ......107

nnex	7
rganizational Chart	7

### Member States of the International Atomic Energy Agency

(as of 31 December 2015)

AFGHANISTAN ALBANIA ALGERIA ANGOLA ANTIGUA AND BARBUDA ARGENTINA ARMENIA AUSTRALIA AUSTRIA AZERBAIJAN BAHAMAS BAHRAIN BANGLADESH BARBADOS BELARUS BELGIUM BELIZE BENIN BOLIVIA, PLURINATIONAL STATE OF BOSNIA AND HERZEGOVINA BOTSWANA BRAZIL BRUNEI DARUSSALAM BULGARIA BURKINA FASO BURUNDI CAMBODIA CAMEROON CANADA CENTRAL AFRICAN REPUBLIC CHAD CHILE CHINA COLOMBIA CONGO COSTA RICA CÔTE D'IVOIRE CROATIA CUBA **CYPRUS** CZECH REPUBLIC DEMOCRATIC REPUBLIC OF THE CONGO DENMARK DJIBOUTI DOMINICA DOMINICAN REPUBLIC **ECUADOR** EGYPT EL SALVADOR ERITREA **ESTONIA ETHIOPIA** FIJI FINLAND FRANCE GABON

GEORGIA GERMANY GHANA GREECE **GUATEMALA GUYANA** HAITI HOLY SEE HONDURAS HUNGARY ICELAND INDIA **INDONESIA** IRAN, ISLAMIC REPUBLIC OF IRAO IRELAND ISRAEL ITALY JAMAICA **JAPAN** IORDAN KAZAKHSTAN KENYA KOREA, REPUBLIC OF KUWAIT KYRGYZSTAN LAO PEOPLE'S DEMOCRATIC REPUBLIC LATVIA LEBANON LESOTHO LIBERIA LIBYA LIECHTENSTEIN LITHUANIA LUXEMBOURG MADAGASCAR MALAWI MALAYSIA MALI MALTA MARSHALL ISLANDS MAURITANIA MAURITIUS MEXICO MONACO MONGOLIA MONTENEGRO MOROCCO MOZAMBIQUE MYANMAR NAMIBIA NEPAL NETHERLANDS NEW ZEALAND NICARAGUA NIGER NIGERIA NORWAY

OMAN PAKISTAN PALAU PANAMA PAPUA NEW GUINEA PARAGUAY PERU PHILIPPINES POLAND PORTUGAL QATAR **REPUBLIC OF MOLDOVA** ROMANIA RUSSIAN FEDERATION RWANDA SAN MARINO SAUDI ARABIA SENEGAL SERBIA SEYCHELLES SIERRA LEONE SINGAPORE **SLOVAKIA** SLOVENIA SOUTH AFRICA SPAIN SRI LANKA SUDAN SWAZILAND SWEDEN SWITZERLAND SYRIAN ARAB REPUBLIC TAJIKISTAN THAILAND THE FORMER YUGOSLAV **REPUBLIC OF MACEDONIA** TOGO TRINIDAD AND TOBAGO TUNISIA TURKEY UGANDA UKRAINE UNITED ARAB EMIRATES UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND UNITED REPUBLIC OF TANZANIA UNITED STATES OF AMERICA URUGUAY UZBEKISTAN VANUATU VENEZUELA, BOLIVARIAN **REPUBLIC OF** VIET NAM YEMEN ZAMBIA ZIMBABWE

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 IAEA's principal objective is "to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world".

### The Agency at a Glance

(as of 31 December 2015)

- **167** Member States.
  - **83** intergovernmental and non-governmental organizations worldwide invited to observe the Agency's General Conference.
- **59** years of international service.
- **2497** professional and support staff.
- €352.1 million total Regular Budget for 2015.<sup>1</sup> Extrabudgetary expenditures in 2015 totalled €85.8 million.
  - €69.8 million target in 2015 for voluntary contributions to the Agency's Technical Cooperation Fund, supporting projects involving 3477 expert and lecturer assignments, 5126 meeting participants and other project personnel, 2722 participants in 175 regional and interregional training courses and 1852 fellows and scientific visitors.
    - **138** countries and territories receiving support through the Agency's technical cooperation programme, including **35** least developed countries.
    - **807** active technical cooperation projects at the end of 2015.
      - **2** liaison offices (in New York and Geneva) and **2** safeguards regional offices (in Tokyo and Toronto).
      - **12** international laboratories (Vienna, Seibersdorf and Monaco) and research centres.
      - **11** multilateral conventions on nuclear safety, security and liability adopted under the Agency's auspices.
      - **4** regional agreements relating to nuclear science and technology.
    - **126** Revised Supplementary Agreements governing the provision of technical assistance by the Agency.
    - **131** active CRPs involving **1686** approved research, technical and doctoral contracts and research agreements. In addition, **79** Research Coordination Meetings were held.
      - **19** national donors to the voluntary Nuclear Security Fund.
    - **181** States in which safeguards agreements were being implemented,<sup>2,3</sup> of which **127** States had additional protocols in force, with **2114** safeguards inspections performed in 2015. Safeguards expenditures in 2015 amounted to **€130.7 million** in the operational portion of the Regular Budget and **€27.0 million** in extrabudgetary resources.
      - **20** national safeguards support programmes and **1** multinational support programme (European Commission).
- **430 000** visitors a month to the Agency's iaea.org site by the end of 2015, a 50% increase from 2014. The Agency's social media reach increased fivefold in 2015, growing to **5 million** people a month.
  - **3.9 million** records in the International Nuclear Information System (INIS), the Agency's largest database, with over **500 000** full texts not readily available through commercial channels and **2.3 million** page views in 2015.
  - **1.1 million** documents, technical reports, standards, conference proceedings, journals and books in the IAEA Library and over **14 000** visitors to the Library in 2015.
  - **145** publications, including newsletters, issued in 2015 (in print and electronic formats).

<sup>2</sup> These States do not include the Democratic People's Republic of Korea, where the Agency did not implement safeguards and, therefore, could not draw any conclusion.

<sup>3</sup> And Taiwan, China.

<sup>&</sup>lt;sup>1</sup> At the UN average rate of exchange of US \$1.1091 to €1.00. The total Regular Budget was €356.4 million at the US \$1.00 to €1.00 rate.

### **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. Among its functions, the Board adopts the Agency's programme for the incoming biennium and makes recommendations on the Agency's budget to the General Conference.

In the area of nuclear technologies, in the course of 2015 the Board considered the *Nuclear Technology Review* 2015.

In the area of safety and security, the Board discussed the *Nuclear Safety Review* 2015 and the *Report on the Fukushima Daiichi Accident*, and also debated the *Nuclear Security Report* 2015.

As regards verification, the Board considered *The Safeguards Implementation Report for 2014*. It approved one safeguards agreement. The Board kept under its consideration the issues of the implementation of the NPT Safeguards Agreement and relevant provisions of the United Nations Security Council resolutions in the Islamic Republic of Iran, the implementation of the NPT Safeguards Agreement in the Syrian Arab Republic and the application of safeguards in the Democratic People's Republic of Korea. The Board authorized the Director General to implement the necessary verification and monitoring of the Islamic Republic of Iran's nuclear-related commitments as set out in the Joint Comprehensive Plan of Action. The Board took note of the report on the *Final Assessment on Past and Present Outstanding Issues regarding Iran's Nuclear Programme* and adopted a resolution, in which, inter alia, it noted that all activities in the Road-map had been completed in accordance with the agreed schedule and that this closed its consideration of this item.

The Board discussed the *Technical Cooperation Report for 2014* and approved the Agency's technical cooperation programme for 2016.

The Board approved the *Strategic Guidelines on Partnerships and Resource Mobilization* as recommended by the Working Group on Resource Mobilization. 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 2016–2017.* 

#### **Composition of the Board of Governors (2015–2016)**

Chair: HE Mr. Laércio Antonio VINHAS Ambassador Governor from Brazil Vice-Chairpersons: HE Mr. Friedrich DÄUBLE Ambassador Governor from Germany HE Mr. Bahtijors HASANS Ambassador Governor from Latvia Ireland Japan Korea, Republic of Latvia Malaysia Mexico Namibia

New Zealand

Nigeria

Pakistan

Paraguay

Philippines

**Russian Federation** 

Saudi Arabia South Africa Spain Switzerland The former Yugoslav Republic of Macedonia Turkey United Kingdom of Great Britain and Northern Ireland United States of America Uruguay

Argentina Australia Belarus Brazil Canada Chile China Egypt Finland France Germany Ghana India

### **The General Conference**

The General Conference comprises all Member States of the Agency and meets once a year. It debates the annual report of the Board of Governors on the Agency's activities during the previous year, approves the Agency's financial statements and budget, approves any applications for membership, and elects members to the Board of Governors. It also conducts a wide ranging general debate on the Agency's policies and programmes and passes resolutions directing the priorities of the Agency's work.

In 2015, the Conference – upon the recommendation of the Board – approved Antigua and Barbuda, Barbados and Turkmenistan for membership of the Agency. At the end of 2015, the Agency's membership was 167.

### Notes

- The *IAEA Annual Report for 2015* aims to summarize only the significant activities of the Agency during the year in question. The main part of the report, starting on page 25, generally follows the programme structure as given in *The Agency's Programme and Budget 2014–2015* (GC(57)/2).
- 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*, 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 9 June 2016, the Board of Governors approved the Annual Report for 2015 for transmission to the General Conference.

# **Abbreviations**

ABACC	Brazilian-Argentine Agency for Accounting and Control of Nuclear Materials
AFRA	African Regional Co-operative Agreement for Research, Development and Training Related to Nuclear Science and Technology
AFRA-NEST	AFRA Network for Education in Science and Technology
AGaRT	Advisory Group on Increasing Access to Radiotherapy Technology in Low and Middle Income Countries
ALMERA	Analytical Laboratories for the Measurement of Environmental Radioactivity
ANENT	Asian Network for Education in Nuclear Technology
AP	additional protocol
ARASIA	Regional Co-operative Agreement for Arab States in Asia for Research, Development and Training related to Nuclear Science and Technology
ARCAL	Co-operation Agreement for the Promotion of Nuclear Science and Technology in Latin America and the Caribbean
CNS	Convention on Nuclear Safety
COP21	21st session of the Conference of the Parties (UNFCCC)
CPF	Country Programme Framework
CPPNM	Convention on the Physical Protection of Nuclear Material
CRP	coordinated research project
CSA	comprehensive safeguards agreement
ECAS	Enhancing Capabilities of the Safeguards Analytical Services
EED	environmental enteric dysfunction
ENEN	European Nuclear Education Network
EPR	emergency preparedness and response
EPREV	Emergency Preparedness Review
Euratom	European Atomic Energy Community
EVD	Ebola virus disease
FAO	Food and Agriculture Organization of the United Nations
GNSSN	Global Nuclear Safety and Security Network
HEU	high enriched uranium
ICTP	Abdus Salam International Centre for Theoretical Physics
INFCIRC	Information Circular (IAEA)
INIR	Integrated Nuclear Infrastructure Review
INIS	International Nuclear Information System
INLEX	International Expert Group on Nuclear Liability
INPRO	International Project on Innovative Nuclear Reactors and Fuel Cycles
INTERPOL	International Criminal Police Organization – INTERPOL
IPPAS	International Physical Protection Advisory Service
IRRS	Integrated Regulatory Review Service

ITDB	Incident and Trafficking Database (IAEA)
JCPOA	Joint Comprehensive Plan of Action
JPA	Joint Plan of Action
JPLAN	Joint Radiation Emergency Management Plan of the International Organizations
LANENT	Latin American Network for Education in Nuclear Technology
LEU	low enriched uranium
NESA	Nuclear Energy System Assessment
NGSS	next generation surveillance system
NPCs	National Participation Costs
NPT	Treaty on the Non-Proliferation of Nuclear Weapons
OA-ICC	Ocean Acidification International Coordination Centre
OECD	Organisation for Economic Co-operation and Development
OECD/NEA	OECD Nuclear Energy Agency
ORPAS	Occupational Radiation Protection Appraisal Service
OSART	Operational Safety Review Team
PACT	Programme of Action for Cancer Therapy (IAEA)
PUI	Peaceful Uses Initiative
QUATRO	Quality Assurance Team for Radiation Oncology
RANET	Response and Assistance Network (IAEA)
RCA	Regional Co-operative Agreement for Research, Development and Training Related to Nuclear Science and Technology
ReNuAL	Renovation of the Nuclear Applications Laboratories
RSA	Revised Supplementary Agreement Concerning the Provision of Technical Assistance by the IAEA
SALTO	Safety Aspects of Long Term Operation
SDG	Sustainable Development Goal
SIT	sterile insect technique
SQP	small quantities protocol
SSAC	State system of accounting for and control of nuclear material
SSDL	secondary standards dosimetry laboratory
STAR-NET	Regional Network for Education and Training in Nuclear Technology
TCF	Technical Cooperation Fund
UNDAF	United Nations Development Assistance Framework
UNEP	United Nations Environment Programme
WHO	World Health Organization