The Agency's Programme and Budget 2016–2017

IAEA
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Introduction

The financial difficulties in many Member States are likely to continue into the coming biennium. Close attention was paid to the views expressed by Member States during discussions on the 2014–2015 programme and budget, as well as to the financial situation in other organizations in the United Nations System in preparing the 2016–2017 draft Programme and Budget for the Agency. Efforts in ensuring prioritization and efficiencies have been applied more thoroughly, using the two-step approach now firmly established in the internal budget preparation process through:

- Prioritization of activities, including the identification of activities to be reduced, discontinued or postponed and their corresponding financial impact;

- Efficiency measures to be undertaken, with the expected corresponding financial impact on the budget for 2016–2017;

- Continuation of the efficiencies initiated in the budget for 2014–2015.

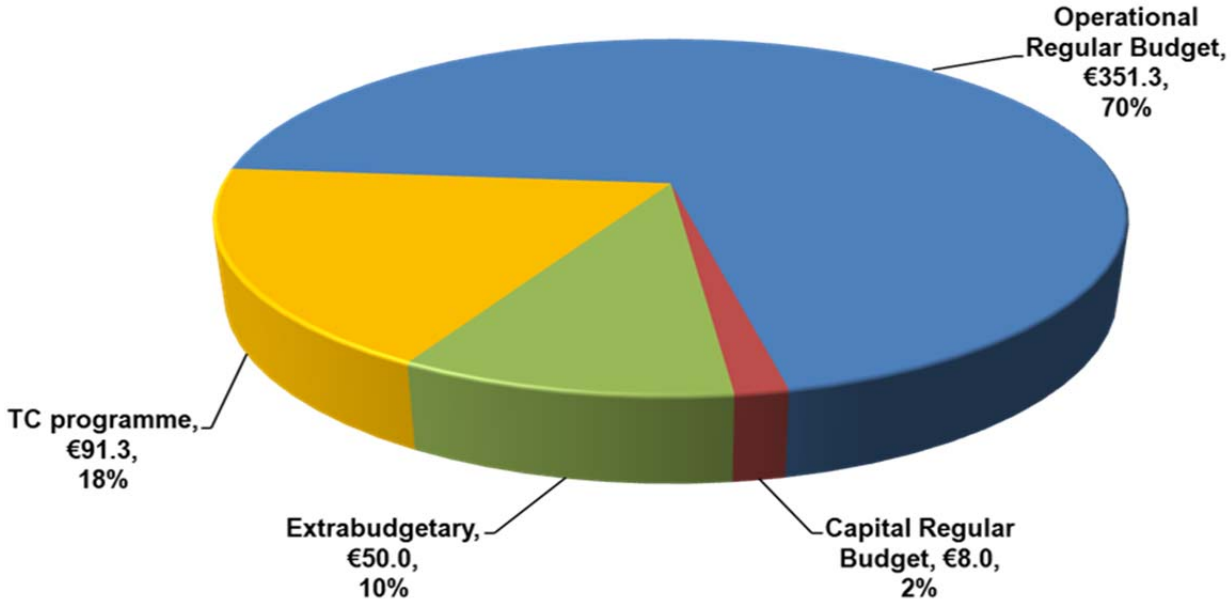
Simultaneously, the Agency needs to respond to the increasing demand for its services owing to, inter alia, growing membership, enhanced interest of Member States in the peaceful uses of atomic energy, and the growing need for nuclear verification activities. The two-step approach has been effective in identifying possible efficiencies and focusing on the essential priorities to be included in the next biennium. This proposal continues to follow a results based approach in developing Agency programmes and setting objectives.

The priorities laid down in the 2014–2015 Programme and Budget — technical cooperation, including the Programme of Action for Cancer Therapy (PACT), nuclear safety, nuclear security and the Renovation of the Nuclear Applications Laboratories in Seibersdorf (ReNuAL) — have a time span going beyond a biennium and remain the Agency's priorities for 2016–2017. The amount of funding assigned to these may differ from 2014–2015, but they will stay at the forefront for the coming biennium. Nuclear energy continues to be a priority in accordance with the Statute.

2016–2017 Programme and Budget at a Glance

2016 Total Resources at a Glance

(in millions at 2016 prices)[1]



€359.3 million	*2016 regular budget (operational and capital)*
1.5%	*1.6% real growth over 2015 for the operational regular budget*
	3.7% decrease over 2015 for the capital regular budget
0.1%	*overall average price adjustment for 2016*
Zero real growth	*2017 regular budget over 2016*
€2.5 million	*2016 capital regular budget for ReNuAL*
€24.5 million	*management of the Technical Cooperation for Development including a 2.9% increase over 2015*
55 GS Positions	*reduced since the AIPS implementation started in 2011 (5.5%)*
Organization	*new Division in the Department of Nuclear Energy*
	new Office in the Department of Nuclear Safety and Security

[1] All figures in this document are presented at 2016 prices, unless otherwise indicated. Figures under the TC programme are represented only in € (EUR) denomination. Please refer to paragraph 76 for details.

PART I

OVERVIEW

Overview

1. The Agency has been experiencing limited growth in its Regular Budget for some time. This situation reflects the overarching economic situation and the challenges Member States face. Simultaenously, the demand for the Agency's services continues to increase with the growing number of Member States, their desire to draw more benefit from the peaceful uses of nuclear technology, and the increasing verification activities. In view of this, the Director General is proposing a modest increase for the coming biennium.

2. For 2016, the Secretariat is proposing a total Regular Budget of €359.3 million which represents an overall increase of €5.7 million or 1.6%. This includes a price adjustment of 0.1%.

3. The operational Regular Budget is proposed at €351.3 million (€6.0 million increase) and the capital Regular Budget at €8.0 million (decrease of €0.3 million), both including price adjustment.

4. All tables in the document are presented in euros, unless otherwise specified.

5. The Programme and Budget for 2016–2017 takes into account the recommendations in the *"Report of the Working Group on Financing the Agency's Activities (WGFAA), including to examine the ways and means to render resources for the Technical Cooperation Fund sufficient, assured and predictable*" for broader and more detailed presentation of information.

Consultative Process

6. *The Agency's Draft Programme and Budget 2016–2017* (GOV/2015/1) was submitted to the Board of Governors on 10 March 2015 with a proposal for 2016 totalling €359.6 million at 2015 prices for operational and capital requirements combined, representing a 1.7% increase compared to 2015. This represented a €6.3 million increase (1.8%) in the operational regular budget and a €0.3 million decrease in the capital regular budget (-3.7%). In addition, the proposal included a price adjustment of 0.1% for a total increase of 1.8%.

7. Following intensive consultations among Member States in the context of the Working Group on the Programme and Budget and the Technical Cooperation Fund Targets for 2016–2017, the Director General presented a revised proposal (as contained in 2015/Note 28[2]) which served as basis for the recommended by the Board of Governors for submission to the General Conference for approval.

8. The revised proposal for the Agency's Programme and Budget for 2016–2017 contained:

- Total increase over 2015, including real growth and price adjustment, of 1.6%;
- An increase for the operational Regular Budget over 2015, prior to price adjustment, of €5.6 million or 1.6 %;
- A decrease for the capital Regular Budget over 2015, prior to price adjustment, of €0.3 million or (3.7%);
- An estimate for price adjustment of 0.1%;

9. The Budget Update for 2017 will be submitted to include the price adjustment and any significant programme changes which may become necessary.

[2] Based on which 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" (GOV/2015/37) was recommended by the Board of Governors.

Prioritization

10. This proposal was prepared taking into account the fact that the global financial situation continues to affect the ability of Member States to fund the Agency's activities. Therefore, a strict prioritization effort was undertaken to identify activities that will be discontinued, reduced in scope or postponed and efficiency measures that will be pursued in the coming biennium.

Priorities

11. The 2016–2017 Programme and Budget supports the continuing priorities identified by the Director General for the 2014–2015 biennium:

- Technical cooperation including the Programme of Action for Cancer Therapy (PACT) — €24.5 million in the 2016 Regular Budget.
- Nuclear Safety and Security — €34.7 million in the 2016 Regular Budget and the budget neutral establishment of a new Office of Safety and Security Coordination as well as continued regularization of positions in Nuclear Security.
- The Renovation of the Nuclear Applications Laboratories in Seibersdorf (ReNuAL) — €2.5 million in the 2016 capital Regular Budget.
- Nuclear Energy — €38.9 million in the 2016 Regular Budget and the establishment of a new Division of Planning, Information and Knowledge Management (NE–PIK).

12. In December 2014, the Board of Governors endorsed the continuation of the Agency's undertaking of monitoring and verification in relation to the nuclear-related measures set out in the Joint Plan of Action (JPA), in response to a request by China, France, Germany, the Russian Federation, the United Kingdom and the United States of America (the E3+3), and the Islamic Republic of Iran, subject to the availability of funds.

13. The financial implications for the Agency for 2016–2017 in connection with the developments in negotiations between EU/E3+3 and Iran were unknown at the time of preparation of the Programme and Budget 2016 and 2017. Member States were informed that in the event of subsequent developments in connection with the negotiations that would affect the Agency's activities, the Director General would report to and consult the Board of Governors, including on the financial implications, accordingly.

Efficiencies

14. The Secretariat continued to pursue further efficiency improvement initiatives and austerity measures. The following ongoing initiatives continue to be addressed:

- Stricter prioritization of travel, including that of senior managers;
- Expanded use of standard equipment in all areas, in particular Safeguards instrumentation, making use of economies of scale and lower maintenance costs;
- Review of computer assets in use with a view of reducing the number of software licences paid;
- Use of innovative tools such as video screening in recruitment of highly qualified personnel;
- Promoting a paper smart environment;
- Further rationalized workload, by the use of the Agency-wide Information System for Programme Support (AIPS);
- Continued optimization of the use of information technology (IT).

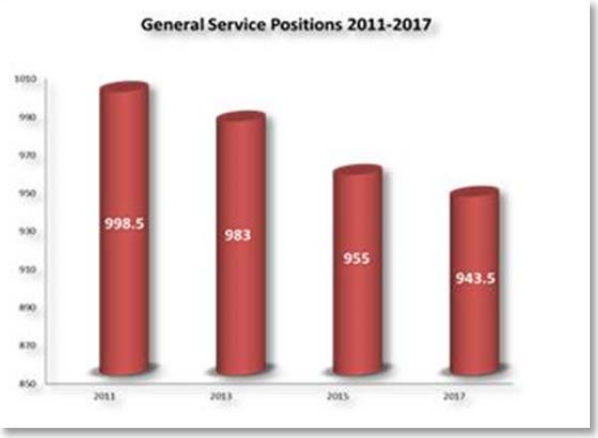
15. Review of business processes to improve their efficiency, while maintaining robust internal controls (e.g. for Host Government Agreement Letters and Invitations to official meetings, acceptance of

extrabudgetary contributions, procurement planning and appointment of consultants).

16. Progress on efficiency efforts, mainly through the Partnership for Continuous Improvement (PCI), was reported by the Secretariat to the Programme and Budget Committee on 5 May 2014 through the issuance of the "Efficiency and Productivity of the Secretariat" brochure. A more detailed report on efficiencies achieved in the biennium will be released after the end of the biennium 2014–2015.

The 2016 budget continues the pursuit of efficiencies, building on ongoing efforts such as the "Partnership for Continuous Improvements" (PCI) and the identification of new areas in which efficiencies can be realized and productivity increased

17. The number of General Services positions is to be further reduced by 11.5 positions as compared to 2015, coming to a total of 55 GS positions reduced since 2011.



18. AIPS is now operating with three out of four planned plateaus, and is continuing to realize benefits through the use of optimized workflows, reduction of administrative burden and the reduced requirement for support functions (e.g. fully automated regular payroll processing, increased usage of employee and management self-service, maximising use of electronic approvals). After the completion of all project plateaus, an assessment study on the impact of AIPS on staffing will be carried out.

Synergies

19. The Agency recognizes the importance of internal and inter-organizational synergies to ensure efficient and effective programme delivery. Major programmes will make a concerted effort to leverage interactions and cooperation within the Agency and with external counterparts. In doing so, the Agency will continue to take advantage of strategic directions, core competencies, and lessons learned, and to avoid duplication of programmatic effort.

20. The Agency seeks synergies not only externally, but also internally, the main objective being collectively to serve Member States, in line with the six strategic objectives of the Medium Term Strategy (MTS) 2012–2017, which are implemented in a coordinated manner through departmental MTS implementation plans, ensuring a one-house approach.

21. Internal synergies are found throughout the Agency in activities that are mutually reinforcing and complementary. The cooperation among major programmes is traditionally seen as technical backstopping provided by Major Programmes 1, 2, 3 and 5 to the design and implementation of the technical cooperation programme (TCP) managed by Major Programme 6. The interaction among all major programmes is manifested in coordinated research activities and in technologies, procedures and standards developed notably by Major Programmes 1, 2 and 3, the results of which often feed into the technical knowledge and capacity transferred to Member States through the TCP. Services provided by Major Programme 3 contribute to the safe use of nuclear technologies supported by Major Programmes 1 and 2. Various core teams and steering groups, such as the Technical Cooperation–Technical Departments Group have been established to facilitate the alignment of activities among Major Programmes.

22. The functioning of the Nuclear Power Support Group (NPSG) is also a manifestation of synergy of all major programmes working together to assist Member States considering the introduction of nuclear power in planning and building their national nuclear infrastructure, including nuclear safety and nuclear security infrastructure.

23. Every major programme will continue to work with external counterparts. For example, Major Programme 1 cooperates with other United Nations organizations on climate change, sustainable development and energy statistics, mainly through the Planning and Economics Studies Section (PESS). By virtue of its energy planning models, the Agency is the sole United Nations agency building national capabilities in overall energy planning.

24. In addition to its cooperation with other United Nations agencies, Major Programme 1 works extensively with the Organisation for Economic Co-operation and Development Nuclear Energy Agency (OECD/NEA) in a number of key areas, including the production of a joint report every two years on uranium resources, production and demand. Major Programme 1 also interacts with several other international organizations.

25. Regarding Major Programme 2, the Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture draws on the broad expertise of staff in both organizations to deliver comprehensive programming in the area of food and agriculture to Member States. A priority in 2016–2017 will be to work closer with the Food and Agricultural Organization of the United Nations (FAO) at all levels on climate smart agriculture. Synergies will continue with the United Nations Environment Programme (UNEP), notably regarding assessing the impact of climate change on the marine environment.

26. Synergies sought by Major Programme 3 include the Agency's cooperation with the World Health Organization (WHO) in the area of radiation protection in medicine. The Agency develops safety standards using information from the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR). In the area of preparedness and response to nuclear and radiological incidents and emergencies, the Agency works closely with several international intergovernmental organizations within the framework of the Inter-Agency Committee on Radiological and Nuclear Emergencies (IACRNE). In accordance with the General Conference resolutions and Board of Governors decisions, the Agency plays a central role in ensuring the coordination of nuclear security activities with the United Nations in particular those undertaken in accordance with United Nations Security Council Resolution 1540, as well as other organizations and initiatives involved in nuclear security, in accordance with the respective mandates of the bodies involved. Promotion of the entry into force of the Amendment to the Convention on the Physical Protection of Nuclear Material (CPPNM) takes full account of the responsibilities of the United Nations Office on Drugs and Crime (UNODC) as they relate to the criminalization aspects dealt with in the international conventions.

27. There is close cooperation between Major Programme 4 and the State and regional systems of accounting for and control of nuclear material (SSACs/RSACs), which are key components of international safeguards and are essential for effective and efficient safeguards implementation. The Agency relies on Member State Support Programmes (MSSPs) for the implementation of its research and development programme for nuclear verification to anticipate trends in technology and its application. In addition, the Network of Analytical Laboratories (NWAL), which includes 20 institutions from 9 Member States plus the European Commission, provides analytical support that is critical to safeguards.

28. The involvement of Major Programme 5 in top-level coordinating bodies such as the United Nations System Chief Executives Board for Coordination (CEB) and the High-

Level Committee on Management (HLCM) will be given priority so as to take advantage of synergies that exist with other United Nations organizations and to keep abreast of the latest system–wide management best practices. Human resources, procurement, security, and IT are additional areas in which the Agency cooperates with other United Nations system organizations through the sharing of best practices and the development of common policies, among other things.

29. In the case of Major Programme 6, design, programming and implementation of many technical cooperation projects are undertaken in close interaction with other United Nations agencies and entities. The Agency has increased its consultation and coordination efforts with other United Nations and development organizations, including the FAO (through the Joint FAO/IAEA Division), the WHO, the United Nations Industrial Development Organization (UNIDO), the United Nations Children's Fund (UNICEF), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, particularly in Africa (UNCCD) and UNEP, especially in areas where the Agency does not have the thematic lead mandate, such as health, food and agriculture, water and the environment. The Agency is increasingly involved in United Nations Development Assistance Framework (UNDAF) development processes. This allows the Agency to identify areas where joint programming with United Nations stakeholders can achieve a greater socio-economic impact. Furthermore, through the framework of the Programme of Action for Cancer Therapy (PACT) on cancer control, the Agency's expertise in programme delivery, radiation safety and radiation medicine for cancer diagnosis and treatment is complemented by WHO expertise in cancer control.

Conclusions of the Working Group on Financing the Agency's Activities

30. On 31 July 2013, the Board of Governors as contained in GOV/2013/30/Rev.1 agreed to establish the open-ended Working Group on financing the Agency's Activities, including to examine the ways and means to render resources for the Technical Cooperation Fund sufficient, assured and predictable (WGFAA). The Working Group concluded with a report contained in GOV/2014/49 dated 12 September 2014.

31. The Secretariat has undertaken several actions to respond to the recommendations of the WGFAA. One of these actions was to facilitate the advance of the date of the informal Programme and Budget Committee (PBC) meeting by early sharing of the information on the programme and budget proposal, so that Member States have sufficient time for its consideration and consultations. As part of these efforts to provide more timely information, part I of the Draft Programme and Budget Proposal was advanced online to make it available to the informal PBC.

32. A central resource mobilization function is proposed to be established, dedicating concrete resources to the implementation of the WGFAA recommendations in this regard.

33. In this proposal the Secretariat is also strengthening the evaluation function of the Office of Internal Oversight Services (OIOS) which will allow for increased outcome monitoring.

Medium Term Strategy[3]

34. The Medium Term Strategy (MTS) covers the period 2012–2017 and was developed through a process of interaction between the Secretariat and an open–ended Working Group established for this purpose by the Board of Governors. The MTS 2012–2017 provides overarching guidance and serves as a "roadmap" for the Agency's activities during this period by identifying priorities among and within programmes based on such considerations as recent technological trends, emerging needs and the political, economic and social background.

35. The MTS 2012–2017 sets out six strategic objectives to be pursued in a coordinated and mutually reinforcing manner.

Medium Term Strategy Objectives

A. Facilitating access to nuclear power.

B. Strengthening promotion of nuclear science, technology, and applications.

C. Improving nuclear safety and security.

D. Providing effective technical cooperation.

E. Strengthening the effectiveness and improving the efficiency of the Agency's safeguards and other verification activities.

F. Providing efficient, innovative management and strategic planning.

36. The programme and budget for the 2016–2017 biennium has been developed on the basis of the MTS 2012–2017 objectives. Specific attention was paid by major programmes to ensure coverage of relevant MTS objectives.

37. The Agency's priority areas for 2016–2017 are technical cooperation, including the PACT, nuclear safety and security, Renovation of Nuclear Applications Laboratories and nuclear energy which closely relate to the strategic objectives and sub-objectives of the MTS. Given the importance of incorporating the Agency's Gender Equality Policy in the programmatic activities, as mentioned in the MTS 2012–2017, specific attention to this topic was paid in the budget preparation process.

Performance Indicators

38. One of the attributes of the Results Based Approach for performance assessment is to quantify the achievement of the planned outcomes. These are measured against respective baseline and target established during the planning stage using quantitative performance indicators (PI). This allows comparing the results of several cycles and increases discipline in planning for results, as managers have to think in advance, measuring and collecting actual figures for reporting.

39. In line with best practices in the United Nations system, the guidance from the Director General's Office for Coordination (DGOC) continued to emphasize that the results based management (RBM) approach be followed and SMART performance indicators be selected to achieve effective programme performance assessment.

[3] The Board of Governors, in its 1288th meeting on 3 December 2011 took note of the Medium Term Strategy 2012–2017, which serves as a general framework and guide for the preparation of three programme and budget cycles using the results based management approach.

SMART:

- Specific: The goal is clear and unambiguous;
- Measurable: Helps assess progress towards successful completion;
- Achievable: Goals and indicators must be realistic and attainable: neither out of reach nor below standard performance;
- Relevant: Consistent with the larger, general objectives of the organization; and
- Time-Bound: Grounding indicators to a specific time frame is essential.

Risk Management

40. Risk management is a fundamental part of RBM. It refers to the identification and mitigation of potential events, both internal and external, which might negatively affect the Agency's ability to deliver its outputs, to achieve its outcomes or to meet its objectives.

41. The Agency continued to implement an organization-wide risk management system to ensure effective risk management. It has an established official risk register, which is periodically reviewed and updated and the assessed risks are centrally recorded. The DGOC oversees the Agency's Risk management policies, processes and practices. Risk Management is fully integrated with major Agency processes: strategic planning, programme and budget development and work planning, to ensure consistent identification, consideration and mitigation of risks in decision making.

I.1 Programmatic Overview by Major Programme

Major Programme 1: Nuclear Power, Fuel Cycle and Nuclear Science

42. Major Programme 1 provides scientific and technical support to Member States through the provision of services, guidance and advice, facilitating discussion and the dissemination of data, information and knowledge. It also designs and delivers training and helps interested Member States to build capacity and to develop infrastructure necessary for managing a nuclear programme.

The Agency's annual projections for nuclear power generation continue to show an overall increase over the coming decades, with some regional variations.

43. The creation of a new Division of Planning, Information and Knowledge Management (NE–PIK) has been proposed to streamline and enhance efficiency in the management of three Sections; Planning and Economic Studies Section (PESS); Nuclear Information Section (NIS); and Nuclear Knowledge Management Section (NKMS).

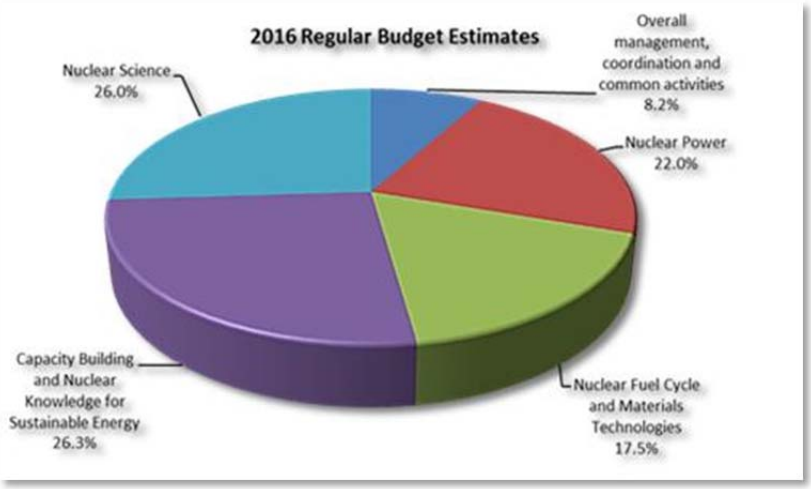
44. The programmatic management of the Agency's activities relating to the technological aspects of radioactive waste management, including spent nuclear fuel declared as waste, has been moved from Major Programme 3 to Major Programme 1 to align the Agency's programmatic structure with the organizational structure.

45. The Agency will continue to support interested Member States to assess their future energy requirements and evaluate the potential for nuclear power to be part of a sustainable and reliable energy mix. Support will be provided to the uranium producing countries particularly to new entrants to ensure that production is optimized in line with the use of environmentally sensitive practices and that, where necessary, remediation efforts are in place to deal with uranium legacy issues.

46. Major Programme 1 provides support for Member States considering or embarking on new nuclear power programmes as well as those Member States with operating nuclear power plants to improve performance, achieve better life management as well as ensuring safe, secure, efficient and reliable long-term operation. Efforts will continue to support fuel cycle activities, especially in areas such as spent fuel integrity, design vulnerabilities, defueling, storage as well as on-site and off-site remediation in the event of an accident. In addition, support will continue to be provided for the development and deployment of innovative reactor designs, small and medium sized reactors (SMRs), non-electric power applications and advanced fuel cycles.

47. The Agency will continue its support to Member States with an interest in building and operating research reactors and as appropriate to those transitioning away from the use of highly enriched uranium in research reactors, where technically and economically feasible.

48. The Agency will remain a reliable source of atomic, molecular and nuclear data. Training and the facilitation of experiments using various types of particle accelerator and other nuclear instrumentation will continue. With progress on the International Thermonuclear Experimental Reactor (ITER), the Agency will continue to involve Member States in fusion technology and facilitate links with partners in the ITER project. Collaboration will continue with the Abdus Salam International Centre for Theoretical Physics in Trieste Italy, to support education and training for scientists, especially from developing countries.



Major Programme 2: Nuclear Techniques for Development and Environmental Protection

49. The objectives of Major Programme 2 continue to support the peaceful uses of nuclear science and applications. Major Programme 2 provides Member States with science-based advice, educational materials, methodological and metrological standards, best practices and reference materials, and technical documents.

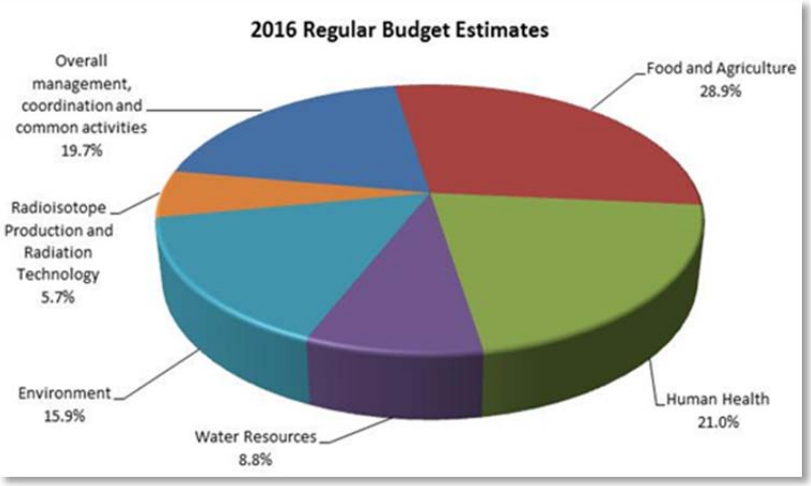
50. Key areas of growing demand for assistance include support for the control of non–communicable and zoonotic diseases, food safety and security, access to potable water and monitoring of environmental changes. The use of radioisotope products and radiation technology to support health care, food safety, industrial growth and environmental protection is another area of increasing demand, as is assistance in establishing response capabilities related to unintended releases of radiation that have direct impacts on these thematic areas.

51. The Renovation of the Nuclear Applications Laboratories (ReNuAL) project which began in the previous biennium will continue for the duration of this biennium, with the goal of establishing fully fit-for-purpose laboratories in Seibersdorf to better serve Member States for the next 15–20 years.

The major programme's laboratories at IAEA Headquarters and in Monaco and Seibersdorf remain an essential vehicle for programme delivery, and ensuring that the laboratories are able to meet the evolving needs of Member States is a priority.

52. Enhancing quality assurance continues to be a priority for the safe and efficient operation of the laboratories. Ongoing efforts to strengthen quality assurance will enable more of the laboratories to achieve and maintain high levels of proficiency, to demonstrate competence and to serve as reference laboratories for Member States.

53. Efforts will also continue to strengthen and expand partnerships, such as the partnership with the Food and Agriculture Organization of the United Nations (FAO) for the management of the Joint FAO/IAEA Programme of Nuclear Techniques in Food and Agriculture, as well as networks of Member State scientific and research institutions. The IAEA Collaborating Centre scheme remains a valuable mechanism for working jointly with Member State institutions, which will be further enhanced and expanded.



54. Education and training are fundamental to the delivery of this major programme. To reach a wider audience and to achieve greater cost savings, the development of e-learning tools and online education platforms, e.g. webinars, will continue to be emphasized. To increase awareness of the general public and decision makers of the work and contributions of this major programme towards achievements of development goals, communication strategies and activities will be prioritized and strengthened.

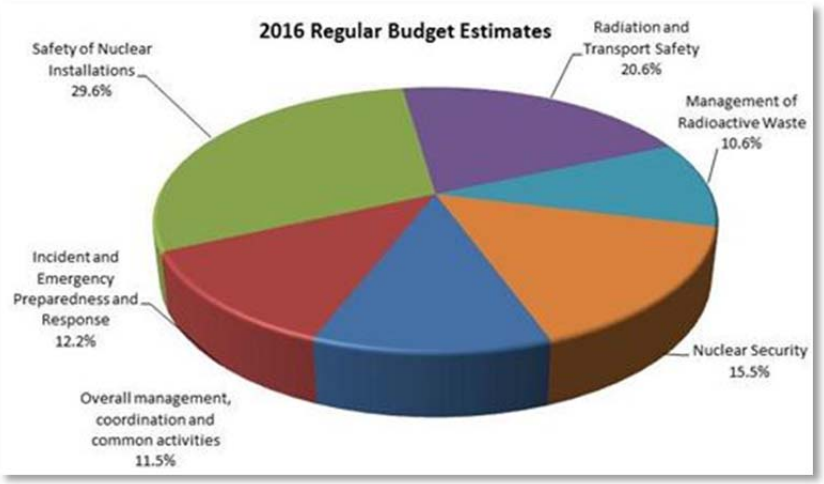
Major Programme 3: Nuclear Safety and Security

55. Major Programme 3 promotes the worldwide achievement and maintenance of high levels of nuclear safety and security to protect people, society and the environment from ionizing radiation. This major programme meets the demand for a higher level of safety of the growing number of nuclear installations, including uranium mining facilities, as well as of the existing nuclear power plants and research reactors, whose average age continues to increase. It also addresses the wider use of ionizing radiation in industry, medicine and agriculture; the continuous threat of nuclear terrorism; and the accumulation of radioactive waste and spent fuel.

56. Major Programme 3 performs the Agency's statutory functions of establishing standards of safety and providing for their application. The Agency assists Member States developing new, operating existing or expanding nuclear energy programmes in building national capacities and promoting international cooperation, and in transferring nuclear safety and security knowledge from countries with mature nuclear energy programmes to countries with emerging nuclear energy programmes through knowledge networks. The security of nuclear and other radioactive material and facilities remains a high priority. The Agency develops and publishes nuclear security recommendations and guidance and maintains an effective information platform for their application. At the request of a State, the Agency assists in developing and implementing a robust nuclear security infrastructure, including prevention, detection and response.

The Agency will continue addressing issues and lessons learned from the accident at the Fukushima-Daiichi Nuclear Power Plant through the follow up to the implementation of the IAEA Action Plan on Nuclear Safety.

57. Despite the nuclear safety and security arrangements in place, the risk of a serious nuclear emergency and the threat of nuclear terrorism cannot be entirely eliminated. Therefore, this major programme also provides for national and international capacities to prepare to effectively respond to and mitigate the consequences of a nuclear or radiological emergency, including nuclear terrorism.



58. With the completion of the Report on the Fukushima Daichii accident and the planned completion of the activities under the IAEA Action Plan on Nuclear Safety by the end of 2015, the follow-up activities will be incorporated and integrated in the relevant departmental programmes for 2016–2017. The Safety and Security Coordination section will be upgraded to an Office which will among other things oversee the integration of follow–up activities of the Action Plan as well as build on the lessons from the implementation of the Action Plan and the Report on the Fukushima Daiichi accident.

Major Programme 4: Nuclear Verification

59. Major Programme 4 supports the Agency's statutory mandate to establish and administer safeguards designed to ensure that special fissionable and other materials, services, equipment, facilities and information made available by the Agency or at its request or under its supervision or control are not used in such a way as to further any military purpose; and to apply safeguards, at the request of the parties, to any bilateral or multilateral arrangement, or at the request of a State, to any of that State's activities in the field of atomic energy.

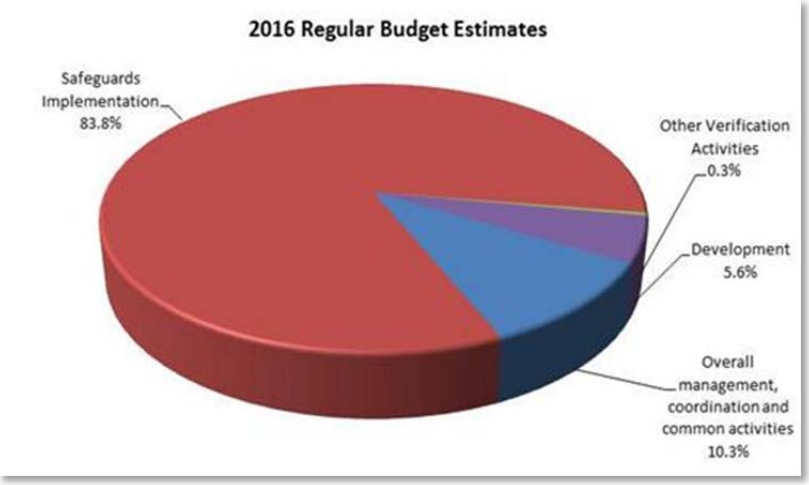
60. To this end, the Agency concludes safeguards agreements with States which confer upon the Agency the legal obligation and authority to apply safeguards to nuclear material, facilities and other items subject to safeguards. Under this Major Programme, the Agency carries out verification activities, including analysis and evaluation of information and provides safeguards instrumentation as well as analytical services required for implementing safeguards.

To draw independent and soundly based safeguards conclusions, the safeguards system needs continuous improvements and the strengthening of its capability of early detection of the possible misuse of nuclear material or technology for proscribed purposes.

61. These activities enable the Agency to draw soundly based safeguards conclusions. In addition, the Agency remains ready to support the efforts of the international community with other verification tasks, when requested by States and approved by the Board of Governors.

62. The main challenges for Major Programme 4 include:

- Encouraging States to conclude additional protocols (AP), which, in combination with comprehensive safeguards agreements (CSAs) enables the safeguards system to realize its full potential.
- Strengthening the effectiveness and improving the efficiency of safeguards implementation to respond to emerging challenges.
- The improvement of physical and information security to protect the confidentiality and integrity of all safeguards related information. This includes modernization of Safeguards information technology to address current deficiencies and to improve the performance of safeguards activities.
- The development of approaches and concepts to address technical issues through the development of innovative solutions.
- Ensuring the safeguards workforce is capable of meeting current and future needs through knowledge management and preservation.
- Responding to requests by States with the approval of the Board of Governors to assist with other verification tasks.



Major Programme 5: Policy, Management and Administration Services

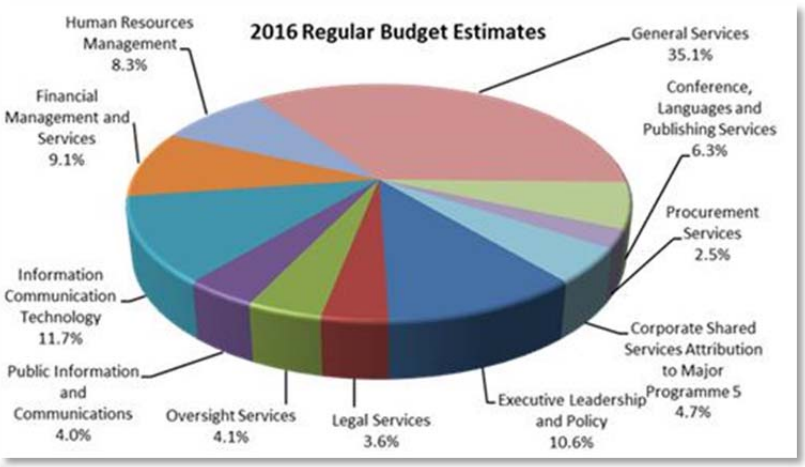
63. Under the leadership, direction and authority of the Director General, the Agency's programme seeks to achieve the goals and objectives of its Member States. This requires effective coordination to ensure a one-house approach, particularly with respect to:

- Overall policies;
- Interactions with Member States;
- Policy planning and strategy in line with the Medium Term Strategy;
- The setting of priorities;
- The development and implementation of programmes;
- The evaluation and assessment of performance;
- Risk management;
- Management of the exchange of information within the Secretariat, between the Secretariat and Member States, and for the benefit of the general public and the media.

The Partnership for Continuous Improvement Initiative, led by Major Programme 5, entails the creation of a sustainable and broad framework that facilitates programme delivery in an effective and efficient manner.

64. In addition, a wide range of administrative and legal services will continue to be provided to support Agency programmes in efficiently and effectively fulfilling the organization's mandate. It should be noted that approximately 24% of the budget for Major Programme 5 is related to the cost of buildings management and the common security services of the Vienna International Centre (VIC).

65. Major Programme 5 will take the lead to coordinate security efforts through a centralized security coordination function for the Agency. There will be an increased focus on information and communication technology (ICT) security to address the severe and escalating threats in this area. This major programme will also continue to have a leadership role in respect to further improving efficiency and effectiveness in programme delivery and implementation of the last plateau of the Agency-wide Information System for Programme Support (AIPS) project. The focus for the Agency will be to achieve results, deliver with desired quality, ensure clear accountability and manage risks proactively.



66. The oversight activities of the Agency will continue to strengthen accountability, efficiency and effectiveness through audits, evaluations, investigations and the provision of advisory support to senior management and the Board of Governors. To better reflect the costs, the provision for the Joint Inspection Unit fees has been reallocated from the Office of Internal Oversight Services and consolidated under the "Executive Leadership and Policy" function. The provision for the External Auditor fees has been transferred from the "Executive Leadership and Policy" function and consolidated under the Division of Budget and Finance.

Major Programme 6: Management of Technical Cooperation for Development

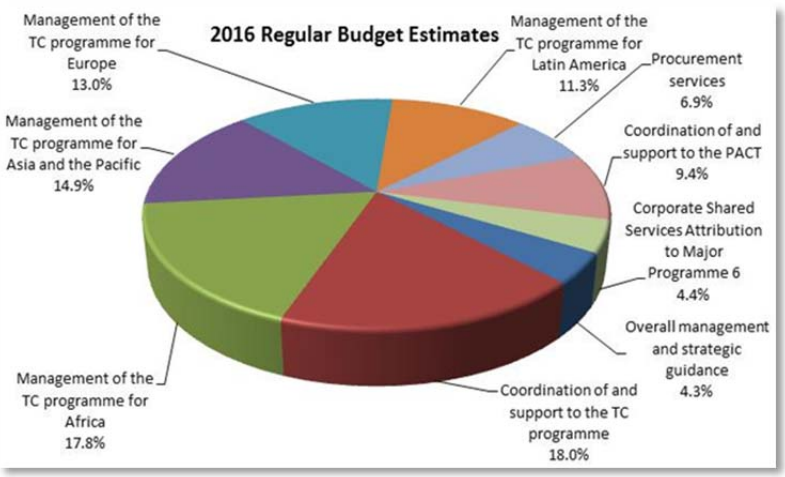
67. Major Programme 6 encompasses specifically the development, implementation and management of technical cooperation projects in the framework of biannual technical cooperation programmes.

Ensuring the Agency's continued capability to swiftly and effectively respond to Member States' requests for support through the Technical Cooperation Programme.

68. The technical cooperation programme (TCP) consists of national, regional and interregional projects funded from the Technical Cooperation Fund (TCF) and from extrabudgetary contributions. In September 2014, 140 Member States were participating in the TCP, including 120 States with a national programme.

69. There are a number of major issues and challenges for the major programme. These include:

- Ensuring the Agency's continued capability to swiftly and adequately respond to Member States' requests for support through the TCP;
- Ensuring adequate support to a growing number of Member States; up to 12 more Member States may have a national programme;
- Strengthening TC support to Member States with regard to radiation safety and regulatory infrastructure;
- Enhancing TC support to Member States that embark on or expand nuclear power programmes;
- Enhancing the visibility, promotion and outreach efforts related to the Agency's TC programme, with a focus on the development community, including potential donors and partners;
- Achieving a Rate of Attainment of minimum 95% of the Technical Cooperation Fund for 2016 and 2017;
- Ensuring the timely availability of sufficient, additional funds to sustain and enhance PACT's programmatic work;
- Enhancing the effectiveness of the TC programme and ensuring progressive implementation of outcome monitoring and evaluation measures.



I.2 Financial Overview

Total Resources

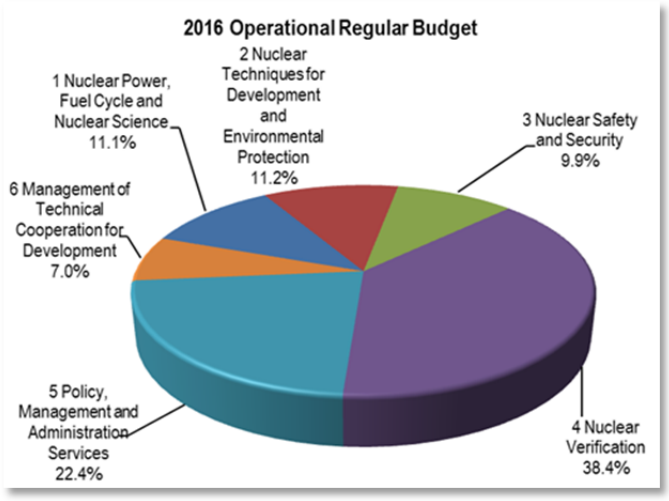
70. The Agency's total resources consist of the regular budget, extrabudgetary resources and resources for the technical cooperation programme. For the biennium 2016–2017, the Agency's total resources amount to €996.6 million at 2016 prices.

2016-2017 Total Resources at a Glance (in millions)

Funding Source	2016	2017	Total
Operational Regular Budget	351.3	351.3	702.6
Capital Regular Budget	8.0	8.0	16.1
Operational Extrabudgetary	50.0	45.9	95.9
TC Programme	91.3	90.7	182.0
TOTAL	**500.6**	**496.0**	**996.6**

71. The Regular Budget consists of an operational and a capital component, the latter to fund major infrastructure investments in line with the major capital investment plan. Regular Budget estimates, in accordance with the structure of the Agency's programme of work, are presented in six major programmes.

72. The Agency continues to rely on extrabudgetary funds, mostly from Member States, to carry out some of its activities. For 2016, €50.0 million are expected to be implemented.



73. New for this biennium is that estimates of extrabudgetary funds for 2016 and 2017 are planned on the basis of the capacity to implement and the likely receipt of the funding, in contrast to prior years when extrabudgetary funding was completely income focused. Owing to this change, as well as the completion of large extrabudgetary projects, estimates for extrabudgetary have decreased compared with 2015.

74. A provision of €4.0 million of Programme Support Costs (PSCs) funding for each year of the biennium 2016–2017 is included together with estimates of extrabudgetary funding and shown in Tables 3(a) and 3(b).

75. For the technical cooperation programme, €74.3 million for 2016 are expected to be available for estimated core project funding. This amount will be supplemented by €2.0 million of national participation costs and €15.0 million of extrabudgetary activities to the TCP. For 2017 an amount of €90.7 million is reflected.

76. In the 2014–2015 Programme and Budget, the underlying currency for the TC Programme was US dollars which through an exchange rate of €1.00 to $1.00 resulted in €101.4 million. Upon recommendation in September 2014 of the WGFAA, the underlying currency for the TC Fund will be euro. Therefore the 2014 and 2015 figures of €101.4 million and €102.08 million respectively, translate to €91.3 million in 2016 and €90.7 million in 2017.

Operational Regular Budget Resources

77. Both the operational and capital Regular Budgets for 2016 and 2017 have been prepared with a view to maintaining the balance between the major programmes. No change is proposed in 2017 compared with 2016 in either the funding envelope or the relative share of funding by major programme. The chart to the left and the following table, depict the operational Regular Budget at 2016 prices.

2016 - 2017 Operational Regular Budget (in millions)

Major Programme	2016	2017
1 Nuclear Power, Fuel Cycle and Nuclear Science	38.9	38.9
2 Nuclear Techniques for Development and Environmental Protection	39.5	39.5
3 Nuclear Safety and Security	34.7	34.7
4 Nuclear Verification	135.0	135.0
5 Policy, Management and Administration Services	78.6	78.6
6 Management of Technical Cooperation for Development	24.5	24.5
Total	**351.3**	**351.3**

Capital Regular Budget Resources

78. The capital Regular Budget for 2016 has been prepared with a view to addressing the highest capital priorities of the Agency. No change is proposed in 2017 as compared with 2016 in the funding envelope for the capital Regular Budget. Changes in distribution for the second year reflect the closure of the AIPS project and redirecting resources to the capital needs of the J-MOX project. The following table depicts the 2016 capital Regular Budget at 2016 prices.

2016 - 2017 Capital Regular Budget (in millions)

Major Programme	2016	2017
2 Nuclear Techniques for Development and Environmental Protection	**2.5**	**2.5**
3 Nuclear Safety and Security	**0.3**	**0.3**
4 Nuclear Verification	**1.2**	**2.2**
5 Policy, Management and Administration Services	**4.0**	**3.0**
Total Agency	**8.0**	**8.0**

Other Financial Considerations

Price Adjustment

79. The overall average price adjustment for 2016 is **0.1%.** This is based on a number of factors, including:

- Decrease for Professional staff costs and consultants of 0.3%;
- Increase for General Service staff costs of 0.9%;
- Increase for all other items of expenditure of 0.4%.

80. The price adjustment has been calculated using the Agency's standard three-year rolling average methodology that builds upon the concept of semi-full budgeting. This methodology, in contrast to the full budgeting methodology which bases adjustment factors entirely on forecasts, takes note of the most recent developments and corrects any over/under forecasts previously planned.

81. Trends and expectations for staff costs are based on forecasts provided by the International Civil Service Commission (ICSC) and the Austrian Tariflohn index, while for all other items of expenditure, the Agency uses the most recent statistical data on Harmonized Index of Consumer Prices (HICP) for the European Union.

82. As different price adjustment factors are applied to the three groups of expenditures, as presented above, the price adjustment varies per and within major programmes depending on the blend of planned expenditure categories.

83. Estimates for the price adjustment for 2017 will be submitted to the governing bodies in the context of the 2017 Budget Update.

84. This price adjustment compares favourably to international indices for 2016, all as of November 2014, including 1.5% for the euro area as per the International Monetary Fund (IMF) World Economic Outlook, 1.5% for the euro area as per the PricewaterhouseCoopers Global Economy

Watch projections, and 1.5% as per the European Central Bank inflation forecast.

Structural Changes

85. To better align the organizational and programmatic structure within the Agency and ensure that the back-end aspects of the nuclear fuel cycle are managed consistently and with a clear definition of responsibilities, as is done in other areas, the technology segment of the Programme "3.4 Management of Radioactive Waste" in Major Programme 3, is moved, together with the associated funding in an amount of €3.5 million, to Major Programme 1 under Programme "1.2 Nuclear Fuel Cycle and Materials Technologies". Due to the effect of this transfer, Major Programme 3 shows an apparent decrease of 7.5% in all budget tables. Excluding the effect of the transfer, the real growth of Major Programme 3 amounts to 2.0%. In contrast, Major Programme 1 shows an increase of 11.5% without which the effect of the transfer would have shown as real growth of 1.4%. The table presents the original and adjusted (for the transfer) budgets.

2016 Regular Budget (in millions)

Figures at 2015 Prices	1 Nuclear Power, Fuel Cycle and Nuclear Science	3 Nuclear Safety and Security
2015 Approved Budget	34.9	37.6
Transfer	3.5	(3.5)
2015 Budget Adjusted for Transfer	38.4	34.1
2016 Estimates with Transfer	38.9	34.7
Total Variance 2016 over 2015%	11.5%	-7.5%
Real growth 2016 over 2015 Net of Transfer %	1.4%	2.0%

Miscellaneous Income

86. Compared to 2015 there is a decrease in both the projections for reimbursable work for others and miscellaneous income. These reflect the discontinuation of the US income tax and the housing services to other Vienna Based Organizations (VBOs), the global financial situation and financial investment opportunities. This is partially offset by an increase in reimbursable work for others for amounts recoverable under safeguards agreements.

Budget Currency and Exchange Rate

87. The Agency's functional currency is the euro. As in the past, Regular Budget estimates have been prepared in euros, using a budget exchange rate of €1.00 to $1.00. All tables and charts in this document are in euros, based on this budget exchange rate. The Agency assesses Member States in euros and US dollars in accordance with the scale of assessment fixed by the General Conference and the required split between the two currencies. Approximately 88% of the expenditures of the Agency are in euros. The split assessment protects the Agency in the event of currency fluctuations between euros and US dollars. As the share of the euro expenditures continues to increase, the Secretariat will observe and report to Member States possible changes in the split assessment.

Report on the Budget to the United Nations General Assembly

88. In accordance with Article XVI of the Agency's relationship agreement with the United Nations (INFCIRC/11, part I), the budget may be reviewed by the Advisory Committee on Administrative and Budgetary Questions (ACABQ), which would report on the administrative aspects thereof to the United Nations General Assembly.

I.3 Budgetary Requirements by Programme and Major Programme

Table 1. The Regular Budget — By Programme and Major Programme

Programme/Major Programme	2015 Budget	2016					2017	
		2016 Estimates at 2015 Prices	Variance over 2015 EUR	Variance over 2015 %	2016 Estimates at 2016 Prices	Price Adjustment	2017 Preliminary estimates at 2015 Prices	2017 Preliminary estimates at 2016 Prices
1. Nuclear Power, Fuel Cycle and Nuclear Science								
Overall Management, Coordination and Common Activities	2 663 938	3 200 904	536 966	20.2%	3 202 953	0.1%	3 256 228	3 258 481
Nuclear Power	8 024 737	8 537 965	513 228	6.4%	8 537 033	(0.0%)	8 487 475	8 486 341
Nuclear Fuel Cycle and Materials Technologies	3 533 982	6 814 105	3 280 123	92.8%	6 815 074	0.0%	6 814 102	6 815 241
Capacity Building and Nuclear Knowledge for Sustainable Energy Development	10 436 076	10 224 431	(211 645)	(2.0%)	10 233 234	0.1%	10 164 562	10 173 135
Nuclear Science	10 203 238	10 107 075	(96 163)	(0.9%)	10 121 270	0.1%	10 162 112	10 176 545
Major Programme 1	**34 861 971**	**38 884 480**	**4 022 509**	**11.5%**	**38 909 564** [1]	**0.1%**	**38 884 479**	**38 909 743**
2. Nuclear Techniques for Development and Environmental Protection								
Overall Management, Coordination and Common Activities	7 217 681	7 762 469	544 788	7.5%	7 785 318	0.3%	7 738 988	7 761 726
Food and Agriculture	11 417 394	11 417 398	4	0.0%	11 433 333	0.1%	11 423 419	11 438 816
Human Health	8 270 472	8 270 448	(24)	(0.0%)	8 276 608	0.1%	8 270 449	8 275 674
Water Resources	3 471 543	3 458 701	(12 842)	(0.4%)	3 466 371	0.2%	3 458 705	3 466 387
Environment	6 262 348	6 262 348	-	-	6 275 597	0.2%	6 262 348	6 275 597
Radioisotope Production and Radiation Technology	2 249 194	2 248 385	(809)	(0.0%)	2 250 108	0.1%	2 265 840	2 267 562
Major Programme 2	**38 888 632**	**39 419 749**	**531 117**	**1.4%**	**39 487 335**	**0.2%**	**39 419 749**	**39 485 762**
3. Nuclear Safety and Security								
Overall Management, Coordination and Common Activities	4 417 163	3 987 109	(430 054)	(9.7%)	3 988 447	0.0%	3 929 336	3 930 426
Incident and Emergency Preparedness and Response	3 817 461	4 249 053	431 592	11.3%	4 250 797	0.0%	4 247 914	4 248 315
Safety of Nuclear Installations	10 040 192	10 267 578	227 386	2.3%	10 261 763	(0.1%)	10 267 311	10 261 971
Radiation and Transport Safety	7 075 966	7 169 322	93 356	1.3%	7 168 211	(0.0%)	7 169 322	7 168 211
Management of Radioactive Waste	7 054 576	3 670 122	(3 384 454)	(48.0%)	3 668 294	(0.0%)	3 670 122	3 668 294
Nuclear Security	5 150 343	5 385 583	235 240	4.6%	5 384 356	(0.0%)	5 444 762	5 443 772
Major Programme 3	**37 555 701**	**34 728 768**	**(2 826 934)**	**(7.5%)**	**34 721 869** [1]	**(0.0%)**	**34 728 767**	**34 720 989**
4. Nuclear Verification								
Overall Management, Coordination and Common Activities	12 962 211	13 899 606	937 395	7.2%	13 919 282	0.1%	14 303 690	14 324 926
Safeguards Implementation	113 520 441	113 110 245	(410 196)	(0.4%)	113 183 014	0.1%	112 706 160	112 777 625
Other Verification Activities	537 002	452 329	(84 673)	(15.8%)	451 642	(0.2%)	452 329	451 642
Development	5 520 438	7 483 100	1 962 662	35.6%	7 473 122	(0.1%)	7 483 100	7 473 122
Major Programme 4	**132 540 092**	**134 945 280**	**2 405 188**	**1.8%**	**135 027 060**	**0.1%**	**134 945 279**	**135 027 315**
5. Policy, Management and Administration Services								
Policy, Management and Administration Services	77 687 366	78 423 694	736 328	0.9%	78 611 528	0.2%	78 423 694	78 612 900
Major Programme 5	**77 687 366**	**78 423 694**	**736 328**	**0.9%**	**78 611 528**	**0.2%**	**78 423 694**	**78 612 900**
6. Management of Technical Cooperation for Development								
Management of Technical Cooperation for Development	23 797 704	24 499 191	701 487	2.9%	24 536 684	0.2%	24 499 191	24 536 669
Major Programme 6	**23 797 704**	**24 499 191**	**701 487**	**2.9%**	**24 536 684**	**0.2%**	**24 499 191**	**24 536 669**
Operational Regular Budget	**345 331 465**	**350 901 162**	**5 569 695**	**1.6%**	**351 294 039**	**0.1%**	**350 901 159**	**351 293 378**
Major Capital Investment Funding Requirements								
Capital Regular Budget	**8 306 240**	**8 000 000**	**(306 240)**	**(3.7%)**	**8 032 000**	**0.4%**	**8 000 000**	**8 032 000**
Total Agency Programmes	**353 637 705**	**358 901 162**	**5 263 455**	**1.5%**	**359 326 039**	**0.1%**	**358 901 159**	**359 325 378**
Reimbursable Work for Others	2 845 593	2 663 096	(182 497)	(6.4%)	2 673 748	0.4%	2 663 096	2 673 748
Total Regular Budget	**356 483 298**	**361 564 258**	**5 080 958**	**1.4%**	**361 999 787**	**0.1%**	**361 564 255**	**361 999 126**
Less Miscellaneous Income	3 500 593	3 213 096	(287 497)	(22.4%)	3 223 748	0.4%	3 213 096	3 223 748
Assessment on Member States	**352 982 705**	**358 351 162**	**5 368 457**	**1.5%**	**358 776 039**	**0.1%**	**358 351 159**	**358 775 378**

[1/] The variance shown for these major programmes is affected by the transfer of Radiation Waste Management from Major Programme 3 to Major Programme 1 in the amount of €3.5 million. The real growth for Major Programme 1 is 1.4% as opposed to the 11.5% shown above. Real growth for Major Programme 3 is 2.0% as opposed to the decrease of 7.5% shown above.

Table 2. The Regular Budget — Summary of Income

	2015 Budget at 2015 Prices	2016 Estimates at 2015 Prices	Variance 2016 over 2015	2016 Estimates at 2016 Prices	2017 Estimates at 2016 Prices
Operational Regular Budget[1]	344 676 465	350 351 162	5 674 697	350 744 039	350 743 378
Capital Regular Budget	8 306 240	8 000 000	(306 240)	8 032 000	8 032 000
Assessed Contributions on Member States	**352 982 705**	**358 351 162**	**5 368 457**	**358 776 039**	**358 775 378**
Miscellaneous Income					
Reimbursable Work for Others					
Printing Services	415 312	415 312	-	416 972	416 972
Medical Services	896 491	857 480	(39 011)	860 910	860 910
Nuclear Fusion Journal	201 158	190 053	(11 105)	190 813	190 813
Other Financial Services[2]	158 857	-	(158 857)	-	-
General Services[3]	60 739	-	(60 739)	-	-
Laboratory Services	218 039	210 000	(8 039)	210 840	210 840
Amounts Recoverable Under Safeguards Agreements	894 997	990 252	95 255	994 213	994 213
Subtotal Reimbursable Work for Others	**2 845 593**	**2 663 097**	**(182 496)**	**2 673 748**	**2 673 748**
Other					
INIS Products[4]	5 000	-	(5 000)	-	-
Publications of the Agency – Other	250 000	150 000	(100 000)	150 000	150 000
Laboratory Income	200 000	300 000	100 000	300 000	300 000
Investment and Interest Income	200 000	100 000	(100 000)	100 000	100 000
Subtotal Other	**655 000**	**550 000**	**(105 000)**	**550 000**	**550 000**
Total Miscellaneous Income	**3 500 593**	**3 213 097**	**(287 496)**	**3 223 748**	**3 223 748**
Total Regular Budget Income	**356 483 298**	**361 564 258**	**5 080 958**	**361 999 787**	**361 999 126**

[1/] Does not include estimates for Other Miscellaneous income.

[2,3/] The provision of housing and US tax services have been reduced and discontinued for other Vienna based organizations.

[4/] Reflects the discontinuation of the production of International Nuclear Information System (INIS) materials.

Table 3 (a). Total Resource Requirements for 2016 – By Programme and Major Programme (at 2016 prices)

Programme / Major Programme	Regular Budget		Extrabudgetary		TC Programme	Total	Unfunded	
	Operational	Capital	Operational	Capital			Operational	Capital
1. Nuclear Power, Fuel Cycle and Nuclear Science					-			
Overall management, coordination and common activities	3 202 953	-	258 384	-	-	3 461 337	207 027	-
Nuclear Power	8 537 033	-	1 925 027	-	4 845 950	15 308 010	-	-
Nuclear Fuel Cycle and Materials Technologies	6 815 074	-	2 419 837	-	2 175 858	11 410 769	428 714	-
Capacity Building and Nuclear Knowledge for Sustainable Energy Development	10 233 234	-	643 326	-	1 507 313	12 383 873	457 962	-
Nuclear Science	10 121 270	-	641 669	-	5 128 372	15 891 311	943 316	-
Major Programme 1	**38 909 564**	**-**	**5 888 243**	**-**	**13 657 493**	**58 455 300**	**2 037 019**	**-**
2. Nuclear Techniques for Development and Environmental Protection					-			
Overall management, coordination and common activities	7 785 318	2 489 920	367 798	-	-	10 643 036	52 283	5 636 912
Food and Agriculture	11 433 333	-	2 617 726	-	12 443 190	26 494 249	8 337	-
Human Health	8 276 608	-	-	-	24 890 600	33 167 208	280 791	-
Water Resources	3 466 371	-	-	-	2 293 150	5 759 521	120 480	-
Environment	6 275 597	-	806 214	-	3 497 839	10 579 650	1 089 717	-
Radioisotope Production and Radiation Technology	2 250 108	-	-	-	9 943 029	12 193 137	-	-
Major Programme 2	**39 487 335**	**2 489 920**	**3 791 738**	**-**	**53 067 809**	**98 836 802**	**1 551 608**	**5 636 912**
3. Nuclear Safety and Security					-			
Overall management, coordination and common activities	3 988 447	301 200	2 343 902	-	-	6 633 549	265 556	321 280
Incident and Emergency Preparedness and Response	4 250 797	-	214 622	-	2 266 875	6 732 294	29 594	-
Safety of Nuclear Installations	10 261 763	-	3 009 042	-	5 798 823	19 069 628	2 635 891	-
Radiation and Transport Safety	7 168 211	-	2 261 470	-	8 363 845	17 793 526	1 146 367	-
Management of Radioactive Waste	3 668 294	-	2 271 891	-	7 699 239	13 639 424	1 823 766	-
Nuclear Security	5 384 356	-	18 404 188	-	-	23 788 544	176 898	-
Major Programme 3	**34 721 869**	**301 200**	**28 505 115**	**-**	**24 128 782**	**87 656 966**	**6 078 072**	**321 280**
4. Nuclear Verification					-			
Overall management, coordination and common activities	13 919 282	-	524 376	-	-	14 443 658	373 691	-
Safeguards Implementation	113 183 014	-	6 427 211	-	-	119 610 225	11 145 982	3 491 630
Other Verification Activities	451 642	-	180 141	-	-	631 783	-	-
Development	7 473 122	1 204 800	549 951	-	-	9 227 873	2 162 708	20 138 743
Major Programme 4	**135 027 060**	**1 204 800**	**7 681 679**	**-**	**-**	**143 913 539**	**13 682 381**	**23 630 373**
5. Policy, Management and Administration Services					-			
Policy, Management and Administration Services	78 611 528	4 036 080	3 037 233	-	467 196	86 152 037	1 724 338	3 252 960
Major Programme 5	**78 611 528**	**4 036 080**	**3 037 233**	**-**	**467 196**	**86 152 037**	**1 724 338**	**3 252 960**
6. Management of Technical Cooperation for Development					-			
Management of Technical Cooperation for Development	24 536 684	-	1 062 231	-	-	25 598 915	355 654	-
Major Programme 6	**24 536 684**	**-**	**1 062 231**	**-**	**-**	**25 598 915**	**355 654**	**-**
Total Agency Programmes	**351 294 039**	**8 032 000**	**49 966 239**	**-**	**91 321 280**	**500 613 558**	**25 429 072**	**32 841 525**
Reimbursable Work for Others	2 673 748					2 673 748		
Total	**353 967 787**	**8 032 000**	**49 966 239**	**-**	**91 321 280**	**503 287 306**	**25 429 072**	**32 841 525**

Table 3 (b). Total Resource Requirements for 2017 – By Programme and Major Programme (at 2016 prices)

Programme / Major Programme	Regular Budget		Extrabudgetary		TC Programme	Total	Unfunded	
	Operational	Capital	Operational	Capital			Operational	Capital
1. Nuclear Power, Fuel Cycle and Nuclear Science					-			
Overall management, coordination and common activities	3 258 481	-	258 384	-	-	3 516 865	215 365	-
Nuclear Power	8 486 341	-	1 925 027	-	4 814 319	15 225 687	110 684	-
Nuclear Fuel Cycle and Materials Technologies	6 815 241	-	2 416 384	-	2 161 655	11 393 280	416 594	-
Capacity Building and Nuclear Knowledge for Sustainable Energy Development	10 173 135	-	454 280	-	1 497 474	12 124 889	272 854	-
Nuclear Science	10 176 545	-	362 213	-	5 094 898	15 633 656	815 587	-
Major Programme 1	**38 909 743**	**-**	**5 416 288**	**-**	**13 568 346**	**57 894 377**	**1 831 084**	**-**
2. Nuclear Techniques for Development and Environmental Protection					-			
Overall management, coordination and common activities	7 761 726	2 489 920	367 798	-	-	10 619 444	52 283	5 638 069
Food and Agriculture	11 438 816	-	2 617 726	-	12 361 970	26 418 512	120 595	-
Human Health	8 275 674	-	-	-	24 728 132	33 003 806	248 151	-
Water Resources	3 466 387	-	-	-	2 278 182	5 744 569	-	-
Environment	6 275 597	-	775 230	-	3 475 007	10 525 834	614 096	-
Radioisotope Production and Radiation Technology	2 267 562	-	-	-	9 878 128	12 145 690	-	-
Major Programme 2	**39 485 762**	**2 489 920**	**3 760 754**	**-**	**52 721 420**	**98 457 856**	**1 035 125**	**5 638 069**
3. Nuclear Safety and Security					-			
Overall management, coordination and common activities	3 930 426	301 200	2 343 902	-	-	6 575 528	265 556	607 420
Incident and Emergency Preparedness and Response	4 248 315	-	183 220	-	2 252 078	6 683 613	-	-
Safety of Nuclear Installations	10 261 971	-	2 624 107	-	5 760 972	18 647 050	2 649 135	-
Radiation and Transport Safety	7 168 211	-	1 980 089	-	8 309 252	17 457 552	1 146 367	-
Management of Radioactive Waste	3 668 294	-	1 959 246	-	7 648 984	13 276 524	1 927 981	-
Nuclear Security	5 443 772	-	18 296 408	-	-	23 740 180	176 898	-
Major Programme 3	**34 720 989**	**301 200**	**27 386 972**	**-**	**23 971 287**	**86 380 448**	**6 165 937**	**607 420**
4. Nuclear Verification					-			
Overall management, coordination and common activities	14 324 926	-	374 376	-	-	14 699 302	343 570	-
Safeguards Implementation	112 777 625	-	6 378 934	-	-	119 156 559	11 180 982	3 491 630
Other Verification Activities	451 642	-	180 141	-	-	631 783	-	-
Development	7 473 122	2 208 800	549 951	-	-	10 231 873	2 034 515	7 726 131
Major Programme 4	**135 027 315**	**2 208 800**	**7 483 402**	**-**	**-**	**144 719 517**	**13 559 067**	**11 217 761**
5. Policy, Management and Administration Services					-			
Policy, Management and Administration Services	78 612 900	3 032 080	809 738	-	464 146	82 918 864	1 815 977	441 760
Major Programme 5	**78 612 900**	**3 032 080**	**809 738**	**-**	**464 146**	**82 918 864**	**1 815 977**	**441 760**
6. Management of Technical Cooperation for Development					-			
Management of Technical Cooperation for Development	24 536 669	-	1 062 231	-	-	25 598 900	372 899	-
Major Programme 6	**24 536 669**	**-**	**1 062 231**	**-**	**-**	**25 598 900**	**372 899**	**-**
Total Agency Programmes	**351 293 378**	**8 032 000**	**45 919 385**	**-**	**90 725 200**	**495 969 963**	**24 780 089**	**17 905 010**
Reimbursable Work for Others	2 673 748					2 673 748		
Total	**353 967 126**	**8 032 000**	**45 919 385**	**-**	**90 725 200**	**498 643 711**	**24 780 089**	**17 905 010**

I.4 Major Programmes at a Glance

Major Programme 1 – Nuclear Power, Fuel Cycle and Nuclear Science

Summary of Regular Budget Resources for the Biennium (excluding Major Capital Investments)

Table 4

Subprogramme / Programme		2015 Budget	2016 Estimates at 2015 prices	2016 Variance over 2015 EUR	2016 Variance over 2015 %	2017 Preliminary Estimates at 2015 prices	2017 Variance over 2016 EUR	2017 Variance over 2016 %
1.0 Overall management, coordination and common activities	↑	**2 663 938**	**3 200 904**	***536 966***	***20.2%***	**3 256 228**	***55 324***	***1.7%***
1.1.1 Strengthening Integrated Engineering Support for Nuclear Power Programmes	=	1 620 544	1 600 319	*(20 225)*	*(1.2%)*	1 579 559	*(20 760)*	*(1.3%)*
1.1.2 Integrated Management and Human Resources Development for Nuclear Power	↓	1 025 387	994 163	*(31 224)*	*(3.0%)*	994 163	-	-
1.1.3 Infrastructure and Planning for New Nuclear Power Programmes	↑	2 267 218	2 479 849	*212 631*	*9.4%*	2 450 119	*(29 730)*	*(1.2%)*
1.1.4 International Project on Innovative Nuclear Reactors and Fuel Cycles	↑	682 212	1 080 735	*398 523*	*58.4%*	1 080 735	-	-
1.1.5 Technology Development for Advanced Reactor Lines	=	2 429 376	2 382 899	*(46 477)*	*(1.9%)*	2 382 899	-	-
1.1 Nuclear Power Total	↑	**8 024 737**	**8 537 965**	***513 228***	***6.4%***	**8 487 475**	***(50 490)***	***(0.6%)***
1.2.1 Uranium Resources and Production	↓	1 266 942	1 199 042	*(67 900)*	*(5.4%)*	1 238 157	*39 115*	*3.3%*
1.2.2 Nuclear Power Reactor Fuel	=	801 123	802 255	*1 132*	*0.1%*	828 746	*26 491*	*3.3%*
1.2.3 Management of Spent Fuel from Nuclear Power Reactors	↓	1 465 917	1 338 697	*(127 220)*	*(8.7%)*	1 281 009	*(57 688)*	*(4.3%)*
1.2.4 Technology for RWM, Decommissioning and Environmental remediation	=	-	3 474 111	*3 474 111*	-	3 466 190	*(7 921)*	*(0.2%)*
1.2 Nuclear Fuel Cycle and Materials Technologies Total	↑	**3 533 982**	**6 814 105**	***3 280 123***	***92.8%***	**6 814 102**	***(3)***	***(0.0%)***
1.3.1 Energy Modelling, Data and Capacity Building	↓	1 873 556	1 800 547	*(73 009)*	*(3.9%)*	1 800 547	-	-
1.3.2 Energy Economy Environment (3E) Analysis	↑	1 368 685	1 509 051	*140 366*	*10.3%*	1 509 054	*3*	*0.0%*
1.3.3 Nuclear Knowledge Management (NKM)	↑	2 230 513	2 280 449	*49 936*	*2.2%*	2 280 463	*14*	*0.0%*
1.3.4 Nuclear Information	↓	4 963 322	4 634 384	*(328 938)*	*(6.6%)*	4 574 498	*(59 886)*	*(1.3%)*
1.3 Capacity Building and Nuclear Knowledge for Sustainable Energy Development Total	↓	**10 436 076**	**10 224 431**	***(211 645)***	***(2.0%)***	**10 164 562**	***(59 869)***	***(0.6%)***
1.4.1 Atomic and Nuclear Data	=	2 745 284	2 773 192	*27 908*	*1.0%*	2 804 522	*31 330*	*1.1%*
1.4.2 Research Reactors	↓	1 745 766	1 660 640	*(85 126)*	*(4.9%)*	1 686 804	*26 164*	*1.6%*
1.4.3 Accelerator Applications and Nuclear Instrumentation	↓	2 534 059	2 477 319	*(56 740)*	*(2.2%)*	2 476 801	*(518)*	*(0.0%)*
1.4.4 Nuclear Fusion Research and Technology	↑	805 920	844 502	*38 582*	*4.8%*	842 563	*(1 939)*	*(0.2%)*
1.4.5 Support to the Abdus Salam International Centre for Theoretical Physics	=	2 372 209	2 351 422	*(20 787)*	*(0.9%)*	2 351 422	-	-
1.4 Nuclear Science Total	=	**10 203 238**	**10 107 075**	***(96 163)***	***(0.9%)***	**10 162 112**	***55 037***	***0.5%***
Total for Nuclear Power, Fuel Cycle and Nuclear Science	↑	**34 861 971**	**38 884 480**[1]	***4 022 509***	***11.5%***	**38 884 479**	***(1)***	***(0.0%)***

[1/] The variance shown for this major programme is affected by the transfer of Technology for Radioactive Waste Management from Major Programme 3 to Major Programme 1 in the amount of €3.5 million. The real growth for Major Programme 1 is 1.4% as opposed to the 11.5% shown above.

Major Programme 2 – Nuclear Techniques for Development and Environmental Protection

Summary of Regular Budget Resources for the Biennium (excluding Major Capital Investments)

Table 5

Subprogramme / Programme		2015 Budget	2016 Estimates at 2015 prices	2016 Variance over 2015 EUR	2016 Variance over 2015 %	2017 Preliminary Estimates at 2015 prices	2017 Variance over 2016 EUR	2017 Variance over 2016 %
2.0 Overall management, coordination and common activities	↑	**7 217 681**	**7 762 469**	***544 788***	***7.5%***	**7 738 988**	***(23 481)***	***(0.3%)***
2.1.1 Sustainable Land and Water Management	–	2 102 900	2 124 616	*21 716*	*1.0%*	2 126 995	*2 379*	*0.1%*
2.1.2 Sustainable Intensification of Livestock Production Systems	–	2 236 067	2 235 730	*(337)*	*(0.0%)*	2 234 408	*(1 322)*	*(0.1%)*
2.1.3 Improvement of Food Safety and Food Control Systems	↑	1 558 021	1 635 042	*77 021*	*4.9%*	1 632 873	*(2 169)*	*(0.1%)*
2.1.4 Sustainable Control of Major Insect Pests	–	3 529 587	3 531 049	*1 462*	*0.0%*	3 538 181	*7 132*	*0.2%*
2.1.5 Crop Improvement for Intensification of Agricultural Production Systems	↓	1 990 819	1 890 961	*(99 858)*	*(5.0%)*	1 890 962	*1*	*0.0%*
2.1 Food and Agriculture Total	–	**11 417 394**	**11 417 398**	***4***	***0.0%***	**11 423 419**	***6 021***	***0.1%***
2.2.1 Nutrition for improved human health	–	1 626 221	1 644 007	*17 786*	*1.1%*	1 653 392	*9 385*	*0.6%*
2.2.2 Nuclear Medicine and Diagnostic Imaging	–	2 070 166	2 074 524	*4 358*	*0.2%*	2 044 517	*(30 007)*	*(1.4%)*
2.2.3 Radiation Oncology and Cancer Treatment	–	1 820 473	1 815 532	*(4 941)*	*(0.3%)*	1 810 023	*(5 509)*	*(0.3%)*
2.2.4 Dosimetry and medical physics for imaging and therapy	–	2 753 612	2 736 385	*(17 227)*	*(0.6%)*	2 762 517	*26 132*	*1.0%*
2.2.5 Programme of Action for Cancer Therapy	–	-	-	-	-	-	-	-
2.2 Human Health Total	–	**8 270 472**	**8 270 448**	***(24)***	***(0.0%)***	**8 270 449**	***1***	***0.0%***
2.3.1 Isotope Data Networks for Hydrology and Climate Studies	–	991 443	991 871	*428*	*0.0%*	991 872	*1*	*0.0%*
2.3.2 Isotope Based Assessment and Management of Water Resources	–	1 017 146	1 026 882	*9 736*	*1.0%*	1 026 884	*2*	*0.0%*
2.3.3 Radio-isotope Applications for Hydrology	–	1 462 954	1 439 948	*(23 006)*	*(1.6%)*	1 439 949	*1*	*0.0%*
2.3 Water Resources Total	–	**3 471 543**	**3 458 701**	***(12 842)***	***(0.4%)***	**3 458 705**	***4***	***0.0%***
2.4.1 IAEA Reference Products for Science and Trade	↓	2 403 757	2 350 017	*(53 740)*	*(2.2%)*	2 350 018	*1*	*0.0%*
2.4.2 Nuclear Techniques to Understand Climate and Environmental Change	–	1 427 912	1 441 033	*13 121*	*0.9%*	1 458 709	*17 676*	*1.2%*
2.4.3 Nuclear Techniques to monitor and assess pollution	↓	1 580 533	743 050	*(837 483)*	*(53.0%)*	751 705	*8 655*	*1.2%*
2.4.4 Applying Analytical Techniques to protect biodiversity and Ecosystem services	↑	850 146	1 728 248	*878 102*	*103.3%*	1 701 916	*(26 332)*	*(1.5%)*
2.4 Environment Total	–	**6 262 348**	**6 262 348**	**-**	**-**	**6 262 348**	**-**	**-**
2.5.1 Radioisotope Products for Cancer Management and Non-communicable Diseases	–	1 041 384	1 041 357	*(27)*	*(0.0%)*	1 041 358	*1*	*0.0%*
2.5.2 Radiation Technology for Health Care and Industrial Applications	–	1 207 810	1 207 028	*(782)*	*(0.1%)*	1 224 482	*17 454*	*1.4%*
2.5 Radioisotope Production and Radiation Technology Total	–	**2 249 194**	**2 248 385**	***(809)***	***(0.0%)***	**2 265 840**	***17 455***	***0.8%***
Total for Nuclear Techniques for Development and Environmental Protection	–	**38 888 632**	**39 419 749**	***531 117***	***1.4%***	**39 419 749**	**-**	**-**

Major Programme 3 – Nuclear Safety and Security

Summary of Regular Budget Resources for the Biennium (excluding Major Capital Investments)

Table 6

Subprogramme / Programme		2015 Budget	2016 Estimates at 2015 prices	2016 Variance over 2015 EUR	2016 Variance over 2015 %	2017 Preliminary Estimates at 2015 prices	2017 Variance over 2016 EUR	2017 Variance over 2016 %
3.0 Overall management, coordination and common activities	↓	**4 417 163**	**3 987 109**	***(430 054)***	***(9.7%)***	**3 929 336**	***(57 773)***	***(1.4%)***
3.1.1 Strengthening National and International Emergency Preparedness	↓	1 479 750	1 393 144	*(86 606)*	*(5.9%)*	1 391 172	*(1 972)*	*(0.1%)*
3.1.2 IAEA IES and operational arrangements with MSs and IOs.	↑	1 901 905	2 855 909	*954 004*	*50.2%*	2 856 742	*833*	*0.0%*
3.1.3 Nuclear Safety Action Plan (NSAP)	↓	435 806	-	*(435 806)*	*(100.0%)*	-	-	-
3.1 Incident and Emergency Preparedness and Response Total	↑	**3 817 461**	**4 249 053**	***431 592***	***11.3%***	**4 247 914**	***(1 139)***	***(0.0%)***
3.2.1 Governmental Regulatory Framework and Safety Infrastructure Development	↑	2 594 028	2 975 382	*381 354*	*14.7%*	2 916 208	*(59 174)*	*(2.0%)*
3.2.2 Safety Assessment of Nuclear Installations	–	2 201 862	2 245 571	*43 709*	*2.0%*	2 294 971	*49 400*	*2.2%*
3.2.3 Safety and Protection Against Internal and External Hazards.	↑	854 629	1 054 337	*199 708*	*23.4%*	1 055 953	*1 616*	*0.2%*
3.2.4 Safe Operation of Nuclear Power Plants	↑	2 536 911	2 679 803	*142 892*	*5.6%*	2 679 803	-	-
3.2.5 Safety of Research Reactor and Fuel Cycle Facilities	↑	1 179 178	1 312 485	*133 307*	*11.3%*	1 320 376	*7 891*	*0.6%*
3.2.6 Nuclear Safety Action Plan (NSAP)	↓	673 584	-	*(673 584)*	*(100.0%)*	-	-	-
3.2 Safety of Nuclear Installations Total	↑	**10 040 192**	**10 267 578**	***227 386***	***2.3%***	**10 267 311**	***(267)***	***(0.0%)***
3.3.1 Radiation Safety and Monitoring	↑	3 747 365	3 968 796	*221 431*	*5.9%*	3 968 796	-	-
3.3.2 Regulatory Infrastructure and Transport Safety	↑	3 073 320	3 200 526	*127 206*	*4.1%*	3 200 526	-	-
3.3.3 Nuclear Safety Action Plan (NSAP)	↓	255 281	-	*(255 281)*	*(100.0%)*	-	-	-
3.3 Radiation and Transport Safety Total	–	**7 075 966**	**7 169 322**	***93 356***	***1.3%***	**7 169 322**	**-**	**-**
3.4.1 Waste and Environmental Safety	↓	3 216 033	-	*(3 216 033)*	*(100.0%)*	-	-	-
3.4.2 Technology for RWM, Decommissioning & Environmental Remediation.	↓	3 369 108	-	*(3 369 108)*	*(100.0%)*	-	-	-
3.4.3 Nuclear Safety Action Plan (NSAP)	↓	469 435	-	*(469 435)*	*(100.0%)*	-	-	-
3.4.1 Safety of Spent Fuel and Radioactive Waste Management	–	-	1 731 751	*1 731 751*	-	1 731 750	*(1)*	*(0.0%)*
3.4.2 Safety of Decommissioning, Remediation and Environmental Releases	–	-	1 938 372	*1 938 372*	-	1 938 372	-	-
3.4 Management of Radioactive Waste Total	↓	**7 054 576**	**3 670 123**	***(3 384 453)***	***(48.0%)***	**3 670 122**	***(1)***	***(0.0%)***
3.5.1 Information Management	↓	1 350 563	1 300 954	*(49 609)*	*(3.7%)*	1 300 954	-	-
3.5.2 Nuclear Security of Materials and Facilities	–	1 314 241	1 336 221	*21 980*	*1.7%*	1 395 400	*59 179*	*4.4%*
3.5.3 Nuclear Security of Material outside of Regulatory Control	↑	1 353 392	1 482 865	*129 473*	*9.6%*	1 482 865	-	-
3.5.4 Programme Development and International Cooperation	↑	1 132 147	1 265 543	*133 396*	*11.8%*	1 265 543	-	-
3.5 Nuclear Security Total	↑	**5 150 343**	**5 385 583**	***235 240***	***4.6%***	**5 444 762**	***59 179***	***1.1%***
Total for Nuclear Safety and Security	↓	**37 555 701**	**34 728 768**[1]	***(2 826 933)***	***(7.5%)***	**34 728 767**	***(1)***	***(0.0%)***

[1/] The variance shown for this major programme is affected by the transfer of Technology for Radioactive Waste Management from Major Programme 3 to Major Programme 1 in the amount of €3.5 million. The real growth for Major Programme 3 is 2.0% as opposed to the decrease of 7.5% shown above.

Major Programme 4 – Nuclear Verification

Summary of Regular Budget Resources for the Biennium (excluding Major Capital Investments)

Table 7

Subprogramme / Programme		2015 Budget	2016 Estimates at 2015 prices	2016 Variance over 2015 EUR	2016 Variance over 2015 %	2017 Preliminary Estimates at 2015 prices	2017 Variance over 2016 EUR	2017 Variance over 2016 %
4.0 Overall management, coordination and common activities	↑	**12 962 211**	**13 899 606**	***937 395***	***7.2%***	**14 303 690**	***404 084***	***2.9%***
4.1.1 Concepts and Planning	↑	6 324 454	8 116 202	*1 791 748*	*28.3%*	7 762 757	*(353 445)*	*(4.4%)*
4.1.2 Safeguards Implementation in States under the responsibility of the Division A	↑	15 546 970	16 241 757	*694 787*	*4.5%*	16 203 327	*(38 430)*	*(0.2%)*
4.1.3 Safeguards Implementation in States under the responsibility of the Division B	↑	19 692 861	20 744 139	*1 051 278*	*5.3%*	20 744 138	*(1)*	*(0.0%)*
4.1.4 Safeguards Implementation in States under the responsibility of the Division C	–	16 408 707	16 369 238	*(39 469)*	*(0.2%)*	16 369 238	-	-
4.1.5 Information Analysis	↑	11 075 064	11 419 133	*344 069*	*3.1%*	11 419 133	-	-
4.1.6 Provision of Safeguards Instrumentation	↑	16 926 939	17 498 238	*571 299*	*3.4%*	17 519 258	*21 020*	*0.1%*
4.1.7 Safeguards Analytical Services	↓	10 944 617	10 722 659	*(221 958)*	*(2.0%)*	10 722 659	-	-
4.1.8 Effectiveness Evaluation	↓	1 742 096	1 550 120	*(191 976)*	*(11.0%)*	1 550 120	-	-
4.1.9 Information Communication Technology (ICT)	↓	14 858 733	10 448 759	*(4 409 974)*	*(29.7%)*	10 415 530	*(33 229)*	*(0.3%)*
4.1 Safeguards Implementation Total	–	**113 520 441**	**113 110 245**	***(410 196)***	***(0.4%)***	**112 706 160**	***(404 085)***	***(0.4%)***
4.2.1 Other Verification Activities	↓	537 002	452 329	*(84 673)*	*(15.8%)*	452 329	-	-
4.2 Other Verification Activities Total	↓	**537 002**	**452 329**	***(84 673)***	***(15.8%)***	**452 329**	**-**	**-**
4.3.1 Development of Safeguards Information Technology	↑	1 973 387	3 908 805	*1 935 418*	*98.1%*	3 908 805	-	-
4.3.2 Development of Safeguards Instrumentation	↑	2 747 347	2 808 693	*61 346*	*2.2%*	2 808 693	-	-
4.3.3 Special Projects	↓	799 704	765 602	*(34 102)*	*(4.3%)*	765 602	-	-
4.3 Development Total	↑	**5 520 438**	**7 483 100**	***1 962 662***	***35.6%***	**7 483 100**	**-**	**-**
Total for Nuclear Verification	–	**132 540 092**	**134 945 280**	***2 405 188***	***1.8%***	**134 945 279**	***(1)***	***(0.0%)***

Major Programme 5 – Policy, Management and Administration Services

Summary of Regular Budget Resources for the Biennium (excluding Major Capital Investments)

Table 8

Function			2015 Budget	2016 Estimates at 2015 prices	2016 Variance over 2015 EUR	2016 Variance over 2015 %	2017 Preliminary Estimates at 2015 prices	2017 Variance over 2016 EUR	2017 Variance over 2016 %
5.0.1	Executive Leadership and Policy	=	8 270 478	8 324 383	*53 905*	*0.7%*	8 009 770	*(314 613)*	*(3.8%)*
5.0.2	Legal Services	↑	2 686 810	2 799 186	*112 376*	*4.2%*	2 822 177	*22 991*	*0.8%*
5.0.3	Oversight Services	↑	3 005 132	3 185 242	*180 110*	*6.0%*	3 211 404	*26 162*	*0.8%*
5.0.4	Public Information and Communications	↑	2 922 063	3 101 085	*179 022*	*6.1%*	3 126 555	*25 470*	*0.8%*
5.0.5	Information Communication Technology	=	9 277 395	9 140 695	*(136 700)*	*(1.5%)*	9 216 400	*75 705*	*0.8%*
5.0.6	Financial Management and Services	↑	6 830 164	7 165 563	*335 399*	*4.9%*	7 222 796	*57 233*	*0.8%*
5.0.7	Human Resources Management	↑	6 377 674	6 530 250	*152 576*	*2.4%*	6 383 757	*(146 493)*	*(2.2%)*
5.0.8	General Services	=	27 772 864	27 555 931	*(216 933)*	*(0.8%)*	27 782 884	*226 953*	*0.8%*
5.0.9	Conference, Languages and Publishing Services	=	4 973 014	4 946 422	*(26 592)*	*(0.5%)*	4 987 049	*40 627*	*0.8%*
5.0.10	Procurement Services	↑	1 860 682	1 955 671	*94 989*	*5.1%*	1 971 734	*16 063*	*0.8%*
5.0.11	Corporate Shared Services Attribution to Major Programme 5	=	3 711 090	3 719 266	*8 176*	*0.2%*	3 689 168	*(30 098)*	*(0.8%)*
Total for Policy, Management and Administration Services		=	**77 687 366**	**78 423 694**	***736 328***	***0.9%***	**78 423 694**	**-**	**-**

Major Programme 6 – Management of Technical Cooperation for Development

Summary of Regular Budget Resources for the Biennium (excluding Major Capital Investments)

Table 9

Subfunction			2015 Budget	2016 Estimates at 2015 prices	2016 Variance over 2015 EUR	2016 Variance over 2015 %	2017 Preliminary Estimates at 2015 prices	2017 Variance over 2016 EUR	2017 Variance over 2016 %
6.0.1.001	Overall management and strategic guidance	=	1 047 485	1 044 820	(2 665)	(0.3%)	1 044 820	-	-
6.0.1.002	Coordination of and support to the TC programme	↑	4 170 203	4 401 670	231 467	5.6%	4 448 986	47 316	1.1%
6.0.1.003	Management of the TC programme for Africa	↑	4 259 804	4 359 119	99 315	2.3%	4 349 648	(9 471)	(0.2%)
6.0.1.004	Management of the TC programme for Asia and the Pacific	=	3 591 094	3 650 130	59 036	1.6%	3 650 130	-	-
6.0.1.005	Management of the TC programme for Europe	=	3 192 009	3 200 187	8 178	0.3%	3 200 187	-	-
6.0.1.006	Management of the TC programme for Latin America	↑	2 658 462	2 777 986	119 524	4.5%	2 777 986	-	-
6.0.1.007	Procurement services	↑	1 585 155	1 679 124	93 969	5.9%	1 629 316	(49 808)	(3.0%)
6.0.1.008	Coordination of and support to the PACT	↑	2 221 849	2 295 287	73 438	3.3%	2 295 287	-	-
6.0.1.009	Corporate Shared Services Attribution to Major Programme 6	=	1 071 643	1 090 868	19 225	1.8%	1 102 831	11 963	1.1%
Total for Management of Technical Cooperation for Development		↑	**23 797 704**	**24 499 191**	**701 487**	**2.9%**	**24 499 191**	**-**	**-**

I.5 Major Capital Investment Plan (MCIP) for 2016–2025
and
Major Capital Investment Fund (MCIF) for 2016–2017

Major Capital Investment Plan

89. The Major Capital Investment Plan (MCIP) outlines the Agency's major capital projects for the biennium as well as the future biennia (up to eight additional years). The MCIP is updated annually and is derived from the needs of the Agency to maintain an updated, well-functioning and adequate infrastructure. An overview of the plan is presented in millions of euros in the table below, with details by year provided in Table 10.

Major Capital Investment Plan 2016-2025 - by Major Programme and Major Capital Item

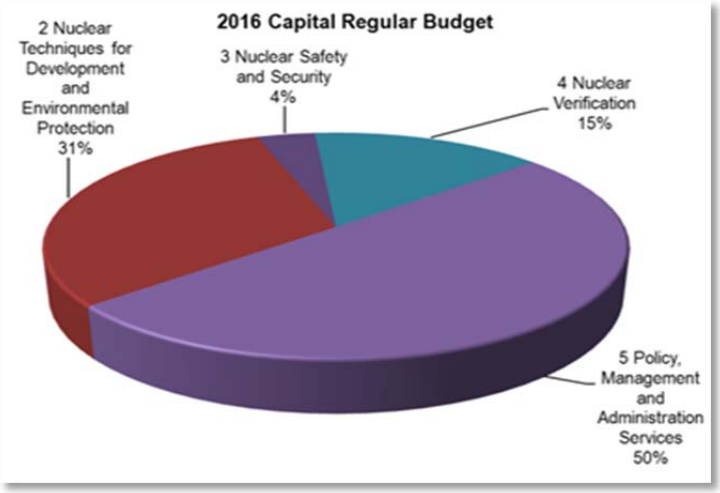
	Major Programme/Major Capital Item	Total
2.	**Nuclear Techniques for Development and Environmental Protection**	
	Renovation of the Nuclear Applications Laboratories (ReNuAL)	16.3
	ReNuAl+	25.1
	Mass Spectrometer for Isotope Hydrology Laboratory	0.6
	Major Programme 2	**41.9**
3.	**Nuclear Safety and Security**	
	Enhancing Radiation Safety through Efficient and Modern Dosimetry (RADSED)	5.0
	Major Programme 3	**5.0**
4.	**Nuclear Verification**	
	NGSS infrastructure replacement	7.0
	MOSAIC	17.3
	Develop and Implement a safeguards approach for J-MOX	12.2
	Develop and implement safeguards approaches for Chernobyl NPP	2.3
	Develop and implement SG approaches for a SF EPGR in Finland/Sweden	7.5
	Major Programme 4	**46.3**
5.	**Policy, Management and Administration Services**	
	Agency-wide Information System for Programme Support (AIPS)	1.5
	Provision for IT Infrastructure and Information Security Investment	41.2
	Major Programme 5	**42.7**
	Major Capital Investment Plan Total	**136.0**

90. The MCIP will be funded from the Major Capital Investmetn Fund (MCIF), extrabudgetary contributions and any other source as the Board of Governors may determine. The MCIF is a reserve fund established in accordance with Financial Regulation 4.06 to help to provide for the Agency's major infrastructure requirements which are included in the MCIP. It provides an opportunity to meet such capital requirements that could otherwise face continued deferral or could require substantial increases in annual contributions. The MCIF is reviewed by the Board of Governors in the framework of the established programme and budget approval process. In accordance with GC(53)/5, the MCIF will be funded by the entire amount appropriated for the capital portion of the Regular Budget, unspent budgetary balances from the 2013 and 2014 operational Regular Budget, if any, and any other source as the Board of Governors may determine. Unspent budgetary balances from the operational Regular Budget will be transferred to the MCIF in accordance with Financial Regulation 7.02 (b) (4).

91. For 2016, major capital investment requirements total €40.9 million.

Capital Regular Budget

92. The Director General has capped the capital Regular Budget funding at €8.0 million for 2016 (before price adjustment). The capital Regular Budget funding will be distributed between projects in Major Programme 2 — Nuclear Techniques for Development and Environmental Protection (€2.5 million), Major Programme 3 — Nuclear Safety and Security (€0.3 million), Major Programme 4 — Nuclear Verification (€1.2 million) and Major Programme 5 — Policy, Management and Administration Services (€4.0 million).



While this document presents the MCIP for the period 2016–2025, a significant amount of capital investments proposed in 2016 still remains unfunded to date. Currently, a total of €32.8 million of capital requirements remains unfunded for 2016, while investments unfunded for 2017 amount to €17.9 million. It is hoped that these requirements will attract extrabudgetary pledges by Member States. Details of these requirements for both 2016 and 2017 are presented in Table 12.

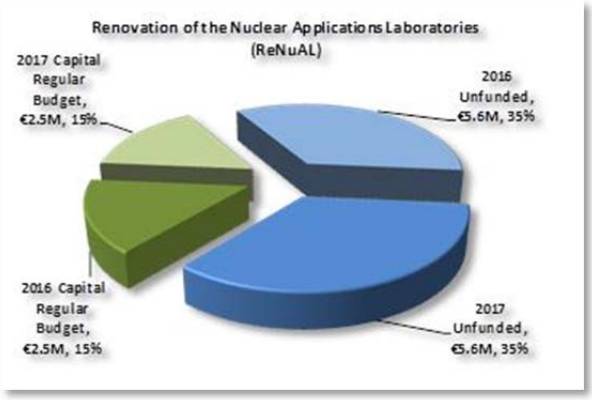
Overview by Major Programme

93. An overview is provided in the following paragraphs for those major capital investments that are part of the MCIP for 2016–2025.

Major Programme 2 — Nuclear Techniques for Development and Environmental Protection

Renovation of the Nuclear Applications Laboratories in Seibersdorf (ReNuAL)

94. The General Conference and the Board of Governors have acknowledged the need to modernize and renovate the Nuclear Applications laboratories in Seibersdorf to ensure their ability to respond to Member States' present and future development needs in the areas of science and technology. The ReNuAL project officially began on 1 January 2014 and remains a priority for the Agency for this biennium. The project includes construction of a new Insect Pest Control Laboratory and a Flexible Modular Laboratory building, as well as other needed elements. To the extent the project's budget will allow, the existing NA laboratory buildings will receive the most needed and practical upgrades.



95. It is planned that the project will be completed in 2017 with a budget of €31.0 million. For 2016–2017, requirements of €16.3 million are presented which are offset by €2.5 million from the capital Regular Budget for each of the biennium years.

ReNuAL+

96. The following list of elements constitutes "ReNuAL+" and will be planned for implementation following the successful completion of the ReNuAL project:

- Further refurbishment of existing buildings and/or new space for those laboratories that remain in these buildings;
- An ion beam accelerator facility and machine for the Nuclear Science and Instrumentation Laboratory (NSIL);
- Biosafety level 3 laboratory (BSL3) capabilities for the Animal Production and Health Laboratory (APHL);
- The remaining identified equipment needs for all laboratories;
- Further infrastructure upgrades as needed.

97. The Agency is actively exploring options for establishing BSL3 capabilities and studying the best way to proceed. Once the best option has been identified, subject to a mutually satisfactory agreement with the host country, and provided the necessary extrabudgetary funding is available in parallel to the €31.0 million required to fund the ReNuAL project, implementation of this element could begin.

Mass Spectrometer for the Isotope Hydrology Laboratory

98. The Agency's Water Resources Programme remains an area of high priority for Member States and continues to further strengthen Member State capacity to use isotope hydrology. Access to analytical facilities for long-lived radionuclides and isotopes of noble gases is currently a key factor limiting the wider, routine use of these tools in isotope hydrology projects. The

Agency has established a noble gas isotope facility in its Isotope Hydrology Laboratory (IHL) to allow Member States to benefit from the application of these isotopes as the cost and operational requirements inhibit the establishment of such laboratories directly in Member States. One of two mass spectrometers in the Agency's laboratory will be nearly 20 years old by 2020, and much beyond its recommended lifespan. Because the use of noble gas isotopes is likely to be even more important in the future, the amount of €0.6 million will be needed to replace an older mass spectrometer devoted to the measurement of helium isotopes and other noble gases. This task is a priority for the Water Resources Programme, as this is the only mechanism to provide access to this tool to hydrologists in numerous Member States involved in water resources assessments. The full amount of €0.6 million is currently unfunded.

Major Programme 3 — Nuclear Safety and Security

Enhancing Radiation Safety through Efficient and Modern Dosimetry (RADSED)

99. Since the creation of the IAEA, the Agency has provided dosimetry for staff and advice to Member States. Dosimetric capabilities are at a significant crossroad that provide for enhanced personalized, cost-effective personal dosimetry. Unlike in the past when systems were introduced one at a time and used almost exclusively around the world, there are now multiple modalities available with advantages for each. This project leverages the most-used and accurate of those modalities.

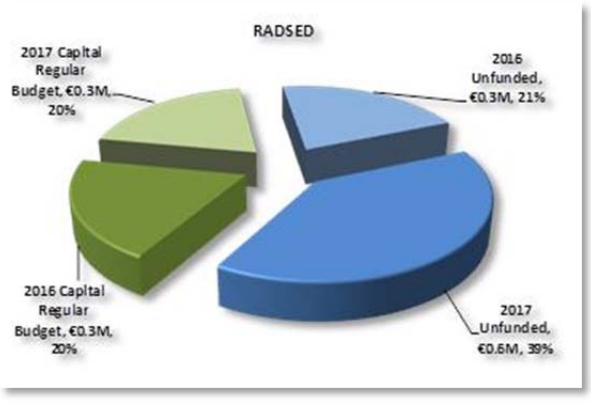
100. This project, over a period of ten years, aims at implementing the best of dose assessment technologies in order to compare their efficiencies to the endpoint of bio–dosimetry. This endpoint has the potential to include other modalities such as those currently in use and those in the advanced stages of development. Programmes will be implemented throughout the time span to better and more accurately:

- Assess doses to IAEA staff and external experts;
- Provide recommendations to Member States on more accurate and efficient modalities, understanding that there could be trade-offs between accuracy and efficiency and allowing for discussion among Member States of those trade-offs depending on the exposure types and levels of detection needed to control exposures;
- Provide recommendations to IAEA managers and to Member States for non-routine planned operations regarding different modalities.

101. The main reasons for this project are:

- Provision of adequate and comprehensive information to IAEA managers on radiation safety and associated radiation risk.
- The high number of inspections and operational missions to facilities, putting an increased burden to understand risks and doses to staff and experts;
- Ongoing development of new dosimetric approaches imposes pressure on the IAEA to cope with this trend in order to provide the best advice to Member States.

102. The 2016 funding requirement for the project is €0.6 million, half of which is funded from the capital Regular Budget. For 2017 funding needs of €0.9 million are offset by €0.3 million from the capital Regular Budget.



Major Programme 4 — Nuclear Verification

Replacement of current infrastructure with the new Next Generation Surveillance System (NGSS)

103. Remote video surveillance systems are core technical components for the effective and efficient implementation of safeguards. They are used to maintain continuity of knowledge over inventories of nuclear material and to support verification activities. In 2012, the safeguards programme had about 1400 digital cameras, with the vast majority being permanently installed in approximately 250 nuclear facilities worldwide.

104. The Agency's remote video surveillance systems currently in use at nuclear facilities are based on components developed for safeguards applications in the 1990s. Besides their relatively poor performance when compared with modern technologies, these components may no longer be kept in production, posing serious risks and entailing increased costs for the maintenance of systems deployed in the field.

105. From 2005 to 2011, the Next Generation Surveillance System (NGSS) was developed and completed in the framework of the Member State Support Programme. Replacing all obsolete cameras currently in use under the optimal schedule will require procurement at a rate of 200–250 cameras per year, as well as the purchase of image server systems to consolidate images from multiple cameras.

106. In previous years the Agency received substantial funding through extrabudgetary contributions of approximately €4.0 million per year.

107. The total requirements of €7.0 million for 2016–2017 remain fully unfunded.

Development and implementation of safeguards approaches for Chernobyl

108. The Agency must develop an effective and efficient approach to safeguard the nuclear material to be contained in the new safe confinement of the Chernobyl nuclear power plant, which is scheduled to be installed over the damaged reactor unit 4 in 2016. The Agency is also required to develop an effective and efficient approach to safeguard the irradiated fuel when transferred from the wet storage to interim dry storage. The conditioning and transfer of the fuel is expected to commence in 2016 and will take at least ten years.

109. A significant redesign and modification of the new conditioning facility had to be undertaken, which caused delays to the original schedule. The safeguards approach is being updated based on the revised design information. Procurement and installation of surveillance and radiation monitoring equipment for the conditioning facility, dry storage and new safe confinement are planned for 2015 and 2016. It is planned to install surveillance and radiation monitoring equipment on a transport platform to monitor the transfer of spent fuel from the conditioning facility to the dry storage. It is also planned to install surveillance and radiation monitoring equipment on a second rail car to monitor the transfer of spent fuel from the wet storage to the conditioning facility.

110. The second phase of the site data integration will also be completed and will result in reducing inspection effort and to minimizing the radiation and contamination hazards as well as to allow secure transmission of remote monitoring data to the Agency's headquarters.

111. The funding requirement for the project is €2.3 million in 2016, all of which is unfunded.

MOSAIC

112. As stated in GOV/INF/2014/24, this is a multi-phase project. The first phase which consists of the transfer of mainframe applications and data has been addressed by the Safeguards Information Systems project in the 2014–2015 biennium budgets. The next phase entails modernizing the remaining information technology for verification

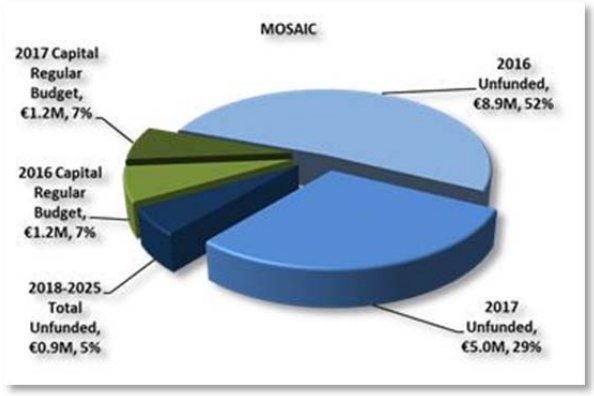
activities to increase the availability, accessibility and security of information, a vital asset for safeguards implementation. In the context of this latter phase, the completion of which is planned by mid-2018, the Agency will also continue to further improve information security in order to protect against external threats and to improve efficiency through the consolidation with Agency-wide systems.

113. The collection, storage and analysis of safeguards-relevant information are central features of the Agency's safeguards system. This information includes, inter alia, State declarations, inspection results, satellite imagery, environmental samples and open source information. The Agency's ability to store, analyse and use all safeguards-relevant data in support of the drawing of credible safeguards conclusions requires a reliable IT system.

114. The current safeguards IT system, started in the 1970s on a mainframe, is becoming increasingly difficult to maintain, not only because of the outdated software applications, but also owing to the limited availability of appropriate in–house technical support, a diminishing number of personnel capable of operating the mainframe and challenges in handling the volume and variety of data that need to be processed. Moreover, the information provided by States is delivered to and stored by the Agency in different formats (papers or individual computers). Consequently, the protection and security of information could also be placed increasingly at risk over time. The necessary know-how to maintain and improve the existing, obsolete software and hardware is no longer commercially available.

115. To address these limitations and strengthen its capability to protect confidential information, the Agency is developing capabilities that allow it to perform safeguards activities more efficiently and effectively. The planned modernization is in line with the Agency's Medium Term Strategy 2012–2017 (MTS) objective to strengthen the effectiveness and to improve the efficiency of its safeguards and other verification activities and in line with the guidance set out in theMTS. The Safeguards information system project is being incorporated into a new established project referred to as the Modernization of the Safeguards Information Technology (MOSAIC) project.

116. Total project costs are estimated at €41.0 million for the period 2015–2018. Of this amount the 2015 needs are €11.2 million, while the estimated staff effort not included in the MCIF for 2016–2018 is €12.6 million. For 2016–2017, €1.2 million is proposed for funding from the capital Regular Budget for each year, leaving needs of at least €13.9 million unfunded for the two years, as indicated in the pie chart below.



Develop and implement safeguards approaches for a spent fuel encapsulation plant and geological repository (EPGR) in Finland and Sweden

117. Finland and Sweden are each planning to construct an encapsulation plant and geological repository (EPGR) to permanently store their respective spent fuel. In Finland the construction licence is planned to be granted in 2016 and operation is planned to commence in 2022. The EPGR in Sweden is planned to commence operation in 2027. The construction of encapsulation plants and geological repositories represents new safeguards challenges as nuclear material is intended to remain there permanently and traditional access for verification will not be possible. The EPGR project coordinates the development of specific safeguards approaches for

encapsulation plants and geological repositories, assesses the existing verification methods and identifies the needs for new equipment and techniques necessary for safeguarding these facilities and implements optimized safeguards measures at the time these facilities become operational. Safeguards approaches need to be developed for these facilities.

118. As the safeguards approaches for these types of facility are still under development, the exact equipment specifications and quantities are not known at this time. However, based on preliminary planning and today's understanding of measurement technologies that are either currently available or in mature stages of development, cost estimates have been developed for the following equipment needs.

- Encapsulation plants:

  Transportation cask monitoring, spent fuel assembly verification, copper canister loading monitoring, welding station monitoring, buffer storage monitoring; and canister lift collar monitoring.

- Geological repositories:

  Vehicle tunnel entrance, air and personnel shaft, and geological containment monitoring.

119. It is not possible at this time to include a cost estimate for micro-seismic array monitoring of the geological repositories and the need for such monitoring has not been approved yet.

120. Even though the entire project at this stage remains unfunded, it is assumed that all technology development costs will be borne by the Member States Support Programme. It is also assumed that Finland and Sweden will cover the infrastructure costs (e.g. cabling, conduit and power supply). Only the estimated procurement and installation costs of the new equipment are included in the project cost estimates presented herein.

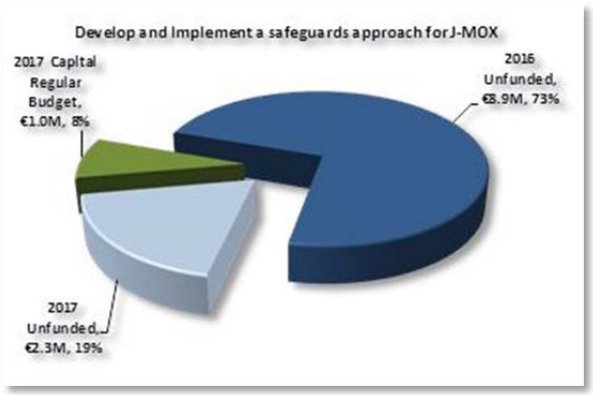
121. In addition to the total of €7.5 million proposed for the period 2017–2025, it is estimated that funds will also be required in 2026.

Develop and Implement a Safeguards Approach for J-MOX

122. Japan Nuclear Fuel Ltd is building a large-scale plant to produce mixed uranium and plutonium oxide (MOX) fuel for light water reactors at its Rokkasho-mura site. The construction, which started on 28 October 2010, was suspended in 2011.

123. The project activities were significantly reduced for the 2014–2015 Programme and Budget cycle, when compared with the previous anticipated funding. In particular, MCIF funding for the development of J-MOX safeguards equipment and software was deferred. However, the construction resumed in 2014 and it continues in accordance with a new construction and commissioning schedule supplied to the Agency with operations expected to commence by the end of 2017. As a result, it is necessary that the development, manufacturing, testing and installation of safeguards equipment and software are synchronized with the construction schedule.

124. The capital requirements of €8.9 million in 2016 are unfunded. €1.0 million is proposed for funding from the capital Regular Budget in 2017 while €2.3 million remains unfunded.



Major Programme 5 — Policy, Management and Administration Services

Agency-wide Information System for Programme Support (AIPS)

125. AIPS is a phased project that will gradually implement a central enterprise resource planning (ERP) system.

126. Prior to the 2014–2015 biennium, the ERP system had been introduced in the areas of finance, asset management, procurement and contacts management, as well as the management, budgeting and assessment of programmes and projects. At the end of 2014, the new systems for human resources and payroll were launched and work started on the Plateau 4 in 2015 to address meetings and travel management.

127. A cost of €1.5 million is estimated to complete Plateau 4 and this is reflected in the funding requirements for 2016, bringing the total estimated cost for AIPS to €35.4 million. The estimates take into consideration the time required to complete Plateau 3 to include additional scope and the resultant impact on the start of Plateau 4.

128. Upon completion of the project, the maintenance and ongoing support of AIPS will be incorporated in existing regular programme structures. The funding requirements for the project are fully funded from the capital Regular Budget.

Provision for IT Infrastructure and Information Security Investment

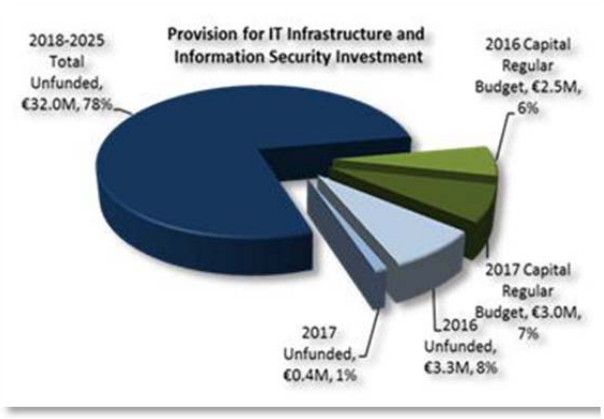
129. This critical project is the successor to the Equipment Replacement Fund (ERF) for which funding was last approved by the Board of Governors in 2005. It is intended to cover the information and communication technology (ICT) costs associated with maintaining up-to-date ICT infrastructure and services.

130. The first component is related to equipment replacement in areas of data processing, storage and networking. The anticipated measures of this provision are based on the industry-practice life-cycles of standard ICT equipment. It also includes disaster recovery infrastructure. Relating to the latter point, the IAEA is significantly behind comparable organizations with respect to disaster recovery infrastructure and capability. Full restore of applications for business processing (e.g. safeguards systems) would take several months. Funding would be used to build capabilities identified as most critical during the 2014–2015 Business Impact Analysis exercise led by the Central Security Coordinator (CSC).

131. The second component of this Major Capital Investment item includes a provision for ICT Security. The ongoing, severe, and escalating threats to the ICT infrastructure demand a high level of investment to protect the availability, confidentiality, and integrity of Agency information. It is proposed that the Agency substantially increase its investment in information security in terms of:

- Policy and procedure framework;
- Technology;
- Resourcing.

132. A 2014–2015 initiative is underway to assess the Agency's information security posture versus comparators and best practices, and define a five-year Agency-wide roadmap. The roadmap will include initiatives, priorities, and resources required. The expectation is that the funding requirements will be substantial and extrabudgetary funding will be required over a long period of time because the threats will continue to escalate.



133. The third component relates to the need for future upgrade of common support systems. Oracle eBusiness Suite (the platform for AIPS) upgrades will be required in the future, as extended support for the Agency's current version of Oracle eBusiness Suite will end in 2019. The new version has already been released by Oracle and there are several technology changes that need to be analysed and tested as part of the upgrade. Such a large upgrade needs to have dedicated resources allocated. The ten year plan foresees an upgrade every five years starting in 2018.

134. The fourth component relates to restructuring of the Agency's common support system for internal communication — On-line Administrative Staff Information System (OASIS). The modern intranet is an integral part of organizations and companies and has become an incredibly useful tool in conducting business. This project aims to make OASIS an effective internal communication, knowledge sharing, and collaboration tool across the Agency, enhancing staff's ability to find, access and share information and services, and to give staff easy access to the information, tools and platforms that will enable them to work more efficiently and productively. The overall goal is to reposition OASIS as a medium for editorially overseen internal communications, support communication and coordination across various programmes and departments, and encourage interaction with and networking between staff. During 2015 the new concept for OASIS will be developed, and its governance defined, so that implementation can be carried out during 2016–2017.

135. A secure, available and reliable ICT infrastructure and support systems are essential to programme delivery, and thus this capital investment is of key importance.

136. Needs of €2.5 million in 2016 and €3.0 million in 2017 will be funded from the capital Regular Budget, while €3.3 million in 2016 and €0.4 million for 2017 remain unfunded. The funding requirements for the project are shown in the chart above.

Table 10. Major Capital Investment Plan 2016–2025

	Major Programme/Major Capital Item	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Total
2.	**Nuclear Techniques for Development and Environmental Protection**											
	Renovation of the Nuclear Applications Laboratories (ReNuAL)	8 126 832	8 127 989	-	-	-	-	-	-	-	-	16 254 822
	ReNuAL+	-	-	6 275 000	6 275 000	6 275 000	6 275 000	-	-	-	-	25 100 000
	Mass Spectrometer for Isotope Hydrology Laboratory	-	-	-	-	552 200	-	-	-	-	-	552 200
	Major Programme 2	**8 126 832**	**8 127 989**	**6 275 000**	**6 275 000**	**6 827 200**	**6 275 000**	**-**	**-**	**-**	**-**	**41 907 022**
3.	**Nuclear Safety and Security**											
	Enhancing Radiation Safety through Efficient and Modern Dosimetry (RADSED)	622 480	908 620	760 927	420 092	450 211	435 711	425 670	405 591	312 487	297 428	5 039 216
	Major Programme 3	**622 480**	**908 620**	**760 927**	**420 092**	**450 211**	**435 711**	**425 670**	**405 591**	**312 487**	**297 428**	**5 039 216**
4.	**Nuclear Verification**											**-**
	NGSS infrastructure replacement	3 491 630	3 491 630	-	-	-	-	-	-	-	-	6 983 259
	MOSAIC	10 115 206	6 207 126	931 386	-	-	-	-	-	-	-	17 253 718
	Develop and Implement a safeguards approach for J-MOX	8 935 602	3 313 199	-	-	-	-	-	-	-	-	12 248 801
	Develop and implement safeguards approaches for Chernobyl NPP	2 292 734	-	-	-	-	-	-	-	-	-	2 292 734
	Develop and implement SG approaches for a SF EPGR in Finland/Sweden	-	414 606	807 785	1 232 032	866 708	893 491	414 606	807 785	1 232 032	866 708	7 535 751
	Major Programme 4	**24 835 172**	**13 426 561**	**1 739 170**	**1 232 032**	**866 708**	**893 491**	**414 606**	**807 785**	**1 232 032**	**866 708**	**46 314 265**
5.	**Policy, Management and Administration Services**											
	Agency-wide Information System for Programme Support (AIPS)	1 506 000	-	-	-	-	-	-	-	-	-	1 506 000
	Provision for IT Infrastructure and Information Security Investment	5 783 040	3 473 840	3 859 764	5 852 324	4 178 040	3 174 040	3 123 840	4 562 564	3 191 724	4 027 440	41 226 617
	Major Programme 5	**7 289 040**	**3 473 840**	**3 859 764**	**5 852 324**	**4 178 040**	**3 174 040**	**3 123 840**	**4 562 564**	**3 191 724**	**4 027 440**	**42 732 617**
	Major Capital Investment Plan Total	**40 873 525**	**25 937 010**	**12 634 861**	**13 779 448**	**12 322 159**	**10 778 242**	**3 964 115**	**5 775 939**	**4 736 243**	**5 191 576**	**135 993 118**

Table 11. Capital Regular Budget Details 2016–2017

	Major Programme / Major Capital Item	2015 Budget	2016 Estimates at 2015 Prices	Variance 2016 over 2015 EUR	Variance 2016 over 2015 %	2017 Preliminary estimates at 2015 Prices	Variance 2017 over 2016 EUR	Variance 2017 over 2016 %	Price Adjustment	2016 Estimates at 2016 Prices	2017 Preliminary estimates at 2016 Prices
2.	**Nuclear Techniques for Development and Environmental Protection**										
	Renovation of the Nuclear Applications Laboratories (ReNuAL)	2 699 528	2 480 000	*(219 528)*	*(8.1%)*	2 480 000	-		0.4%	2 489 920	2 489 920
	Major Programme 2	**2 699 528**	**2 480 000**	**(219 528)**	**(8.1%)**	**2 480 000**	**-**		**0.4%**	**2 489 920**	**2 489 920**
3.	**Nuclear Safety and Security**										
	Enhancing Radiation Safety through Efficient and Modern Dosimetry (RADSED)	-	300 000	300 000	-	300 000	-		0.4%	301 200	301 200
	Major Programme 3	**-**	**300 000**	**300 000**	**-**	**300 000**	**-**		**0.4%**	**301 200**	**301 200**
4.	**Nuclear Verification**										
	NGSS Infrstructure Replacement	2 284 216	-	(2 284 216)	(100.0%)	-	-		-	-	-
	MOSAIC	-	1 200 000	1 200 000	-	1 200 000	-		0.4%	1 204 800	1 204 800
	Develop and Implement a safeguards approach for J-MOX	-	-	-	-	1 000 000	1 000 000		-	-	1 004 000
	Major Programme 4	**2 284 216**	**1 200 000**	**(1 084 216)**	**(47.5%)**	**2 200 000**	**1 000 000**		**0.4%**	**1 204 800**	**2 208 800**
5.	**Policy, Management and Administration Services**										
	Agency-wide Information System for Programme Support (AIPS)	2 284 216	1 500 000	*(784 216)*	*(34.3%)*	-	*(1 500 000)*		0.4%	1 506 000	-
	Provision for IT Infrastructure and Information Security Investment	1 038 280	2 520 000	*1 481 720*	*142.7%*	3 020 000	*500 000*		0.4%	2 530 080	3 032 080
	Major Programme 5	**3 322 496**	**4 020 000**	**697 504**	**21.0%**	**3 020 000**	**(1 000 000)**		**0.4%**	**4 036 080**	**3 032 080**
	Capital Regular Budget	**8 306 240**	**8 000 000**	**(306 240)**	**(3.7%)**	**8 000 000**	**-**		**0.4%**	**8 032 000**	**8 032 000**

Table 12. Unfunded 2016–2017 Capital Needs

137. The table below lists 2016–2017 capital needs that will not be funded within the capital Regular Budget limit set by the Director General. It is expected that these requirements will attract extrabudgetary pledges by Member States.

Major Programme/Major Capital Item	2016	2017
2. Nuclear Techniques for Development and Environmental Protection		
Renovation of the Nuclear Applications Laboratories (ReNuAL)	5 636 912	5 638 069
Major Programme 2	**5 636 912**	**5 638 069**
3. Nuclear Safety and Security		
Enhancing Radiation Safety through Efficient and Modern Dosimetry (RADSED)	321 280	607 420
Major Programme 3	**321 280**	**607 420**
4. Nuclear Verification		
NGSS infrastructure replacement	3 491 630	3 491 630
MOSAIC	8 910 406	5 002 326
Develop and Implement a safeguards approach for J-MOX	8 935 602	2 309 199
Develop and implement safeguards approaches for Chernobyl NPP	2 292 734	-
Develop and implement SG approaches for a SF EPGR in Finland/Sweden	-	414 606
Major Programme 4	**23 630 372**	**11 217 761**
5. Policy, Management and Administration Services		
Provision for IT Infrastructure and Information Security Investment	3 252 960	441 760
Major Programme 5	**3 252 960**	**441 760**
Major Capital Investment Plan Total	**32 841 525**	**17 905 010**

Annex. Draft Resolutions for 2016

138. This section presents the Agency's draft resolutions for 2016, including the appropriations for the 2016 Regular Budget, the allocation for the Technical Cooperation Fund (TCF) in 2016, and the Working Capital Fund (WCF) in 2016.

A. The Regular Budget

139. Regular budget appropriations for 2016 are presented in two parts: one for the operational Regular Budget (paras 1 and 2 of Resolution A); and one for the capital Regular Budget (paras 3 to 5 of Resolution A). The expenditures against these appropriations will be recorded separately, so that funds appropriated for the operational Regular Budget will not be used for major capital investments and vice versa. The total amount of appropriations for the capital Regular Budget will be transferred to the Major Capital Investment Fund.

140. The resolution for the Regular Budget appropriation contains an adjustment formula to take into account the exchange rate variations during the year. Member State contributions will be based on the scale of assessment to be fixed by the General Conference in September 2015.

B. Technical Cooperation Programme

141. The technical cooperation (TC) activities of the Agency are financed from the TCF and extrabudgetary contributions. The TCF is mainly comprised of voluntary contributions, for which a target is recommended each year by the Board of Governors, and National Participation Costs paid by recipient Member States. The target for voluntary contributions to the TCF recommended by the Board of Governors for 2016 amounts to €84 456 000 and to €84 915 000 for 2017.

142. The forecast of the resources for the technical cooperation programme for 2016 amounts to €91 321 280 and comprises: (a) €74 321 280 for estimated core project funding; (b) €2 000 000 for National Participation Costs (to be added to the estimated core funding); (c) €15 000 000 for the estimated implementation levels of extrabudgetary activities.

143. The forecast for 2017 amounts to €90 725 200 and comprises: (a) €74 725 200 for estimated core project funding; (b) €1 000 000 for National Participation Costs (to be added to the estimated core funding); (c) €15 000 000 for the estimated implementation levels of extrabudgetary activities.

144. These amounts do not constitute a target for or limitation on funds and do not in any way prejudge the technical cooperation programme for 2016 and 2017.

C. Working Capital Fund

145. In its 58th regular session, the General Conference approved a continuation of the WCF at the level of €15 210 000 for 2015. No change in this level is proposed for 2016, although it should be borne in mind that the average monthly requirement of the Regular Budget exceeds the level of the WCF, which constitutes a significant risk to the Agency.

A. REGULAR BUDGET APPROPRIATIONS FOR 2016

The General Conference,

Accepting the recommendations of the Board of Governors relating to the Regular Budget of the Agency for 2016[3],

1. Appropriates, on the basis of an exchange rate of $1.00 to €1.00, an amount of €353 967 788 for the operational portion of the Regular Budget expenses of the Agency in 2016 as follows[4]:

		€
1.	Nuclear Power, Fuel Cycle and Nuclear Science	38 909 564
2.	Nuclear Techniques for Development and Environmental Protection	39 487 335
3.	Nuclear Safety and Security	34 721 869
4.	Nuclear Verification	135 027 060
5.	Policy, Management and Administration Services	78 611 528
6.	Management of Technical Cooperation for Development	24 536 684
	Subtotal of Major Programmes	351 294 039
7.	Reimbursable work for others	2 673 748
	TOTAL	353 967 788

the amounts in the appropriation sections to be adjusted in accordance with the adjustment formula presented in Attachment A.1 in order to take into account the exchange rate variations during the year;

2. Decides that the foregoing appropriation shall be financed, after the deduction of:
- Revenues deriving from Reimbursable Work for Others (Section 7); and
- Other Miscellaneous Income of €550 000;

from contributions by Member States amounting, for an exchange rate of $1.00 to €1.00, to €350 744 039 (€303 913 518 plus $46 830 521), in accordance with the scale of assessment fixed by the General Conference in resolution GC(59)/RES/ ;

[3] GC(59)/2.

[4] Appropriation Sections 1–6 represent the Agency's major programmes.

3. Appropriates, on the basis of an exchange rate of $1.00 to €1.00, an amount of €8 032 000 for the capital portion of the Regular Budget expenses of the Agency, in 2016 as follows[5]:

	€
Nuclear Power, Fuel Cycle and Nuclear Science	-
Nuclear Techniques for Development and Environmental Protection	2 489 920
Nuclear Safety and Security	301 200
Nuclear Verification	1 204 800
Policy, Management and Administration Services	4 036 080
Management of Technical Cooperation for Development	-
TOTAL	8 032 000

the amounts in the appropriation sections to be adjusted in accordance with the adjustment formula presented in Attachment A.2 in order to take into account the exchange rate variations during the year;

4. Decides that the foregoing appropriation shall be financed from contributions by Member States amounting, for an exchange rate of $1.00 to €1.00, to €8 032 000 (€8 032 000 plus $0), in accordance with the scale of assessment fixed by the General Conference in resolution GC(59)/RES/ ;

5. Authorizes the transfer of the capital portion of the Regular Budget to the Major Capital Investment Fund; and

6. Authorizes the Director General:
   a. To incur expenditures additional to those for which provision is made in the Regular Budget for 2016, provided that the relevant emoluments of any staff involved and all other costs are entirely financed from revenues arising out of sales, work performed for Member States or international organizations, research grants, special contributions or other sources extraneous to the Regular Budget for 2016; and
   b. With the approval of the Board of Governors, to make transfers between any of the Sections listed in paras 1 and 3 above.

[5] Please refer to footnote 4.

ATTACHMENT

A.1 APPROPRIATIONS FOR THE OPERATIONAL PORTION OF THE REGULAR BUDGET IN 2016

ADJUSTMENT FORMULA IN EURO

	€		US$
Nuclear Power, Fuel Cycle and Nuclear Science	33 440 085	+ (	5 469 479 /R)
Nuclear Techniques for Development and Environmental Protection	35 193 595	+ (	4 293 740 /R)
Nuclear Safety and Security	28 845 267	+ (	5 876 602 /R)
Nuclear Verification	115 093 012	+ (	19 934 048 /R)
Policy, Management and Administration Services	70 993 885	+ (	7 617 643 /R)
Management of Technical Cooperation for Development	20 897 674	+ (	3 639 010 /R)
Subtotal of Major Programmes	304 463 518	+ (	46 830 521 /R)
Reimbursable work for others	2 673 748	+ (	- /R)
TOTAL	307 137 267	+ (	46 830 521 /R)

Note: R is the average United Nations dollar to euro exchange rate which will be experienced during 2016.

ATTACHMENT

A.2 APPROPRIATIONS FOR THE CAPITAL PORTION OF THE REGULAR BUDGET IN 2016

ADJUSTMENT FORMULA IN EURO

	€		US$	
Nuclear Power, Fuel Cycle and Nuclear Science	-	+ (		- /R)
Nuclear Techniques for Development and Environmental Protection	2 489 920	+ (		- /R)
Nuclear Safety and Security	301 200	+ (		- /R)
Nuclear Verification	1 204 800	+ (		- /R)
Policy, Management and Administration Services	4 036 080	+ (		- /R)
Management of Technical Cooperation for Development		+ (		/R)
TOTAL	8 032 000	+ (		- /R)

Note: R is the average United Nations dollar to euro exchange rate which will be experienced during 2016.

B. TECHNICAL COOPERATION FUND ALLOCATION FOR 2016

The General Conference,

(a) Noting the decision of the Board of Governors of June 2015 to recommend the Technical Cooperation Fund target of €84 456 000 for voluntary contributions to the Agency's Technical Cooperation Fund for 2016, and

(b) Accepting the foregoing recommendation of the Board,

1. Decides that for 2016 the target figure for voluntary contributions to the Technical Cooperation Fund shall be €84 456 000;

2. Allocates, in euro, contributions of €84 456 000 for the Agency's Technical Cooperation programme for 2016;

3. Urges all Member States to make voluntary contributions for 2016 in accordance with Article XIV.F of the Statute, with para. 2 of its Resolution GC(V)/RES/100 as amended by Resolution GC(XV)/RES/286 or with para. 3 of the former Resolution, as appropriate.

C. THE WORKING CAPITAL FUND FOR 2016

The General Conference,

Accepting the recommendations of the Board of Governors relating to the Agency's Working Capital Fund for 2016,

1. Approves a level of €15 210 000 for the Agency's Working Capital Fund for 2016;

2. Decides that the Fund shall be financed, administered and used in 2016 in accordance with the relevant provisions of the Agency's Financial Regulations;[6]

3. Authorizes the Director General to make advances from the Fund not exceeding €500 000 at any time to finance temporarily projects or activities which have been approved by the Board of Governors for which no funds have been provided under the Regular Budget;

4. Requests the Director General to submit to the Board of Governors statements of advances made from the Fund under the authority given in para. 3 above.

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[6] INFCIRC/8/Rev.3.

PART II

DETAILS OF THE PROGRAMME AND BUDGET FOR 2016–2017 BY MAJOR PROGRAMME

Major Programme 1
Nuclear Power, Fuel Cycle and Nuclear Science

Objectives: *To expand and improve the use of current nuclear technologies in support of sustainable development, advance nuclear science and technology, catalyse innovation, and build up knowledge and expertise to support the existing and expanded use of nuclear power and nuclear science applications.*

Introduction:

Major Programme 1 provides scientific and technical support to Member States through the provision of services, guidance and advice; facilitating discussion; and, the dissemination of data, information, and knowledge. It also designs and delivers training and helps interested Member States to build capacity and to develop infrastructure necessary for managing a nuclear programme.

The creation of a new Division of Planning, Information, and Knowledge Management (NE–PIK) has been proposed to streamline and enhance efficiency in the management of three Sections: the Planning and Economic Studies Section (PESS); the Nuclear Information Section (NIS); and the Nuclear Knowledge Management Section (NKMS).

The programmatic management of the Agency's activities relating to the technological aspects of radioactive waste management (RWM), including spent nuclear fuel declared as waste, has been moved from Major Programme 3 to Major Programme 1 in order to align the programmatic structure with the organizational structure.

The Agency will continue to support interested Member States to assess their future energy requirements and to evaluate the potential for nuclear power to be part of a sustainable and reliable energy mix. Support will be provided to uranium producing countries, particularly new entrants, to ensure that production is optimized in line with the practices, remaining sensitive to the environment and that, where necessary, remediation programmes are implemented to deal with uranium legacy issues.

Major Programme 1 provides support for Member States considering or embarking on new nuclear power programmes as well as those Member States with operating nuclear power plants to improve performance, achieve better life cycle management, as well as ensure safe, secure, efficient and reliable long-term operation. Efforts will continue to support fuel cycle activities, especially in areas such as spent fuel integrity, design vulnerabilities, defueling, storage as well as on-site and off-site remediation in the event of an accident. In addition, support will continue to be provided for the development and deployment of innovative reactor designs, small- and medium-sized reactors (SMRs), non-electric power applications and advanced fuel cycles.

The Agency will continue its support to Member States with an interest in building and operating research reactors, and as appropriate to those transitioning away from the use of high-enriched uranium (HEU) in research reactors, where technically and economically feasible.

The Agency will remain a reliable source of atomic, molecular and nuclear data. Training and the facilitation of experiments using various types of particle accelerator and other nuclear instrumentation will continue. With progress on the International Thermonuclear Experimental Reactor (ITER), the Agency will continue to involve Member States in fusion technology and to facilitate links with partners in the ITER project. Collaboration will continue with the Abdus Salam International Centre for Theoretical Physics (ICTP), in Trieste, Italy, to support education and training for scientists, especially those from developing countries.

Medium Term Strategy

The planning process takes into account Medium Term Strategy 2012–2017 (MTS) so that the programmes, subprogrammes and projects are generally linked to one or more of the following Medium Term Strategy objectives and sub-objectives having direct relevance to this major programme.

A. Facilitating access to nuclear power

- A01 Assist Member States planning nuclear power programmes, as well as those establishing their first research reactor or fuel cycle facility, to strengthen infrastructure development;
- A02 Assist Member States with nuclear power programmes to plan expansion and to improve performance at all stages of the fuel cycle;
- A03 Help Member States to build capacities in nuclear science, energy systems analysis, engineering evaluations, project management and long-term planning for the sustainability of nuclear power;
- A04 Support innovations in all areas of nuclear power for near-term and long-term deployment;
- A05 Assist throughout all stages of research reactor applications;
- A06 Enhance nuclear safety standards and security guidance, peer reviews, and advisory services;
- A07 Act as an objective and reliable source of information on issues related to nuclear power and nuclear science;
- A08 Facilitate and assist international research and development collaboration for beneficial uses of nuclear energy.

Major Programme 1

B. Strengthening promotion of nuclear science, technology, and applications

- B06 Ensure that Agency laboratories are able to meet the needs of Member States and upgrade and modernize the laboratories as needed
- B07 Maintain and distribute objective and reliable sources of information on atomic, molecular and nuclear data;
- B08 Promote applications of advanced nuclear/radiation techniques.

In addition, several projects due to their cross-cutting nature also link to the following MTS objectives and sub-objectives. In such cases, Major Programme 1 provides support to activities led within other Major Programmes.

C. Improving nuclear safety and security

- C01 Enhance the global nuclear safety and security framework;
- C02 Establish and continuously improve standards and guidance;
- C03 Assist Member States to develop and strengthen safety and security capacity building;
- C05 Assist Member States in enhancing safety of nuclear installations;
- C06 Assist Member States in strengthening the control of radioactive sources, and in mitigating the effects of unauthorized disposal;
- C08 Assist Member States in enhancing waste and environmental safety and developing and enhancing waste management infrastructure;
- C10 Help States to enhance their nuclear security infrastructure.

D. Providing effective technical cooperation

- D01 Ensure support in areas of increasing demand and interest, such as nuclear power for newcomer States, safety and security infrastructures, health, water, food and agriculture and relevant industrial applications;
- D02 Facilitate cooperation among Member States bilaterally and regionally;
- D05 Promote South–South and North–South partnerships, information and technical exchanges and capacity strengthening initiatives by building upon the expertise available in Member States and Regional Resource Centres and by the promotion of networking;
- D07 Promote best practices in project formulation, management, monitoring and evaluation.

F. Providing efficient, innovative management and strategic planning

- F01 Under the results based management approach, seek efficiency gains in management and focus on priority areas, while meeting demands for the Agency's unique services in the use of nuclear technology without increasing the risk of proliferation;
- F13 Promote gender equality and equitable geographical representation in the Agency, especially at managerial levels.

Outcomes	Performance Indicators
• Increased number of advanced newcomer Member States embarking on a nuclear power programme with improved capacity in developing nuclear infrastructure and increased use in Member States of information provided by the Agency.	• Number of self-evaluations prepared and requests for missions relevant to newcomer support.
• Wide use of the Agency's analytical energy modelling tools and experts in interested Member States who are well trained in their use and are able to independently conduct comprehensive energy environment analyses.	• Number of requests by Member States and other international organizations for the Agency's analytical energy modelling tools.

Outcomes	Performance Indicators
• Increased international cooperation in nuclear sciences for technological advancement.	• Number of institutions and Member States participating in the Agency's nuclear science activities.

Projects

Title	Main Planned Outputs
1.0.0.001 Overall management, coordination and common activities	Guidance, reports, policy documents, internal and external communications.

Programme 1.1 Nuclear Power

Objectives:

- *To assist Member States embarking on new nuclear power programmes in planning and building their national nuclear infrastructures.*
- *To provide integrated support to Member States with existing nuclear power plants and to those planning new nuclear build in order to help improve operating performance and help ensure safe, secure, efficient and reliable long-term operation through the implementation of good practices and innovative approaches, and lessons learned from the Fukushima Daiichi accident.*
- *To provide collaborative frameworks for operators of water-cooled reactors to benefit from advances in technology, and for Member States to facilitate effective development of fast reactors and gas-cooled reactors and to expand the safe use of non-electric applications.*

Programme 1.1 supports the operation of nuclear power plants in Member States, to enhance performance and to achieve better plant life management, and to ensure safe, *secure, efficient and reliable* long-term operation (in cooperation with Major Programme 3), as well as to improve performance and power uprates through advanced process control systems. Additional support is provided to expanding nuclear programmes, including human resource development and to implement integrated management systems (in cooperation with Major Programme 3). The programme also continues to support Member States embarking on new nuclear power programmes, by helping them build sound nuclear infrastructure for the successful introduction of nuclear power plants and for their safe, secure, efficient and reliable long-term operation. In this, the programme coordinates services with all other Agency departments.

Programme 1.1 also supports innovation and technical advancement by helping to resolve issues associated with nuclear power reactors and their non-electric applications. This is achieved by coordinating research, promoting information exchange, and analysing data and results for various reactor lines; by providing a forum for technology users and holders to jointly consider innovations; and by supporting Member States in their long range planning through the International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO). The objective of Programme 1.1 is to achieve continuous improvement in the economic competitiveness, safety levels, proliferation resistance, resource efficiency and waste minimization of new reactors and fuels, and building, managing, preserving and further enhancing nuclear expertise, knowledge and competence in support of Member States.

Outcomes	Performance Indicators
• Enhanced satisfaction of Member States with the Agency's services, documents, materials, databases and expertise for the safe, secure, efficient and reliable long-term operation and life management of existing and new nuclear power plants.	• Number of Member States using relevant Agency resources, including Nuclear Energy Series (NES) publications, guidelines, recommendations and databases.
• Increased cooperation between Member States for nuclear reactor technology development and applications; improved understanding of, and international cooperation on, global nuclear energy sustainability in the 21st century, long term nuclear energy strategies, and technical and institutional innovations.	• Number of Member States cooperating in evolutionary and innovative nuclear reactor technology development and applications under Agency coordination. • Number of INPRO member countries.

Outcomes	Performance Indicators
• Improved awareness of infrastructure issues and related action plans in States embarking on a nuclear power programme; improved understanding of planning, constructing and commissioning of the first nuclear power plant.	• Number of INIR missions performed. • Number of documents published or revised, including reports and case studies.

Lessons learned from reviews, assessment, evaluations: Member States interested in expanding or starting a nuclear power programme have indicated that the Agency should continue to disseminate best practices through new and updated NES publications and other reports, as well as to continue to provide tailored review and assistance services through technical cooperation (TC) projects. The good relationships established with international organizations and initiatives — such as the European Commission's Joint Research Centre (EC/JRC), the OECD Nuclear Energy Agency (OECD/NEA), the World Association of Nuclear Operators (WANO), the Generation IV International Forum (GIF) and the European Atomic Forum (FORATOM) — have been demonstrated to be highly beneficial for Member States and maintaining these relationships will continue to be a priority.

Specific criteria for prioritization:

1. Activities supporting nuclear newcomer Member States in their infrastructure development.
2. Activities in response to the increased use of nuclear energy and emerging development that ensure the sharing of best practices for safe, secure, efficient and reliable long-term operation and that support the launch of nuclear programmes.
3. Activities underpinning the innovative development of nuclear power for a long term sustainable future.
4. Activities fostering international cooperation, information exchange, knowledge management and human resource development.

Subprogramme 1.1.1 Strengthening Integrated Engineering Support for Nuclear Power Programmes

Objectives:

— *To enhance performance and safe, secure, efficient and reliable long-term operation of nuclear power plants.*

— *To enhance effectiveness of engineering processes of new nuclear power plant projects.*

Outcomes	Performance Indicators
• Use of Agency expertise and guidance to support performance improvements in operating nuclear power plants and to establish and implement best practices in the area of engineering support, including safety aspects and advanced applications.	• Number of Member States using the relevant Agency resources, NES publications, guidelines, recommendations and databases.
• Use of Agency expertise and guidance to support implementation of expanding/ new nuclear power plant projects and to implement best practices in the area of engineering aspects of design, construction and commissioning of new nuclear power plants.	• Number of Member States using the relevant Agency resources, NES publications, guidelines, recommendations and databases.

Programmatic changes and trends: The activities in Subprogramme 1.1.1 continue from the previous biennia, focusing on operating nuclear power plants and expansion of new nuclear projects. This includes plant life management to enhance safety, improve performance and extend the service life of nuclear power plants, and engineering support for all stages of nuclear projects, including support to expanding/newcomer States. For risk management, it is necessary to collect and disseminate best practices and lessons learned in the construction, operation and decommissioning of nuclear power plants, by providing overviews of organizational risk tolerance, capabilities and competencies and by developing the tools to manage identified risks.

Projects

Title	Main Planned Outputs
1.1.1.001 Engineering support for operating nuclear facilities	Completed Coordinated Research Projects (CRPs), NES publications on specific aspects of ageing management, information and national experience in the subject area exchanged among Member States.
1.1.1.002 Engineering support for expanding and new nuclear power projects	Completed NES publications on specific aspects of technical support organizations (TSOs) and design review, and information exchange among Member States on pre-construction, construction and bid preparation and evaluation.
1.1.1.003 AP support related to operating nuclear facilities	Completed CRPs, NES publications on specific aspects of ageing management, meetings of the nuclear operator organizations forum.

Subprogramme 1.1.2 Integrated Management and Human Resource Development for Nuclear Power

Objective:

— *To enable effective management of existing, expanding and new nuclear power projects and programmes and to increase capacity in Member States to utilize advanced methods of management and human resource development.*

Outcomes	Performance Indicators
• Use of Agency documents, materials and expertise, and consideration of lessons learned in the management of nuclear programmes.	• Number of Member States using the Agency's resources, NES publications, guidelines, recommendations and e-learning modules.
• Use of Agency documents, materials and expertise, and consideration of lessons learned in human resource development and capacity building.	• Number of Member States using the Agency's resources, NES publications, guidelines, recommendations and e-learning modules.

Programmatic changes and trends: This is a continuation of the subprogramme from the previous biennium focusing on the management and human resource development for new nuclear programmes or the expansion of current programmes. This includes the management system, human resource development, bid preparation and evaluation and contracting, stakeholder involvement, and the development of expansion strategies and e-learning modules.

Projects

Title	Main Planned Outputs
1.1.2.001 Management support for nuclear power plant projects	NES publications, information exchange and direct support services.
1.1.2.002 Human resource development for nuclear power programme	NES publications, training courses, workshops, e-learning courseware and review services.
1.1.2.003 AP support related to expanding nuclear power programme	Completed CRPs, NES publications on specific aspects of expansion programmes.

Subprogramme 1.1.3 Infrastructure and Planning for New Nuclear Power Programmes

Objectives:

— *To improve understanding among Member States of the responsibilities and obligations essential to implementing safe and secure nuclear power programmes.*

— *To support Member States in developing the necessary infrastructure for introducing nuclear power.*

— *To provide integrated and coordinated Agency support to newcomer States.*

Outcomes	Performance Indicators
• Awareness of infrastructure issues and related action plans in States embarking on a nuclear power programme.	• Number of INIR missions performed. • Number of countries attending workshops on specific infrastructure issues.
• Improved understanding of planning, constructing and commissioning of the first nuclear power plant.	• Number of documents published or revised, including reports and case studies. • Number of States that have made a decision and are attending workshops on relevant topics.

Programmatic changes and trends: Subprogramme 1.1 provides support to States considering or embarking on a nuclear power programmes. As the subprogramme is also the point of integration of such activities throughout Major Programme 1, and for coordination of the activities across the Agency, some of these activities are implemented in conjunction with technical staff from other sections. The current workload at NIDS established as a section in 2014would require more regular positions, which are presently funded by extrabudgetary funds. In 2016–2017, there will be additional emphasis on States starting construction, preparing to commission and start commercial operation of their first nuclear power plants. Greater emphasis will also be placed on supporting the increasing number of States expressing interest in nuclear power for the first time after the Fukushima Daiichi accident. Efforts will be increased towards improving the quality, consistency and effectiveness of Agency assistance.

Projects

Title	Main Planned Outputs
1.1.3.001 Strengthening nuclear power infrastructure	Documents on nuclear power infrastructure as well as objective information on nuclear power; workshop for sharing of experience and lessons learned; and enhancement of coordination and communication.
1.1.3.002 Capacity building for the introduction of nuclear power	Workshops, training courses, expert services, training materials including software, review and INIR missions, and networking.

Subprogramme 1.1.4 International Project on Innovative Nuclear Reactors and Fuel Cycles

Objectives:

— *To increase international cooperation and dialogue on global nuclear energy sustainability in the 21st century, on long term nuclear energy strategies, and on institutional and technical nuclear energy innovations.*

Outcomes	Performance Indicators
• Improved understanding of, and international cooperation on, global nuclear energy sustainability in the 21st century, long term nuclear energy strategies, and technical and institutional innovations.	• Number of INPRO members. • Number of Collaborative Projects, applications of the INPRO methodology and/or NES scenario modelling studies, INPRO Dialogue Forums, and training events consistent with EB awards and Steering Committee approval as appropriate.

Programmatic changes and trends: INPRO membership is expected to continue to grow in Member States with nuclear power programmes, as well as those seeking to establish a new programme. It will increasingly focus on priority national, regional and global nuclear energy sustainability issues through cooperation among the Member States and involvement in four distinct tasks on global scenarios, innovations, strategies and the INPRO Dialogue Forum. The major programmatic change will be a higher degree of integration among the INPRO tasks, facilitated by several new collaborative projects. The current and forecast future workload for INPRO, established as a section in 2014, resulted in the allocation of additional resources beginning in the 2016–2017 biennium. INPRO will continue to provide direct assistance to Member States via Nuclear Energy System Assessments (NESAs) and nuclear energy scenario analysis, collaborative projects and technical studies, the further development of tools for NESA and scenario analyses, and the provision of services, training and guidance to Member States on the application of all INPRO products.

Projects

Title	Main Planned Outputs
1.1.4.001 International Project on Innovative Nuclear Reactors and Fuel Cycles	Publications on nuclear energy system scenarios, NESAs and selected innovations; INPRO methodology revision for innovative nuclear energy systems; tools and training on nuclear energy system scenario modelling and economics; INPRO Dialogue Fora on nuclear energy system sustainability; and INPRO Steering Committee guidance.
1.1.4.002 AP support related to INPRO	Second edition of the INPRO methodology (safety chapters only); publication(s) on safety issues of innovative reactor designs; and guidance for Member States on incorporating lessons learned from the Fukushima Daiichi accident into long term strategies.

Subprogramme 1.1.5 Technology Development for Advanced Reactor Lines

Objectives:

— *To provide collaborative framework and improve understanding among Member States on advances in reactor technologies critical to safety, efficiency improvement and economics.*

— *To catalyse evolution and innovation in nuclear reactor technology and non-electric application.*

— *To support Member States in the demonstration of nuclear desalination projects and facilitates the safe use of nuclear power in the area of non-electric applications for advancing thermal efficiency.*

Outcomes	Performance Indicators
• Member States use and exhibit an active interest in the information published on technology development and technical solutions in light water and advanced reactors.	• Number of Member States collaborating through the Agency to share information and to conduct collaborative R&D to resolve common challenges.
• Agency publications that share expert knowledge and tools to resolve evolving challenges for newcomers and in technology development areas.	• Number of Member States using Agency provided information and seeking Agency staff expertise to conduct workshops and training.
• Member States participate and pool resources for developing and publishing technology solutions.	• Number of Member State requests for addressing solutions to common problems.

Programmatic changes and trends: Subprogramme 1.1.5 supports the development of evolutionary and revolutionary advancements in power reactors. The increased interest of Member States has been observed in the Fast Reactor programme because of its potential for greater energy recovery from nuclear fuel and a significant reduction in radioactive waste and its toxicity. Member States' interest in small- and medium-sized reactors (SMRs) continues, and Subprogramme 1.1.5 addresses specific deployment challenges. Advances in computer technology are helping to utilize modelling and simulation software for building inexpensive and effective training tools in plant operation and accident management. There will be an increased focus on advancing thermal efficiency of nuclear power plants by facilitating industrial use (non-electric applications) of nuclear heat energy.

Projects

Title	Main Planned Outputs
1.1.5.001 Technology development for water-cooled reactors	Newcomer support for safe, economical and efficient deployment of water-cooled reactors; NES publications and databases; technological advances of advanced water-cooled reactors; CRPs on technology development; and technical meetings, workshops, training sessions and support to technical cooperation.
1.1.5.002 Small and medium-sized reactor technology development	Technical meetings, workshops, and publications on key enabling technologies and common deployment issues for SMRs; assist Member States in understanding SMR technology and performing assessments; and issue a NES publication describing an SMR technology roadmap.

Title	Main Planned Outputs
1.1.5.003 Advanced technology for fast and gas-cooled reactors	Technical meetings, workshops, education and training seminars; CRPs; technical studies, NES publications, TECDOCs and status reports; and web sites, databases, e-platforms and simulators related to research, technology development and deployment of fast nuclear systems and gas cooled reactors. A major output is the organization of the IAEA FR17 Conference on Fast Reactors.
1.1.5.004 Non-electric applications of nuclear power	Refinement, maintenance and upgrade of Agency software — the Desalination Economic Evaluation Program (DEEP), the Hydrogen Economic Evaluation Program (HEEP), the Desalination Thermodynamic Optimization Program (DE-TOP) and the Water Management Program in Nuclear Power Plants (WAMP); toolkits on nuclear desalination and nuclear hydrogen production; and providing support for Member State on the demonstration of non-electric applications projects and efficiency improvement in nuclear power plants.
1.1.5.005 AP support related to advanced reactor lines	Implementation of the Action Plan, including development of ways to address existing plant vulnerabilities, facilitating improvements for new builds, promulgating information to Member States by workshops and NES publications, and effective utilization of R&D sources.

Programme 1.2 Nuclear Fuel Cycle and Materials Technologies

Objectives:

- *To advance the development and implementation of an increasingly safe, reliable, efficient, proliferation resistant and environmentally sustainable nuclear fuel cycle (NFC), providing the maximum benefit to Member States.*
- *To assist and support Member States in strengthening their capabilities and improving practices in radioactive waste management (RWM), decommissioning and remediation of contaminated sites and to support States embarking on nuclear power and developing countries to develop necessary RWM infrastructure.*
- *To collect data on damaged fuel and storage facilities and to assist Member States discuss and share ideas and information on nuclear fuel behaviour under severe conditions.*
- *To assist Member States decommission nuclear sites affected by accidents and to remediate off-site contaminated areas.*

Programme 1.2 is to be expanded in 2016 to include activities relating to radioactive waste technology, benefiting from synergies derived from the integrated management of the whole of the nuclear fuel cycle (NFC). The anticipated growth of nuclear power will increase demands on the NFC, resulting in higher uranium production, improved fuel performance and the appropriate management of spent fuel through storage and eventual disposal or recycling. In addition to assistance in these areas, Member States also require support in decommissioning of nuclear facilities and the environmental remediation of sites contaminated by radioactive materials. Pending final disposition, some States have suggested storage of spent fuel for longer periods, sometimes exceeding 100 years, which creates significant institutional and technical challenges. Other States are interested in spent fuel recycling, to increase sustainability and to reduce the volume, radiotoxicity and decay heat of high-level waste.

Significant emphasis in Programme 1.2 is focused on the integration of IAEA peer review services in the NFC. In addition, the programme will offer guidance and training to Member States to catalyse technology development, identify best practices in sustainable NFC and RWM, and encourage cooperation among Member States and with other international organizations, such as OECD/NEA. Activities initiated as part of the Nuclear Safety Action Plan are integrated into regular budget activities. Examples include: the investigation of fuel behaviour under severe accident conditions, the management of severely damaged fuel, the performance of spent fuel storage systems in extreme conditions, the decommissioning of accident-affected facilities and the environmental remediation of off-site contaminated areas, including the management of radioactive waste generated during such activities.

Outcomes	Performance Indicators
• Use of Agency guidance, reviews, training and technology exchange forums to plan, make policy, undertake R&D, and implement safe, economic, proliferation resistant and sustainable NFC as well as waste management activities.	• Number of Member States contributing to, and making use of, Agency guidance, reviews and training, and participating in Agency technology and information exchange forums. • Number of training meetings held.
• Sharing among Member States of best practices in fuel design, engineering, quality assurance, manufacturing and operation. Information on spent fuel management is used by Member States and the general public.	• Number of participants in Agency activities that would result in the sharing of best practices in power reactor fuel engineering. • Number of audio and video files on spent fuel management downloaded.
• Member States strengthening their capabilities in RWM, decommissioning and remediation and increased international cooperation and improved national competence in RWM, decommissioning and remediation.	• Number of Member States having developed a national policy and strategy for RWM. • Number of Member States participating in network activities.

Lessons learned from reviews, assessment, evaluations: Programme 1.2 has expanded to cover NFC and radioactive waste technologies (previously part of Programme 3.4). A key benefit is the synergy to be derived from the integrated management of the whole NFC as a way to optimize assistance to Member States in this area. The structure of Programme 1.2 has been adapted to reflect the increased scope. The activities in this programme have been adapted to give appropriate response to the feedback from Member States, the Board of Governors and the technical working groups requesting increased effort in key areas. As a result, priorities include contributions to address post-Fukushima Daiichi issues, such as the management of severely damaged fuel, decommissioning and remediation after a nuclear accident; increasing sustainability of the fuel cycle and promoting international cooperation NFC and waste technology issues through the use of networks and electronic resources to enhance dissemination of good practices and experiences.

Specific criteria for prioritization:

1. Contribution to the post-accident Fukushima Daiichi objectives in relation to fuel cycle facilities, the management of severely damaged fuel, and decommissioning and environmental remediation (D&ER) after the Fukushima Daiichi accident.
2. Increasing sustainability of the NFC, including support of uranium production and the efficient use of uranium, as well as support for waste technology capacity building.
3. Activities fostering international cooperation and information exchange on NFC and waste management issues.

Subprogramme 1.2.1 Uranium Resources and Production

Objectives:

— *To improve the capability of Member States to understand, plan and develop activities in the uranium production cycle (UPC), through Agency guidance on good practices, publications, peer reviews, training and databases.*

Outcomes	Performance Indicators
• Accurate, up-to-date references available on global uranium resources.	• Joint OECD/NEA–IAEA publication entitled "Uranium Resources, Production and Demand" produced once every two years. • Increased use of IAEA codes and databases based on user accesses to the Nuclear Fuel Cycle Information System (NFCIS), Nuclear Fuel Cycle Simulation System (NFCSS), World Distribution of Uranium Deposits (UDEPO) and World Distribution of Thorium Deposits and Resources (ThDEPO).
• Increase in the material available for understanding and analysis of the UPC.	• Number of released publications by tasks under this subprogramme. • Establishment/revision of Agency uranium/thorium resource reporting standards and guidelines to aid global communication.

Outcomes	Performance Indicators
• Collection and sharing of good practices in the UPC, and support for Member States in understanding and implementing best practices.	• Participation in Agency meetings related to good practices in the UPC. • Person-hours of training imparted through training courses on good practices in UPC.

Programmatic changes and trends: Increased resources and the expansion of subprogramme activities reflect the increased emphasis being placed on the UPC and on support to States initiating activities in this area. Member States interest in the near term will be driven by market economies. Agency assistance will continue to focus on supply continuity activities. Implementation will be adjusted to changes in market economies where and when possible.

Projects

Title	Main Planned Outputs
1.2.1.001 Uranium resources and production	Biennial publication on Uranium resources, production and demand information; well-maintained uranium and thorium deposit databases; documents supporting good practice in uranium and thorium production; and well attended meetings on good practices in the uranium and thorium production cycles.

Subprogramme 1.2.2 Nuclear Power Reactor Fuel

Objectives:

— *To enable Member States to organize adequate R&D programmes to support effective design and manufacturing technologies and to optimize in-pile performance of current and advanced fuels and materials for reliability and efficiency.*

Outcomes	Performance Indicators
• Use in interested Member States of support and information provided by the Agency to improve fundamental understanding and to reveal links between different levels of material structures and operational properties of fuel and core materials.	• Number of CRPs supported. • Number of participants in Agency meetings and workshops on fundamental material science relevant to reactor fuels.
• Sharing among Member States of best practices in fuel engineering and operation.	• Number of released publications by tasks under this subprogramme. • Number of participants in Agency activities that result in the sharing of best practices in power reactor fuel engineering and operation.
• Sharing of knowledge in the development of advanced, innovative fuels and fuels and materials for advanced reactors.	• Number of participants in Agency activities addressing advanced, innovative fuels and fuels and materials for advanced reactors. • Degree of coordination with other advanced fuel work.

Programmatic changes and trends: This subprogramme continues from the preceding two-year cycle. In response to the Fukushima Daiichi accident and owing to significant and ongoing interest from Member States, this subprogramme consolidates understanding on the design, manufacture and behaviour of nuclear fuel and strengthens an activity associated with the development and behaviour of fuel designs with improved performance under accident conditions. The establishment of the IAEA LEU Bank[1] is expected to continue to make progress following the conclusion of the Host State Agreement with Kazakhstan. The project is fully funded through extrabudgetary contributions.

Projects

Title	Main Planned Outputs
1.2.2.001 Nuclear power reactor fuel engineering	Publications on advanced materials and fuel design, fabrication and performance.

[1] Other assurance of supply mechanisms established with IAEA approval include a guaranteed physical reserve of LEU maintained by the Russian Federation at the International Uranium Enrichment Centre in Angarsk, Russian Federation (ref: GOV/2009/76 and GOV/2009/81), and a UK assurance of supply guaranty for supplies of LEU enrichment services (ref: GOV/2011/10 and GOV/2011/17).

Title	Main Planned Outputs
1.2.2.002 LEU Bank	Establishment of an IAEA low enriched uranium (LEU) bank in accordance with GOV/2010/67 and GOV/2010/70.
1.2.2.003 AP support related to nuclear power reactor fuel	Publications on the behaviour of nuclear fuel under accident conditions.

Subprogramme 1.2.3 Management of Spent Fuel from Nuclear Power Reactors

Objectives:

— *To improve the capability of Member States to plan, develop and implement safe, environmentally sound and efficient spent fuel management programmes, able to bridge the gap from spent fuel discharge to its eventual disposition.*

Outcomes	Performance Indicators
• Substantial participation in Action Plan activities.	• Number of Member States participating in Action Plan activities related to spent fuel management. • Publication of documentation as part of the Action Plan response.
• Information on spent fuel management is used by Member States and the general public.	• Number of Member States quoting documents published by the Agency. • Number of audio and video files on spent fuel management downloaded.
• Information on spent fuel recycling is used by Member States.	• Presentation of results at international conferences by Agency staff or on behalf of Agency activities. • Release of publications.

Programmatic changes and trends: Under some circumstances, such as slow progress towards the provision of a geological disposal facility or reprocessing, spent nuclear fuel storage systems may have to be maintained for extended periods There are already solid foundations to support Member States in bridging knowledge gaps associated with extended storage and these will be continued and built upon through Agency activities on spent fuel behaviour and system performance monitoring. The subprogramme also seeks to respond to developing Member States needs for ageing management programmes for dry storage systems.

Projects

Title	Main Planned Outputs
1.2.3.001 Spent fuel storage	Proceedings of the 2015 International Conference on the Management of Spent Fuel; TECDOC on the final report of CRP T13014; TECDOC on spent fuel stability options; CLP4NET module on spent fuel management.
1.2.3.002 Spent fuel recycling	Development and sharing of knowledge and information on closed fuel cycles.
1.2.3.003 AP support related to spent fuel	Collection and analysis of data from spent fuel storage facilities on site, lessons learned in spent fuel management, coordinated research project on severely damaged spent fuel and corium, examination of design basis scenarios for spent fuel storage facilities.

Subprogramme 1.2.4 Technology for RWM, Decommissioning and Environmental remediation

Objectives:

- *To assist and support Member States in strengthening their capabilities and improving their practices in RWM, decommissioning of installations and remediation of contaminated sites.*
- *To provide support to States embarking on nuclear power and developing countries, to plan and develop necessary RWM infrastructure, RWM policies and strategies, and human resource capacities and capabilities to deal with waste issues.*
- *To facilitate experience sharing and knowledge transfer on effective applications of practical solutions in RWM, decommissioning of installations and environmental remediation of contaminated sites, including stakeholder engagement.*

Outcomes	Performance Indicators
• Member States strengthening their capabilities and improving their practices in RWM, decommissioning of nuclear installations and remediation of contaminated sites.	• Number of Member States having developed a national policy and strategy for RWM.
• Increased awareness among newcomers of the importance of addressing the RWM issue during the initial phase of a new nuclear power plant or research reactor project.	• Number of Member States embarking on nuclear power and having developed a national policy and strategy for RWM.
• Increased international cooperation and improved national competence in RWM, decommissioning of nuclear installations and environmental remediation of sites.	• Number of Member States participating in network activities.

Programmatic changes and trends: The subprogramme on Technology for RWM, Decommissioning and Environmental Remediation is moved from Major Programme 3 to Major Programme 1 in order to enhance planning for the subprogramme and its performance as well as to ensure its integration with the management of other aspects of the fuel cycle. The structure of Subprogramme 1.2.4 remains the same as previous Subprogramme 3.4.2. The subprogramme deals with technological aspects of RWM and that are thematically organized, covering predisposal, disposal, disused sealed radioactive source (DSRS) management, D&ER, and information exchange and dissemination of knowledge for capacity building. The subprogramme covers activities related to the development of new publications, further development of e-learning materials and enhancement of RWM information systems and databases, as well as international cooperation and coordination activities. Maintaining close cooperation with colleagues in the Division of Radiation, Transport and Waste Safety (NSRW), among others, as a result of the move of the subprogramme from Major Programme 3 to Major Programme 1 is vital to continued good progress.

Projects

Title	Main Planned Outputs
1.2.4.001 Pre-disposal management of radioactive waste	Effective implementation of predisposal activities in Member States facilitated by publication of relevant technical documents reflecting best practice; development of lecture materials (e-learning) and conducting training courses within the framework of RB and technical cooperation projects.
1.2.4.002 Managing disposal of radioactive waste and spent fuel	Reports, web-based information material, meetings and network development.
1.2.4.003 Managing disused sealed radioactive sources (DSRS)	Guidance documents on management of DSRS; provide training to Member States in conditioning of DSRS; removing and securing high activity DSRS through repatriation upon request from Member States, recycling or consolidation in national store; support of the International Catalogue of Sealed Radioactive Sources and Devices (ICSRS); and activities conducted in support of technical cooperation and extra budgetary projects.

Title	Main Planned Outputs
1.2.4.004 Decommissioning of nuclear facilities and environmental remediation	Preparation of thematically focused technical publications related to D&ER; support of implementation of regional and national technical cooperation projects; activities organized within the International Decommissioning Network (IDN) and the Network on Environmental Management and Remediation (ENVIRONET).
1.2.4.005 Knowledge sharing for capacity building in RWM, decommissioning and ER	Maintained, updated and improved web-based systems and improved implementation of best practices in RWM and D&ER, including better access to information supporting safe and technically sound RWM programmes.
1.2.4.006 AP support related to RWM (technology)	Development of the IAEA NES publications and other support of Member States.

Programme 1.3 Capacity Building and Nuclear Knowledge for Sustainable Energy Development

Objectives:

- *To strengthen Member State capacities in energy and nuclear power planning to elaborate sustainable energy strategies and conduct studies for energy system and electricity supply options, energy investment planning, and energy environment policy formulation.*
- *To build Member State capacities to manage nuclear knowledge and provide knowledge management services and assistance.*
- *To procure and provide printed and electronic information in the area of nuclear science and technology to the IAEA Secretariat and Member States.*

IAEA energy projections for the coming decades continue to indicate a growing demand for electricity generated by nuclear power. The principal driving forces are global population growth, together with an associated rise in urbanization and industrialization, an increasing need for security of energy supply and, in some countries, a strategic decision to limit the domestic use of indigenous hydrocarbon resources. Furthermore, the fact that greenhouse gas (GHG) production and the emission of particulates and other chemical pollutants are almost negligible during the operation of a nuclear power plant is, and will continue to be, an important consideration in national decision making regarding energy choices. Nuclear power production, as part of a well-planned and balanced energy mix supporting sustainable development, is a potentially viable option for many States that do not, or will not, have sufficient and 'clean' energy derived from alternative sources of energy.

For all Member States, including those with operating nuclear power programmes, ready access to information and knowledge is essential in order to develop and enhance skills and experience in the nuclear sector. Programme 1.3 activities support the introduction and use of safe, secure, efficient and reliable nuclear power programmes in interested States. The work undertaken in Programme 1.3 helps Member States ensure their needs are met through the provision of economic and energy systems planning models, by making nuclear information and knowledge widely and easily accessible, and by training local experts to manage this nuclear information and knowledge. The programme also seeks to ensure a 'level playing field' for nuclear power by providing authoritative, balanced and objective information on nuclear energy to inform international deliberations that will establish global priorities, as well as national policies, and in doing so strengthen the role of nuclear power in support of sustainable development.

Outcomes	Performance Indicators
• Wide use of the Agency's analytical energy modelling tools and experts in interested Member States who are well trained in their use.	• The number of requests by Member States and other international organizations for the Agency's analytical energy modelling tools.
• The Agency considered by Member States and other international organizations as a competent partner in addressing sustainable energy development issues and as an objective and up to date source of information on nuclear technology in the context of sustainable energy and economic development.	• Number of instances where the Agency's economic or Energy Economy Environment (3E) analyses are requested, or are incorporated into the decision making process of Member States, or other agencies or offices.

Outcomes	Performance Indicators
• Increased application by Member States of nuclear knowledge management (NKM) methods and tools, and unrestricted and easy access for Member States and the Agency to high quality, relevant and reliable information in the International Nuclear Information System (INIS) and the IAEA Library on the peaceful uses of nuclear energy.	• Number of Member States using Agency methodology and guidance in their NKM projects. • Number of INIS Collection searches and document downloads.

Lessons learned from reviews, assessment, evaluations: Programme 1.3 has been prioritized to take into account feedback concerning Member State needs. In particular, energy planning models will be improved and made more widely available; e-learning content will be increased and promoted; guidance to Member States in relation to cost estimation and financing schemes will be enhanced, within the mandate of the Agency; support to educational programmes will be increased; advances in technology will be leveraged to improve information delivery; high-impact CRPs will be organized and high-quality documents published.

Specific criteria for prioritization:

1. Promoting the role of Nuclear Information and Knowledge Management to enhance the safety of nuclear facilities in Member States.
2. Strengthening capabilities and capacity in Member States to undertake robust energy system analysis and planning and to appreciate the socio-economic and environmental implications of nuclear power generation programmes.
3. Providing balanced and accurate information about nuclear energy's role in reducing GHG emissions and mitigating the effects of global climate change and its contribution to sustainable development.

Subprogramme 1.3.1 Energy Modelling, Data and Capacity Building

Objectives:

— *To strengthen the capacity and capabilities in Member States to elaborate their sustainable energy strategies and conduct studies for energy system and electricity sector development and management, energy investment planning and energy environment policy formulation.*

Outcomes	Performance Indicators
• Wide use of the Agency's analytical energy modelling tools and experts in interested Member States who are well trained in their use.	• Number of Member States and international organizations using Agency-provided analytical tools (energy models). • Number of experts from Member States trained in the use of Agency-provided energy models.
• Information on energy and nuclear power status and trends available to Member States.	• Number of requests from Member States and international organizations for Agency reports and publications.

Programmatic changes and trends: Subprogramme 1.3.1 will continue to incorporate the feedback received from Member States on its technical support and analytical tools. New or emphasised areas of development include: expanded e-training via creation of e-learning packages to supplement face to face training; improvements to annual PESS publications (e.g. RDS#1) to improve readability and usefulness to Member States; and increased energy and technology data sharing with other international organizations, including Member States currently utilising relevant nuclear technologies or planning to do so in the near future and international institutes, such as the EC/JRC.

Projects

Title	Main Planned Outputs
1.3.1.001 Energy, electricity and nuclear power economics: Status and trends	Updated information on status and trends of energy, electricity and nuclear power development in different world regions; updated internal and external web sites; and publication of Reference Data Series No. 1.
1.3.1.002 Models and capacity building for energy and nuclear power planning	Technical support, including through technical cooperation projects, for Member State energy planning studies; enhanced analytical tools (models) applicable in widely diverse country situations; and training courses.
1.3.1.003 AP support related to energy modelling, data and capacity building	Information on economic aspects of nuclear power, particularly related to safety upgrades and life extension.

Subprogramme 1.3.2 Energy Economy Environment (3E) Analysis

Objectives:

— *To improve Member States' understanding of nuclear technology's compatibility with national sustainable development objectives and its possible contributions to socio-economic development, climate protection and energy security.*

Outcomes	Performance Indicators
• Agency considered by Member States and other international organizations as a competent partner in addressing sustainable energy development issues and as an objective and up to date source of information on nuclear technology in the context of sustainable energy and economic development.	• Number of instances where Agency's economic or 3E analyses are requested, or incorporated into the decision making process of Member States or other agencies or offices.

Outcomes	Performance Indicators
• Publication of technical and informational documents in the areas of technoeconomic analysis, climate change and nuclear power, and sustainable development and nuclear power.	• Number of internal (Agency) and external publications in the area of 3E analysis.

Programmatic changes and trends: Subprogramme 1.3.2 will continue to integrate products completed in the previous biennium into work on new challenges and issues for nuclear energy in the fast changing global energy context. New or emphasised areas of development include: integration of energy systems and defining the role for future nuclear reactors (including small modular reactors) within systems consisting of greater shares of renewable energy; increased nuclear energy and fuel cycle cost data compilation and nuclear cost modelling in partnership with other international organizations; increased attention to analysis of economic and social impacts of nuclear programmes at the national and regional level and of nuclear finance schemes; and assistance to Member States creating national climate change implementation plans resulting from the 2015 Climate Change agreement.

Projects

Title	Main Planned Outputs
1.3.2.001 Technoeconomic analysis	Economic studies (feasibility studies, cost assessments, comparisons, cost-effectiveness and cost–benefit analyses) of various issues in nuclear energy development and deployment, including innovative nuclear systems and SMRs; and comparative assessments of energy systems or their attributes.
1.3.2.002 Topical issues related to sustainable energy development	Reports, presentations on diverse issues of sustainable development and climate change, especially on the potential contribution of nuclear technologies; and case studies and country profiles analysing sustainable energy development strategies.
1.3.2.003 AP support related to 3E analysis	Tools to estimate the costs of complying with enhanced safety standards.

Subprogramme 1.3.3 Nuclear Knowledge Management (NKM)

Objectives:

— *To increase Member States' application of NKM strategies and approaches through the development and dissemination of Agency methodology, guidance and tools, as well as support their implementation in national programmes, and by providing knowledge management services and assistance.*

— *To enhance capability of Agency's nuclear information and knowledge resources and services providing support and guidance to Member States in applying advanced technologies for sustainable nuclear information management over the life cycle to strengthen safety and economics of peaceful uses of nuclear technology.*

— *To support, strengthen and enhance university education in the Member States in the areas of: nuclear technology management, nuclear engineering, nuclear science, and nuclear applications, and all through networking, collaboration, methodology development, and resource development and sharing.*

Outcomes	Performance Indicators
• The increased application by Member States' of NKM strategies and approaches using the Agency methodology, guidance and tools, in the implementation of national or organizational level programmes as a result of Agency knowledge management services and assistance.	• Number of Member States using or requesting Agency methodology and guidance for their NKM programmes, initiatives or projects. • Number of Member States participating in the development, sharing, or dissemination of Agency methodology and tools.
• The enhanced capability of the Agency's nuclear information and knowledge resources and services and the increased application of advanced technologies for nuclear information management over the life cycle as a result of Agency guidance, tools, methodology and assistance.	• Number of Member States using or requesting Agency methodology and guidance for their NKM programmes, initiatives or projects. • Number of Member States participating in the development, sharing, or dissemination of Agency methodology and tools.
• Strengthened university education programmes in the Member States in the areas of nuclear management, nuclear engineering, nuclear science, and applications and increased levels of Member State activity in nuclear education networking, methodology development, and resource development/sharing.	• Number of Member States using or requesting Agency methodology and guidance for their nuclear education curricula improvement programmes or initiatives. • Number of Member States universities and stakeholder organizations actively participating in the Agency supported nuclear education networks.

Programmatic changes and trends: Subprogramme 1.3.3 will continue to expand its scope and services in response to Member State priorities and requests. Anticipated growth is also expected to be supported by extrabudgetary funding. Additional national, regional and interregional technical cooperation projects focused on NKM-related areas will increase demand for technical officers' support. The busiest period for the programme was 2014, with an increase in meetings and record-high participation rates. Priority areas include: knowledge management methodology document development and services; supporting innovations and quality university-level nuclear education programmes (including Master level education for nuclear managers); knowledge organizational systems and technology; knowledge management for newcomers and new-builds; issues and challenges of life cycle management of nuclear facility design knowledge; and establishing and strengthening knowledge networks and technical communities of practice.

Projects

Title	Main Planned Outputs
1.3.3.001 Implementing knowledge management in nuclear organizations	Publications, reports and proceedings on topical issues and special knowledge management tools and products (e.g. knowledge preservation systems for different reactor types).
1.3.3.002 Facilitating sustainable education in nuclear science and technology	One school on NKM and one school on nuclear energy management (NEM) per year; and regional schools on NKM and NEM on request from Member States; publications on nuclear education; annual regional and interregional meetings to facilitate networking for nuclear education; and additional e-learning opportunities for Member States.
1.3.3.003 AP support related to NKM	New knowledge preservation system (KPS), based on experience with the KPS for nuclear accidents, that includes other important incidents as well as the Three Mile Island, Chernobyl and Fukushima Daiichi accidents; and an NES publication or TECDOC on NKM capacity building.
1.3.3.004 Nuclear knowledge organizational systems and technology	Knowledge organization systems and tools for organization of nuclear data, information and knowledge; platform for collaboratively managing glossaries, thesauri, taxonomies and knowledge models; publications, reports and proceedings on topical issues; continuously updating and maintaining the Cyber Learning Platform for Nuclear Education and Training (CLP4NET).

Subprogramme 1.3.4 Nuclear Information

Objectives:

- *To procure and provide printed and electronic information in the area of nuclear science and technology to the IAEA Secretariat, delegations and other users.*
- *To facilitate the sustainable sharing of information generated by Member States on the peaceful uses of nuclear energy.*

Outcomes	Performance Indicators
• Unrestricted and easy access for Member States and the Agency to high quality, relevant and reliable information on the peaceful uses of nuclear science and technology stored in the INIS Collection.	• Number of records available in the INIS database. • Number of INIS Collection web page views.
• Unrestricted and easy access to high quality, relevant and reliable information on the peaceful uses of nuclear science and technology for Agency staff members and other users from the IAEA Library collections.	• Annual number of library services used. • Availability and ease of access to information.
• Operational International Nuclear Library Network (INLN).	• Number of members participating in the INLN. • Number of nuclear information requests from INLN members.

Programmatic changes and trends: The Nuclear Information System Section (NIS) will continue to gather appropriate nuclear information on the peaceful use of nuclear energy and to make it available to Member States, National Delegations and the IAEA Secretariat through INIS, the IAEA Library and the INLN.

Projects

Title	Main Planned Outputs
1.3.4.001 IAEA Library information resources and services	Accessible, relevant and up to date collection of information resources; acquired print and electronic monographs and serial publications; and operational INLN.
1.3.4.002 INIS Collection and services	Accessible, relevant and up to date collection of INIS bibliographic and full text records; good cooperation with national INIS centres; and high quality thesaurus and accompanying standards.
1.3.4.003 AP support related to nuclear information	Increased number of information resources relevant to nuclear safety available in the IAEA Library and through the INIS Collection's search application.

Programme 1.4 Nuclear Science

Objectives:

- *To increase Member State capabilities in the development and application of nuclear science as a tool for their technological and economic development.*
- *To assist Member States in the management and effective utilization of research reactors.*

Nuclear science provides important support for all nuclear applications, including nuclear energy. The Agency will continue to develop, provide and maintain the nuclear, atomic and molecular data libraries that are crucial for nuclear energy and nuclear applications through international networking and specific projects. Research reactors have many vital applications such as radioisotope production, materials testing and material modification. Major concerns such as ageing, under-utilization and issues spanning the research reactor fuel cycle will be addressed by facilitating research reactor coalitions amongst the Member States to increase utilization, manage ageing equipment, manage spent fuel inventories and help to plan new facilities. International collaboration to assess the role of research reactors in the development of innovative nuclear power reactors and fuel cycles will also be promoted.

Particle accelerators such as synchrotrons and ion beam accelerators provide different types of radiation, which have numerous applications in a variety of areas such as materials sciences, biotechnology, environment and cultural heritage. Such applications will be facilitated for use by Member States. Training and quality-related services in the area of nuclear instrumentation will be continued to support sustainable applications of nuclear techniques. Adaptive

R&D for quick mapping of environmental radiation will be continued. As recommended by the International Fusion Research Council (IFRC), knowledge exchange in the area of nuclear fusion between the ITER countries and IAEA Member States will be facilitated through projects and the Demonstration Fusion Power Plant (DEMO) Programme Workshop series. Support for the Abdus Salam International Centre for Theoretical Physics (ICTP) will continue, and training events on subjects of relevance to the Agency will be conducted with the ICTP to foster the research capabilities of the scientists from developing Member States.

Outcomes	Performance Indicators
• Increased international cooperation in nuclear sciences for technological advancement.	• Number of institutions and Member States participating in the Agency's nuclear science activities, and number of resultant products/documents.
• Increased use of Agency mechanisms and guidance for more effective use of research reactors.	• Number of Member States seeking the Agency's support in the management of research reactors.

Lessons learned from reviews, assessment, evaluations: Fusion energy holds promise for the future and the Agency is expected to take the lead role in bringing the Member States together in their research and in dissemination of information to the community. Particle accelerators are of several types and their applications are enormous. With the growth of the nuclear industry, including the introduction of novel fuels and growing scientific R&D activities, applications of particle accelerators are numerous. It is important to bring such applications to the Member States in order to realise the benefits of these applications. Many areas under nuclear science have an overlapping or common interest with other subprogrammes of the Agency and at times with other international agencies. It is necessary to continue cooperative work with such programmes and institutions for achieving the highest level of efficiency in implementation.

Specific criteria for prioritization:

1. Fostering international cooperation and information exchange in nuclear fusion research and plasma physics.
2. Provision of nuclear, atomic and molecular data services.
3. Strengthening research reactor management and effective utilization; activities to support Member States upon request, with the transition away from the use of HEU fuels and targets.
4. Raising awareness of the applications of accelerators to address emerging needs in nuclear power and other non-power industries such as materials testing and characterization, without prejudice to any other nuclear technologies.
5. Provision of laboratory services, advanced training and materials for human resource development.

Subprogramme 1.4.1 Atomic and Nuclear Data

Objectives:

— *To increase the capabilities and expertise of Member States to ensure the safe and economic adoption of all forms of nuclear technologies by providing rapid access to reliable atomic and nuclear data for energy and non-energy applications.*

Outcomes	Performance Indicators
• Increased use by Member States of sets of atomic and nuclear data recommended by the Agency.	• Number of accesses and retrievals of atomic and nuclear data from the Agency's web site per year.

Programmatic changes and trends: During the 2016–2017 biennium, Subprogramme 1.4.1 activities will extend the most important aspects of the work of previous biennia, notably in terms of data evaluation and compilation, provision of data services to Member States, organization of CRPs, missions to collaborating centres, and support for information exchange. The number of projects has been maintained at three, basically mirroring the work of the three Units of NIS. There are many steps in the production of databases — measurements, evaluation, database production, processing, benchmarking and validation — before a database is suitable for public use. These are typically carried out by different experts, many from outside the Agency, and thus it is essential that the role of the Agency in this process is also long term. These steps usually span the Agency's biennial programmes, and thus many of the activities are necessarily long term.

Projects

Title	Main Planned Outputs
1.4.1.001 Provision of data services	Easy access to data via the web by improved searching and visualization tools; documentation and reports to enable efficient data use; new and improved atomic and nuclear databases; and coordinated data networks and training courses.
1.4.1.002 Nuclear data developments	Update of the Ion Beam Analysis Nuclear Data Library (IBANDL) to include particle induced gamma ray emission (PIGE) data; evaluated files of prompt fission neutron spectra for the major actinides; final documented version of the International Reactor Dosimetry and Fusion File (IRDFF); and updated neutron standards and charged particle monitor reactions.
1.4.1.003 Atomic and molecular data developments	Improved versions of the A Labelled Atomic Data Interface (ALADDIN) and Atomic and Molecular Bibliographic Data System (AMBDAS) databases containing newly evaluated datasets as these become available.

Subprogramme 1.4.2 Research Reactors

Objectives:

- *To assist Member States to overcome challenges and make informed decisions regarding all aspects of research reactor management including new project and infrastructure development, the fuel cycle, including where appropriate, HEU minimization and repatriation, and operation and maintenance.*
- *To increase capabilities of Member States to apply research reactors safely, reliably and efficiently to achieve non-power, national objectives related to nuclear technology development, research, isotope production, and education and training — with a focus on severely under-utilised facilities.*
- *To foster peer to peer collaboration via regional and international coalitions, networks and shared-user facilities.*

Outcomes	Performance Indicators
• Increased use of the Agency's assistance and guidance on research reactor utilization, infrastructure, fuel cycle issues and operation and maintenance.	• Number of current, Agency publications on research reactor utilization, infrastructure, fuel cycle issues and operation and maintenance.
• Increased networking within the global research reactor community through the use of Agency databases and via participation in supported networks and coalitions and international centres.	• Number of operating, temporarily shut down or under construction research reactors whose entries in the research reactor database have not been updated within the past five years. • Number of research reactor networks, coalitions and International Centres of Excellence Based on Research Reactors (ICERR) with active joint activities and regular communications.
• Increased use of the Agency's assistance on research reactor fuel cycle issues.	• Number of Member States receiving IAEA assistance on research reactor fuel cycle issues.

Programmatic changes and trends: The subprogramme will address (i) regional and interregional collaboration through coalitions, networking and centres of excellence to improve utilization and provide access to countries with no research reactors; (ii) improvement in operation and maintenance to maximize availability and reliability; (iii) dissemination of good practices on modernization and refurbishment; (iv) national planning or implementation of a first or new research reactor; (v) assistance to reduce under-utilization, inadequate funding and over-reliance on public sector funding by supporting strategic and business planning and developing market analyses and marketing skills for research reactor goods and services; (vi) assistance with ageing issues; (vii) assistance with spent fuel management; and (viii) supporting upon request Member States to transition away from the use of HEU in research reactors.

Projects

Title	Main Planned Outputs
1.4.2.001 Enhancement of utilization and applications of research reactors	Organization of topical CRPs, technical meetings and trainings relevant to research reactor applications; support of international conferences and schools; publications on research reactor utilization and applications; enhanced cooperation through research reactor networks and coalitions; review of strategic and business planning for research reactors; and proficiency tests and exercises.
1.4.2.002 Research reactor infrastructure, planning and capacity building	Direct support to Member States embarking on new research reactor projects through missions and local workshops; training workshops and other support to national capacity building; and support to relevant technical cooperation projects.
1.4.2.003 Addressing research reactor fuel cycle issues	Reports on high density U-Mo fuels; uranium based production of Mo-99; fuel qualification techniques; good practices for fuel management; LEU-based, accelerator-driven, subcritical systems options and applications; LEU conversion of research reactors where appropriate and return of HEU to the country of origin upon request ; training courses on U-Mo fuel.
1.4.2.004 Research reactor operation and maintenance	CRP and research coordination meeting reports; peer review missions; reports on ageing management issues, digital instrumentation and control system technologies; and other technical reports to help ensure reliable facility performance.

Subprogramme 1.4.3 Accelerator Applications and Nuclear Instrumentation

Objectives:

— *To increase the capabilities of Member States to adopt and benefit from the applications of particle accelerators, spectrometric techniques and nuclear instrumentation.*

Outcomes	Performance Indicators
• Well functioning and optimized nuclear science infrastructure established in interested Member States and operated by qualified experts.	• Number of beneficiaries attending conferences, meetings, and training supported under the subprogramme. • Number of publications/reports resulting from the utilization of accelerators, nuclear spectrometry and instrumentation.

Programmatic changes and trends: The emphasis of the accelerator projects on material science applications remains, in particular with a view to materials for future nuclear power applications. In addition, facility management and the Accelerator Knowledge Portal (AKP) are key areas. Points of particular focus in this biennium are the optimum use of the existing facilities at the Nuclear Science and Instrumentation Laboratory and at the external beamline at Elettra, and at the external beamline at the Ruđer Bošković Institute (RBI).

Projects

Title	Main Planned Outputs
1.4.3.001 Fostering accelerator applications in multiple disciplines	CRPs and technical meetings on a wide variety of accelerator applications in different disciplines, with an emphasis on materials science and energy applications; Symposium on Accelerator Applications (AccApp2015); and an accelerator database.
1.4.3.002 Facilitating experiments with accelerators	Experiments, training courses and workshops with practical components at the IAEA synchrotron beam line at ELETTRA and the ion beam line at RBI, as well as corresponding CRPs and technical meetings.

Title	Main Planned Outputs
1.4.3.003 Nuclear instrumentation	CPRs and technical meetings on nuclear instrumentation, with an emphasis on applications in environmental monitoring, nuclear spectrometry, accelerator based R&D and cultural heritage; training courses and course materials; XRF Newsletter; and a nuclear instrumentation network.
1.4.3.004 AP support to development equipment for environmental monitoring	Mobile gamma spectrometry system, consisting of portable gamma spectrometry detectors, data acquisition system, analysis software and geo-information system for in situ mapping of radiological contamination; and an unmanned aerial-vehicle-based gamma detector system for the survey of medium-sized areas.

Subprogramme 1.4.4 Nuclear Fusion Research and Technology

Objectives:

— *To strengthen research programmes in plasma physics, controlled nuclear fusion and nuclear fusion related technology.*

Outcomes	Performance Indicators
• Improved infrastructure and fusion research capacity in Member States.	• Number of participants in CRPs, technical meetings and joint experiments.
• Improved information exchange between researchers in plasma physics, nuclear fusion and nuclear fusion related technology.	• Number of participants in Fusion Energy Conference and DEMO Workshop series.

Programmatic changes and trends: The most significant trend in this field is a shift from pure research to technology. With ITER under construction and the follow-up DEMO projects on the horizon, technology questions are moving more into focus. Following the recommendations of the International Fusion Research Council (IFRC) and the Standing Advisory Group on Nuclear Energy (SAGNE), the activities under this subprogramme have been expanded in the direction of fusion technology, and a new Agency wide coordination function for fusion activities has been introduced. At the same time, outreach activities are also increasing.

Projects

Title	Main Planned Outputs
1.4.4.001 Nuclear fusion research and technology	CRPs and technical meetings on nuclear fusion and plasma physics; Fusion Energy Conference 2014; DEMO Workshop series; and cooperation with ITER.

Subprogramme 1.4.5 Support to the Abdus Salam International Centre for Theoretical Physics

Objectives:

— *To enhance the scientific capability of, in particular, developing countries through training and exchange of knowledge between scientists in nuclear science and technology and related applications from developing and developed countries.*

Outcomes	Performance Indicators
• Scientists from developing and developed Member States making use of knowledge obtained through their participation in the scientific programmes of ICTP.	• Number of scientific events that are aimed at benefiting the scientists, especially from developing countries. • Number of publications by scientists participating in ICTP scientific events.
• Reduced 'brain drain' from developing Member States by enabling their scientists to carry out doctoral research at an internationally renowned institute through fellowships, and, consequently, enhanced quality of scientific work in their respective home country.	• Number of Sandwich Training Educational Programme (STEP) fellowships funded (by the Agency, as well as by ICTP and others).

Major Programme 1

Programmatic changes and trends: The areas of the ICTP's activities have widened in the past few years to include physics-related areas, such as climate change modelling and medical dosimetry. The IAEA–ICTP joint activities are focused on areas that are of relevance to both in the fields of nuclear science and applications, nuclear energy, and nuclear safety and security that would be of interest to the Member States. The proposals as well as participation have exhibited a growing trend.

Projects

Title	Main Planned Outputs
1.4.5.001 Support to ICTP	Training courses and material on topics covered by workshops and seminars; scientific publications.

Major Programme – 1 Nuclear Power, Fuel Cycle and Nuclear Science

Summary of Programme Structure and Resources
(excluding Major Capital Investments)

Table 13

Programme / Subprogramme / Project	2016 at 2016 prices			2017 at 2016 prices		
	Regular Budget	Extrabudgetary	Unfunded	Regular Budget	Extrabudgetary	Unfunded
1.0.0.001 Overall management, coordination and common activities	1 748 745	222 484	149 822	1 844 812	222 484	158 160
1.S Corporate shared services	1 454 208	35 900	57 205	1 413 669	35 900	57 205
	3 202 953	**258 384**	**207 027**	**3 258 481**	**258 384**	**215 365**
1.1.1.001 Engineering support for operating nuclear facilities	1 096 482	-	-	1 096 482	-	-
1.1.1.002 Engineering suport for expanding and new nuclear power projects	334 524	-	-	313 681	-	-
1.1.1.003 AP support related to operating nuclear facilities	170 375	-	-	170 375	-	-
1.1.1 Strengthening Integrated Engineering Support for Nuclear Power Programmes	**1 601 381**	**-**	**-**	**1 580 538**	**-**	**-**
1.1.2.001 Management support for nuclear power plant projects	495 910	-	-	495 910	-	-
1.1.2.002 Human resource development for nuclear power programmes	428 655	-	-	428 655	-	-
1.1.2.003 AP support related to expanding nuclear power programmes	69 063	-	-	69 063	-	-
1.1.2 Integrated management and human resources development for nuclear power	**993 627**	**-**	**-**	**993 628**	**-**	**-**
1.1.3.001 Strengthening nuclear power infrastructure	1 436 873	887 602	-	1 442 167	887 602	98 595
1.1.3.002 Capacity building for the introduction of nuclear power	1 040 847	30 187	-	1 005 705	30 187	12 089
1.1.3 Infrastructure and Planning for New Nuclear Power Programmes	**2 477 720**	**917 789**	**-**	**2 447 871**	**917 789**	**110 684**
1.1.4.001 International project on innovative nuclear reactors and fuel cycles	1 033 260	680 517	-	1 033 260	680 517	-
1.1.4.002 AP support related to INPRO	47 654	-	-	47 654	-	-
1.1.4 International Project on Innovative Nuclear Reactors and Fuel Cycles	**1 080 915**	**680 517**	**-**	**1 080 915**	**680 517**	**-**
1.1.5.001 Technology development for water cooled reactors	893 704	176 898	-	893 704	176 898	-
1.1.5.002 Small and medium-sized reactor technology development	227 354	-	-	227 354	-	-
1.1.5.003 Advanced technology for fast and gas cooled reactors	660 390	149 822	-	660 390	149 822	-
1.1.5.004 Non-electric applications of nuclear power	449 225	-	-	449 225	-	-
1.1.5.005 AP support related to advanced reactor lines	152 717	-	-	152 717	-	-
1.1.5 Technology Development for Advanced Reactor Lines	**2 383 390**	**326 721**	**-**	**2 383 390**	**326 721**	**-**
1.1 Nuclear Power	**8 537 033**	**1 925 027**	**-**	**8 486 341**	**1 925 027**	**110 684**
1.2.1.001 Uranium resources and production	1 199 082	-	251 704	1 238 195	-	238 280
1.2.1 Uranium Resources and Production	**1 199 082**	**-**	**251 704**	**1 238 195**	**-**	**238 280**
1.2.2.001 Nuclear power reactor fuel engineering	610 404	-	-	605 639	-	-
1.2.2.002 LEU Bank	-	1 782 870	-	-	1 726 175	-
1.2.2.003 AP support related to nuclear power reactor fuel	192 179	-	-	223 926	-	-
1.2.2 Nuclear Power Reactor Fuel	**802 583**	**1 782 870**	**-**	**829 564**	**1 726 175**	**-**

Major Programme – 1 Nuclear Power, Fuel Cycle and Nuclear Science
Summary of Programme Structure and Resources
(excluding Major Capital Investments)

Table 13 (cont'd)

Programme / Subprogramme / Project	2016 at 2016 prices			2017 at 2016 prices		
	Regular Budget	Extrabudgetary	Unfunded	Regular Budget	Extrabudgetary	Unfunded
1.2.3.001 Spent fuel storage	435 523	44 835	-	435 949	44 835	-
1.2.3.002 Spent fuel recycling	310 425	-	9 735	241 643	-	-
1.2.3.003 AP support related to spent fuel	593 704	-	-	604 063	-	-
1.2.3 Management of Spent Fuel from Nuclear Power Reactors	**1 339 652**	**44 835**	**9 735**	**1 281 656**	**44 835**	**-**
1.2.4.001 Pre-disposal management of radioactive waste	746 753	39 567	17 453	725 173	122 366	28 491
1.2.4.002 Managing disposal of radioactive waste and spent fuel	1 096 431	191 070	-	1 092 744	226 536	-
1.2.4.003 Managing disused sealed radioactive sources (DSRS)	261 891	26 221	-	247 393	-	-
1.2.4.004 Decommissioning of nuclear facilities and environmental remediation	694 206	238 968	-	687 194	195 856	-
1.2.4.005 Knowledge sharing for capacity building in RWM, decommissioning and ER	549 129	96 306	149 822	587 975	100 617	149 822
1.2.4.006 AP support related to RWM (technology)	125 346	-	-	125 346	-	-
1.2.4 Technology for RWM, Decommissioning and Environmental remediation	**3 473 756**	**592 132**	**167 276**	**3 465 826**	**645 374**	**178 314**
1.2 Nuclear Fuel Cycle and Materials Technologies	**6 815 074**	**2 419 837**	**428 714**	**6 815 241**	**2 416 384**	**416 594**
1.3.1.001 Energy, electricity and nuclear power economics: status and trends	491 491	30 145	-	491 491	30 145	25 872
1.3.1.002 Models and capacity building for energy and nuclear power planning	1 248 074	70 339	10 778	1 248 074	70 339	10 778
1.3.1.003 AP support related to energy modelling, data and capacity building	59 313	-	10 778	59 313	-	20 645
1.3.1 Energy Modelling, Data and Capacity Building	**1 798 878**	**100 484**	**21 556**	**1 798 878**	**100 484**	**57 294**
1.3.2.001 Technoeconomic analysis	887 259	-	57 533	884 221	-	108 474
1.3.2.002 Topical issues related to sustainable energy development	569 245	-	43 720	572 349	-	11 684
1.3.2.003 AP support related to 3E analysis	50 362	-	-	50 362	-	-
1.3.2 Energy Economy Environment (3E) Analysis	**1 506 866**	**-**	**101 253**	**1 506 932**	**-**	**120 157**
1.3.3.001 Implementing knowledge management in nuclear organizations	896 086	-	259 739	844 383	-	-
1.3.3.002 Facilitating sustainable education in nuclear science and technology	569 068	516 444	-	618 279	353 796	-
1.3.3.003 AP support related to NKM	180 371	-	22 980	180 371	-	11 853
1.3.3.004 Nuclear knowledge organizational systems and technology	634 940	26 397	52 434	637 389	-	33 615
1.3.3 Nuclear Knowledge Management (NKM)	**2 280 464**	**542 842**	**335 153**	**2 280 422**	**353 796**	**45 468**
1.3.4.001 IAEA library information resources and services	2 575 875	-	-	2 575 875	-	-
1.3.4.002 INIS collection and services	2 005 808	-	-	1 945 683	-	49 934
1.3.4.003 AP support related to nuclear information	65 344	-	-	65 344	-	-
1.3.4 Nuclear Information	**4 647 026**	**-**	**-**	**4 586 901**	**-**	**49 934**
1.3 Capacity Building and Nuclear Knowledge for Sustainable Energy Development	**10 233 234**	**643 326**	**457 962**	**10 173 135**	**454 280**	**272 854**

Major Programme – 1 Nuclear Power, Fuel Cycle and Nuclear Science
Summary of Programme Structure and Resources
(excluding Major Capital Investments)

Table 13 (cont'd)

Programme / Subprogramme / Project	2016 at 2016 prices			2017 at 2016 prices		
	Regular Budget	Extrabudgetary	Unfunded	Regular Budget	Extrabudgetary	Unfunded
1.4.1.001 Provision of data services	1 062 129	-	-	1 051 089	-	-
1.4.1.002 Nuclear data developments	1 180 456	176 898	-	1 228 986	176 898	-
1.4.1.003 Atomic and molecular data developments	530 837	-	-	524 821	-	-
1.4.1 Atomic and Nuclear Data	**2 773 422**	**176 898**	**-**	**2 804 896**	**176 898**	**-**
1.4.2.001 Enhancement of utilization and applications of research reactors	377 652	-	194 466	377 652	-	156 756
1.4.2.002 Research reactor infrastructure, planning, and capacity building	437 282	279 456	146 692	450 272	-	165 272
1.4.2.003 Addressing research reactor fuel cycle issues	430 654	35 492	200 995	444 108	35 492	197 830
1.4.2.004 Research reactor operation and maintenance	415 114	-	329 627	414 938	-	224 193
1.4.2 Research Reactors	**1 660 702**	**314 948**	**871 780**	**1 686 970**	**35 492**	**744 051**
1.4.3.001 Fostering accelerator applications in multiple disciplines	805 716	149 822	-	800 098	149 822	-
1.4.3.002 Facilitating experiments with accelerators	447 770	-	-	437 730	-	-
1.4.3.003 Nuclear instrumentation	889 024	-	71 535	894 121	-	71 535
1.4.3.004 AP support to development equipment for environmental monitoring	339 105	-	-	349 145	-	-
1.4.3 Accelerator Applications and Nuclear Instrumentation	**2 481 615**	**149 822**	**71 535**	**2 481 094**	**149 822**	**71 535**
1.4.4.001 Nuclear fusion research and technology	844 704	-	-	842 757	-	-
1.4.4 Nuclear Fusion Research and Technology	**844 704**	**-**	**-**	**842 757**	**-**	**-**
1.4.5.001 Support to ICTP	2 360 828	-	-	2 360 828	-	-
1.4.5 Support to the Abdus Salam International Centre for Theoretical Physics	**2 360 828**	**-**	**-**	**2 360 828**	**-**	**-**
1.4 Nuclear Science	**10 121 270**	**641 669**	**943 316**	**10 176 545**	**362 213**	**815 587**
Major Programme 1 - Nuclear Power, Fuel Cycle and Nuclear Science	**38 909 564**	**5 888 243**	**2 037 019**	**38 909 742**	**5 416 288**	**1 831 083**

Major Programme 1

Major Programme – 1 Nuclear Power, Fuel Cycle and Nuclear Science
Tasks with not fully funded activities (in euros)

Table 14

Project	Tasks	2016 Unfunded	2017 Unfunded
1.0.0.001 Overall management, coordination and common activities	Administration and coordination	-	8 337
	Information technology	149 822	149 822
	Corporate shared services	57 205	57 205
1.1.3.001 Strengthening nuclear power infrastructure	Advisory support and information sharing related to NP infrastructure	-	48 206
	Develop/update guidance and case studies on infrastructure issues and the milestones approach	-	50 389
1.1.3.002 Capacity building for the introduction of nuclear power	General management	-	12 089
1.2.1.001 Uranium resources and production	Geochemical and mineralogical characterization of uranium and thorium deposits (new in 2014-2015)	10 909	5 699
	Uranium - thorium fuelled HTGRS application for energy neutral sustainable comprehensive extraction and mineral product development process	93 963	92 353
	Uranium and thorium resources	68 476	78 756
	Uranium production cycle	25 346	8 464
	Uranium production cycle good practices (incl. Th)	53 009	53 009
1.2.3.002 Spent fuel recycling	Closed fuel cycle technologies and knowledge sharing	9 735	-
1.2.4.001 Pre-disposal management of radioactive waste	Alpha waste management: characterization & processing	17 453	28 491
1.2.4.005 Knowledge sharing for capacity building in RWM, decommissioning and ER	Collaboration tools to improve effectiveness of RWM networks and RWM activities for Member States and IAEA	74 911	74 911
	Development of information systems for Member States to support radioactive waste management	59 929	59 929
	International coordination with external organizations	14 982	14 982
1.3.1.001 Energy, electricity and nuclear power economics: status and trends	Collect, compile and disseminate updated information	-	25 872
1.3.1.002 Models and capacity building for energy and nuclear power planning	Develop/enhance and disseminate to interested Member States, energy models for comprehensive analysis of various energy options and strategies, and prepare/update user manuals and training material	10 778	10 778
1.3.1.003 AP support related to energy modelling, data and capacity building	AP support related to energy modelling, data and capacity building	10 778	20 645
1.3.2.001 Technoeconomic analysis	Prepare case studies, economic reports, or economic components to specific projects, on topical economic and environmental energy, nuclear and sustainable development issues	52 898	73 406
	Prepare reports and case studies on nuclear energy economics, cost assessments and financing, with special attention to issues related to establishing or extending nuclear energy programmes	4 635	35 068
1.3.2.002 Topical issues related to sustainable energy development	Develop long-term global energy scenarios and studies for assessing the role of nuclear power in climate change mitigation under alternative designs of the Durban Platform protocol	34 245	10 664
	Prepare documents, presentations on the role of nuclear and other energy technologies in sustainable development strategies, reduction GHG emissions, as input to UN-Energy, UNCSD and other UN efforts	9 475	1 019

Major Programme – 1 Nuclear Power, Fuel Cycle and Nuclear Science
Tasks with not fully funded activities (in euros)

Table 14 (cont'd)

Project	Tasks	2016 Unfunded	2017 Unfunded
1.3.3.001 Implementing knowledge management in nuclear organizations	International conference on knowledge management in nuclear energy	232 631	-
	KM assist visits and expert missions	16 064	-
	Life-cycle knowledge management	11 044	-
1.3.3.003 AP support related to NKM	Develop guidance documents on capacity building	8 032	11 853
	Develop tools to support the knowledge preservation of nuclear accidents	14 948	-
1.3.3.004 Nuclear knowledge organizational systems and technology	E-learning technology and systems	4 614	-
	Knowledge organization systems and technology	16 064	15 864
	Plant information management technology/systems	11 782	8 072
	Project management and administration	19 974	9 679
1.3.4.002 INIS collection and services	Capacity building and Member States support	-	49 934
1.4.2.001 Enhancement of utilization and applications of research reactors	Capacity building in Member States and collaboration in the area of RR utilization and applications	27 077	27 077
	Conferences, symposia and workshops on RR utilization and applications	40 941	40 941
	Development of an integrated approach to routine automation of neutron activation analysis	31 572	3 289
	Development of standardized protocols and samples to evaluate the performance of digital neutron imaging for industrial applications	47 296	37 868
	General management and administration	36 991	36 991
	Publications related to RR utilization and applications, including relevant web portals and databases	10 590	10 590
1.4.2.002 Research reactor infrastructure, planning, and capacity building	Capacity building in Member States and collaboration with other organisations on RR infrastructure	2 696	10 778
	Project management and administration	22 865	22 865
	Publications related to new RR projects and capacity building	46 271	46 271
	Workshops, conferences and symposia	74 860	85 358
1.4.2.003 Addressing research reactor fuel cycle issues	Capacity building in Member States and collaboration with other organisations on RR fuel cycle issues	8 546	8 546
	Innovative methods in research reactor analysis: benchmarks against experimental data on fuel burnup and material activation	42 048	42 048
	Options and technologies for managing the back end of the research reactor nuclear fuel cycle (partly EB)	66 654	66 383
	Organise and support conferences, symposia and workshops on RR fuel cycle issues	46 379	69 005
	Publications related to RR fuel cycle and support to RR databases	37 369	11 848

Major Programme – 1 Nuclear Power, Fuel Cycle and Nuclear Science
Tasks with not fully funded activities (in euros)

Table 14 (cont'd)

Project	Tasks	2016 Unfunded	2017 Unfunded
1.4.2.004 Research reactor operation and maintenance	Capacity building in Member States and collaboration with other organisations on RR O&M	43 489	21 745
	Condition monitoring and incipient failure detection of rotating equipment at research reactors	46 804	46 804
	Implement conferences, symposia and workshops on RR O&M	118 151	103 703
	Publications related to RR O&M as well as the RR database	80 916	51 941
	Research reactor components and material properties database	40 266	-
1.4.3.003 Nuclear Instrumentation	Project management and administration	71 535	71 535
Grand Total		**2 037 020**	**1 831 083**

Major Programme 2
Nuclear Techniques for Development and Environmental Protection

Objectives: *To enhance the capacity of Member States to meet basic human needs and to assess and manage the marine and terrestrial environments through the integration of nuclear and isotopic techniques, where they have comparative advantages, into sustainable development programmes.*

Introduction:

The objectives of Major Programme 2 continue to support the peaceful uses of nuclear science and applications. Major Programme 2 provides Member States with science based advice, educational materials, methodological and metrological standards, best practices and reference materials, and technical documents.

Key areas of growing demand for assistance include support for the control of non-communicable and zoonotic diseases, food safety and security, access to potable water and the monitoring of environmental changes. The use of radioisotope products and radiation technology to support health care, food safety, industrial growth and environmental protection is another area of increasing demand, as is assistance in establishing response capabilities related to unintended releases of radiation that have direct impacts on these thematic areas.

The Renovation of the Nuclear Applications Laboratories (ReNuAL) project, which began in the previous biennium, will continue for the duration of this biennium, with the goal of establishing fully fit for purpose laboratories in Seibersdorf to better serve Member States for the next 15–20 years.

Enhancing quality assurance continues to be a priority for the safe and efficient operation of the laboratories. Ongoing efforts to strengthen quality assurance will enable more of the laboratories to achieve and maintain high levels of proficiency, demonstrate competence and serve as reference laboratories for Member States.

Efforts will also continue to strengthen and expand partnerships, such as the partnership with the Food and Agriculture Organization of the United Nations (FAO) for the management of the Joint FAO/IAEA Programme of Nuclear Techniques in Food and Agriculture, as well as networks of Member State scientific and research institutions. The IAEA Collaborating Centre scheme remains a valuable mechanism for working jointly with Member State institutions, which will be further enhanced and expanded.

Education and training are fundamental to the delivery of this major programme. To reach a wider audience and to achieve greater cost savings, the development of e-learning tools and on-line education platforms (e.g. webinars) will continue to be emphasized. To increase awareness of the general public and decision makers of the work and contributions of this major programme towards achievements of development goals, communication strategies and activities will be prioritized and strengthened.

Medium Term Strategy

The planning process takes into account Medium Term Strategy 2012–2017 (MTS) so that the programmes, subprogrammes and projects are generally linked to one or more of the following Medium Term Strategy objectives and sub-objectives having direct relevance to this major programme:

B. Strengthening promotion of nuclear science, technology and applications

- B01 Improve human health by supporting: the use of nuclear techniques in nutrition; the safe and effective use of radiation medicine for the diagnosis and treatment of patients; the development of integrated, comprehensive national programmes through partnerships, especially the Joint World Health Organization (WHO)/IAEA Programme on Cancer Control. and the education and training of practitioners;
- B02 In partnership with FAO facilitate the use of nuclear technologies in Member States to contribute to global food security;
- B03 Assist Member States in the use of isotopic techniques for water resources mapping and assessment to enhance water security;
- B04 Facilitate the utilization of isotopes and nuclear techniques to gain a better understanding of the environment and to support the addressing of environmental sustainability;
- B05 Support the building of capacities in the areas of production of radioisotope and radiopharmaceuticals and applications of radiation technologies;
- B06 Ensure that Agency laboratories are able to meet the needs of Member States and upgrade and modernize the laboratories as needed;
- B08 Promote applications of advanced nuclear/radiation techniques.

In addition, several projects due to their cross-cutting nature also link to the following MTS objectives and sub-objectives. In such cases, Major Programme 2 provides support to activities led within other Major Programmes.

C. Improving nuclear safety and security

— C02 Establish and continuously improve standards and guidance;

— C04 Help to build national, regional and international capacity to respond to nuclear and radiological incidents and emergencies and assist in case of a nuclear or radiological incident or emergency.

D. Providing effective technical cooperation

— D01 Ensure support in areas of increasing demand and interest, such as nuclear power for newcomer States, safety and security infrastructures, health, water, food and agriculture and relevant industrial applications;

— D02 Facilitate cooperation among Member States bilaterally and regionally;

— D03 Advance partnerships with the United Nations and other multilateral organizations, regional development bodies and other relevant intergovernmental and non-governmental bodies;

— D04 Mobilize extrabudgetary contributions to respond to the growing needs and demands of Member States, including for footnote-a projects;

— D05 Promote South–South and North–South partnerships, information and technical exchanges and capacity strengthening initiatives by building upon the expertise available in Member States and Regional Resource Centres and by the promotion of networking;

— D06 Promote regional cooperation among Member States in response to transboundary development challenges;

— D07 Promote best practices in project formulation, management, monitoring and evaluation.

F. Providing efficient, innovative management and strategic planning

— F13 Promote gender equality and equitable geographical representation in the Agency, especially at managerial levels.

Outcomes	Performance Indicators
• Increased use by Member States of nuclear and isotopic techniques for effective improvement in food security, human health, water resources management, management of the marine and terrestrial environments, and industrial development.	• Number of coordinated research projects (CRPs) and IAEA Collaborating Centres. • Number of training events to which the Department participates.

Projects

Title	Main Planned Outputs
2.0.0.001 Overall management, coordination and common activities	Annual Report, Nuclear Technology Review, Medium Term Strategy implementation report, Mid-Term Progress Report, Programme Performance Report and reports to the General Conference; briefings, meetings of the Standing Advisory Group on Nuclear Applications (SAGNA) and meetings with Member States; and maintenance of departmental web pages for outreach purposes.
2.0.0.002 Management of the coordinated research activities	Completed CRPs, completed research, technical, doctoral contracts and research agreements; technical meetings; publications; and databases and techniques dissemination.
2.0.0.003 Renovation of the Nuclear Applications Laboratory (ReNuAL)	New laboratory buildings with needed space that meet the relevant health and safety requirements and accommodate the growing number of trainees and fellows as well Agency staff; new equipment to replace ageing hardware or to address emerging challenges to meet growing Member State demands.

Programme 2.1 Food and Agriculture

Objectives:

- *To contribute to the sustainable intensification of agricultural production and the improvement of global food security by addressing the challenges of food production, food protection and food safety through capacity building and technology transfer to Member States.*
- *To increased resilience of livelihoods to threats and crises in agriculture by improving assessment and mitigation of threats and crises in agriculture, including impact of climate change and nuclear or radiological accidents on agriculture, as well as food safety risks.*
- *To improve efficient agricultural and food systems for sustainable management and conservation of natural resources, and to enhance the conservation and application of plant and animal biodiversity.*

Major global trends that will frame agricultural development over the medium term include: rising food demand, lingering food insecurity, malnutrition, and the impact of climate change on agricultural production and the natural resources required to support that production. The current FAO Medium Term Plan and the IAEA Medium Term Strategy, as well as the increasing demands from Member States, will define the Food and Agriculture Programme for 2016–2017.

The programme for this biennium will retain and further concentrate on the priorities of supporting the intensification of agricultural productivity, ensuring food safety and quality, and increasing resilience of livelihoods to threats and crises in food and agriculture, including protection from pests and diseases, better adaptation to, and mitigation of, climate change in agriculture (climate smart agriculture), and preparation and response to nuclear or radiological accidents affecting food and agriculture.

Outcomes	Performance Indicators
• Increased food security and sustainable use of natural resources through application of nuclear and related techniques, guidelines and information products.	• Number of Member States improving their food security and sustainable use of natural resources with notable social and economic or environmental impacts.
• Improved capacity of Member States to use nuclear techniques for sustainable intensification of agricultural production.	• Number of national agricultural research institutes using Agency recommended techniques, guidelines and products in their agricultural research and development.

Lessons learned from reviews, assessment, evaluations: Strengthening cooperation through coordinated and coherent programmes with the FAO is critical in order to address the strategic objectives of both organizations. An initiative to modernize the Department of Nuclear Science and Applications laboratories in Seibersdorf to revitalize and expand their capabilities and to provide greater assistance to Member States has begun and will continue for the duration of this biennium.

Specific criteria for prioritization:

1. Promote food security to increase sustainable agricultural productivity.
2. Support climate smart agriculture for effective adaptation to and mitigation of climate change.
3. Increase food safety and food control, including nuclear emergency preparedness and response.

Subprogramme 2.1.1 Sustainable Land and Water Management

Objectives:

- *To enhance Member State capabilities in land and water management to ensure agricultural sustainability under climate change and under crises in agriculture posed by nuclear emergencies, while intensifying/diversifying agricultural production through the development and application of nuclear techniques.*
- *To build Member State capacities in the use of isotopic and nuclear techniques to assess impacts of land and water management practices and climate change on soil and water resources for sustainable food production and to improve response to nuclear emergencies affecting food and agriculture.*

Outcomes	Performance Indicators
• Enhanced Member State capability to mitigate the impact of climate change and related changes in land use activities, land degradation, soil erosion and water scarcity, and nuclear emergencies on food and biomass production.	• Number of innovative land and water management packages developed and adapted for improving water use efficiency, soil quality, soil resilience and crop adaptation to climate change; and strengthening preparedness for, and response to, nuclear emergencies affecting food and agriculture.
• Strengthened Member State capability to use isotopic and nuclear techniques to assess the impact of on-farm and area-wide land and water management practices and climate change on soil and water resources for sustainable food production and nuclear emergencies affecting food and agriculture.	• Number of States reporting on the use of isotopic, nuclear and related conventional techniques to assess the impacts of on-farm and area-wide land and water management practices and climate change on soil and water conservation, and nuclear emergencies affecting food and agriculture.

Programmatic changes and trends: This subprogramme reflects an increasing concern in Member States regarding the management of soil and water resources for sustainable food production, particularly in the context of the impacts of climate change and variability. Climate smart agriculture requires the development of tools and technologies for improving on-farm and area-wide land and water management practices under both rain fed and irrigated farmlands and assessing their beneficial impacts on food production, soil quality and water quantity and quality in both cropping and integrated cropping-livestock farming systems, including conservation agriculture. The subprogramme responds as well to the increase in demand from Member States for assistance in response to nuclear emergencies affecting food and agriculture. The subprogramme supports the critical need to improve data collection management and mapping necessary for the effective and timely dissemination and communication of information to stakeholders in affected areas.

Projects

Title	Main Planned Outputs
2.1.1.001 Land management for climate smart agriculture	Data on impact of climate change on soil and land productivity, and effectiveness of climate smart soil management practices; protocols and guidelines; data collection, management and visualization tools for crisis management; publications; support for 20 technical cooperation projects; and training.
2.1.1.002 Water management for resource saving agriculture	Protocols, guidelines and e-learning courses to improve agricultural water use efficiency, crop water productivity for climate smart agriculture, and to enhance conservation of agricultural resources and external inputs; publications in journals and newsletters; and support to technical cooperation projects and fellowship training.

Subprogramme 2.1.2 Sustainable Intensification of Livestock Production Systems

Objectives:

— *To enhance Member State capabilities, particularly in the context of climate change, to intensify livestock production systems sustainably and to assess, control and manage risks from transboundary animal and zoonotic diseases, by developing, transferring and applying nuclear and related techniques.*

Outcomes	Performance Indicators
• Increased use of Agency recommended locally available feed resources while protecting the environment.	• Number of Member States using Agency recommended standards and techniques in feeding livestock.
• Enhanced use of reproduction and breeding strategies and practices that improve productivity in smallholder production systems.	• Number of Member States introducing animal genetic characterization and breeding strategies and improved reproduction practices.
• Increased ability to diagnose and control transboundary animal diseases (TADs) and zoonotic diseases.	• Number of Member States introducing advanced animal disease diagnostics for rapid detection epidemiology and surveillance and effective control (vaccination or disease elimination) strategies.

Programmatic changes and trends: There continues to be a programmatic shift from classical, non-molecular technologies towards value added, immunological and molecular nuclear based technologies to optimally utilize available animal feed resources (while protecting the environment), improve the production traits of local livestock breeds (i.e. more and better quality milk and meat), and develop and transfer early and rapid diagnostic technologies for TADs and zoonotic diseases to enable Member States to respond to the risks posed by such events earlier and with greater effectiveness. In addition, the use of gamma radiated inactivated/killed disease pathogens as vaccine components and the use of stable isotopes to follow and monitor pathways of disease carriers in a non-invasive way will increasingly form the basis of activities in this biennium.

Projects

Title	Main Planned Outputs
2.1.2.001 Improving animal production and breeding	Publications; guidelines; standard operating procedures (SOPs); training courses; workshops; database for recording production data; and inputs to technical cooperation projects to improve local feed resource utilization and to enhance reproduction and breeding strategies.
2.1.2.002 Decreasing transboundary animal and zoonotic disease threats	Atomic, nuclear and nuclear related technologies for the early and rapid diagnoses and control of TADs and zoonotic diseases; isotopic signatures of migratory wildlife correlated with environmental isoscapes; radiation attenuated vaccines; and guidelines and SOPs.

Subprogramme 2.1.3 Improvement of Food Safety and Food Control Systems

Objectives:

— *To improve food safety and food control systems, as well as environmental protection, including preparedness and response to nuclear and radiological emergencies and in relation to the use of agrochemicals.*

— *To enhance international food trade through the use of nuclear and related techniques for sanitary and phytosanitary purposes.*

Outcomes	Performance Indicators
• Increased and expanded application of established and novel food irradiation technologies for food quality, sanitary and phytosanitary purposes.	• Number of Member States that allow the export/import of irradiated food. • Number of facilities treating food.
• Use of integrated food forensic, traceability and contaminant control techniques to improve food safety/quality and to strengthen domestic/international trade; improved agricultural practices related to the use of agrochemicals to optimize food production and environmental sustainability.	• Number of laboratories developing and/or applying food control techniques and methods. • Number of validated analytical methods transferred or implemented in Member States for food safety and integrity.
• Enhanced use of harmonized procedures and international standards for preparedness and response to nuclear / radiological emergencies; development and dissemination of guidelines and protocols for agricultural countermeasures and remediation strategies for agricultural production, land and water.	• Number of harmonized administrative arrangements and procedures and international standards developed and disseminated. • Number of guidelines on agricultural countermeasures and remediation strategies, including monitoring and sampling protocols, developed and disseminated.

Programmatic changes and trends: Trends towards more specific food safety and control systems will be addressed, including new uses of machine generated irradiation technologies to provide effective means to ensure food quality, and minimize losses and waste without relying on radionuclide sources, while addressing consumer concerns related to the use of ionizing radiation. In the area of preparedness and response to nuclear and radiological emergencies affecting food and agriculture, harmonized field and laboratory practices will be developed for monitoring commodities and selecting feasible agricultural countermeasures and remediation strategies to restore production and distribution systems for food, agriculture, forestry and fisheries products. The development and transfer of analytical methodology packages for Member States will be optimized to tackle the rapidly growing problem of food fraud in international trade, which has both economic and food safety implications and is closely linked to food traceability.

Projects

Title	Main Planned Outputs
2.1.3.001 Food irradiation applications using novel radiation technologies	International standards, guidelines, protocols and approaches for food quality, and sanitary and phytosanitary applications of food irradiation using novel and established radiation technologies; and updated databases on irradiated food authorizations and food irradiation treatment facilities.
2.1.3.002 Traceability to improve food safety and quality and to enhance international trade	Validated methods for food forensic, traceability and contaminant control techniques to improve food safety and to quality and strengthen international trade; laboratory scientists and technicians trained; quality assurance/control programmes implemented in Member State laboratories.
2.1.3.003 Preparation and response to radiological emergencies (food and agriculture)	Revised and up to date Joint Radiation Emergency Management Plan of the International Organizations (JPLAN) and Cooperative Arrangements between the FAO and the IAEA related to nuclear and radiological emergencies; and revised IAEA safety standards and Codex guideline levels for radionuclides in foods.

Subprogramme 2.1.4 Sustainable Control of Major Insect Pests

Objectives:

— *To increase Member State capacity in the area-wide suppression, containment or eradication of key pests of crops, livestock and humans by developing and integrating the sterile insect technique (SIT) with other methods.*

— *To help Member States reduce losses and insecticide use, facilitate international agricultural trade and reduce the risk of establishment and spread of exotic insect pests through the development, validation and transfer of sterile insect and other biological technologies.*

Outcomes	Performance Indicators
• Increased awareness, capacity and use by Member States of improved sterile insect and related techniques and decision support systems.	• Number of Member States receiving training, support and improved technologies, feasibility and decision support studies, guidelines and manuals and standards.

Programmatic changes and trends: Subprogramme 2.1.4 is subject to a growing Member State demand for the environment friendly management of key plant pests that cause major economic losses, but also for the control of insect vectors transmitting diseases to livestock and humans. These trends were confirmed by a detailed external evaluation in 2011, which gave a very positive assessment of subprogramme outputs and outcomes. The specific recommendations have been incorporated in the programmes for 2014–2015 and 2016–2017.

Projects

Title	Main Planned Outputs
2.1.4.001 SIT and related technologies to manage major insect plant pests	Improved methods and strains; feasibility assessments and implementation of area-wide integrated programmes; design of rearing facilities; post-harvest treatments; guidelines, databases, models and services; shipment of strains and materials; and training and technical support to technical cooperation projects.
2.1.4.002 Management of livestock insect pests for sustainable agriculture	Improved procedures to mass-rear, sex, sterilize, release and monitor sterile flies; capacity building; provision of materials/services, feasibility assessments/facility designs; strategy and policy advice; harmonized approaches among key international partners; and technical support to technical cooperation projects.

Title	Main Planned Outputs
2.1.4.003 Development of the SIT for the control of disease transmitting mosquitoes	Methodologies for medium scale rearing and sterilization of *Aedes albopictus*, *A. aegypti* and *Anopheles arabiensis*; sexing systems and strains; male mosquito behaviour assessments; guidelines, manuals and facility designs; and training and technical support to technical cooperation projects.

Subprogramme 2.1.5 Crop Improvement for Intensification of Agricultural Production Systems

Objectives:

— *Enhance Member State capabilities to ensure agricultural and environmental sustainability under climate change and variability, while intensifying and diversifying crop production systems, through developing and applying methodologies for mutation breeding and efficiency enhancing biotechnologies.*

Outcomes	Performance Indicators
• Member State crop breeding programmes enabled to apply methodologies integrating mutation induction and efficiency enhancing biotechnologies for breeding improved varieties.	• Number of Member States supported in the use of nuclear techniques in crop improvement.

Programmatic changes and trends: This subprogramme reflects an increasing concern in Member States regarding the resilience of agro-biodiversity resources for sustainable food production to the negative impacts of climate change and variability. Broadening adaptability of crops using mutation induction and efficiency enhancing biotechnologies will be one of the major trends pursued in this biennium by the subprogram. A special focus will be on transboundary plant diseases (such as rust in coffee and wheat).

Projects

Title	Main Planned Outputs
2.1.5.001 Mutation induction for better adaptation to climate change	Improved mutant germplasm (advanced lines and mutant varieties) as breeding resources (yield, quality, nutrition and commercial traits) with broadened adaptability to climatic stresses; informational materials; and training of Member State personnel.
2.1.5.002 Integrated techniques for mutation breeding and biodiversity	Protocols and guidelines for enhancing the efficiency of mutation detection; trained scientists; and characterized mutant genetic resources available for distribution.

Programme 2.2 Human Health

Objectives:

— *To enhance capabilities in Member States to address needs related to the prevention, diagnosis and treatment of health problems through the development and application of nuclear and related techniques within a quality assurance framework.*

Nuclear and related techniques are used in the prevention, diagnosis and treatment of a large number of health issues or to complement non-nuclear techniques. The programme's scope includes medical imaging and radiation treatment within the framework of a quality management system to ensure the safety of patients, workers and the general public, and the use of stable isotope techniques to combat malnutrition throughout the life cycle.

The programme will continue focusing on enhancing Member States' capabilities in the clinical utilization of current advanced radiotherapy technologies in the curative and palliative treatment of cancer and medical imaging modalities to allow for an early and precise diagnosis, careful prognostic assessment and appropriate therapeutic decisions, as well as to allow for the monitoring of treatment effect.

Implementation of imaging and treatment modalities requires medical physics support, including the development of harmonized quality assurance guidelines and dosimetry protocols, and the provision of dosimetry services to ensure appropriate clinical outcomes and a reduction of risk of error, accidents and misdiagnosis.

In the area of nutrition, the programme will continue assisting Member States to build capacity and effective partnerships to develop sustainable and efficient nutrition programmes that will improve the nutritional status and health of populations.

Efforts to enhance the quality and accessibility of education materials will continue.

Outcomes	Performance Indicators
• Increased Member States' ability to combat malnutrition in all its forms through the use of nuclear and related techniques as a result of the support provided by the Agency.	• Number of institutions in Member States using nuclear and related techniques to develop and evaluate nutrition strategies through Agency supported activities in one year.
• Enhanced capabilities of Member States to use nuclear techniques in health safely and effectively as a result of implementation of Agency quality assurance programmes.	• Number of institutions in Member States that use Agency's quality audit guidelines: Quality Assurance Team for Radiation Oncology (QUATRO), Quality Management Audits in Nuclear Medicine Practices (QUANUM) and Quality Assurance Audit for Diagnostic Radiology Improvement and Learning (QUAADRIL).

Lessons learned from reviews, assessment, evaluations:
Investment in new technology is not always accompanied by adequate investment in human resource development in Member States.

Additional efforts should be deployed to strengthen the central role for capacity building, especially when transitioning to new technology.

The implementation of Agency's guidelines to enhance quality assurance in Member States is challenging owing to limited resources that are dedicated to quality improvement. There is a need to increase the Agency's efforts to raise awareness on the need to promote quality assurance in Member States.

Specific criteria for prioritization:

1. Activities that have the highest impact on effectiveness of diagnosis and treatment of patients, while ensuring safety of patients, staff and public.
2. Activities designed to support the implementation and sustainability of existing technologies in Member States.
3. Activities that support Member States in the safe transitioning to new and proven modalities, including those relating to capacity building of professionals.
4. Emerging nuclear technologies that reflect priorities identified by Member States.

Subprogramme 2.2.1 Nutrition for Improved Human Health

Objectives:

— *To enhance Member State capabilities to combat malnutrition and environment related nutrition issues for better health throughout the life cycle.*

Outcomes	Performance Indicators
• Increased Member State ability to combat malnutrition in all its forms through the use of nuclear and related techniques.	• Number of institutions in Member States using nuclear and related techniques to develop and evaluate nutrition strategies through Agency supported activities in one year.
• Increased number of nutritionists and public health professionals using nuclear and related techniques in public health nutrition issues.	• Number of nutritionists and public health professionals trained in the application of nuclear related techniques through Agency's supported activities in one year.

Programmatic changes and trends: The subprogramme will focus on nutritional issues during infancy and childhood to reflect increased attention on early life nutrition and the prevention of non-communicable diseases later in life. Areas include moderate acute malnutrition, protein bioavailability and nutritional issues related to the environment. There will be a continued focus on capacity building through support to doctoral CRPs, technical cooperation projects and development of education materials and syllabi, which will contribute to training of future policy makers/leaders in nutrition. Focus will also be on quality assurance in analytical methodologies as well as on partnership with the United Nations and non UN agencies.

Projects

Title	Main Planned Outputs
2.2.1.001 Health effects of nutrition and the environment	Guidelines and on-line education resources, reports and peer reviewed publications, inputs to technical cooperation projects, standard quality control procedures in collaboration with partners.

Subprogramme 2.2.2 Nuclear Medicine and Diagnostic Imaging

Objectives:

— *To improve the management of cancer, cardiac and other non-communicable diseases in Member States by enhancing professional capabilities through effective implementation of nuclear medicine and integrated diagnostic imaging practices.*

Outcomes	Performance Indicators
• Increased capacity of Member States to manage major health conditions such as cardiovascular disease and cancer by using nuclear medicine and diagnostic imaging techniques along with Agency standards/guidelines.	• Number of institutions in Member States applying nuclear medicine and diagnostic imaging procedures in one year.
• Increased capacity of Member States to provide advanced nuclear medicine and diagnostic imaging procedures.	• Number of procedures in cardiology using Agency guidelines/ recommendations in one year. • Number of procedures in oncology using Agency guidelines/ recommendations in one year.

Programmatic changes and trends: Requests to support medical applications of nuclear techniques are steadily increasing, as evidenced by the continuous increase in the number of technical cooperation projects. The subprogramme will continue its focus on integrated diagnostic medical imaging, including nuclear medicine and radiological techniques such as computed tomography (CT) and magnetic resonance imaging (MRI) to tackle chronic diseases such as cardiac disorders and cancer, which are also becoming one of the new focuses of the World Health Organization (WHO). Applications such as positron emission tomography (PET)/CT, single photon emission computed tomography (SPECT)/CT, CT and MRI and their management will be addressed both from clinical and research perspectives. The main outputs will be guidance documents and web based e-learning resources, and from a research point of view, new CRPs have been planned to cover areas of interest for Member States.

Projects

Title	Main Planned Outputs
2.2.2.001 Nuclear medicine in diagnosis and therapy of non-communicable diseases	Guidance documents, guidelines, SOPs, international conference and results of CRPs.
2.2.2.002 Educational resources for use of nuclear techniques in human health	Review/update Human Health Campus; update Nuclear Medicine Database (NUMDAB); interactive e-learning material; webinars/training materials; harmonize nuclear medicine training curriculum; and promote the use of QUANUM in Member States.

Subprogramme 2.2.3 Radiation Oncology and Cancer Treatment

Objectives:

— *To enhance Member State capabilities to establish sound policies for radiotherapy and cancer treatment, and other applications of radiation in human health, and to ensure the effective, efficient and safe utilization of current and future advanced radiotherapy technologies.*

Outcomes	Performance Indicators
• Improved management of cancer patients in Member States through implementation of evidence based approaches and Agency's guidelines.	• Number of radiotherapy institutions in Member States applying Agency's guidelines in the management of cancer patients in one year.

Programmatic changes and trends: Consistent with the overall objectives of the Human Health Programme, the subprogramme will pursue modern mechanisms for the delivery of training in low resource environments including e-learning strategies. Areas include novel techniques (e.g. intensity modulated radiation therapy, image guided radiation therapy, stereotactic radiotherapy, intraoperative radiotherapy, tomotherapy, particle therapy and applied radiation biology in particular clinical applications of biodosimetry) and the exploration of their feasibility for effective use in developing countries. The subprogramme will emphasize the use of radiotherapy in paediatric oncology in developing countries and other areas of interest such as dose fractionation and brachytherapy in general.

Projects

Title	Main Planned Outputs
2.2.3.001 Clinical radiation oncology	Agency reports, peer reviewed publications, databases, teaching materials and e-learning resources.
2.2.3.002 Biological effects of radiation	Production of training materials; provision of expertise to implement clinical trials utilizing novel strategies, including clinical biodosimetry; and research progress in radiation sterilization in tissue banking and tissue engineering.

Subprogramme 2.2.4 Dosimetry and Medical Physics for Imaging and Therapy

Objectives:

— *To enhance the capability of Member States to implement radiation imaging and treatment modalities safely and effectively through optimized dosimetry and medical physics practice.*

Outcomes	Performance Indicators
• Enhanced quality assurance and dosimetry in national calibration laboratories and hospitals in Member States through the use of the Agency's guidelines and dosimetry services.	• Number of Member States that use Agency's dosimetry services and implement Agency's guidelines in dosimetry and quality assurance in one year.

Programmatic changes and trends: This biennium will focus on the update of quality assurance and quality control guidance in medical physics, the consolidation of external auditing mechanisms and support to Member States for the implementation of harmonized protocols for new technology and capacity building. The Agency dosimetry services provided to Member States through laboratory activities will be enhanced with the introduction of a new dosimetry auditing technology. In addition, preparations for the implementation of the extension of the dosimetry services in the framework of the Agency's ReNuAL project will be supported.

Support will be provided for research coordination activities to test and improve dosimetry protocols and quality assurance and quality control guidelines. The monitoring of new technology and assessment of its efficacy will be conducted through consultancies and the exchange of information with professional societies and international organizations.

Support for clinical training residencies and certification programmes in medical physics will be strengthened.

Projects

Title	Main Planned Outputs
2.2.4.001 Calibration and auditing services	Results of thermoluminescence dosimetry (TLD)/ glass dosimetry postal audit service; results of calibration of national dosimetry standards; results of comparisons; resolution of discrepancies of beam calibrations in Member States; and updated databases.
2.2.4.002 Developments in radiation dosimetry	Agency publications, training materials on radiation dosimetry.
2.2.4.003 Clinical medical radiation physics	Publications on quality assurance guidelines; education materials for medical physicists working in medical radiation imaging and treatment; and methodologies on auditing procedures in radiation medicine.

Programme 2.3 Water Resources

Objectives:

— *To enable Member States to use isotope hydrology for the assessment and management of their water resources, including the characterization of climate change impacts on water availability.*

Water remains as a critical resource which influences the environment and almost all sectors of social and economic activities. Estimates of the total amount of available water on earth, its storage and flow patterns, are poorly constrained and characteristics of where and how freshwater occurs and its life cycle are poorly understood. Use of groundwater resources has greatly contributed to increased food and water security over the past fifty years. On the other hand, an increased use of groundwater has resulted in environmental degradation and declining water levels have led to insecurity with regards to sustaining future irrigation levels and water supply for domestic and industrial uses. Increasing energy demand also requires greater availability of water and ability of governments to allocate water rationally between different economic activities. Greater uncertainties arise from the impact that climate change may have on the availability of water resources.

Water resources assessment and management require multidisciplinary approaches based on physical and social sciences that must be underpinned strongly by scientific data on the occurrence and distribution of surface and groundwater resources. Comprehensive national assessments (including groundwater) are still lacking, limiting Member States' ability to fully use their resources for meeting the demands for water supply and better address water security. Isotope hydrology techniques — based upon 'fingerprints' of radioactive and stable isotopes in water — help to rapidly and cost effectively assess and manage water resources. Continued Agency's activities in this field are necessitated by the lack of sufficient capacity for using these tools effectively. Programme priorities remain to increase capacity and self-reliance in the use of isotope tools for the assessment and management of water resources.

Outcomes	Performance Indicators
• Sustainable water resources management and related policy development in Member States increasingly based on a scientifically sound knowledge base.	• Percentage of Member States using isotope hydrology methodologies and global isotope datasets for water resources assessment and management, including adaptation to climate change by the end of the cycle.
• Member States with trained human resources and related infrastructure for the use of isotope hydrology methods in water resources assessments.	• Percentage of Member States having implemented/initiated water resources assessment programmes using isotope techniques by the end of the cycle. • Number of laboratories in Member States with the ability to produce good quality, stable isotope and tritium analyses of water samples by the end of the cycle.

Lessons learned from reviews, assessment, evaluations: A key lesson has been to formulate activities based on specific hydrological gaps at either local or national scales, where isotope techniques and the Agency have an advantage and make important contributions to the national and international water agendas. Accordingly, tasks related to the use of artificial radioisotopes, geothermal reservoirs, salinity issues and dam leakage were reduced. The reorganization of the laboratory allowed increased activities and expansion in the use radioisotope and noble gas applications, since the access to these tools is still limited in most Member States.

Specific criteria for prioritization:

1. Agency's services of interest to Member States, as expressed in several General Conference resolutions.
2. Comparative advantages of nuclear technology compared with non-nuclear alternatives for the proposed application.
3. Member States' prioritization of their development needs and efforts.

Subprogramme 2.3.1 Isotope Data Networks for Hydrology and Climate Studies

Objectives:

— *To provide Member States access to global isotope data and mapping products, and to disseminate isotope hydrology information through publications and training.*

Outcomes	Performance Indicators
• Increased ability of Member State institutions to utilize isotope techniques in water resources assessment and management.	• Percentage of Member States having implemented/initiated water resources assessment programmes using isotope techniques by the end of the cycle. • Percentage of Member States using laser isotope analysis for hydrological and climatic studies by the end of the cycle.

Programmatic changes and trends: The provision of global isotope data for hydrological and climatic studies and the support to isotope hydrology laboratories in the Member States remain the main priorities of Subprogramme 2.3.1. The demand for global isotope data for hydrological and climatic applications is growing, with frequent contributions and requests to IAEA databases. The operation of these global monitoring programmes remains a key activity of the Water Resources Programme. On the other hand, the fast development of laser absorption spectroscopy has led to the replacement of mass spectrometric methods by these simpler methods. The current priority of the Isotope Hydrology Laboratory is to ensure self-reliance in stable isotope analysis in Member States through the provision of regular training on the new analytical tools, quality assurance and quality control support, and the organization of proficiency tests.

Projects

Title	Main Planned Outputs
2.3.1.001 IAEA isotope data networks for precipitation, rivers and groundwater	Updates of the Water Isotope System for Data Analysis, Visualization, and Electronic Retrieval (WISER) databases and new spatial analysis/mapping products.
2.3.1.002 Synthesis and dissemination of global isotope data and related information	Mapping products, newsletters, atlases, training programmes/e-learning products with the UNESCO-IHE Institute for Water Education (UNESCO-IHE).

Subprogramme 2.3.2 Isotope Based Assessment and Management of Water Resources

Objectives:

— *To enable Member States to use isotope techniques for local scale to national scale water resources assessment and surface or groundwater management.*

Outcomes	Performance Indicators
• Increased use of isotope hydrology by Member States as part of their water resources assessment efforts.	• Percentage of total Member States regularly using isotope hydrology methods as part of their water resources assessment and management efforts (including activities under the technical cooperation programme), by the end of the cycle.

Programmatic changes and trends: Subprogramme 2.3.2 will focus on the growing Member State need for integrated water resources assessments at national and regional scales, based on the experience learned in the past cycle through the implementation of the IAEA Water Availability Enhancement Project. These priorities emphasised the Agency's unique role in helping Member States to conduct assessments through the promotion of isotope techniques through technical cooperation projects as well as collaborative projects with other United Nations agencies and non-governmental organizations. Projects on dam safety, geothermal, use of artificial tracers and coastal aquifer salinity problems will be phased out.

Projects

Title	Main Planned Outputs
2.3.2.001 Comprehensive assessment of resources	National assessment reports for participating Member States.
2.3.2.002 Management strategies for groundwater and surface water resources	Transboundary assessment reports.

Subprogramme 2.3.3 Radioisotope Applications for Hydrology

Objectives:

- *To enable Member State use of radioisotopes of carbon and noble gases for river and groundwater management.*
- *To strengthen Member State capacity for the analysis of environmental tritium in water samples.*

Outcomes	Performance Indicators
• Improved assessment and management of river and groundwater systems using radioisotopes.	• Percentage of Member States where radionuclides and noble gas isotopes have been used with Agency assistance for the assessment of water resources by the end of the cycle.
• Improved Member State capacity for the analysis of environmental tritium in water samples.	• Percentage of isotope hydrology laboratories able to produce high quality tritium isotope data in their own laboratories by the end of the cycle.

Programmatic changes and trends: Subprogramme 2.3.3 continues to focus in the priorities set in the previous cycle, namely facilitating access and expand the use of radionuclides and noble gases and its isotopes for water resources management. The planned activities in this cycle are expected to consolidate the ongoing work promoting a broader use of both long lived and short lived radionuclides for groundwater age dating and recharge assessments, as well as tracing sources and dynamics of pollution. Several of these activities aim at developing and testing field and laboratory methodologies to facilitate the routine application of these new approaches, combined with other hydrological and geochemical tools, in Member States.

Projects

Title	Main Planned Outputs
2.3.3.001 Characterization of fossil groundwater using long-lived radionuclides	Expanded network of Member State laboratories providing isotope analysis for technical cooperation projects and measurement protocols for isotope sampling and analysis.
2.3.3.002 Noble gas isotopes for groundwater recharge and pollution studies	Improved sampling methods for helium isotope analysis; and use of helium and other noble gases for water resource assessments.

Programme 2.4 Environment

Objectives:

- *To identify environmental problems caused by radioactive and non-radioactive pollutants and climate change, using nuclear, isotopic and related techniques, and to propose mitigation/adaptation strategies and tools.*
- *To enhance the capability of Member States to develop strategies for the sustainable management of terrestrial, marine and atmospheric environments and their natural resources in order to address effectively and efficiently their environment related development priorities.*

Protecting the natural environment remains one of the three fundamental pillars of sustainable development and ensuring effectiveness and efficiency in environmental management is fundamental to the success of the post-2015 development agenda. Major threats to the environment such as over-exploitation, habitat loss, invasive species, pollution and climate change continue to reduce biodiversity and quality of life, while affecting the provision of key ecosystem services critical to further development and reducing poverty.

Nuclear and isotopic techniques have an important role to play in the management of the environment and in the development of mitigation/adaptation strategies. The global objective of the programme is to enhance the capacity of Member States to understand marine, terrestrial and atmospheric environmental processes and dynamics, and to identify and address environmental problems caused by radioactive and non-radioactive pollutants and climate change using nuclear and isotopic techniques.

The activities of the programme support international trade, ecological sustainability, effective environmental risk assessment and remediation of polluted environments, with corresponding improvements in the analytical capabilities of the Member State laboratories involved in Agency's activities at national, regional or interregional level. The programme further enhances capacity building in Member States dealing with elevated levels of radioactive or other environmental contaminants for sustainable management of terrestrial and marine environments and their natural resources. The programme also provides scientific information to other international organizations.

Outcomes	Performance Indicators
• Enhanced capability of Member States in using nuclear, isotopic and related techniques for identifying environmental problems caused by radioactive and non-radioactive pollutants, climate change and the loss of natural habitat, and to develop mitigation/adaptation strategies and tools.	• Number of Member States assisted in order to improve the use of nuclear and isotopic techniques to identify environmental impacts caused by pollution, climate change or loss of habitat. • Number of new certified materials produced and analytical methodologies published and/or validated in the biennium 2016–2017.
• Enhanced capability of Member States in developing strategies for the sustainable management of terrestrial, marine and atmospheric environments and their natural resources in order to address effectively and efficiently their environment related development priorities.	• Number of Member States participating in research, monitoring or training activities that will enhance their capability to develop strategies to protect the environment and sustainably utilize natural resources.

Lessons learned from reviews, assessment, evaluations: The subprogrammes will be enhanced by strengthening their activities. This includes:

Strengthening capacity of Member States to study, monitor and address: environmental radioactivity, climate change and ocean acidification, coastal pollution and seafood safety, and habitats threatened by agriculture, forestry and mining;

Integrating soil, freshwater, biota, coastal, marine and atmospheric studies to improve understanding of environmental processes and anthropogenic impacts, paying particular attention to multiple stresses in the environment;

Strengthening the capacity to respond to radiological emergencies;

Consolidating reference material production and distribution;

Enhancing collaboration with key partners;

Improving communication and outreach activities.

These activities will be assisted by the finalisation and implementation of a quality system, providing a model for other Member States laboratories.

Specific criteria for prioritization:

1. Activities that make a significant contribution to reaching the sustainable development goals (SDGs).
2. Activities that assist Member State laboratories through networking and development of guidelines, and enhance their environmental awareness using nuclear techniques,
3. Activities that support lowering technical barriers to trade and support the competitiveness of the least developed and developing Member States. Efforts are made to focus on increasing the efficiency of programme delivery, in part by working more closely with Member State institutions via networks (e.g. Analytical Laboratories for the Measurement of Environmental Radioactivity (ALMERA)) as well as through IAEA Collaborating Centres and other partnerships at the national, regional and international levels. Quality of services will be emphasized and assured via, for example, the development of guidelines and standards and the production of reference materials.

Subprogramme 2.4.1 IAEA Reference Products for Science and Trade

Objectives:

— *To enhance the reliability and comparability of measurement results obtained by nuclear analytical techniques in Member State laboratories.*

Outcomes	Performance Indicators
• Enhanced capability of Member State laboratories to carry out sampling and measurement with the assistance of reference materials provided by the Agency.	• Number of laboratories in the ALMERA network. • Number of IAEA reference materials available on the web page of the Reference Products for Science and Trade subprogramme.

Programmatic changes and trends: Reference materials and proficiency tests remain the core activities of the subprogramme together with support to the ALMERA laboratory network. The formal establishment of a Reference Material Certification Committee for IAEA reference materials will formalize the already existing synergies as cross-cutting activity over all subprogrammes of the Programme 2.4 and beyond. The establishment of an internal laboratory quality system at the IAEA and planned accreditation of first analytical methods will enhance the reliability of the IAEA as a provider of high quality products for quality assurance and control in the field of environmental related nuclear techniques.

Projects

Title	Main Planned Outputs
2.4.1.001 Provision of reference products and laboratory performance support	Production and distribution of reference materials; conduct of proficiency tests; provision of reference procedures; consolidated Agency web site for customer interaction; and harmonization of Agency reference materials production and reference materials certification process.
2.4.1.002 Quality management and supporting network activities	Establishment of quality management at IAEA laboratories with accreditation of analytical procedures; assistance and advice to Member State laboratories regarding their analytical performance; operational ALMERA network of laboratories; and personnel trained.

Subprogramme 2.4.2 Nuclear Techniques to Understand Climate and Environmental Changes

Objectives:

- *To enhance the capability of Member States to develop and apply nuclear, isotopic and related techniques to assess climate and environmental changes and their effects on environmental contamination by radioactive and non-radioactive pollutants.*
- *To enhance the capability of Member States to develop and apply nuclear and related techniques for identifying, monitoring and mitigating impacts of climate and environmental changes on ecosystem services.*

Outcomes	Performance Indicators
• Enhanced capability of Member States to use nuclear, isotopic and related techniques for identifying, assessing and monitoring changes in pollution trends in relation to climate and environmental changes and for risk based assessment of impacts of carbon cycle changes and related ocean acidification.	• Number of Member States using nuclear and isotopic techniques to assess changes in pollution trends in relation to climate/environmental changes and risk based impacts of carbon cycle changes and related ocean acidification, as demonstrated through IAEA supported activities.
• Improved knowledge of climate and environmental changes and of impact of ocean acidification on pollution levels and trends, bioaccumulation pathways of contaminants, and ecological and socioeconomic vulnerability of ecosystems and organisms of ecological and economic value.	• Number of Member States representatives trained in the use of nuclear and isotopic techniques to assess changes in pollution trends in relation to climate/environmental changes and risk based impacts of carbon cycle changes and related ocean acidification. • Number of representatives in Member States actively searching the Ocean Acidification International Coordination Centre (OA-ICC) for information on ocean acidification and potential socioeconomic impacts.

Programmatic changes and trends: Nuclear and associated techniques are applied to better understand impacts of multiple stressors on resources and the assessment is completed through the evaluation of socioeconomic effects. The Agency being recognized by Member States and partner organizations as a key player in the area of ocean acidification, IAEA Environment Laboratories (NAEL) will enhance its technical contributions to investigate ocean acidification related problems. Field and laboratory based investigations, modelling and coordination activities related to the ocean acidification process and its environmental and socioeconomic impact will be strengthened and will support the OA-ICC, established at NAEL with Peaceful Uses Initiative (PUI) support. The integration of marine, terrestrial and atmospheric work on climate change continues. An emerging focus on atmospheric CO_2 isotopic applications will support an improved understanding of complex processes, linking the carbon cycle to the hydrological cycle.

Projects

Title	Main Planned Outputs
2.4.2.001 Isotopic tools to study climate and environmental change	Publications (technical reports, Agency and non-Agency publications); and a web site.
2.4.2.002 Assessing carbon cycle and impacts of ocean acidification	Agency and non-Agency publications and newsletters; web site of OA-ICC; technical cooperation projects backstopping; training course reports; contributions to joint activities under international projects; and cooperation with other United Nations agencies and ocean acidification programmes.

Subprogramme 2.4.3 Nuclear Techniques to Monitor and Assess Pollution

Objectives:

- *To enhance the capability of Member States to apply nuclear, isotopic and related techniques for monitoring environmental contamination by radioactive and non-radioactive pollutants.*
- *To assist Member States to apply analytical, tracer and numerical tools to assess the origins, behaviour and trends of radioactive and non-radioactive pollutants, and their impact on the environment, as well as to support environmental management decisions in routine and emergency situations.*

Outcomes	Performance Indicators
• Enhanced capability of Member States to use nuclear and related techniques for monitoring the occurrence, dispersion and trends of radioactive and non-radioactive pollutants and for assessing their origin, behaviour and impacts on the environment.	• Number of Member States using nuclear and isotopic techniques to assess radioactive and non-radioactive pollution and impacts of contaminants on the environment.
• Increased access of Member States to information, data, real time measurements and numerical tools supporting decision in environmental management in routine and accidental situations.	• Amount of additional data made available to Member States in free Internet access through the Marine Information System (MARIS) database.

Programmatic changes and trends: Subprogramme 2.4.3 is now focused on supporting Member States to address their needs related to monitoring and assessment of radioactive and non-radioactive pollution in the environment in an integrated and comprehensive manner, in the context of multiple stressors and changing climate and environmental conditions. Support to environmental database development and modelling are also strengthened in this subprogramme. In particular, the IAEA MARIS will be expanded and networked to serve a broader stakeholders' community and to provide instant access to a comprehensive data and information resource on key environmental pollutants.

Former project 2.4.3.2 Nuclear techniques for marine resource management and seafood safety in cycle 2014–2015 was moved to subprogramme 2.4.4 as project 2.4.4.2 Nuclear techniques for the management of ecosystem services. This move is oriented for improving thematic harmonization between environment subprogrammes.

Projects

Title	Main Planned Outputs
2.4.3.001 Radioactive and non-radioactive pollution and impact on environment	Published reports, papers and guidelines on the application of nuclear and associated techniques to environmental pollution studies.

Subprogramme 2.4.4 Applying Analytical Techniques to Protect Biodiversity and Ecosystem Services

Objectives:

- *To provide technical support and expertise to Member States on the application of nuclear and isotopic techniques to understand transfer, behaviour and impact of contaminants, biotoxins and radionuclides in biodiversity, food safety and ecosystem services.*
- *To develop recommended procedures for determination of nuclear and non-nuclear pollutants in the environment and to provide guidelines on the behaviour and impact of radionuclides in the environment.*
- *To increase knowledge on accumulation and transfer of contaminants (radioactive, non-radioactive biotoxins related to harmful algal bloom (HAB)) in organisms, especially those of importance as seafood and for trade.*

Outcomes	Performance Indicators
• Improved capacity of Member State laboratories to apply nuclear and non-nuclear techniques to assess the occurrence, transfer and impact of contaminants to the environment.	• Number of training courses with participation of Member States on the application of nuclear and non-nuclear techniques for marine and terrestrial monitoring. • Number of Member States assisted to improve their capacity to understand transfer processes, behaviour and impact of pollutants and radionuclides in various marine and terrestrial ecosystems.
• New recommended procedures for determination of nuclear and non-nuclear pollutants in the environment and guidelines on the behaviour and impact of radionuclides in the environment.	• Number of novel low level, high accuracy and high precision analytical procedures developed to assess the occurrence and fate of pollutants in the environment. • Number of publications on application of methods to assess the behaviour and impact of contaminants in biota and the environment.
• Improved capacity of Member States to measure accumulationand transfer of contaminants (radioactive, non-radioactive biotoxins related to HAB) in organisms.	• Number of published scientific papers on experimentally derived transfer factors, uptake pathways, behaviour and fate of radionuclides, trace metals, biotoxins and organic contaminants in marine organism.

Programmatic changes and trends: There is an increased focus globally on the assessment of the behaviour and transport of radionuclides, trace elements, and persistent organic pollutants and biotoxins in the marine and terrestrial environment, as well as on remediation activities in contaminated areas, in order to protect biodiversity and ecosystem services. The application of nuclear techniques and methodologies for understanding contaminants' behaviour in biota and the environment is a key component for this subprogramme. Knowledge development, information transfer and preparation of guideline documents will be a high priority for the extended scope of the subprogramme. Project 2.4.4.2 Nuclear techniques for the management of ecosystem services is new and replaces former project 2.4.3.2 Nuclear techniques for marine resource management and seafood safety (in cycle 2014–2015). The move of the project to this subprogramme was done for improving thematic harmonization between environment subprogrammes.

Projects

Title	Main Planned Outputs
2.4.4.001 Developing methodologies for environmental monitoring and assessment	Analytical methodologies for determination of nuclear and non-nuclear contaminants; capacity building in Member States to improve knowledge of environmental monitoring, assessment and remediation.
2.4.4.002 Nuclear techniques for management of ecosystem services	Agency and non-Agency publications, report of Research Coordination Meetings, backstopping of technical cooperation projects and training course reports; contributions to joint activities under international projects; and cooperation with other United Nations agencies and HAB programmes.

Programme 2.5 Radioisotope Production and Radiation Technology

Objectives:

— *To strengthen national capabilities to produce radioisotope products and radiopharmaceuticals and to apply radiation technology, thus contributing to improved health care and sustainable industrial development in Member States.*

Radioisotopes and radiation have numerous applications covering a wide range of areas that directly benefit the society. Some important areas include health care, food safety and security, environment and industries. Programme 2.5 will address the most important applications in these diverse areas, keeping the needs of Member States as the prime target. Assisting Member States in production of radioisotopes and radiopharmaceuticals, and radiation technology applications through coordinated projects, guideline documents, web based educational materials and helping to set up facilities would be the focus with emphasis on quality practice and regulatory compliance.

Subprogramme 2.5.1 will address e-learning modules in radiopharmacy, alternate technologies for production of $^{99}Mo/^{99m}Tc$, the most important medical isotopes, radionuclide generators and emerging therapeutic radionuclides and radiopharmaceuticals.

Subprogramme 2.5.2 will focus on applications of radiation technologies and industrial applications of radiotracers. Radiation processing is a proven effective mode for development of novel micro and nano sized materials. Development of new materials will be pursued for food packaging, health care and tissue engineering in coordination with relevant counterparts within the Agency. Radiation processing is also a 'green technology', for mitigation of microorganisms as well as 'tough to break' chemical contaminants often present in industrial and agricultural effluents. Use of radiation technology to mitigate threats from such contaminants introduced either deliberately or inadvertently into the environment will be addressed. Radiation based techniques are powerful tools for quality assurance and for optimization of industrial processes. Emerging techniques in multiphase systems and 3-D imaging in petrochemical and mining industries will be explored for dissemination in requesting Member States.

Outcomes	Performance Indicators
• Enhanced Member State capabilities to produce and use radioisotope products and radiopharmaceuticals and to apply radiation technology, thus contributing to improved health care and safe, clean and more efficient industrial development.	• Number of Member State laboratories adapting/contributing to developing and improving the methodologies for various products, techniques and applications. • Number of technical publications, databases, guidelines and training materials made available to Member States.

Lessons learned from reviews, assessment, evaluations: The need to engage all the stakeholders, if possible from the beginning to ensure success has been realised. This resulted in our focus on the need to have trained certified personnel and quality assurance aspects. Guidelines and training materials are hence planned with the above focus in mind, to foster the application of radioisotope products and radiation technology, as well as building local production capabilities in Member States. Internal coordination with the Human Health Programme in the areas of radiopharmaceuticals and with the Food and Agriculture Programme in the use of radiation processing technology in food industry would be continued for good synergy. Establishment of emerging radiation based techniques for industrial applications continues to be an area of importance for developing Member States, although in many developed countries radiotracer and radiation based techniques are well established in industrial areas.

Specific criteria for prioritization:

1. Activities where nuclear techniques have distinct advantage in providing better living conditions and in meeting the needs and interests of Member States would be focused, keeping the need to have a holistic development plan that takes care of man power development and high quality safe working practices.

Subprogramme 2.5.1 Radioisotope Products for Cancer Management and Non-communicable Diseases

Objectives:

— *To enhance Member State capabilities to locally produce radioisotopes and radiopharmaceuticals and to use them for supporting the management of cancer and other non-communicable diseases.*

Outcomes	Performance Indicators
• Increased availability of radioisotopes and radiolabelled products currently employed in key medical and industrial applications in Member States that can effectively contribute to improve health care, safe and clean industrial development, and environmental protection.	• Number of Member State laboratories involved in developing and utilizing the methodologies for radioisotopes and radiopharmaceuticals production. • Number of technical documents on the above topics made available to Member States.

Programmatic changes and trends: Subprogramme 2.5.1 will address alternate technologies for production of the most important medical isotopes $^{99}Mo/^{99m}Tc$, radionuclide generators and emerging therapeutic radionuclides/radiopharmaceuticals. Emphasis will be laid on quality assurance and quality control practice to be adhered for locally production of radiopharmaceuticals and use of radiation technology. E-learning will be developed towards this aim. In health care, diagnostic (based on ^{68}Ga and ^{99m}Tc) and therapeutic (based on ^{64}Cu and ^{177}Lu) radiopharmaceuticals that address neurodisorders, infections and cancer will be focused upon. Close coordination with Programme 2.2 will be continued in relevant areas. In addition, industrial radiotracers, radionuclide generators will also be addressed.

Projects

Title	Main Planned Outputs
2.5.1.001 Development and production of medical radioisotopes	E-learning modules in radiopharmacy; alternate technologies for production of the most important medical isotopes $^{99}Mo/^{99m}Tc$; and new radionuclide generators technologies and applications of emerging therapeutic radionuclides such as Cu-64.
2.5.1.002 Development of diagnostic and therapeutic radiopharmaceuticals	Guidelines on regulatory issues related to the production of radiopharmaceuticals; pre-clinical and clinical tests with new radiopharmaceuticals; and educational/training programme for radiopharmacists and technologists.

Subprogramme 2.5.2 Radiation technology for health care and industrial applications

Objectives:

— *To strengthen Member State capabilities to adopt and use radiation technology for the development of products for health care and for cleaner industrial processes and practices*

Outcomes	Performance Indicators
• Increased national capabilities to use radioisotope techniques for efficient industrial processes and radiation technology for environmental remediation, advanced materials production for use in health care and agricultural industries.	• Number of Member State laboratories involved in developing and utilizing the methodologies for radiation processing, compositional analysis and industrial applications of radioisotope techniques. • Number of technical documents on the above topics made available to Member States.

Programmatic changes and trends: Member States will be supported through education on radiation sciences and technologies through e-learning materials (web based tutorials), repository of most important literature; workshops, meetings and training courses. An international conference is planned to address in a comprehensive manner the recent developments that have taken place in radiation sciences and technologies, particularly the applications that have brought socioeconomic benefit to the Member States.

Projects

Title	Main Planned Outputs
2.5.2.001 Industrial applications of radioisotopes and radiation techniques	E-learning materials as well as manuals and training materials on sealed radiation source and radioactive tracers applications in industry will be made available. New technologies will be evaluated for the application of sealed sources and radioactive tracers in several industrial uses.
2.5.2.002 Radiation technology for health care and environmental applications	Methodologies and standard procedures for radiation applications for food safety, health care, industry and also for decontamination of biological agents; e-learning modules for education of radiation technologies; and the proceedings of a conference (if approved) on radiation technology applications.

Major Programme 2 – Nuclear Techniques for Development and Environmental Protection

Summary of Programme Structure and Resources
(excluding Major Capital Investments)

Table 15

Programme / Subprogramme / Project	2016 at 2016 prices			2017 at 2016 prices		
	Regular Budget	Extrabudgetary	Unfunded	Regular Budget	Extrabudgetary	Unfunded
2.0.0.001 Overall management, coordination and common activities	1 976 523	155 000	-	1 974 121	155 000	-
2.0.0.002 Management of the coordinated research activities	716 113	-	-	716 113	-	-
2.0.0.003 Renovation of the Nuclear Applications Laboratories (ReNuAL)	502 000	176 898	-	122 897	176 898	-
2.S Corporate shared services	4 590 681	35 900	52 283	4 948 594	35 900	52 283
	7 785 318	**367 798**	**52 283**	**7 761 726**	**367 798**	**52 283**
2.1.1.001 Land management for climate-smart agriculture	1 156 872	184 108	8 337	1 147 469	184 108	-
2.1.1.002 Water management for resource-saving agriculture	971 740	147 649	-	983 689	147 649	-
2.1.1 Sustainable Land and Water Management	**2 128 612**	**331 756**	**8 337**	**2 131 158**	**331 756**	**-**
2.1.2.001 Improving animal production and breeding	698 255	24 150	-	687 477	24 150	-
2.1.2.002 Decreasing transboundary animal and zoonotic disease threats	1 540 545	638 947	-	1 549 694	638 947	-
2.1.2 Sustainable Intensification of Livestock Production Systems	**2 238 800**	**663 096**	**-**	**2 237 171**	**663 096**	**-**
2.1.3.001 Food irradiation applications using novel radiation technologies	347 068	42 492	-	451 662	42 492	-
2.1.3.002 Traceability to improve food safety and quality	1 209 946	419 376	-	1 103 223	419 376	-
2.1.3.003 Preparation & response to radiological emergencies (Food & Agriculture)	78 877	-	-	78 877	-	-
2.1.3 Improvement of Food Safety and Food Control Systems	**1 635 891**	**461 868**	**-**	**1 633 762**	**461 868**	**-**
2.1.4.001 SIT and related technologies to manage major insect plant pests	1 557 747	318 421	-	1 453 969	318 421	120 595
2.1.4.002 Management of livestock insect pests for sustainable agriculture	1 139 700	157 661	-	1 268 917	157 661	-
2.1.4.003 Development of the SIT for control of disease transmitting mosquitoes	838 837	128 071	-	820 369	128 071	-
2.1.4 Sustainable Control of Major Insect Pests	**3 536 283**	**604 153**	**-**	**3 543 254**	**604 153**	**120 595**
2.1.5.001 Mutation induction for better adaptation to climate change	919 383	365 990	-	919 004	365 990	-
2.1.5.002 Integrated techniques for mutation breeding and biodiversity	974 364	190 862	-	974 466	190 862	-
2.1.5 Crop Improvement for Intensification of Agricultural Production Systems	**1 893 747**	**556 853**	**-**	**1 893 471**	**556 853**	**-**
2.1 Food and Agriculture	**11 433 333**	**2 617 726**	**8 337**	**11 438 816**	**2 617 726**	**120 595**
2.2.1.001 Health effects of nutrition and the environment	1 645 983	-	50 119	1 655 545	-	-
2.2.1 Nutrition for Improved Human Health	**1 645 983**	**-**	**50 119**	**1 655 545**	**-**	**-**
2.2.2.001 Diagnostics and therapy of non-communicable diseases	1 388 531	-	154 190	1 370 987	-	141 521
2.2.2.002 Educational resources for use of nuclear techniques in human health	688 116	-	-	675 256	-	-
2.2.2 Nuclear Medicine and Diagnostic Imaging	**2 076 647**	**-**	**154 190**	**2 046 243**	**-**	**141 521**

Major Programme 2 – Nuclear Techniques for Development and Environmental Protection
Summary of Programme Structure and Resources
(excluding Major Capital Investments)

Table 15 (cont'd)

Programme / Subprogramme / Project	2016 at 2016 prices			2017 at 2016 prices		
	Regular Budget	Extrabudgetary	Unfunded	Regular Budget	Extrabudgetary	Unfunded
2.2.3.001 Clinical radiation oncology	1 317 821	-	-	1 265 997	-	-
2.2.3.002 Biological effects of radiation	499 170	-	-	545 708	-	-
2.2.3 Radiation Oncology and Cancer Treatment	**1 816 991**	**-**	**-**	**1 811 705**	**-**	**-**
2.2.4.001 Calibration and auditing services	1 076 395	-	-	1 068 306	-	-
2.2.4.002 Developments in radiation dosimetry	476 142	-	24 145	459 167	-	86 424
2.2.4.003 Clinical medical radiation physics	1 184 450	-	52 338	1 234 708	-	20 206
2.2.4 Dosimetry and Medical Physics for Imaging and Therapy	**2 736 988**	**-**	**76 483**	**2 762 181**	**-**	**106 629**
2.2 Human Health	**8 276 608**	**-**	**280 791**	**8 275 674**	**-**	**248 151**
2.3.1.001 IAEA isotope data networks for precipitation, rivers, and groundwater	668 491	-	-	653 701	-	-
2.3.1.002 Synthesis and dissemination of global isotope	327 061	-	-	341 865	-	-
2.3.1 Isotope Data Networks for Hydrology and Climate Studies	**995 553**	**-**	**-**	**995 566**	**-**	**-**
2.3.2.001 Comprehensive assessment of resources	456 913	-	-	449 567	-	-
2.3.2.002 Management strategies for groundwater and surface water resources	571 220	-	120 480	578 569	-	-
2.3.2 Isotope Based Assessment and Management of Water Resources	**1 028 133**	**-**	**120 480**	**1 028 135**	**-**	**-**
2.3.3.001 Characterization of fossil groundwater using long-lived radionuclides	492 871	-	-	492 871	-	-
2.3.3.002 Noble gas isotopes for groundwater recharge and pollution studies	949 813	-	-	949 814	-	-
2.3.3 Radio-isotope Applications for Hydrology	**1 442 684**	**-**	**-**	**1 442 685**	**-**	**-**
2.3 Water Resources	**3 466 371**	**-**	**120 480**	**3 466 387**	**-**	**-**
2.4.1.001 Provision of reference products and laboratory performance support	1 439 052	-	119 855	1 439 052	-	54 821
2.4.1.002 Quality management and supporting network activities	915 100	-	-	915 100	-	-
2.4.1 IAEA Reference Products for Science and Trade	**2 354 152**	**-**	**119 855**	**2 354 152**	**-**	**54 821**
2.4.2.001 Isotopic tools to study climate and environmental change	662 681	-	123 134	680 428	-	56 536
2.4.2.002 Assessing carbon cycle and impacts of ocean acidification	782 529	130 413	412 024	782 529	99 430	351 969
2.4.2 Nuclear Techniques to Understand Climate and Environmental Change	**1 445 209**	**130 413**	**535 158**	**1 462 957**	**99 430**	**408 505**

Major Programme 2 – Nuclear Techniques for Development and Environmental Protection

Summary of Programme Structure and Resources
(excluding Major Capital Investments)

Table 15 (cont'd)

Programme / Subprogramme / Project	2016 at 2016 prices			2017 at 2016 prices		
	Regular Budget	Extrabudgetary	Unfunded	Regular Budget	Extrabudgetary	Unfunded
2.4.3.001 Radioactive and non-radioactive pollution and impact on environment	745 963	243 243	165 680	754 653	243 243	65 930
2.4.3 Nuclear Techniques to Monitor and Assess Pollution	**745 963**	**243 243**	**165 680**	**754 653**	**243 243**	**65 930**
2.4.4.001 Developing methodologies for environmental monitoring and assessment	921 894	333 127	167 668	922 867	333 127	64 120
2.4.4.002 Nuclear techniques for management of ecosystem service	808 379	99 430	101 357	780 968	99 430	20 720
2.4.4 Applying Analytical Techniques to Protect Biodiversity And Ecosystem Services	**1 730 272**	**432 557**	**269 024**	**1 703 835**	**432 557**	**84 840**
2.4 Environment	**6 275 597**	**806 214**	**1 089 717**	**6 275 597**	**775 230**	**614 096**
2.5.1.001 Development and production of medical radioisotopes	471 026	-	-	471 026	-	-
2.5.1.002 Development of diagnostic and therapeutic radiopharmaceuticals	570 929	-	-	570 929	-	-
2.5.1 Radioisotope Products for Cancer Management and Non-communicable Diseases	**1 041 956**	**-**	**-**	**1 041 956**	**-**	**-**
2.5.2.001 Industrial applications of radioisotopes and radiation techniques	484 785	-	-	482 386	-	-
2.5.2.002 Radiation technology for health care and environmental applications	723 367	-	-	743 221	-	-
2.5.2 Radiation Technology for Health Care and Industrial Applications	**1 208 152**	**-**	**-**	**1 225 606**	**-**	**-**
2.5 Radioisotope Production and Radiation Technology	**2 250 108**	**-**	**-**	**2 267 562**	**-**	**-**
Major Programme 2 - Nuclear Techniques for Development and Environmental Protection	**39 487 335**	**3 791 738**	**1 551 608**	**39 485 762**	**3 760 754**	**1 035 125**

Major Programme 2 – Nuclear Techniques for Development and Environmental Protection
Tasks with not fully funded activities (in euros)

Table 16

Project	Tasks	2016 Unfunded	2017 Unfunded
2.0.0.001 Overall management, coordination and common activities	Corporate shared services	52 283	52 283
2.1.1.001 Land management for climate-smart agriculture	General management	8 337	
2.1.4.001 SIT and related technologies to manage major insect plant pests	Development of the SIT for the control of pests in greenhouses and other confined habitats	-	120 595
2.2.1.001 Health effects of nutrition and the environment	Nutrition and environment	50 119	-
2.2.2.001 Diagnostics and therapy of non-communicable diseases	Role of diagnostic imaging in neuroblastoma	78 933	91 321
	Use of interventional procedures in nuclear medicine and diagnostic imaging	75 257	50 200
2.2.4.002 Developments in radiation dosimetry	Development of techniques for the dissemination of absorbed dose to water standards in kilo voltage x ray range through the network of SSDLs	12 128	50 326
	Support to the SSDL network	12 017	36 098
2.2.4.003 Clinical medical radiation physics	Education and clinical training	20 004	-
	Guidelines and methodologies	12 128	-
	Review and assessment technology	20 206	20 206
2.3.2.002 Management strategies for groundwater and surface water resources	Use of isotopic tracers to assess groundwater transport in clay-rich hydrogeological systems	120 480	-
2.4.1.001 Provision of reference products and laboratory performance support	Capacity building for analytical laboratories using reference products	15 089	15 089
	Development and test of analytical recommended methods	14 405	14 405
	Production of IAEA reference materials for international use	90 360	25 327
2.4.2.001 Isotopic tools to study climate and environmental change	Application of nuclear analytical techniques to marine environmental studies of climate trends and variability	-	12 238
	Application of nuclear and isotopic methods to study climate and environmental changes	15 060	5 020
	Benchmark ocean models for the dispersion and radiological impact of radionuclides released from nuclear power stations in emergency situations	27 259	-
	Capacity building in MSs for studying climate and environmental changes	-	4 675
	General management of the project isotopic tools to study climate and environmental change	5 457	-
	Joint activities with other international programmes	15 060	4 483
	Reevaluation of Stable Isotope fractionation factors used in global climate models	60 298	30 120
2.4.2.002 Assessing carbon cycle and impacts of ocean acidification	Capacity building, in MSs, for improving assessment of carbon cycle and impacts of ocean acidification	30 120	-
	Coordination of the Ocean Acidification International Coordination Centre (OA-ICC)	326 684	311 809
	Improving knowledge and tools for assessing carbon cycle and impacts of ocean acidification	55 220	40 160

Major Programme 2 – Nuclear Techniques for Development and Environmental Protection
Tasks with not fully funded activities (in euros)

Table 16 (cont'd)

Project	Tasks	2016 Unfunded	2017 Unfunded
2.4.3.001 Radioactive and non-radioactive pollution and impact on environment	Capacity building in Member States for measurement and assessment of radioactive and non-radioactive pollution and its impact on the environment	6 024	6 024
	Collaboration with Member States for implementation of monitoring and assessment programmes	61 839	11 639
	Joint activities with other international programmes	17 685	3 501
	Levels, trends and radiological effects of radionuclides in the marine environment	34 185	24 685
	Study of global temporal trends of pollution in selected coastal areas by the application of isotopic and nuclear tools	45 947	20 080
2.4.4.001 Developing methodologies for environmental monitoring and assessment	Development of analytical methodology for determination of non-nuclear and nuclear contaminants and knowledge improvement	95 671	32 253
	Development of tools for environment monitoring	71 997	31 867
2.4.4.002 Nuclear techniques for management of ecosystem service	Capacity Building in mss for improving management and safe use of ecosystem	55 173	-
	Improving knowledge and tools for sustainable and safe use of environmental resources in MSs	22 088	-
	Toxicological and ecotoxicological assessment of benthic algae and their toxins to achieve sustainable management of marine ecosystems services	24 096	20 720

Major Programme 3
Nuclear Safety and Security

Objectives:

- *To continuously improve global safety and security through the establishment and wide application of safety standards and security guidelines, worldwide subscription to international legal instruments, integrated and modular peer reviews and services, capacity building and networking.*
- *To continuously enhance national, regional and international capabilities and arrangements for ensuring a high level of safety and security and emergency planning and response.*

Introduction:

Major Programme 3 promotes the worldwide achievement and maintenance of high levels of nuclear safety and security to protect people, society and the environment from ionizing radiation. This major programme meets the demand for a higher level of safety of the growing number of nuclear installations, including uranium mining facilities, as well as of the existing nuclear power plants and research reactors, whose average age continues to increase. It also addresses the wider use of ionizing radiation in industry, medicine and agriculture; the continuous threat of nuclear terrorism; and the accumulation of radioactive waste and spent fuel.

Major Programme 3 performs the Agency's statutory functions of establishing standards of safety and providing for their application. The Agency assists Member States developing new, operating existing or expanding nuclear energy programmes in building national capacities and promoting international cooperation, and in transferring nuclear safety and security knowledge from States with mature nuclear energy programmes to States with emerging nuclear energy programmes, through knowledge networks. The security of nuclear and other radioactive material and facilities remains a high priority. The Agency develops and publishes nuclear security recommendations and guidance and maintains an effective information platform for their application. At the request of a State, the Agency assists in developing and implementing a robust nuclear security infrastructure, including prevention, detection and response.

Despite the nuclear safety and security arrangements in place, the risk of a serious nuclear emergency and the threat of nuclear terrorism cannot be entirely eliminated. Therefore, this major programme also provides for national and international capacities to prepare to effectively respond to, and mitigate, the consequences of a nuclear or radiological emergency, including nuclear terrorism.

With the completion of the Report on the Fukushima Daichii accident and the planned completion of the activities under the IAEA Action Plan on Nuclear Safety by the end of 2015, the follow-up activities will be incorporated and integrated in the relevant departmental programmes for 2016–2017. The Safety and Security Coordination Section will be upgraded to an Office which will among others oversee the integration of follow-up activities of the Action Plan as well as build on the lessons from the implementation of the Action Plan and the Report on the Fukushima Daiichi accident.

Medium Term Strategy

The planning process takes into account the Medium Term Strategy 2012–2017 (MTS) so that the programmes, subprogrammes and projects are generally linked to one or more of the following Medium Term Strategy objectives and sub-objectives having direct relevance to this major programme.

C. Improving nuclear safety and security

— C01 Enhance the global nuclear safety and security framework;

— C02 Establish and continuously improve standards and guidance;

— C03 Assist Member States to develop and strengthen safety and security capacity building;

— C04 Help to build national, regional and international capacity to respond to nuclear and radiological incidents and emergencies and assist in case of a nuclear or radiological incident or emergency;

— C05 Assist Member States in enhancing safety of nuclear installations;

— C06 Assist Member States in strengthening the control of radioactive sources, and in mitigating the effects of unauthorized disposal;

— C07 Assist Member States in enhancing their national radiation and transport safety;

— C08 Assist Member States in enhancing waste and environmental safety and developing and enhancing waste management infrastructure;

— C09 Strengthen international cooperation in nuclear security;

— C10 Help States to enhance their nuclear security infrastructure.

In addition, several projects due to their cross-cutting nature also link to the following MTS objectives and sub-objectives. In such cases, Major Programme 3 provides support to activities led within other Major Programmes.

A. Facilitating access to nuclear power

— A06 Enhance nuclear safety standards and security guidance, peer reviews and advisory services.

D. Providing effective technical cooperation

— D02 Facilitate cooperation among Member States bilaterally and regionally.

Outcomes	Performance Indicators
• Improved nuclear safety and security capabilities at the national, regional and international levels.	• Increase in the number of good practices and conclusions of reviews and services.
• A current, comprehensive suite of safety standards and security guidelines.	• Number of new or revised safety standards and security guidance per year.
• A global communications and knowledge sharing network.	• Increase in the number of issues resolved through knowledge sharing networks.

Projects

Title	Main Planned Outputs
3.0.0.001 Enhancing the nuclear safety and security framework globally	Policies, standards and guidelines; databases and promotional products (web sites and brochures); integrated national capacity building plans; knowledge safety networks; national collaborative networks and knowledge resource depositories; documentation systems; and on-line education and training platforms.
3.0.0.002 Overall management, coordination and common activities	Nuclear Safety Review; departmental input to the MTS implementation report, Programme Performance Report, Annual Report and communication products.

Programme 3.1 Incident and Emergency Preparedness and Response

Objectives:

— *To maintain and further enhance efficient Agency, national and international emergency preparedness and response (EPR) capabilities and arrangements for effective response to nuclear/radiological emergencies independent of their cause.*

— *To improve provision/sharing of information on nuclear or radiological incidents and emergencies among Member States, international stakeholders and the general public/media in preparedness stage and during response.*

Member States and the international community have to be prepared to effectively respond to nuclear and radiological emergencies should they occur. The programme supports Member States to enhance specific elements of EPR, for example developing and maintaining national infrastructure elements, improving cooperation between safety and security communities, assessment of hazards, emergency management, in particular in severe emergencies, and keeping the international community and the general public well informed, etc. Programme also assists Member States to develop effective national and global response capabilities and arrangements to minimize the impacts of nuclear or radiological events.

An effective response to an emergency requires a coherent initial assessment followed by adequate emergency management, all of which can only be achieved through coordinated EPR activities. The Agency is the focal point in EPR for nuclear and radiological emergencies independent of whether they arise from an accident, natural disaster, negligence, nuclear security event or any other cause. This role derives from responsibilities mandated to the Agency by the Early Notification and Assistance Conventions and the policy-making organs. It is also established in a number of mechanisms and practical arrangements and builds upon the expertise and long experience of the Agency in the EPR area. The Agency also has a statutory function to develop safety standards in the area of EPR and to provide for their application. Finally, the Agency has an important role in assessing nuclear and radiological events and in communicating the significance and potential consequences of these events.

Outcomes	Performance Indicators
• Enhanced EPR capability to effectively respond to an emergency at the national and international level.	• Percentage of implemented recommendations for improvement of national and international EPR over two years.
• Enhanced EPR capability to effectively respond to an emergency at the IAEA level.	• Percentage of implemented recommendations for improvement of the Agency EPR over two years.

Outcomes	Performance Indicators
• Improved provision/sharing of information on nuclear or radiological incidents and emergencies.	• Percentage of implemented recommendations for improvement of provision/sharing information on nuclear or radiological emergencies over two years.

Lessons learned from reviews, assessment, evaluations: This programme takes into account Member State needs as expressed in relevant General Conference resolutions, in Board of Governors decisions and in Emergency Preparedness and Response Expert Group (EPREG) recommendations. It also takes into account lessons identified during the performance assessment of the previous programmatic cycle, as well as the recommendations made by the External Auditor.

Specific criteria for prioritization:

1. Activities necessary to fulfil obligations under the Early Notification and Assistance Conventions and other mechanisms and practical arrangements.
2. Activities enhancing Member States EPR
3. Activities that are linked to, but not required by, the Conventions (e.g. in-house EPR activities, Response Assistance Network (RANET), interagency cooperation and the Joint Plan).

Subprogramme 3.1.1 Strengthening National and International Emergency Preparedness

Objectives:

— *To strengthen EPR arrangements and capabilities through the development and assistance in application of the safety standards, operational guidelines and tools, and through EPR peer reviews.*

— *To enhance the transparency and knowledge sharing in the area of EPR through a more effective and comprehensive use of peer review missions and collaborative networks.*

— *To strengthen the EPR framework at the international level.*

Outcomes	Performance Indicators
• Strengthened national EPR arrangements and capabilities and enhanced transparency in sharing of information on EPR.	• Number of Member States that have provided input into the EPR information management system (EPRIMS) after two years. • Percentage of Member States with high implementation of IAEA EPR safety standards after two years.
• Strengthened EPR framework at the international level and enhanced interagency cooperation and coordination.	• Percentage of implemented recommendations for improvement of international EPR framework and interagency cooperation and coordination over two years.

Programmatic changes and trends: This subprogramme is a continuation and follow-up of relevant EPR activities from the preceding two year programme cycle. It was prepared based on the EPR needs identified through the assessment and evaluation of national and international EPR taking into account long term recommendations of the International Action Plan for Strengthening the International Emergency Preparedness and Response System for Nuclear and Radiological Emergencies, recommendations from the EPREG, actions in the Nuclear Safety Action Plan (NSAP), General Conference safety resolutions and conclusions of the Competent Authorities meetings and meetings of the Inter-Agency Committee on Radiological and Nuclear Emergencies (IACRNE).

Projects

Title	Main Planned Outputs
3.1.1.001 Member State emergency preparedness	Training events and expert missions; established Capacity Building Centres; training material and tools; new or revised EPR publications and guidance tools; and Emergency Preparedness Review (EPREV) and Integrated Regulatory Review Service (IRRS) reports.
3.1.1.002 International emergency management	Updated Joint Radiation Emergency Management Plan of the International Organizations (JPLAN); IACRNE reports; EPREG recommendations; IACRNE operational procedures; and IACRNE and EPREG web sites.

Title	Main Planned Outputs
3.1.1.003 Follow-up to the Nuclear Safety Action Plan (NSAP)	Emergency preparedness data; collaborative knowledge sharing information; EPREV mission key performance indicators and performance evaluations; and EPREV continuous improvement action plan.

Subprogramme 3.1.2 IAEA IES and Operational Arrangements with Member States and International Organizations

Objectives:

— *To maintain and continuously enhance arrangements for effective response (notification, exchange of information, assessment and prognosis, international assistance and public communication) and to respond effectively to nuclear or radiological emergencies.*

— *To develop, maintain and continuously improve systems facilitating the exchange of technical information particular in an emergency.*

— *To act as the Agency spokesperson in a nuclear or radiological emergency in close coordination with the Office of Public Information and Communication (OPIC) to ensure consistency of communicated messages.*

Outcomes	Performance Indicators
• Effective response and response coordination with the States and relevant international organizations in a nuclear or radiological emergency.	• Percentage of implemented recommendations for improvement of EPR over two years.
• Efficient international assistance mechanism and effective provision of requested assistance.	• Percentage of provided assistance utilizing registered National Assistance Capabilities over a two year period.

Programmatic changes and trends: This subprogramme is a continuation, follow-up and consolidation of relevant activities aimed at maintaining and continuously enhancing the Agency Incident and Emergency System (IES) and operational arrangements with Member States and relevant international organizations — cosponsors of the JPLAN. It was prepared based on the needs identified through the evaluation of exercises and recent emergency responses as well as on actions in the NSAP and decisions of the Agency Policy-Making Organs.

Projects

Title	Main Planned Outputs
3.1.2.001 Maintain and enhance preparedness of Incident and Emergency System	Yearly training programme; ConvEx-1 exercises; schedule and training records; and maintained and enhanced response arrangements (appendices to the Response Plan for Incidents and Emergencies (REPLIE), procedures, checklists and instructions).
3.1.2.002 Maintain/enhance response and assistance arrangements with Member States and international organizations	Effective response to incidents and emergencies; operational protocols with international organizations; trained counterparts; conduct of ConvEx-2 and 3 exercises; improved RANET records on assistance capabilities; and publication of EPR-RANET 2017.
3.1.2.003 Public communication in emergencies	Agency publications, International Nuclear and Radiological Event Scale (INES) documentation, training material, IEC Newsletters and promotional material.
3.1.2.004 Follow-up to the Nuclear Safety Action Plan (NSAP)	Arrangements with Member States to participate and support in the assessment and prognosis process; and assessment tools, procedures and guidance to support the process.

Programme 3.2 Safety of Nuclear Installations

Objectives:

- *To continuously improve the safety of nuclear installations during site evaluation, design, construction and operation through the availability of safety standards and their application.*
- *To support Member States in developing and implementing the appropriate safety infrastructure.*
- *To assist adherence to, and implementation of, the Convention on Nuclear Safety (CNS) and the Code of Conduct on the Safety of Research Reactors and to strengthen international cooperation.*

With the completion of the Report on the Fukushima Daiichi accident, the activities being carried out under the IAEA Action Plan on Nuclear Safety will be incorporated into the programmes planned for 2016–2017. Lessons learned and conclusions drawn from both these undertakings will continue to contribute to programme development. In spite of the accident, Member States' interest in developing new, or expanding existing, nuclear power programmes continues to grow. Member States must be supported in building capacity and developing safety infrastructure through enhanced international cooperation and in line with the global nuclear safety and security framework. Renewed interest in nuclear power and long term operation of existing installations requires strong safety assessment capabilities consistent with advances in technology, safety assessment methods and tools, strong safety design requirements and management systems, leadership and safety culture.

The need to evaluate new and existing nuclear installation safety against natural hazards, human induced events including sabotage and site related environmental aspects requires state of the art methods. The Agency will strengthen feedback mechanism between the CNS, IAEA safety standards and the Code of Conduct on the Safety of Research Reactors so that all are applied in a strategic and synergistic manner. In the light of lessons learned from the Fukushima Daiichi accident, the review and revision of safety standards is under way with the aim to have all safety standards reviewed and revised, and as necessary new safety standards to be developed. Promoting the application of the safety standards and reviewing their implementation through safety and peer review services are important components for Member States to ensure a solid safety infrastructure and continued improvements in the safety of nuclear installations and regulatory body effectiveness.

Outcomes	Performance Indicators
• Global safety framework strengthened through acceptance and implementation of Agency safety standards relevant to legal and governmental infrastructure and nuclear installations.	• Number of new or revised safety standards relevant to Governmental organizations and nuclear installations approved by the Commission on Safety Standards (CSS).
• Improved safety of nuclear installations in Member States based on the implementation of recommendations and suggestions of safety services based on Agency safety standards.	• Percentage of Agency recommendations and suggestions from safety services adequately addressed in regulatory authorities and nuclear installations.

Lessons learned from reviews, assessment, evaluations: The background and basis for this programme take into consideration the General Conference resolutions, the results of the Sixth Review Meeting of the CNS (March/April 2014)the CNS Diplomatic Conference (February 2015) and Member State recommendations provided during Agency conferences. Lessons and feedback from safety review services are incorporated.

Specific criteria for prioritization:

1. Projects dealing with capacity building and strengthening information exchange.
2. Projects establishing safety standards and servicing conventions and codes of conduct.
3. Projects related to the application of the standards.

Subprogramme 3.2.1 Governmental Regulatory Framework and Safety Infrastructure Development

Objectives:

- *To have effective, independent and sustainable governmental, regulatory and safety frameworks in place for nuclear installations based on the IAEA safety standards.*
- *To enhance the global nuclear safety framework by applying a consistent development, review and revision process for up to date and high quality safety standards for a governmental and regulatory framework for nuclear installations.*

— *To have an enhanced regulatory and safety capacity building process in place in line with the IAEA safety standards.*

Outcomes	Performance Indicators
• Effective, independent and sustainable regulatory bodies in Member States, with an adequate governmental, regulatory and safety framework to ensure effective regulatory control during the entire lifetime of the nuclear installations, in accordance with the IAEA safety standards.	• Number of safety review missions (e.g. IRRS and expert assistance missions). • Percentage of Agency recommendations and suggestions adequately addressed by the Member States.
• New and/or revised safety standards related to the governmental and regulatory framework areas, submitted for approval by the Nuclear Safety Standards Committee (NUSSC).	• Percentage of document preparation profiles approved by the CSS.
• Improved competency of regulatory bodies supporting the safe use of nuclear installations in Member States for emerging and mature nuclear programmes.	• Number of Member States using Agency training programmes in regulatory area to support sustainable education and training programmes. • Number of Member States utilizing the Guidelines for Systematic Assessment of Regulatory Competence Needs (SARCoN) tool and methodology for competency building.

Programmatic changes and trends: The trend among countries either restarting or introducing nuclear power programmes continues, the projects under this subprogramme are tailored to build upon the Agency's work on assisting States in developing their governmental and regulatory frameworks. Capacity building for nuclear installations is specifically addressed.

Projects

Title	Main Planned Outputs
3.2.1.001 Strengthening regulatory effectiveness and regulatory networking	Safety standards, guidelines (i.e. programme implementation guidance), information exchange and mission reports; information in the International Regulatory Network (RegNet); and an international conference on regulatory effectiveness.
3.2.1.002 Improve safety standards, support CNS and INSAG	Safety standards and reports.
3.2.1.003 Capacity building for installations safety and regulatory functions	Reports, training materials, enhanced web platforms and multimedia products.
3.2.1.004 Follow-up to the Nuclear Safety Action Plan (NSAP)	Safety infrastructure of Member States; and effective regulatory control for new facilities.

Subprogramme 3.2.2 Safety Assessment of Nuclear Installations

Objectives:

— *To provide Member States with up to date safety assessment and design safety standards based on current technology and best practices.*

— *To support Member States with advice and review services in the implementation of safety assessment and design safety standards.*

— *To develop safety assessment knowledge requirements and provide support to Member States in safety assessment competency and capacity building.*

Outcomes	Performance Indicators
• Updated Agency safety standards in the areas of design and safety assessment accounting for the latest technical information about nuclear safety and design for both operating and new nuclear power plants.	• Number of updated safety standards and associated technical documents.
• Increased awareness and utilization of agency design and safety assessment services updated to reflect the latest safety standards and practices.	• Number of Design and Safety Assessment Review Services being utilized by Member States.

Outcomes	Performance Indicators
• Increased utilization of competency and capacity building programmes via the Global Safety Assessment Network (GSAN) and the Safety Assessment Education Training Programme.	• Number of Member States embarking on nuclear power that have established comprehensive and timely safety assessment capacity building programmes with Agency support.

Programmatic changes and trends: In line with efforts to either restart or introduce nuclear power programmes and the need to address lessons learned from the accident at the Fukushima Daiichi nuclear power plant, there is a need to develop and revise design and safety assessment standards and related technical documents. Associated with the restart or introduction of nuclear power, there will be an increased need for either safety and design review services or competency and capacity building programmes. All of these needs are specifically addressed.

Projects

Title	Main Planned Outputs
3.2.2.001 Evaluation of design and safety assessment of nuclear facilities/activities	New and revised safety standards and technical documents, review reports, training and workshop sessions, and training materials.
3.2.2.002 Sustainable design and safety assessment competency, methods and tools	Operational GSAN; operational Safety Assessment Education and Training (SAET) Programme; and deployment of safety assessment capacity and competency building programmes in Member States.
3.2.2.003 Follow-up to the Nuclear Safety Action Plan (NSAP)	Workshops, meetings and training programmes; and technical reports and safety standards.

Subprogramme 3.2.3 Safety and Protection Against Internal and External Hazards

Objectives:

— *To develop consensus requirements and guidance documents on site and installation design safety with respect to internal and external hazards, including hazards resulting from human activity.*

— *To assist embarking Member States, with reviews on site selection, site evaluation and installation design against internal and external hazards using the IAEA safety standards upon request through the Technical Cooperation Programme (TCP) and special missions requested by Member States.*

— *To assist Member States in addressing new technical issues identified during lessons learned from major events affecting nuclear installations and supporting operating organizations, regulatory bodies in addressing technical issues with the global community, in the aftermath of major external events.*

Outcomes	Performance Indicators
• Increased awareness of International Seismic Safety Centre (ISSC) activities in the areas of technical document development, and knowledge dissemination via international cooperation utilizing the resources from the regular and extrabudgetary programmes.	• Number of requests from Member States for support with information on safety documents and external event notification systems and similar services of the ISSC.
• Implementation of safety standards through Site and External Events Design (SEED) review missions and provision of recommendations to Member States in alignment with the guidance provided in these documents.	• Number of SEED safety review services requested by Member States.
• Updated methodologies for external and internal hazard analysis, installation design, design of protective measures against external hazards, and safety communication and information dissemination tools.	• Number of supporting documents (Safety Reports and TECDOCs).

Programmatic changes and trends: There will be a greater focus on safety review services, and training activities on site and design safety issues in the light of the Fukushima Daiichi accident for operating and new nuclear power plant programmes. The Member States will demand more focused and technical input in the training modules as they progress in their nuclear programmes.

Projects

Title	Main Planned Outputs
3.2.3.001 Site and installation design safety	New and updated Safety Guides and supporting documents corresponding to site selection, evaluation, protection against external hazards and installation design; and technical cooperation mission reports and reports of SEED missions to evaluate site and safety performance of installations against external events.
3.2.3.002 Site evaluation methods and tools for installation safety assessment	New or updated TECDOCs required for implementation of Safety Guides; Safety Reports/TECDOCs in areas that need guidance and not addressed by other Agency publications; and workshops on capacity building activities and information dissemination at international forums.
3.2.3.003 Follow-up to the Nuclear Safety Action Plan (NSAP)	Training and workshops to promote the knowledge base in embarking countries and conduct of SEED review missions to confirm compliance with IAEA safety standards.

Subprogramme 3.2.4 Safe Operation of Nuclear Power Plants

Objectives:

— *To improve operational safety in Member States based on the implementation of recommendations and suggestions of Operational Safety Review Team (OSART) and Safety Aspects of Long Term Operation (SALTO) missions and conducting structured self-assessment using the IAEA safety standards.*

— *To strengthen Member States' capability to enhance operational safety performance through the exchange and utilization of operational experience feedback and to strengthen IAEA safety standards on operational safety to consider lessons learned and new safety developments.*

— *To improve operational safety in Member States by the implementation of actions based on the guidance and assessment services provided by the Agency in the field of leadership and safety culture.*

Outcomes	Performance Indicators
• Improved operational safety in Member States based on the implementation of recommendations and suggestions of OSART and SALTO missions using OSART and SALTO guidelines.	• Number of OSART and SALTO missions requested by Member States annually. • Percentage of Agency recommendations and suggestions on operational safety improvements adequately addressed in nuclear power plants in Member States.
• Improved operational safety in Member States through the exchange and utilization of operational experience feedback and application of IAEA safety standards.	• Number of IAEA safety standards on operational safety reviewed and revised. • Number of PROSPER missions or equivalent requested by Member States annually.
• Improved operational safety in Member States by the implementation of actions based on the guidance and assessment services provided by the Agency.	• Number of OSART missions that have safety culture and leadership feedback to the host organization. • Number of safety culture self-assessments and assistance missions performed.

Programmatic changes and trends: There will be greater focus to improve operational safety review services OSART and SALTO, in particular for the areas of commissioning of new nuclear power plants, corporate OSART review at nuclear utility level, self-assessment, safety culture, long term operation and severe accident management. The Agency will continue to strengthen the safety of nuclear power plants in respect of management of ageing and other time depending degradation processes at them.

Projects

Title	Main Planned Outputs
3.2.4.001 Enhancing operational safety performance	OSART mission reports; guidelines for performance of plant self-assessment; updated database of OSART Mission Results (OSMIR); integrated revision of the safety guides for operational safety; publication of OSART mission highlights; and dissemination of OSART related information on a dedicated web site.

Title	Main Planned Outputs
3.2.4.002 Strengthening sharing and use of international operating experience	To strengthen Member State capability to enhance operational safety performance and self-identification of emerging adverse trends through the exchange and utilization of operational experience feedback by encouraging self-assessment and Agency's safety reviews of their programmes.
3.2.4.003 Effective leadership, management for safety and safety culture in Member States	Safety culture, safety leadership and management for safety reports; revised guidelines on the Leadership and Management for Safety; reports, training material, communications material (including presentations and web site) and other documents.
3.2.4.004 Supporting long term operation safety	SALTO mission reports and reports on ageing management and time limited ageing analyses; revision of the Safety Guide on ageing management; implementation and enhancement of the International Generic Ageing Lessons Learned (IGALL) Safety Report; and introduction of the coordinated research project (CRP) on properties of aged material.
3.2.4.005 Follow-up to the Nuclear Safety Action Plan (NSAP)	Analysis of the trends in nuclear power plant operational safety and a report to the Member States on significant operational safety issues for the next review meeting on the CNS.

Subprogramme 3.2.5 Safety of Research Reactor and Fuel Cycle Facilities

Objectives:

— *To enhance the safety of research reactors and fuel cycle facilities in Member States through effective application of the Code of Conduct on the Safety of Research Reactors, and by developing and applying safety standards, conducting safety review services and sharing operating experience.*

— *To support Member States building capacity for developing a safety infrastructure for research reactors and fuel cycle facilities, and for fostering international cooperation and sharing of knowledge and operating experience.*

Outcomes	Performance Indicators
• Enhanced safety of research reactors, including those under project and supply agreements.	• Percentage of Member States with research reactors in line with the provisions of the Code of Conduct on the Safety of Research Reactors and IAEA safety standards. • Percentage of recommendations from safety review services addressed by Member States as measured in follow-up missions.
• Enhanced safety of fuel cycle facilities.	• Percentage against planned of the safety standards and supporting documents on fuel cycle facilities. • Percentage of the fuel cycle facilities covered by the participating Member States in the Fuel Incident Notification and Analysis System (FINAS).

Programmatic changes and trends: There will be an increased focus on revision of safety standards and development of supporting documents, conduct of safety review services, and capacity building activities, including training that support application of the Code of Conduct on the Safety of Research Reactors and IAEA safety standards on fuel cycle facilities, as well as on addressing the lessons from the implementation of the IAEA Action Plan on Nuclear Safety and the report on the Fukushima Daiichi accident as they relate to the safety research reactors and fuel cycle facilities.

Projects

Title	Main Planned Outputs
3.2.5.001 Enhancing the safety of research reactors	Safety standards and supporting publications; meeting and mission reports; conference proceedings; training materials; Member State self-assessments; and the Incident Reporting System for Research Reactors (IRSRR) database.

Title	Main Planned Outputs
3.2.5.002 Enhancing the safety of fuel cycle facilities	Safety standards and supporting publications; meeting/mission reports; training materials; and the FINAS database.
3.2.5.003 Follow-up to the Nuclear Safety Action Plan (NSAP)	Agency publications; meeting and mission reports; and training materials and workshops.

Programme 3.3 Radiation and Transport Safety

Objectives:

— *To achieve global harmonization of the development and application of the Agency's safety standards in this area, and to increase the safety of radiation sources and thereby raise the levels of protection of people, against the harmful effects of radiation.*

This programme focuses on the protection of people and the environment from the harmful effects of radiation . The programme covers the establishment of safety standards and provision for their application — both being statutory functions of the Agency. Capacity building, including education and training, and networking are cross-cutting key elements of the global safety framework, and they are included throughout the programme. The importance of international undertakings as an element of the safety framework is also recognized. The activities within the programme are mainly ongoing with some changes of emphasis, remaining cognizant of General Conference resolutions. The target audience includes national bodies and relevant international organizations dealing with radiation and transport safety issues. The beneficiaries are governments, regulators, workers, patients, the general public, and users and operators.

The IAEA safety standards and guides will continue to be reviewed, including, inter alia, consideration of lessons learned from the Fukushima Daiichi accident. This includes providing for the application of Agency safety standards and the Code of Conduct on the Safety and Security of Radioactive Sources. This is done through various means that include, inter alia, peer review and advisory services, outreach and information exchange, guidance and training materials. These activities provide essential feedback and assurances on the overall effectiveness of the programme, as well as facilitating planning and anticipating future issues.

Outcomes	Performance Indicators
• International acceptance and application of IAEA radiation and transport safety standards and international undertakings.	• Number of revised or new radiation and transport safety standards and guides approved through the IAEA safety standards committees. • Number of States hosting Agency review or appraisal mission in the biennium.

Lessons learned from reviews, assessment, evaluations: Considerable time and effort needs to be devoted to creating awareness and promoting the use of international safety standards and the relevant international undertakings, and maintaining approaches to demonstrate compliance with them. International harmonization is required, especially in the application of the safety standards and of the Code of Conduct on the Safety and Security of Radioactive Sources, with its supplementary Guidance on the Import and Export of Radioactive Sources. Promotion of international legal instruments such as the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (Joint Convention) and the Code of Conduct on the Safety and Security of Radioactive Sources should be done in a systematic way.

Specific criteria for prioritization:

1. Strengthening the global safety framework through establishing safety standards and international undertakings and by assisting Member States with their application.

Subprogramme 3.3.1 Radiation Safety and Monitoring

Objectives:

— *To assist in reaching the highest level of radiation safety in Member States through development of Safety Standards and Guides and providing for their application in all sectors of industry, medicine and other applications.*

— *To ensure a high level of radiation protection for the Agency's own operations and for all operations making use of materials, services, equipment, facilities and information made available by the Agency, including technical cooperation projects.*

Outcomes	Performance Indicators
• Improved radiation safety in Member States through the establishment and global acceptance of the IAEA safety standards, including implementation in Member States of IAEA Safety Standards Series No. GSR Part 3, Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards (BSS), and through development of the safety guides and technical documentation.	• Number of Member States updating the existing radiation protection regulations to implement the revised BSS or entering in to communication with the Agency on their implementation. • Number of Safety Guides and TECDOCs that are published (revision of existing document or development of new document) to support the implementation of the revised BSS.
• To contribute to the establishment of the harmonized framework for the protection of occupationally exposed workers. To establish the adequate system of radiation safety technical services to achieve the highest level of radiation safety to Agency's own operations with radioactive sources.	• Number of cooperation Safety Guides and TECDOCs elaborated in the area of the occupational radiation protection. • Number of Agency organizational units entering into service agreements with the service provider.
• Improved awareness of good practice in medical radiation protection among health professionals and organizations involved in medical radiation exposures globally.	• Extent of use of internationally agreed guidance and other information on methods to improve radiation protection of patients, as published on the Radiation Protection of Patients (RPOP) web site (measured as annual 'visits' to the web site).

Programmatic changes and trends: The subprogramme focuses on ensuring that the fundamental basis for radiation safety is in place, paying particular attention to the protection of the general public, patients and workers. The IAEA safety standards receive increased attention as more organizations, regulatory authorities and users look to them as international benchmarks. In 2016–2017, the Agency will continue to encourage Member States to implement the BSS and associated Safety Guides. In the medical area, the third international conference on the subject will be organized, addressing, inter alia, issues as summarized in the Bonn Call-for-Action. The Agency will also follow-up on recommendations from the Second International Conference on Occupational Radiation Protection. Activities related to the NSAP will mainly focus on supporting extrabudgetary projects and some topics in occupational protection. Radiation safety technical services will continue to be provided to the Agency's operations and activities with radioactive sources.

Projects

Title	Main Planned Outputs
3.3.1.001 Radiation protection criteria and standards	Development and publication of Safety Guides, and meetings/workshops for Member States to support implementation of the BSS.
3.3.1.002 Radiation protection of patients	Safety related publications on radiation protection of patients; reporting systems for radiological procedures and radiotherapy; and a dedicated web site with updated information on dose reduction in medical exposure for health professionals and patients.
3.3.1.003 Occupational radiation protection	Draft and published safety documents; expanded and new radiation protection networks; upgraded and new training packages; reports and self-assessment tools for the Occupational Radiation Protection Appraisal Service (ORPAS); and expanded and operation of Occupational Radiation Protection Networks (ORPNET).
3.3.1.004 Radiation safety technical services	Provision of radiation safety technical services to protect occupationally exposed workers in Agency operations and missions; services encompass individual and workplace accredited monitoring and emergency services for Seibersdorf laboratories; and dissemination of best practices among Member States.
3.3.1.005 Follow-up to the Nuclear Safety Action Plan (NSAP)	Support provided to NSAP extrabudgetary projects addressing radiation protection and monitoring, and preparing focused material such as, for example, in revised guidance in occupational radiation protection to reflect protection of the workers in non-routine situations.

Subprogramme 3.3.2 Regulatory Infrastructure and Transport Safety

Objectives:

— *To strengthen radiation and transport safety in Member States.*

Outcomes	Performance Indicators
• Comprehensive and up to date suite of safety standards and supporting guidance covering transport safety, regulatory infrastructure and education and training.	• Number of safety standards approved during 2016–2017.
• International undertakings agreed by, and implemented by, Member States.	• Number of States expressing support for the Code of Conduct on the Safety and Security of Radioactive Sources. • Number of States expressing support for the Guidance on the Import and Export of Radioactive Sources.
• Increased application of IAEA safety standards and guidance by Member States.	• Relative percentage increase in performance indicators in the Radiation Safety Information Management System (RASIMS) for regulatory infrastructure; education and training in radiation, and Transport and waste safety; and transport safety thematic safety areas.

Programmatic changes and trends: The programme recognizes the increasing importance of the globalization of the safety framework to ensure harmonization, maximize synergies and improve effectiveness. The increasing demand from Member States for independent peer reviews and advisory missions supported by self-assessments, will continue, especially in the area of regulatory infrastructure and transport of radiation sources. In terms of technical assistance to Member States, the recently developed strategic approach to establish and strengthen national radiation safety infrastructure will be promoted and implemented. Improving the long term management of disused radioactive sources will be a priority. In the transport safety area, the review and revision cycle of IAEA Safety Standards Series No. SSR-6, Regulations for the Safe Transport of Radioactive Material (2012 Edition), will be completed and focus will be put on providing a structured training programme for transport regulatory authorities that is focused on meeting the needs of individual Member States on a national and regional basis.

Projects

Title	Main Planned Outputs
3.3.2.001 Control of radiation sources	Member States and their national regulatory bodies have knowledge and expertise to establish/improve their national regulatory infrastructure for radiation safety to ensure adequate control of radiation sources.
3.3.2.002 Transport safety	A comprehensive set of transport safety standards, TECDOCs and other guidance documentation; and support for their implementation.
3.3.2.003 Technical assistance and information management	Updated radiation safety infrastructure profiles; reports from RASIMS; radiation safety clearance of procurements of sources based on RASIMS data; reports from the Steering Committee on Education and Training in Radiation, Transport and Waste Safety; and postgraduate educational course directors meetings.

Programme 3.4 Radioactive Waste Management and Environmental Safety

Objectives:

— *To achieve harmonization in policies and standards governing waste safety and public and environmental protection, together with provisions for their application, including sound technologies and good practices.*

Fuel cycle facilities and the handling, use and processing of radioactive material from nuclear power plants and nuclear applications generate radioactive waste and may give rise to discharges to the environment. Radioactive waste must be carefully managed, discharges controlled and facilities carefully decommissioned, which may require remediation of sites. Radioactive waste must be immobilized and safely stored and eventually disposed of in appropriate facilities. These activities require safety standards of high quality. The Agency's programme on radioactive waste management (RWM) promotes a global safety framework for use by the Member States. RWM projects typically last for decades, continuity and sustainability in programme activities is important.

The structure of this programme reflects the move of waste technologies elements to Major Programme 1, and the elaboration of waste safety as two broad subprogrammes for: (a) radioactive waste and spent fuel management (storage, transportation, surface and geological disposal); and (b) the collective of waste safety issues for decommissioning, remediation and environmental releases. This is in recognition of the growing demands for support in predisposal, disposal, storage, remediation, decommissioning and environmental safety assessment standards and practices in all of waste safety and waste management areas arising from the lessons from the Fukushima Daiichi accident; continued and additional nuclear power installations and the increased adoption of other nuclear applications (industrial, research and medical) by Member States; and the accelerated decommissioning of existing nuclear power plants and legacy sites.

Outcomes	Performance Indicators
• Strengthened global safety framework through internationally harmonized application of waste related safety standards and use of sound technologies and international good practices for achieving a high level of safety in waste management, decommissioning and environmental remediation.	• New or revised waste related safety standards approved by the CSS. • Number of Contracting Parties to the Joint Convention.

Lessons learned from reviews, assessment, evaluations: The number of facilities being decommissioned continues to increase, and continuous efforts are needed to maintain safety standards of high quality. It is equally important to provide Member States with up to date knowledge on good practices and to facilitate exchange of experience. Owing to the lack of implementation of disposal solutions for high level radioactive waste and spent fuel, longer periods of storage have to be considered, and will continue to pose safety challenges as well as concern for the general public. The decommissioning of nuclear facilities damaged by severe accidents remains a difficult and longstanding challenge.

Specific criteria for prioritization:

1. Establishing safety standards and international undertakings, assisting Member States with their application, servicing of the Joint Convention and transfer of technology.

Subprogramme 3.4.1 Safety of Spent Fuel and Radioactive Waste Management

Objectives:

— *To improve the safety of Member States programmes regarding radioactive waste and spent fuel management.*

— *To establish and maintain a comprehensive set of international safety standards and similar products related to implementation, including Safety Reports, TECDOCs, software and other relevant instruments.*

— *To promote the application of the IAEA safety standards and supporting instruments relevant to radioactive waste and spent fuel management in Member State programmes.*

Outcomes	Performance Indicators
• Improved safety in RWM through the consistent and harmonized implementation of the waste safety standards regarding spent fuel and radioactive waste management, including predisposal and disposal (near surface and geologic).	• New or revised waste safety standards approved by the CSS. • Number of contracting parties to the Joint Convention and RASIMS performance indicators status increased.

Programmatic changes and trends: Subprogramme 3.4.1 consists of projects concerned with the safety of spent fuel and radioactive waste management. The projects cover predisposal and disposal of spent fuel and radioactive waste. Efforts will continue in the area of disposal of high level waste and will address the development and review of safety cases for both operational and post-closure safety of disposal facilities.

Projects

Title	Main Planned Outputs
3.4.1.001 Developing safety standards and coordination for the Joint Convention	Development of safety standards (drafts); publication of internationally agreed safety standards on the predisposal management of radioactive waste and the disposal of radioactive waste; and provision of the Secretariat services to the Joint Convention.

Title	Main Planned Outputs
3.4.1.002 Application of safety standards and intercomparison projects	Continuation of existing and evaluation of potential new international projects and working groups on the application of safety standards; guidelines for the peer review service on waste management (ARTEMIS) and peer reviews at request of the Member States; and technical cooperation activities.
3.4.1.003 Follow-up to the Nuclear Safety Action Plan (NSAP)	Development of a strategy and implementation plan for incorporation of NSAP lessons learned to a broader Member State audience.

Subprogramme 3.4.2 Safety of Decommissioning, Remediation and Environmental Releases

Objectives:

- *To improve the safety of Member State programmes regarding decommissioning, remediation and environmental releases.*
- *To establish and maintain a comprehensive set of international safety standards and similar products related to implementation, including Safety Reports, TECDOCs, software and other relevant instruments.*
- *To promote the application of the IAEA safety standards and supporting instruments relevant to decommissioning, remediation and environmental releases in Member State programmes.*

Outcomes	Performance Indicators
• Improved safety in RWM through the consistent and harmonized implementation of the waste safety standards regarding decommissioning, remediation and environmental releases.	• Development of safety standards and publication of internationally agreed safety standards on the remediation, decommissioning and environmental releases.
• Member States have improved implementation of safety standards and practices in regulatory developments for decommissioning and remediation of facilities and contaminated sites, and a regulatory system for environmental release management.	• Peer review services on waste management are accomplished in the relevant subject areas.

Programmatic changes and trends: Subprogramme 3.4.2 consists of projects concerned with the safety of the interrelated elements of decommissioning, remediation and environmental monitoring and management of radioactive releases to the environment. Efforts will continue in the development and review of safety standards and guidance for this growing demand. In addition, there is a growing interest in uranium production, and new or revised recommendations and training materials will be developed to support newcomers (States and organizations). Decommissioning is increasing worldwide, and it is important to continue activities in this area in order to provide Member States with updated guidance and to facilitate exchange of information and lessons learned.

Projects

Title	Main Planned Outputs
3.4.2.001 Safety for decommissioning ***and remediation***	New/revised IAEA safety standards pertaining to decommissioning and remediation; technical reports and training materials to assist Member States with application of the IAEA safety standards pertaining to decommissioning and remediation; and dissemination of methods for application of the IAEA safety standards.
3.4.2.002 Safety for assessment and management of environmental releases	New/revised safety standards, new technical documents to assist to elaborate examples for the application of safety standards in practice; capabilities for performing assessment of radiological impacts and environmental monitoring to enhance nuclear safety; and advice to conventions.
3.4.2.003 Follow-up to the Nuclear Safety Action Plan (NSAP)	Strategy and implementation plan for incorporation of NSAP lessons learned to a broader Member State audience.

Programme 3.5 Nuclear Security

Objectives:

- *To contribute to global efforts to achieve effective nuclear security, by establishing comprehensive l nuclear security guidance and providing for its use through peer reviews and advisory services and capacity building, including education and training.*
- *To assist in adherence to, and implementation of, relevant international legal instruments, and to strengthen the international cooperation and coordination of assistance in a way that underpins the use of nuclear energy and applications.*
- *To play the central role and enhance international cooperation in nuclear security, in response to General Conference resolutions and Board of Governors directions.*

The risk that nuclear or other radioactive material could be used in malicious acts continues to be a serious threat to international peace and security. Although much progress has been made in recent years in countering it, more needs to be done. The primary responsibility for ensuring nuclear security lies with the State, but international cooperation has been recognized as — and will remain — vital to facilitating the peaceful use of nuclear energy and to enhancing global efforts to combat criminal or terrorist acts. The security of nuclear material and associated facilities and activities has always been of the highest priority and a long term imperative. The potential threats involving the malicious use of other radioactive materials and associated facilities and activities remain a serious concern and therefore higher priority continues to be given to improving the security of such materials.

The programme is designed to assist Member States, upon request, in meeting the requirements of the legally binding and non-binding international instruments and to establish and maintain effective national nuclear security. The programme has been restructured to respond to lessons learned from the implementation of the General Conference resolutions, the Nuclear Security Plan (NSP) 2010–2013, taking into account feedback from Member States and international forums as well as relevant output from Agency conferences. Activities cover all seven elements of the NSP 2014–2017. Greater emphasis is placed on production of comprehensive documents in the IAEA, nuclear security series; provision for its use, as appropriate, including through peer reviews and advisory services, and capacity building, including education and training and collective professional networks; and ensuring coordination and promotion of international cooperation activities in nuclear security, while avoiding duplication and overlap.

Outcomes	Performance Indicators
• Continued improvement in the security of nuclear material, other radioactive material, nuclear and radiological facilitiesand transport.	• Number of Member States that have established or improved national nuclear security measures and systems on the basis of advice from the Agency.
• Improved capacity among Member States to implement national nuclear security measures.	• Number of Member States that requested and receiving Agency assistance identified in the Integrated Nuclear Security Support Plans (INSSPs), as appropriate.
• Improved global coordination and cooperation in the delivery of support to national efforts to improve nuclear security.	• Number of activities duplicated by other initiatives, number carried out in conjunction with the IAEA.

Lessons learned from reviews, assessment, evaluations: Programme 3.5 is designed to support activities set out in the NSP 2014–2017 (GOV/2013/42-GC(57)/19). The overall priorities remain to develop coordination and priority setting by the NSGC, the publication of IAEA NSS publications and to provide applicable services to promote their use. However, resources from the Regular Budget are insufficient to meet all of the requests for support, and implementation of the programme will continue to be dependent on Nuclear Security Fund (NSF) contributions and conditions attached to those contributions.

Specific criteria for prioritization:

1. Completion and maintenance of universally applicable IAEA NSS recommendations and guidance, and provision of assessment and evaluation services at the request of Member States.
2. The provision, upon request of assistance in capacity building, human resources development programmes and risk reduction activities, inter alia, based on an analysis of needs, including those identified through INSSPs.

Subprogramme 3.5.1 Information Management

Objectives:

- *To maintain a comprehensive information platform providing a good understanding of nuclear security needs of States globally and supporting implementation of the NSP.*
- *To improve computer security and information security capabilities in Member States.*

Outcomes	Performance Indicators
• Maintain databases and tools which meet the requirements of States without duplicating other national, bilateral or multilateral programmes.	• Number of databases developed by the Agency to support States, the Secretariat and other appropriate international organizations.
• Improved information and computer security capabilities at the State and facility levels to support the prevention and detection of, and response to, computer security incidents that have the potential to either directly or indirectly adversely impact nuclear safety and security.	• Number of States requesting assistance and or participating in Agency activities related to computer and information security.
• Planned and implemented INSSPs.	• Number of INSSPs agreed by States and agreement by them of accuracy and relevance of the information for their support needs. • Number of Nuclear Security Information Management System (NUSIMS) self-assessment questionnaires voluntarily initiated by States.

Programmatic changes and trends: This subprogramme represents amalgamation of activities from the NSP. Interest among Member States in computer and information security at nuclear power plants and nuclear facilities remain. Attacks on computer systems have increased worldwide, and there is a need for information sharing meetings, consultancies, technical guidance publications and training for the global community. Agency assistance provided to Member States under INSSPs has increased owing to the greater awareness of Agency nuclear security activities on the part of the international nuclear security community. Detailed programmatic priorities and goals, which determine changes and trends under this subprogramme are reported to the Board of Governors through the annual nuclear security report.

Projects

Title	Main Planned Outputs
3.5.1.001 Assessing nuclear security needs, priorities and threats	Development and implementation of INSSPs, where appropriate, development of voluntary self-assessment mechanism or tool for States' use.
3.5.1.002 Illicit Incident andTrafficking Database	Information sharing, as appropriate, technical meetings training of appropriate partner professionals to improve the effectiveness of activities implemented by the Agency in relation to the ITDB .
3.5.1.003 Information and computer security, and information technology services	Information and computer security guidance publications; expert meetings; training courses and workshops; technical assistance for Member States; coordinated research.

Subprogramme 3.5.2 Nuclear Security of Materials and Facilities

Objectives:

- *To establish international guidance and assist States in developing or enhancing, maintaining and upon request reviewing effective implementation of the nuclear security framework for nuclear material and other radioactive material, and associated facilities and activities, including transport.*
- *To improve States' institutional, regulatory and technical security and human resource capabilities to protect nuclear and radioactive materials and associated facilities, including transport.*
- *To reduce the risk of malicious acts involving nuclear and other radioactive materials associated facilities and activities, including transport.*

Outcomes	Performance Indicators
• Increased number of technical guidance publications prepared and used by States in the establishment and maintenance of their national nuclear security regime.	• Number of document preparation profiles approved by the Nuclear Security Guidance Committee (NSGC) on nuclear security of materials, facilities and activities. • Number of guidance documents published and used for training events and advisory services.
• Increased knowledge and capacity building for nuclear security of material, facilities and activities in States through, inter alia, the development and provision of training, experts' advice and peer reviews.	• Number of professionals trained and who are used for effective capacity building in States.
• Reduced global risk associated with nuclear power and non-nuclear power applications in medicine, agriculture, research, industry and other applications including transport.	• Number of international peer review, advisory and evaluation missions requested by States and feedback from States on implementation of their recommendations.

Programmatic changes and trends: This subprogramme represents amalgamation of activities from the NSP. Further increase in demand is anticipated for the development of practical technical security guidance and training on physical protection of nuclear facilities. The contribution of States systems of accounting for and control of nuclear material to preventing loss of control and illicit trafficking and to deterring and detecting the unauthorized removal of nuclear material has been recognized. Nuclear material control and accounting systems at nuclear facilities for security purposes continues to be an important security element. Further increase in Member State requests for advisory services and assessment missions on physical protection of materials, facilities and activities is also anticipated. Detailed programmatic priorities and goals, which determine changes and trends under this subprogramme are reported to the Board of Governors through the annual nuclear security report.

Projects

Title	Main Planned Outputs
3.5.2.001 Integrated nuclear security approaches for the nuclear fuel cycle	Availability of a comprehensive set of guidance, procedures, methodologies, assistance programmes and resources in harmony with international instruments and consistent with IAEA Nuclear Security Series No. 13 to maximize the effectiveness of the security of the nuclear facilities.
3.5.2.002 Enhancing nuclear materials security using accounting and control	A comprehensive set of guidance, procedures, methodologies, and programmes to assist States, upon request, to meet their obligations under international instruments and the recommendations on nuclear material accounting and control set out in IAEA Nuclear Security Series No. 13.
3.5.2.003 Upgrading security of radioactive material and associated facilities	Guidance approved by the NSGC for States on how to develop, enhance, implement and maintain a nuclear security regime for radioactive material, associated facilities and associated activities; capacity building; provision of peer reviews; and upgrades of physical protection systems.
3.5.2.004 Nuclear security in transportation of nuclear and radioactive material	Technical guidance, procedures, methodologies, training and practical assistance, including exercises for security in the transport of nuclear and other radioactive material; and improved national nuclear security legal and regulatory framework and capabilities for transport security.

Subprogramme 3.5.3 Nuclear Security of Material outside of Regulatory Control

Objectives:

— *To assist States in establishing and sustaining an effective institutional infrastructure to strengthen national efforts to protect people, property, the environment and society from the unauthorized use of nuclear and other radioactive material.*

— *To assist States in detecting, locating and interdicting nuclear and other radioactive material out of regulatory control, and in providing an effective response to a nuclear security event.*

— *To assist in States, upon request in strengthening their national framework for managing radiological crime scenes, collecting evidence for use in subsequent legal proceedings, undertaking nuclear forensics*

examinations to support investigations and determining the location from which the material was lost to address nuclear security vulnerabilities.

Outcomes	Performance Indicators
• Increased awareness of the need for an effective institutional infrastructure in a State to ensure national and international obligations are met.	• Number of relevant IAEA NSS publications available in all official Agency languages and used by States. • Number of activities implemented related to institutional infrastructure for managing material out of regulatory control.
• Increased probability that any nuclear and other radioactive material that is out of regulatory control is detected and appropriately responded to.	• Number of relevant IAEA NSS publications available in all official Agency languages and used by States. • Number of activities implemented related to detection and response to materials outside of regulatory control.
• Improved capability of States to conduct investigations involving nuclear and other radioactive material, and to determine the point at which such material left regulatory control and address nuclear security vulnerabilities.	• Number of relevant IAEA NSS publications available in all official Agency languages and used by States. • Number of activities implemented related to radiological crime scene management and nuclear forensics.

Programmatic changes and trends: This subprogramme represents amalgamation of activities from the NSP. In particular, this subprogramme will assist States to improve internal coordination between the various State competent authorities dealing with the security of nuclear and other radioactive material out of regulatory control. Detailed programmatic priorities and goals, which determine changes and trends under this subprogramme are reported to the Board of Governors through the annual nuclear security report.

Projects

Title	Main Planned Outputs
3.5.3.001 Institutional infrastructure for material out of regulatory control	Development of nuclear security guidance; as appropriate, conduct of peer review missions; implementation of projects including arising from INSSP; provision of support for states to establish national nuclear security infrastructure; and assistance in capacity building, including the conduct of training, workshops and seminars.
3.5.3.002 Nuclear security detection and response architecture	NSS guidance in accordance with roadmap approved by NSGC; missions; projects arising from INSSPs; CRPs; technical support to States to establish detection and response measures; assistance in capacity building; and radiation detection equipment.
3.5.3.003 Radiological crime scene management and nuclear forensics science	IAEA Nuclear Security Series; nuclear security training programme; assessment missions; assistance to States to strengthen their capacity, and international, regional and national organizations and CRPs.

Subprogramme 3.5.4 Programme Development and International Cooperation

Objectives:

— *To ensure that the NSP is implemented in a coordinated manner within the Division of Nuclear Security with other international organizations, initiatives and assistance in order to reduce duplication of effort.*

— *To assist in the development and promotion of nuclear security globally, including the production and relevant use of guidance in the IAEA NSS and promotion of adherence to international legal instruments (Convention on the Physical Protection of Nuclear Material (CPPNM) and the Amendment thereto).*

— *To provide coordinated education and training programmes that meet the requirements of Member States and to facilitate delivery of those programmes through the International Nuclear Security Education Network (INSEN) and Nuclear Security Support Centre (NSSC) networks and the Nuclear Security Information Portal (NUSEC).*

Outcomes	Performance Indicators
• Improved nuclear security through the production of current nuclear security guidance involving all Member States and adherence to international legal instruments.	• Number of Member States participating in the NSGC, number of publications produced in the IAEA NSS, entry into force of and implementation of and adherence to the CPPNM and the Amendment thereto.
• Strengthened Member States' capacity building through implementation of nuclear security education and training programme, available to all Member States through the INSEN and NSSC networks and the Agency's Nuclear Security Information Portal (NUSEC).	• Number of Member States using Agency developed education and training courses, number of Member States and institutions participating in INSEN and NSSC networks.
• Coordinated delivery of the Agency programmes with those of other initiatives with a reduction of duplication and overlap.	• Number of events organized by the Agency to which other organizations and donors were invited which addressed coordination of activities.

Programmatic changes and trends: This subprogramme represents amalgamation of activities from the NSP. It aims to continue and further strengthen the process of greater Member State involvement in nuclear security activities through facilitating participation in the development of education and training networks, and, in particular, nuclear security publications through membership of the NSGC. Detailed programmatic priorities and goals, which determine changes and trends under this subprogramme, are reported to the Board of Governors through the annual nuclear security report.

Projects

Title	Main Planned Outputs
3.5.4.001 International cooperation on nuclear security, networks and partnerships	Practical arrangements, contribution agreements, reports to the Policy-Making Organs.
3.5.4.002 Education and training programmes for human resource development	Textbooks and course materials on nuclear security including on the Master's degree; and modular training programmes covering all aspects of nuclear security.
3.5.4.003 Coordinating nuclear security guidance and advice services	Consensus nuclear security guidance publications approved by Member States; and expert advice to the Director General on the Agency's nuclear security programme, and relevant issues.

Major Programme 3 – Nuclear Safety and Security

Summary of Programme Structure and Resources
(excluding Major Capital Investments)

Table 17

Programme / Subprogramme / Project	2016 at 2016 prices			2017 at 2016 prices		
	Regular Budget	Extrabudgetary	Unfunded	Regular Budget	Extrabudgetary	Unfunded
3.0.0.001 Enhancing the nuclear safety and security framework globally	1 079 725	2 236 467	-	1 089 144	2 236 467	-
3.0.0.002 Overall management, coordination and common activities	1 186 016	71 535	200 968	1 186 016	71 535	200 968
3.S Corporate shared services	1 722 706	35 900	64 588	1 655 265	35 900	64 588
	3 988 448	**2 343 902**	**265 556**	**3 930 425**	**2 343 902**	**265 556**
3.1.1.001 Member State emergency preparedness	888 432	-	29 594	883 459	-	-
3.1.1.002 International emergency management	295 972	-	-	298 891	-	-
3.1.1.003 Follow up to the Nuclear Safety Action Plan (NSAP)	208 470	-	-	207 778	-	-
3.1.1 Strengthening National and International Emergency Preparedness	**1 392 873**	**-**	**29 594**	**1 390 128**	**-**	**-**
3.1.2.001 Maintain and enhance preparedness of incident and emergency system	991 628	-	-	1 299 175	-	-
3.1.2.002 Maintain/enhance response and assistance arrangements with MS and IOs	1 027 747	107 958	-	718 222	52 089	-
3.1.2.003 Public communication in incidents and emergencies	526 448	91 400	-	528 688	124 271	-
3.1.2.004 Follow up to the Nuclear Safety Action Plan (NSAP)	312 102	15 263	-	312 102	6 859	-
3.1.2 IAEA IES and Operational Arrangements with MSs and IOs.	**2 857 924**	**214 622**	**-**	**2 858 187**	**183 220**	**-**
3.1 Incident and Emergency Preparedness and Response	**4 250 797**	**214 622**	**29 594**	**4 248 315**	**183 220**	**-**
3.2.1.001 Strengthening regulatory effectiveness and regulatory networking	1 498 241	452 642	561 358	1 406 522	326 721	520 937
3.2.1.002 Improve Safety standards, support CNS and INSAG	1 044 721	60 296	-	1 096 002	-	159 034
3.2.1.003 Capacity building for installations safety and regulatory functions	280 044	58 116	-	261 370	-	-
3.2.1.004 Follow up to the Nuclear Safety Action Plan (NSAP)	150 185	-	-	150 185	-	-
3.2.1 Governmental Regulatory Framework and Safety Infrastructure Development	**2 973 191**	**571 054**	**561 358**	**2 914 079**	**326 721**	**679 971**
3.2.2.001 Evaluation of design and safety assessment of nuclear facilities/activities	1 179 558	456 078	-	1 179 558	456 078	-
3.2.2.002 Sustainable design and safety assessment competency, methods and tools	942 754	286 612	760 115	992 353	286 612	750 577
3.2.2.003 Follow up to the Nuclear Safety Action Plan (NSAP)	121 689	-	-	121 689	-	-
3.2.2 Safety Assessment of Nuclear Installations	**2 244 001**	**742 690**	**760 115**	**2 293 599**	**742 690**	**750 577**
3.2.3.001 Site and installation design safety	627 377	299 645	91 476	629 108	299 645	101 477
3.2.3.002 Site evaluation methods and tools for installation safety assessment	352 018	544 038	601 617	351 903	566 361	572 259
3.2.3.003 Follow up to the Nuclear Safety Action Plan (NSAP)	74 805	-	-	74 805	-	-
3.2.3 Safety and Protection Against Internal and External Hazards.	**1 054 201**	**843 683**	**693 093**	**1 055 817**	**866 006**	**673 736**

Major Programme 3 – Nuclear Safety and Security
Summary of Programme Structure and Resources
(excluding Major Capital Investments)

Table 17 (cont'd)

Programme / Subprogramme / Project	2016 at 2016 prices			2017 at 2016 prices		
	Regular Budget	Extrabudgetary	Unfunded	Regular Budget	Extrabudgetary	Unfunded
3.2.4.001 Enhancing operational safety performance	922 240	686 956	237 210	922 240	688 691	211 900
3.2.4.002 Strengthening sharing and use of international operating experience	848 848	-	82 221	848 848	-	82 221
3.2.4.003 Effective leadership, management for safety and safety culture in Member States	361 341	50 679	29 274	361 293	-	8 054
3.2.4.004 Supporting long term operation safety	366 631	113 981	247 609	366 631	-	242 675
3.2.4.005 Follow up to the Nuclear Safety Action Plan (NSAP)	178 954	-	15 632	178 954	-	-
3.2.4 Safe Operation of Nuclear Power Plants	**2 678 014**	**851 615**	**611 946**	**2 677 966**	**688 691**	**544 851**
3.2.5.001 Enhancing the safety of research reactors	884 430	-	9 379	899 136	-	-
3.2.5.002 Enhancing the safety of fuel cycle facilities	301 659	-	-	295 106	-	-
3.2.5.003 Follow up to the Nuclear Safety Action Plan (NSAP)	126 267	-	-	126 267	-	-
3.2.5 Safety of Research Reactor and Fuel Cycle Facilities	**1 312 356**	**-**	**9 379**	**1 320 510**	**-**	**-**
3.2 Safety of Nuclear Installations	**10 261 763**	**3 009 042**	**2 635 891**	**10 261 971**	**2 624 107**	**2 649 135**
3.3.1.001 Radiation protection criteria and standards	946 101	229 273	312 646	946 101	229 273	312 646
3.3.1.002 Radiation protection of patients	925 896	229 273	-	925 896	229 273	-
3.3.1.003 Occupational radiation protection	426 834	375 175	312 646	426 834	198 009	312 646
3.3.1.004 Radiation safety technical services	1 502 352	-	-	1 502 352	-	-
3.3.1.005 Follow up to the Nuclear Safety Action Plan (NSAP)	170 539	-	-	170 539	-	-
3.3.1 Radiation Safety and Monitoring	**3 971 722**	**833 722**	**625 291**	**3 971 722**	**656 556**	**625 291**
3.3.2.001 Control of radiation sources	1 241 056	1 073 417	521 076	1 241 056	1 073 417	521 076
3.3.2.002 Transport safety	945 518	281 381	-	945 518	177 166	-
3.3.2.003 Technical assistance and information management	1 009 916	72 951	-	1 009 916	72 951	-
3.3.2 Regulatory Infrastructure and Transport Safety	**3 196 490**	**1 427 748**	**521 076**	**3 196 490**	**1 323 533**	**521 076**
3.3 Radiation and Transport Safety	**7 168 211**	**2 261 470**	**1 146 367**	**7 168 211**	**1 980 089**	**1 146 367**
3.4.1.001 Developing safety standards and coordination for the joint convention	768 788	72 951	-	768 788	72 951	-
3.4.1.002 Application of safety standards and inter-comparison projects	529 354	541 919	833 722	529 354	541 919	937 937
3.4.1.003 Follow up to the Nuclear Safety Action Plan (NSAP)	432 939	-	-	432 939	-	-
3.4.1 Safety of Spent Fuel and Radioactive Waste Management	**1 731 081**	**614 870**	**833 722**	**1 731 081**	**614 870**	**937 937**

Major Programme 3 – Nuclear Safety and Security

Summary of Programme Structure and Resources
(excluding Major Capital Investments)

Table 17 (cont'd)

Programme / Subprogramme / Project	2016 at 2016 prices			2017 at 2016 prices		
	Regular Budget	Extrabudgetary	Unfunded	Regular Budget	Extrabudgetary	Unfunded
3.4.2.001 Safety for decommissioning and remediation	953 211	1 417 327	990 044	953 211	1 104 681	990 044
3.4.2.002 Safety for assessment and management of environmental releases	742 208	239 695	-	742 208	239 695	-
3.4.2.003 Follow up to the Nuclear Safety Action Plan (NSAP)	241 794	-	-	241 794	-	-
3.4.2 Safety of Decommissioning, Remediation and Environmental Releases	**1 937 213**	**1 657 022**	**990 044**	**1 937 213**	**1 344 376**	**990 044**
3.4 Management of Radioactive Waste	**3 668 294**	**2 271 891**	**1 823 766**	**3 668 294**	**1 959 246**	**1 927 981**
3.5.1.001 Assessing nuclear security needs, priorities and threats	525 799	934 317	-	525 799	934 317	-
3.5.1.002 Illicit incident and trafficking data base	497 524	493 890	-	497 524	493 890	-
3.5.1.003 Information and computer security, and information technology services	275 778	1 233 709	-	275 778	1 125 929	-
3.5.1 Information Management	**1 299 101**	**2 661 916**	**-**	**1 299 101**	**2 554 137**	**-**
3.5.2.001 Integrated nuclear security approaches for the nuclear fuel cycle	583 457	4 814 875	176 898	583 457	5 353 772	176 898
3.5.2.002 Enhancing nuclear materials security using accounting and control	108 066	1 136 726	-	108 066	1 028 946	-
3.5.2.003 Upgrading security of radioactive material and associated facilities	378 387	2 101 046	-	437 803	2 101 046	-
3.5.2.004 Nuclear security in transportation of nuclear and radioactive material	267 274	818 466	-	267 274	710 687	-
3.5.2 Nuclear Security of Materials and Facilities	**1 337 183**	**8 871 113**	**176 898**	**1 396 599**	**9 194 451**	**176 898**
3.5.3.001 Institutional infrastructure for material out of regulatory control	345 559	760 334	-	345 559	760 334	-
3.5.3.002 Nuclear security detection and response architecture	631 301	2 905 036	-	631 301	2 905 036	-
3.5.3.003 Radiological crime scene management and nuclear forensics science	504 817	767 447	-	504 817	767 447	-
3.5.3 Nuclear Security of Material outside of Regulatory Control	**1 481 678**	**4 432 818**	**-**	**1 481 678**	**4 432 818**	**-**
3.5.4.001 International cooperation on nuclear security, networks and partnerships	434 695	810 684	-	434 695	487 346	-
3.5.4.002 Education and training programmes for human resource development	449 566	1 468 905	-	449 566	1 468 905	-
3.5.4.003 Coordinating nuclear security guidance and advice services	382 133	158 751	-	382 133	158 751	-
3.5.4 Programme Development and International Cooperation	**1 266 395**	**2 438 341**	**-**	**1 266 395**	**2 115 002**	**-**
3.5 Nuclear Security	**5 384 356**	**18 404 188**	**176 898**	**5 443 772**	**18 296 408**	**176 898**
Major Programme 3 - Nuclear Safety and Security	**34 721 869**	**28 505 115**	**6 078 072**	**34 720 989**	**27 386 972**	**6 165 937**

Major Programme 3 – Nuclear Safety and Security
Tasks with not fully funded activities (in euros)

Table 18

Project	Tasks	2016 Unfunded	2017 Unfunded
3.0.0.002 Overall management, coordination and common activities	Coordination of remaining activities of NSAP	200 968	200 968
	Corporate shared services	64 588	64 588
3.1.1.001 Member State emergency preparedness	Development of EPR standards, guides and other reference material	29 594	-
3.2.1.001 Strengthening regulatory effectiveness and regulatory networking	Develop, review and revise safety standards and related documents on Governmental and Regulatory Framework for nuclear installations	11 795	-
	Implement the Integrated Regulatory Review Services (IRRS) and assist Member States in the implementation of recommendations made	172 019	172 019
	Support the application of legal and non-binding instruments in the regulatory bodies, including provision of safety reviews and assistance services	176 898	176 898
	Support the implementation of the nuclear safety infrastructure based on SSG-16 for Member States embarking on a new nuclear power programme	195 609	172 019
	Suprt intl cooperation, coordination and information exchange by organizing, participating and supporting intl conferences and forums, regulatory networks, intl WGs and institutions and other intl activities in regulatory area	5 036	-
3.2.1.002 Improve Safety Standards, support CNS and INSAG	Organize review meetings of the contracting parties, including maintain the CNS secure website	-	159 034
3.2.2.002 Sustainable design and safety assessment competency, methods and tools	Develop and maintain the Global Safety Assessment Network	100 484	100 484
	Develop and maintain the Safety Assessment Education and Training curriculum	27 297	24 666
	Sharing and harmonization of design and safety assessment approaches	632 334	625 427
3.2.3.001 Site and installation design safety	Conduct SEED review and advisory services missions	29 292	29 426
	Develop review and revise Safety Standards and supporting technical documents on safety assessment of nuclear activities and facilities and on the design of nuclear power plants	15 446	15 446
	Development and maintenance of the ISSC Database and information systems	6 249	6 249
	Support international co-operation by participating in international activities	24 721	34 588
	Supporting documents on protection of nuclear installations against hazards	15 768	15 768
3.2.3.002 Site evaluation methods and tools for installation safety assessment	Capacity Building, Training, Education on Safety of Nuclear Installation	77 095	74 495
	External and internal event design	155 085	149 822
	Hazard evaluation of external events for the nuclear installations	138 578	137 744
	Information exchange with MS, Int. Agencies and establishing databases as resources	163 249	149 822
	Safety Assessment of nuclear installations against external hazards	67 610	60 374

Major Programme 3 – Nuclear Safety and Security
Tasks with not fully funded activities (in euros)

Table 18 (cont'd)

Project	Tasks	2016 Unfunded	2017 Unfunded
3.2.4.001 Enhancing the operational safety performance	Overall management and operations	100 484	100 484
	Develop, review and revise SS and supporting documents on OS of NPPs	81 195	61 174
	Impl. the OSART progr. and assist MS in the impl. of recomm. made	50 242	50 242
	Support international cooperation, coordination and inform. exchange	5 289	-
3.2.4.002 Strengthening sharing and use of international operating experience	Conduct operating experience programme Review(PROSPER) and assist MS in the implementation of recommendation made	82 221	82 221
3.2.4.003 Effective leadership, management for safety and safety culture in MSs	Develop safety standards and supporting documents on leadership, management for safety and SC	21 220	-
	Leadership and Safety Cult Rev Serv	8 054	8 054
3.2.4.004 Supporting long term operation safety	Conduct safety aspects of long term operation (SALTO) missions	35 380	35 380
	Evaluation of structures' and components' material properties utilizing actual aged materials removed from decommissioned reactors	101 157	101 157
	Overall management and operations	35 380	35 380
	Revision of safety standards and supporting documents for LTO	40 313	35 380
	Strengthen international cooperation, coordination and information exchange	35 380	35 380
3.2.4.005 Follow up to the Nuclear Safety Action Plan (NSAP)	Operational safety for NSAP	15 632	-
3.2.5.001 Enhancing the safety of research reactors	"Benchmarks of computational tools against experimental data on fuel burnup and material activation for utilization, operation and safety analysis of research reactors"	9 379	-
3.3.1.001 Radiation protection criteria and standards	Implement safety standards	312 646	312 646
3.3.1.003 Occupational radiation protection	Application of occupational radiation protection safety standards	312 646	312 646
3.3.2.001 Control of radiation sources	Assistance to S tates for the implementation of the safety standards through guidance, training course, tools, services, networking	521 076	521 076
3.4.1.002 Application of safety standards and inter-comparison projects	Application of Safety Standards for the safe disposal of radioactive waste	833 722	937 937
3.4.2.001 Safety for decommissioning and remediation	Application of safety standards for remediation	990 044	990 044
3.5.2.001 Integrated nuclear security approaches for the nuclear fuel cycle	Developing nuclear security guidance documents	35 380	35 380
	Support to NSP 2014-2017	141 519	141 519

Major Programme 4
Nuclear Verification

Objectives:

— *To deter the proliferation of nuclear weapons by detecting early the misuse of nuclear material or technology, and by providing credible assurances that States are honouring their safeguards obligations.*

— *To remain ready to assist with verification tasks, in accordance with the Agency's Statute, in connection with nuclear disarmament or arms control agreements, as requested by States and approved by the Board of Governors.*

Introduction:

Major Programme 4 supports the Agency's statutory mandate to establish and administer safeguards designed to ensure that special fissionable and other materials, services, equipment, facilities and information made available by the Agency, or at its request or under its supervision or control, are not used in such a way as to further any military purpose; and to apply safeguards, at the request of the States Parties, to any bilateral or multilateral arrangement, or at the request of a State, to any of that State's activities in the field of atomic energy.

To this end, the Agency concludes safeguards agreements with States which confer upon the Agency the legal obligation and authority to apply safeguards to nuclear material, facilities and other items subject to safeguards. Under this major programme, the Agency carries out verification activities, including analysis and evaluation of information and provides safeguards instrumentation as well as analytical services required for implementing safeguards.

These activities enable the Agency to draw soundly based safeguards conclusions. In addition, the Agency remains ready to support the efforts of the international community with other verification tasks, when requested by States and approved by the Board of Governors.

The main challenges for Major Programme 4 include:

— Encouraging States to conclude additional protocols (APs) which, in combination with comprehensive safeguards agreements (CSAs), enables the safeguards system to realize its full potential.
— Strengthening the effectiveness and improving the efficiency of safeguards implementation to respond to emerging challenges.
— The improvement of physical and information security to protect the confidentiality and integrity of all safeguards related information. This includes modernization of safeguards information technology to address current deficiencies and to improve the performance of safeguards activities.
— The development of approaches to address technical issues through the development of innovative solutions.
— Ensuring the safeguards workforce is capable of meeting current and future needs through knowledge management and preservation.
— Responding to requests by States with the approval of the Board of Governors to assist with other verification tasks

Medium Term Strategy

The planning process takes into account the Medium Term Strategy 2012–2017 (MTS) so that the programmes, subprogrammes and projects are generally linked to one or more of the following Medium Term Strategy objective and sub-objectives having direct relevance to this major programme:

E. Strengthening the effectiveness and improving the efficiency of the Agency's safeguards and other verification activities

— E01 Seek to enhance the ability of the safeguards system to draw independent and soundly based safeguards conclusions, and strengthen the system's capability for early detection of possible misuse of nuclear material and facilities for proscribed purposes;

— E02 Assist, in accordance with its Statute, with verification tasks under nuclear disarmament or arms control agreements when requested by the States Parties to such agreements;

— E03 Encourage States to conclude safeguards agreements and additional protocols and to accept the revised standardized text for small quantities protocols; provide States with associated assistance, guidance and training on the implementation of their agreements, and fully exercise the Agency's mandate and authority;

— E04 Further evolve the State-level concept for the planning, conduct and evaluation of safeguards activities for all States in accordance with their safeguards agreements, and develop and implement State-level approaches for all States with CSAs in force;

— E05 Further diversify the sources of safeguards relevant information and maximize the use of this information in the planning, conduct and evaluation of safeguards activities; reach out to States to increase voluntary sharing of safeguards relevant and reliable information;

— E06 Strengthen physical and information security to protect safeguards information, confidentiality and integrity; employ modern and secure safeguards information systems;

— E07 Strengthen the Agency's technical capabilities, applying technology foresight to identify scientific and technological innovations with promising potential for verification purposes; strengthen the Agency's R&D planning and build effective partnerships with Member States;

— E08 Deploy state of the art equipment and advanced information and communication technologies; increase the use information and communication technologies to enhance the efficiency of the Agency's daily operations, both in the field and at Headquarters; strengthen the analytical capabilities of the Safeguards Analytical Laboratories and expand the Agency's Network of Analytical Laboratories

— E09 Deploy and implement strategies to ensure that a capable safeguards workforce can be maintained through appropriate knowledge management and recruitment policies;

— E10 Ensure that States have competent State safeguards authorities and support States in establishing State or regional systems of accounting for and control of nuclear material (SSACs/RSACs) and in making them more effective; enhance the cooperation between the Agency and SSACs/RSACs;

— E11 Provide guidance to States on the incorporation of safeguards relevant features into new facilities;

— E12 Report safeguards conclusions and other information on safeguards and verification matters in a transparent and timely manner; build States' knowledge of the processes for drawing safeguards conclusions.

In addition, some of the projects due to their cross cutting nature also links to the following MTS objectives and sub-objectives. In such cases, Major Programme 4 provides support to activities led within other Major Programmes.

A. Facilitating access to nuclear power

— A01 Assist Member States planning nuclear power programmes as well as those establishing their first research reactor or fuel cycle facility to strengthen infrastructure development.

C. Improving nuclear safety and security

— C09 Strengthen international cooperation in nuclear security;

D. Providing effective technical cooperation

— D02 Facilitate cooperation among Member States bilaterally and regionally;

— D07 Promote best practices in project formulation, management, monitoring and evaluation.

F. Providing efficient, innovative management and strategic planning

— F01 Under the results based management approach, seek efficiency gains in management and focus on priority areas, while meeting demands for the Agency's unique services in the use of nuclear technology without increasing the risk of proliferation;

— F02 Provide overarching guidance, direction and support in relation to the planning, and efficient and effective implementation of the Agency's programme;

— F03 Provide effective coordination within the Secretariat, for example by sharpening lines of authority and accountability, with due regard to quality and risk management;

— F04 Ensure targeted prioritization of the Agency's activities to derive maximum benefit from the Agency's programme, with activities closely focused on areas in which the Agency can make a unique impact by inter alia strengthening strategic and policy planning and policy coordination;

— F07 Using best practice tools, including comprehensive application of quality management and benchmarking, improve the Agency's efficiency in its programme activities and management practices;

— F08 Reinforce the Agency's commitment to a more systematic approach to identifying, quantifying and reporting on efficiency gains by inter alia improving coordination between staff and the programme, and introducing greater flexibility in meeting emerging programmatic challenges;

— F13 Promote gender equality and equitable geographical representation in the Agency, especially at managerial levels.

Outcomes	Performance Indicators
• Soundly based safeguards conclusions on States' fulfilment of their safeguards obligations.	• Percentage of States with safeguards agreements in force for which safeguards activities were conducted and safeguards conclusions were drawn through the implementation of established processes and procedures. • Level of Member States' satisfaction with information reported in the Safeguards Implementation Report (SIR).

Outcomes	Performance Indicators
• Timely detection of any diversion of nuclear material from peaceful activities, any misuse of facilities and other items to which safeguards are applied, any withdrawal of nuclear material from safeguarded facilities and detection of any undeclared nuclear material and activities, as applicable.	• Percentage of attainment of established safeguards objectives.
• Capacity to carry out, upon States' requests, verification tasks and other technical assistance.	• Percentage of requests that were successfully carried out.

Projects

Title	Main Planned Outputs
4.0.0.001 Overall management and coordination	Policies and directives, reporting documents including the SIR and relevant sections of the Annual Report; country specific safeguards implementation information; action and follow-up plans for implementation of management mechanisms and tools; an overarching communication plan and facilitation of open and active dialogue with States on safeguards matters.
4.0.0.002 Quality management	Trained staff on quality management; document management and control system, validated safeguards documents; IT tools to support quality management activities, safeguards audit programme and audit reports; Office of Internal Oversight Services (OIOS) audits/evaluations implemented in safeguards and recommendations processed; and condition reports reviewed and processed.
4.0.0.003 Resources management	Coordination of planning, monitoring and reporting on results; staffing plans; recruited and designated inspectors; financial reviews; occupational health and safety procedures; staff trained on occupational safety and radiation protection; monitoring of safety incidents; and office space management.
4.0.0.004 Security	New and revised security policies and procedures; responses to physical and information security related incidents; security awareness campaigns; staff trained to work with safeguards sensitive information; and enhanced coordination and cooperation with the Agency's Security Coordinator and the Chief Information Officer.

Programme 4.1 Safeguards Implementation

Objectives:

— *To verify that all nuclear material remains in peaceful activities in States with CSAs.*
— *To verify that nuclear material, facilities and other items to which safeguards are applied pursuant to item specific safeguards agreements based on INFCIRC/66/Rev.2 remain in peaceful activities.*
— *To verify that nuclear material to which safeguards are applied in selected facilities pursuant to voluntary offer safeguards agreements (VOAs) remains in peaceful activities unless withdrawn as provided for in the agreements.*
— *To ensure that safeguards are effective and implemented in an efficient manner.*

The effective implementation of safeguards requires the Agency to conduct a variety of activities to verify that States are honouring their safeguards obligations. The activities range from access to safeguards relevant information and relevant locations in States, to the availability of appropriately prepared, calibrated, tested and well maintained equipment, including information analysis, development and/or updating of safeguards approaches to be implemented in States and at specific types of facility, as well as providing staff with the specialized skills and training that they require for effective and efficient safeguards implementation. This programme includes projects that enable the Agency to establish a complete and comprehensive information basis upon which safeguards conclusions can be drawn.

Outcomes	Performance Indicators
• Timely detection of any diversion of nuclear material from peaceful activities, any misuse of facilities and other items to which safeguards are applied, and detection of any undeclared nuclear material and activities.	• Percentage of anomalies, questions and inconsistencies identified through safeguards activities that were followed up by the Agency.
• Enhanced cooperation in safeguards implementation between State and/or regional authorities and the Agency.	• Percentage of States with timely submission of declarations and nuclear material accounting reports. • Percentage of States reached through Agency training and outreach on safeguards implementation.
• Safeguards implementation that is supported by up to date concepts and approaches, implementation processes and procedures, analytical methodologies, tools and services, and technology.	• Percentage of States for which State-level safeguards approaches (SLAs) were developed/updated, approved and implemented. • Percentage of safeguards activities that utilized advanced tools, methodologies and technologies.

Lessons learned from reviews, assessment, evaluations: The programme addresses recommendations from external programme evaluations and the implementation of safeguards and internal audits. There is significant staff turnover and the Agency must compete with others in the context of the limited availability of nuclear professional staff. Priorities therefore include knowledge management, staff planning and development. Gender mainstreaming and activities to ensure equitable geographical representation will also be integrated through training of personnel from Member States and specific recruitment policies.

Specific criteria for prioritization:

1. Projects responding directly to the Agency's statutory and legal obligations, and decisions of the Board of Governors and the General Conference. The Agency must conduct these projects and cannot defer their implementation.
2. Projects enhancing the Agency's ability to conduct mandatory activities effectively and efficiently: providing technological, methodological, information management and research infrastructure.
3. Non-mandatory projects carried out at the request of States and subject to decisions of the Board of Governors.

Subprogramme 4.1.1 Concepts and Planning

Objectives:

— *To contribute to setting strategic directions and objectives and prepare for future safeguards relevant challenges.*

— *Consistent with the overall conceptual framework to develop safeguards approaches, and establish internal policies, processes, procedures and guidance for safeguards implementation.*

— *To continually improve safeguards processes, including the measurement of performance and to preserve mission critical safeguards knowledge.*

— *To strengthen safeguards knowledge, skills and abilities within the Department of Safeguards and in States, through training, advisory services, guidance and dialogue.*

Outcomes	Performance Indicators
• Up to date departmental internal planning documents that identify emerging challenges and capabilities needed to address them, including approaches, techniques and expertise, and that define priorities and plans to address them.	• Percentage of departmental internal planning documents updated in a timely manner in accordance with procedures. • Percentage of identified emerging challenges that were satisfactorily addressed through Agency projects, including through Member State Support Programmes (MSSPs).
• Improved and up to date internal processes and procedures to support safeguards implementation that is non-discriminatory and objective.	• Percentage of core internal safeguards implementation processes for which established procedures and guidance have been updated or reaffirmed in a timely manner.
• Improved skills and ability of Agency staff as well as counterparts in the States to perform safeguards activities.	• Percentage of positive feedback received from supervisors of trained SSAC staff. • Percentage of formalized safeguards training carried out, as identified in the Annual Safeguards Training Programme.

Programmatic changes and trends: The subprogramme continues to be dedicated to high priority operational support activities critical to ensuring that the Agency's mandatory safeguards obligations can be carried out effectively and efficiently. In recognition of the importance of the technical effectiveness of SSACs for safeguards implementation, former Project 4.3.1.004 Development of SSAC was moved under this subprogramme. The project was renamed into 4.1.1.005 Training of and assistance to SSAC to better reflect the nature of the activities covered. In addition, activities and resources related to the development of SG approaches for new facilities, formerly covered under Project 4.3.1.001 Safeguards concepts, were merged with the former Project 4.1.1.001 Safeguards approaches under the new title Project 4.1.1.002 Safeguards approaches and concepts. The budget increase in this subprogramme is mainly explained by these transfers of activities as well as the funding of the biennial traineeship programme. Former Project 4.1.1.004 Strategic planning was renamed Project 4.1.1.001 Strategic planning and coordination to better reflect activities related to the coordination of the MSSPs. The title of project 4.1.1.003 Training was changed into 4.1.1.004 Safeguards staff training and traineeship to show that internal safeguards specific training activities as well as the traineeship programme are covered there.

Projects

Title	Main Planned Outputs
4.1.1.001 Strategic planning and coordination	Internal strategic planning documents, workshops and technical reports; biennial Development & Implementation Support programme and report; guidance to States on safeguards; Standing Advisory Group on Safeguards Implementation (SAGSI) reports, MSSP task proposals, application reports, and meeting documents and records for technical meetings on safeguards implementation.
4.1.1.002 Safeguards approaches and concepts	Safeguards implementation document reviews; safeguards approach and measure reviews and advice; subsidiary arrangements reviews; new and revised internal policies, approaches, methodologies and guidelines for safeguards implementation; and generic safeguards approaches for new types of facilities, advice to the Operations Divisions on development of SG approaches.
4.1.1.003 Process design	Improved processes, process descriptions and maps, performance indicators, procedures and guides; safeguards cost methodology; and knowledge management strategy and programme.
4.1.1.004 Safeguards staff training and traineeship	Training needs analysis; training curricula; evaluation procedures; about 90 training courses; reports and assessment of training courses; teaching materials and training tools; and traineeship programme for six trainees.
4.1.1.005 Training of and assistance to SSAC	Training needs analysis; training curricula; evaluation procedures; about ten conducted training courses; reports and assessment of training courses; and teaching materials and training tools.

Subprogramme 4.1.2 Safeguards Implementation for States under responsibility of Division SGOA

Objectives:

— *To verify that all nuclear material remains in peaceful activities in States with CSAs in force.*

— *To verify that nuclear material to which safeguards are applied in selected facilities pursuant to VOAs remains in peaceful activities unless withdrawn as provided for in the agreements.*

Outcomes	Performance Indicators
• Verification activities performed in field at the State's site, facility and other locations.	• Percentage of States for which SLAs were developed/updated, approved and implemented. • Percentage of States for which an annual implementation plan was developed and executed.

Outcomes	Performance Indicators
• Evaluation of all safeguards relevant information for each State.	• Percentage of States with safeguards agreements in force for which the collected safeguards relevant information was processed, evaluated and documented.
• Timely detection of any diversion of nuclear material from peaceful nuclear activities and of any undeclared nuclear material and activities for the State as a whole.	• For States with safeguards agreements in force, percentage of States for which safeguards objectives were attained. • Percentage of States with a CSA and additional protocol in force, for which the broader conclusion was drawn or reaffirmed.

Programmatic changes and trends: The in-field verification effort in some States has been reduced with the implementation of integrated safeguards. The updating of existing SLAs and development and implementation of new SLAs is expected to result in strengthened effectiveness and improved efficiency of safeguards. The transfer of verification activities for South Africa to this subprogramme caused a slight budget increase.

Projects

Title	Main Planned Outputs
4.1.2.001 Verification for States with CSA and AP in force	State evaluation reports; State evaluation documents; SLAs; annual implementation plans; design information verification (DIV) plans; safeguards approaches and inspection procedures; and statements and documentation on activities, results and conclusions of inspections, complementary access (CA) and DIVs.
4.1.2.002 Verification for States with CSA	State evaluation reports; State evaluation documents; SLAs; annual implementation plans; DIV plans; safeguards approaches and inspection procedures; and statements and documentation on activities, results and conclusions of inspections and DIVs.
4.1.2.003 Verification for States with VOA	State evaluation reports; State evaluation documents; annual implementation plans; DIV plans; safeguards approaches and inspection procedures; and statements and documentation on activities, results and conclusions of inspections and DIVs.

Subprogramme 4.1.3 Safeguards Implementation for States under responsibility of Division SGOB

Objectives:

— *To verify that all nuclear material remains in peaceful activities in States with CSAs in force.*

— *To verify that nuclear material, facilities and other items to which safeguards are applied pursuant to item specific safeguards agreements based on INFCIRC/66/Rev.2 remain in peaceful activities.*

— *To verify that nuclear material to which safeguards are applied in selected facilities pursuant to VOAs remains in peaceful activities unless withdrawn as provided for in the agreements.*

Outcomes	Performance Indicators
• Verification activities performed in field at the State's site, facility and other locations.	• Percentage of States for which SLAs were developed/updated, approved and implemented. • Percentage of States for which an annual implementation plan was developed and executed.
• Evaluation of all safeguards relevant information for each State.	• Percentage of States with safeguards agreements in force for which the collected safeguards relevant information was processed, evaluated and documented.
• Timely detection of any diversion of nuclear material from peaceful nuclear activities and of any undeclared nuclear material and activities for the State as a whole.	• For States with safeguards agreements in force, percentage of States for which safeguards objectives were attained. • Percentage of States with a CSA and additional protocol in force, for which the broader conclusion was drawn or reaffirmed.

Programmatic changes and trends: The in-field verification effort in some States has been reduced with the implementation of integrated safeguards. The updating of existing SLAs and development and implementation of new SLAs is expected to result in strengthened effectiveness and improved efficiency of safeguards. The Iran Task Force has been established within Project 4.1.3.002 Verification in States with a CSA, reflecting the high priority given to safeguards activities in the Islamic Republic of Iran. The effort in India continues to increase. These anticipated increases in workload result in the proposed higher funding needs. Safeguards activities in the United States of America are funded by extrabudgetary funding.

Projects

Title	Main Planned Outputs
4.1.3.001 Verification for States with CSA and AP in force	State evaluation reports; State evaluation documents; SLAs; annual implementation plans; DIV plans; safeguards approaches and inspection procedures; and statements and documentation on activities, results and conclusions of inspections, CAs and DIVs.
4.1.3.002 Verification for States with CSA	State evaluation reports; State evaluation documents; SLAs; annual implementation plans; DIV plans; safeguards approaches and inspection procedures; and statements and documentation on activities, results and conclusions of inspections and DIVs.
4.1.3.003 Verification for States with INFCIRC/66 type agreements	State evaluation reports; State evaluation documents; annual implementation plans; safeguards approaches and inspection procedures; and statements and documentation on activities, results and conclusions of inspections.
4.1.3.004 Verification for States with VOA	State evaluation reports; State evaluation documents; annual implementation plans; DIV plans; safeguards approaches and inspection procedures; and statements and documentation on activities, results and conclusions of inspections, CAs and DIVs.

Subprogramme 4.1.4 Safeguards Implementation for States under responsibility of Division SGOC

Objectives:

— *To verify that all nuclear material remains in peaceful activities in States with CSAs in force.*

— *To verify that nuclear material, to which safeguards are applied in selected facilities pursuant to VOAs, remains in peaceful activities unless withdrawn as provided for in the agreements.*

Outcomes	Performance Indicators
• Verification activities performed in field at the State's site, facility and other locations.	• Percentage of States for which SLAs were developed/updated, approved and implemented. • Percentage of States for which an annual implementation plan was developed and executed.
• Evaluation of all safeguards relevant information for each State.	• Percentage of States with safeguards agreements in force for which the collected safeguards relevant information was processed, evaluated and documented.
• Timely detection of any diversion of nuclear material from peaceful nuclear activities and of any undeclared nuclear material and activities for the State as a whole.	• For States with safeguards agreements in force, percentage of States for which safeguards objectives were attained. • Percentage of States with a CSA and additional protocol in force, for which the broader conclusion was drawn or reaffirmed.

Programmatic changes and trends: There are no substantive programmatic changes in this subprogramme compared to the previous biennium. Implementation of remote monitoring data transmission in additional facilities within the NNWSs of the European Atomic Energy Community (Euratom) is expected to further improve safeguards effectiveness and efficiency, helping to maintain a stable funding level. Safeguards activities in the Russian Federation are funded by extrabudgetary funding.

Projects

Title	Main Planned Outputs
4.1.4.001 Verification for States with CSA and AP in force	State evaluation reports; State evaluation documents; SLAs; annual implementation plans; DIV plans; safeguards approaches and inspection procedures; and statements and documentation on activities, results and conclusions of inspections, CAs and DIVs.
4.1.4.002 Verification for States with CSA	State evaluation reports; State evaluation documents; SLAs; annual implementation plans; DIV plans; safeguards approaches and inspection procedures; and statements and documentation on activities, results and conclusions of inspections and DIVs.
4.1.4.003 Verification for States with VOA	State evaluation reports; State evaluation documents; annual implementation plans; DIV plans; safeguards approaches and inspection procedures; and statements and documentation on activities, results and conclusions of inspections, CAs, as applicable, and DIVs.

Subprogramme 4.1.5 Information Analysis

Objectives:

— *To contribute to drawing soundly based safeguards conclusions through collecting, evaluating, analysing, structuring, securing and disseminating necessary information in a timely manner.*

Outcomes	Performance Indicators
• Enhanced verification effectiveness and soundness of the safeguards conclusions through the provision of relevant information and analytical added value.	• Absence of instances where additional information, that later comes to light, brings into question a previously drawn safeguards conclusion.
• Timely availability of information and competence contributing to departmental collaborative processes (State evaluation and in field activities implementation).	• Percentage of information available on time to meet the State evaluation schedules.
• Necessary methodologies, approaches, processes, tools and procedures in place.	• Percentage of processes in place improved yearly through the implementation of methodologies, approaches, tools and procedures.

Programmatic changes and trends: This subprogramme remains split into four projects. It continues to group all projects dedicated to ongoing safeguards relevant information collection, advanced technical expert's evaluation, and all-sources analysis required to draw soundly based safeguards conclusions from mandatory verification activities. It also includes an effort in the development of the relevant methodologies, related experts' analytical tools and analytical processes. Former Project 4.1.5.003 State factor analysis was renamed into Project 4.1.5.004 Information collection and analysis, in order to be aligned with terminology used in other documents and better describe the kind of activities, which will continue to be carried out under this project. The increasing complexity and volume of information analysis requires an enhanced profile of expertise and explains the increased budget in this area.

Projects

Title	Main Planned Outputs
4.1.5.001 Declared information analysis	Comprehensive and up to date State declared information processed and stored in databases compliant with analytical needs; official statements to States; analytical reports backing verification activities and State evaluation; contribution to SIR; improved methodologies; and training support for SSACs.
4.1.5.002 Nuclear fuel cycle information analysis	Evaluation of in-field measurement and sample results and estimation of their uncertainties; development of probabilistic verification schemes; documented evaluation methodologies and IT solutions; training and consultancy; and extensive contribution to field activities and safeguards implementation.
4.1.5.003 State infrastructure analysis	Analytical reports from commercially available satellite imagery and other sources providing geo-referenced information; analytical reports on advanced fuel cycle issues; and contributions to State evaluation and field activities.

Title	Main Planned Outputs
4.1.5.004 Information collection and analysis	Analytical reports from open source information and from commercially available databases; analytical reports based on information on nuclear procurement activities; contributions to State evaluation, field activities.

Subprogramme 4.1.6 Provision of Instrumentation

Objectives:

— *To enable and improve the implementation of safeguards through the provision of appropriate and reliable safeguards instruments with adequate field support.*

— *To enable and maintain a system of asset management and operational equipment tracking compliant with International Public Sector Accounting Standards (IPSAS).*

— *To assure safety in the handling of portable equipment through properly organized equipment flow, contamination checking and decontamination measures.*

Outcomes	Performance Indicators
• Timely availability of appropriate and reliable safeguards instruments for inspections and adequate field support.	• Percentage of inspector equipment requests for portable and resident equipment completed in a timely manner. • Dependability of safeguards instruments measured by the time fraction when instrumentation data are available for analysis.
• IPSAS compliant asset management and real time tracking of equipment.	• Number of negative findings from internal and external auditors constituting significant risk. • Ratio of equipment with lost tracking information compared to the overall equipment pool at IAEA Headquarters and the Safeguards Analytical Laboratories.
• Absence of contaminated equipment items issued for inspection use.	• Number of contaminated items issued to inspectors.

Programmatic changes and trends: The subprogramme addresses core verification activities of the Department. No significant programmatic changes have been envisaged other than editorial changes in terminology and a general trend in reducing dependency on extrabudgetary funding. The slight increase in budget reflects the need for additional equipment and instrumentation. This increase is partially offset by reduced supplies costs.

Projects

Title	Main Planned Outputs
4.1.6.001 Portable and resident non-destructive assay equipment	Portable NDA instruments provided to inspectors; transportable attended measurement systems; field support by relevant experts; in-house expertise; and measurement results
4.1.6.002 Unattended safeguards instrumentation	Prepared, installed and tested surveillance and unattended monitoring systems; field support to inspectors; and in-house data review and analysis support.
4.1.6.003 Equipment logistics and storage	Received and contamination checked safeguards equipment; stored equipment; delivered inspection items; IPSAS compliant equipment inventory management data and system; and equipment performance and reliability data.
4.1.6.004 Systems integration and coordination	Engineering solutions for complex systems; reliably operating remote monitoring infrastructure; hardware/software security and containment verification; up to date procedures and tools; and equipment documentation and authorization records.

Subprogramme 4.1.7 Analytical Services

Objectives:

— *To maintain and improve capabilities, capacity and services for destructive analysis and environmental sample analysis in order to strengthen the Agency's verification capabilities.*

Outcomes	Performance Indicators
• Accurate and timely analysis of all required nuclear material and environmental samples.	• Number of nuclear material and environmental sample analytical results reported by the IAEA Network of Analytical Laboratories (NWAL), including the Safeguards Analytical Laboratories. • Percentage of safeguards samples analysed within agreed timeliness goals.

Programmatic changes and trends: The main tasks covered by this subprogramme as provider of analytical services remain unchanged. The quality and timeliness of analytical services provided should improve thanks to the full usage of the new facilities in Seibersdorf and the Network of Analytical Laboratories (NWAL). The increased maintenance costs of the new laboratory were off-set by efforts to postpone replacement of equipment and to pursue increased savings in supply costs, allowing for a stable budget compared to the previous biennium.

Projects

Title	Main Planned Outputs
4.1.7.001 Analytical services and sample analysis	Nuclear material and environmental sample analytical results; shipment and logistics of samples; NWAL management; and stockpile and provision of sampling kits and materials.

Subprogramme 4.1.8 Effectiveness Evaluation

Objectives:

— *To ensure that key safeguards activities are subject to quality reviews in order to validate that the results of safeguards activities met the relevant objectives and support the safeguards conclusions.*

— *To ensure that the performance of the department is monitored, evaluated and reported on, following best practices.*

— *To ensure that the Board of Governors is informed annually on the conclusions drawn from safeguards implementation during the prior year.*

Outcomes	Performance Indicators
• Confirmation that the results of safeguards activities meet the relevant safeguards objectives and support the safeguards conclusions.	• Percentage of internal quality reviews performed as scheduled in the annual Safeguards Effectiveness Evaluation (SEE) plans for quality control reviews. • The number of inaccuracies identified in the Data Evaluation Report (DER) on implementation of Agency safeguards.
• Submission of a high quality SIR annually to the Board of Governors.	• Number of inaccuracies identified in the SIR. • Number of days after the scheduled distribution date by which the SIR is distributed to Member States.
• Enhanced internal performance management tool for the Department of Safeguards.	• Number of instances where the developed internal performance management tool was used to make decisions.

Programmatic changes and trends: This subprogramme on effectiveness evaluation will further strengthen the independent quality reviews it performs on the results from safeguards implementation and evaluation activities conducted by the Department. A stronger focus will be given to strengthen its capability to monitor, evaluate and report on the performance of the Department in order to support decision making. The slight decrease in the budget is due to staffing adjustments between projects.

Projects

Title	Main Planned Outputs
4.1.8.001 Safeguards effectiveness evaluation	SIR and DER; and reports on results of internal quality reviews of safeguards implementation and evaluation activities; and internal dashboard on the performance of the Department.

Subprogramme 4.1.9 Safeguards Information Communication Technology (ICT)

Objectives:

— *To enhance the Safeguards' evolving processes through the development of new software.*

— *To provide reliable and fully available ICT services.*

— *To ensure the security of safeguards information.*

Outcomes	Performance Indicators
• Effective and efficient delivery of ICT projects to address safeguards requirements.	• Satisfaction rate of internal stakeholders that the implemented projects address departmental business requirements. • Percentage of safeguards databases integrated in a single repository inside the integrated safeguards environment.
• Increased efficiency while providing maintenance and support services for safeguards applications.	• Average response time (in weeks) between change requests or incident reports and solutions.
• Improved information security through implementation of the safeguards information security policy.	• Percentage of critical recommendations identified during the yearly assessments.

Programmatic changes and trends: This subprogramme ensures clear focus on ICT solutions. Future changes might be due to technology evolution, which might impact the IT development, infrastructure and support. The decrease in funding needs is because of saving measures and the shift of resources to Subprogramme 4.3.1. Development of Safeguards Information Technology to support the high priority Modernization of Safeguards Information Technology (MOSAIC) project.

Projects

Title	Main Planned Outputs
4.1.9.001 ICT development	Departmental IT systems implemented (developed in-house or utilizing commercial products); software provided to Member States to support their safeguards reporting responsibilities; and migration of departmental data that is not stored in databases.
4.1.9.002 ICT infrastructure and support	Help desk, email, file storage, network, database, IT security and applications hosting services; desktop/laptop design services; equipment standards and evaluation and life cycle management; mobile devices management; and mobile platform, disaster recovery and next generation security implementation.

Programme 4.2 Other Verification Activities

Objectives:

— *To remain ready to assist with verification tasks, in accordance with the Agency's Statute, in connection with nuclear disarmament or arms control agreements, as requested by States and approved by the Board of Governors.*

In the past, the Agency was asked to undertake additional verification tasks such as those in connection with nuclear material no longer required for defence purposes. To ensure that it would be able to contribute to the process of nuclear arms control and disarmament, when requested by States and approved by the Board of Governors, the Agency will respond to requests for verification and technical assistance in this field.

Outcomes	Performance Indicators
• Capacity to carry out, upon request, verification tasks	• Percentage of requests that were successfully addressed.

Lessons learned from reviews, assessment, evaluations: Among the strategic goals identified in the area of nuclear verification, the Agency must remain ready to assist, in accordance with its Statute, with verification tasks so as to contribute to the process of nuclear disarmament or arms control that it may be requested to carry out once approved by the Board of Governors. The Agency was requested in 2010 to undertake a verification role under the Agreement between the Government of the Russian Federation and the Government of the United States of America Concerning the Management and Disposition of Plutonium Designated as No Longer Required for Defence Purposes and Related Cooperation (PMDA), as amended. Hence, the Agency continues to be prepared to assist the international community upon request.

Specific criteria for prioritization:

1. Projects responding directly to the Agency's statutory and legal obligations, and decisions of the Board of Governors and the General Conference. The Agency must conduct these projects and cannot defer their implementation.
2. Projects enhancing the Agency's ability to conduct mandatory activities effectively and efficiently: providing technological, methodological, information management and research infrastructure.
3. Non-mandatory projects carried out at the request of States and subject to decisions of the Board of Governors.

Subprogramme 4.2.1 Other Verification Activities

Objectives:

— *To prepare and be ready to verify that the Democratic People's Republic of Korea is fulfilling its obligations under its NPT Safeguards Agreement (INFCIRC/403), and the abandonment of the nuclear programme of the Democratic People's Republic of Korea in a complete, verifiable and irreversible manner, when requested by the Board of Governors.*

— *To follow any evolutions in discussions on the disposition of plutonium designated as no longer required for defence purposes, in accordance with an agreement to be concluded between the Agency, the Russian Federation and the United States of America, as approved by the Board of Governors.*

Outcomes	Performance Indicators
• Maintained readiness and preparedness to implement safeguards under INFCIRC/403 and to conduct other verification activities in the Democratic People's Republic of Korea, as approved by the Board of Governors.	• Percentage of required documents and plans in place to allow for verification activities in the Democratic People's Republic of Korea.
• Necessary legal framework, verification approaches and equipment to conduct verification related to the PMDA in place.	• Percentage of required arrangements, approaches and systems in place to allow for verification of the PMDA.

Programmatic changes and trends: The activities related to the Agency's readiness to conduct verifications in the Democratic People's Republic of Korea are continuing as in the previous biennium and as approved by the Board of Governors. Pending new developments, some resources were transferred to Subprogramme 4.1.2 Safeguards implementation in States under the responsibility of SGOA.

The verification activities related to the PMDA cannot begin until a trilateral agreement is concluded, the necessary extrabudgetary funds are obtained, the applicable subsidiary arrangements, facility attachments and verification approaches specifying how the provisions of the PMDA are to be applied have been approved, and the necessary facilities constructed. This will require negotiation between the Agency, the Russian Federation and the United States of America, and the approval by the Board of Governors.

Projects

Title	Main Planned Outputs
4.2.1.001 Verification activities in the Democratic People's Republic of Korea	State evaluation report for the Democratic People's Republic of Korea; plans to implement safeguards or other monitoring and/or verification measures under different scenarios.

Title	Main Planned Outputs
4.2.1.002 Verification activities related to the PMDA	Verification approaches; inspection procedures; statements and documentation on activities, results and conclusions of inspections; equipment requirements; and installed and tested equipment.

Programme 4.3 Development

Objectives:

— *To preserve and further develop the Agency's infrastructure and capabilities to conduct verification tasks.*

Development activities permit the Agency to optimize the breadth and quality of relevant information upon which safeguards conclusions are drawn, to anticipate and prepare for future technological requirements, and to improve the overall effectiveness and efficiency of safeguards. This programme includes projects addressing the development of hardware, software and infrastructure required for effective and efficient support for information processing; the evaluation of appropriate inspection strategies, supported by suitable methods and verification technologies, as well as the development of instrumentation and communications infrastructure.

Outcomes	Performance Indicators
• Enhanced technical infrastructure and systems that are robust, fit for purpose and secure.	• Timeliness of delivery of the modernized information system to support safeguards implementation processes. • Number of innovative solutions (new and upgraded instruments, technologies and installations) introduced into operational practice.
• Safeguards approaches developed for new facility types in a timely manner and in coordination with the relevant State/regional authorities.	• Percentage of safeguards approaches needed for new types of facilities that are being developed.

Lessons learned from reviews, assessment, evaluations: The Agency must have adequate technologies, methods and capabilities to conduct current and future verification tasks effectively. This requires sufficient financial resources as well as long term research, development and planning. Effective project planning and efficient use of resource will be key success factors.

Specific criteria for prioritization:

4. Projects responding directly to the Agency's statutory and legal obligations, and decisions of the Board of Governors and the General Conference. The Agency must conduct these projects and cannot defer their implementation.
5. Projects enhancing the Agency's ability to conduct mandatory activities effectively and efficiently: providing technological, methodological, information management and research infrastructure.
6. Non-mandatory projects carried out at the request of States and subject to decisions of the Board of Governors.

Subprogramme 4.3.1 Development of Information Technology

Objectives:

— *To strengthen the security and integrity of safeguards information assets.*

— *To improve the accessibility and availability of information within the Department.*

— *To increase the efficiency of IT services within the Agency.*

Outcomes	Performance Indicators
• Improved IT assets security incidents detection capabilities.	• Percentage of critical recommendations identified during the yearly assessments. • Percentage of exceptions from the established standard role based access rules.
• Safeguards information available and accessible from a single information repository.	• Percentage of safeguards relevant information for State evaluation available via the State File.

Outcomes	Performance Indicators
• New and modernized information systems to support safeguards processes.	• Percentage of new and modernized information systems completed in support of safeguards implementation.

Programmatic changes and trends: Two projects which evolved to cover less developmental activities than direct support to Safeguards implementation (4.3.1.001 Safeguards concepts and 4.3.1.004 Development of SSAC, which was renamed into 4.1.1.005 Assistance to and training of SSAC) under the former Subprogramme 4.3.1. Evolving Safeguards Implementation, were transferred to Subprogramme 4.1.1. Concepts and Planning. Furthermore, the subprogramme was renamed into 4.3.1 Development of Safeguards Information Technology to reflect the focus on information technology development activities. Project 4.3.1.001 Modernization of Safeguards Information Technology (MOSAIC) is the continuation of the former Project 4.3.2.002 Safeguards information systems project, with an extended scope but same budget level. It benefits from a substantive resource transfer from Subprogramme 4.1.9 Information Communication Technology (ICT) owing to the high priority given to this project.

Projects

Title	Main Planned Outputs
4.3.1.001 Modernization of Safeguards Information Technology (MOSAIC)	Enhanced existing capabilities (tools and applications) and the introduction of improved capabilities to increase effectiveness and efficiency of safeguards implementation and strengthened information security.

Subprogramme 4.3.2 Development of Instrumentation

Objectives:

— *To ensure the availability of effective, up to date, and cost efficient instrumentation for the verification of nuclear material and other items placed under safeguards.*

— *To develop innovative approaches and upgrades in traditional safeguard technologies, and to evaluate the application of new technologies for the detection of undeclared activities.*

— *To ensure synergy between safeguards equipment development and nuclear security applications through provision of technical expertise and testing and evaluation services.*

Outcomes	Performance Indicators
• Availability of effective, up to date, and cost efficient instrumentation for the verification of nuclear material and other items placed under safeguards.	• Number of completed authorization actions. • Number of development tasks (internal and MSSP) delayed more than two years against schedule.
• Identification and evaluation, including testing and specifications analysis, of technologies potentially addressing gaps in the technologies used in safeguards implementation.	• Number of new types of technologies, selected for evaluation and meeting end-user requirements.
• Technical adequacy and quality of radiation measurement equipment installed or distributed under the nuclear safety and security programmes.	• Percentage of requested equipment installation missions, testing campaigns and/or training events under nuclear safety and security programmes that were implemented with the participation of the Nuclear Security and Safety team.

Programmatic changes and trends: The instrumentation development Subprogramme addresses sustainability of technical and scientific support to the core verification mission, and is designed to be flexible enough to cope with dynamic changes in the requirements. The general trend may be characterized as certain shifts of emphasis on developing technologies and methods for the detection of undeclared material and activities compared to traditional material accountancy techniques. The slight budget increase comes from resource transfers from Subprogramme 4.1.6 Provision of Safeguards Instrumentation.

Projects

Title	Main Planned Outputs
4.3.2.001 Development of equipment components and stand-alone instruments	New and upgraded instruments and components available; vulnerability assessment report; test reports for instruments and components; and proposals for instrument/components development.

Title	Main Planned Outputs
4.3.2.002 Development of instrumentation systems and methodology	Introduction of new and improved methods and their realization in new safeguards equipment systems available for use by Agency inspectors.

Subprogramme 4.3.3 Special Projects

Objectives:

— *To ensure the timely implementation of effective and efficient safeguards approaches requiring significant capital investments for special projects in Member States.*

Outcomes	Performance Indicators
• Effective and efficient safeguards approaches and verification available and implemented for all special projects in States' facilities.	• Percentage of verification equipment, software and systems and associated information made available in accordance with planned schedules.

Programmatic changes and trends: The former Project 4.3.3.005 Enhancing capabilities of the safeguards analytical services (ECAS) was successfully finalized and closed during the previous biennium. Project 4.3.3.003 Development and implementation of safeguards approaches for Chernobyl NPP has been delayed owing to redesign and modification of the new conditioning facility. Project 4.3.3.005 Develop and implement safeguards approaches for a spent fuel encapsulation plant and geological repository (EPGR) in Finland and Sweden is on schedule. Project 4.3.3.001 Develop and implement a safeguards approach for J-MOX is timed with the actual J-MOX construction that is ongoing. The goal of these projects is to have safeguards measures in place by the time the respective facility is commissioned. However, the funding for these projects is significantly below the levels needed for the timely delivery of all components of required safeguards measures.

Projects

Title	Main Planned Outputs
4.3.3.001 Develop and implement a safeguards approach for J-MOX	Project plan and schedule updated in line with construction plan; Development of safeguards approach and related equipment and documentation as required.
4.3.3.003 Develop and implement safeguards approaches for the Chernobyl NPP	Safeguards approaches, equipment requirements defined; Installed and tested equipment for verification of the new safe confinement (shelter) and transfer of irradiated fuel to dry storage.
4.3.3.005 Develop and implement safeguards approaches for a spent fuel (SF) encapsulation plant and geological repository (EPGR) in Finland and Sweden	Safeguards approaches; equipment requirements defined; and installed and tested equipment for verification of the EPGR.

Major Programme 4 – Nuclear Verification
Summary of Programme Structure and Resources
(excluding Major Capital Investments)

Table 19

Programme / Subprogramme / Project	2016 at 2016 prices			2017 at 2016 prices		
	Regular Budget	Extrabudgetary	Unfunded	Regular Budget	Extrabudgetary	Unfunded
4.0.0.001 Overall management and coordination	2 620 270	248 000	45 179	2 630 706	98 000	15 059
4.0.0.002 Quality management	859 525	50 242	-	859 525	50 242	-
4.0.0.003 Resources management	1 384 342	100 484	20 011	1 384 342	100 484	20 011
4.0.0.004 Security	532 607	-	-	532 607	-	-
4.S Corporate shared services	8 522 538	125 650	308 500	8 917 745	125 650	308 500
	13 919 283	**524 376**	**373 691**	**14 324 925**	**374 376**	**343 570**
4.1.1.001 Strategic planning and coordination	1 665 819	249 380	24 503	1 662 523	249 995	15 632
4.1.1.002 Safeguards approaches and concepts	2 537 691	149 822	-	2 537 691	149 822	-
4.1.1.003 Process design	1 004 206	50 242	-	1 004 206	50 242	-
4.1.1.004 Safeguards staff training and traineeship	2 284 845	176 898	207 866	1 933 594	176 898	210 746
4.1.1.005 Training of and assistance to SSAC	621 114	1 078 075	-	621 114	1 078 075	-
4.1.1 Concepts and Planning	**8 113 675**	**1 704 418**	**232 368**	**7 759 129**	**1 705 033**	**226 378**
4.1.2.001 Verification for States with CSA and AP in force	15 487 759	-	18 072	15 449 176	-	18 072
4.1.2.002 Verification for States with CSA	295 571	-	-	295 571	-	-
4.1.2.003 Verification for States with VOA	455 286	-	-	455 286	-	-
4.1.2 Safeguards Implementation in States Under Responsibility Of Division SGOA	**16 238 617**	**-**	**18 072**	**16 200 033**	**-**	**18 072**
4.1.3.001 Verification for States with CSA and AP in force	6 431 488	-	89 607	6 384 591	-	89 607
4.1.3.002 Verification for States with CSA	11 083 962	123 048	10 422	11 297 602	123 048	10 422
4.1.3.003 Verification for States with INFCIRC/66 - type agreements	3 215 509	-	-	3 048 765	-	-
4.1.3.004 Verification for States with VOA	-	434 848	-	-	434 848	-
4.1.3 Safeguards Implementation in States Under Responsibility of Division SGOB	**20 730 959**	**557 896**	**100 029**	**20 730 958**	**557 896**	**100 029**
4.1.4.001 Verification for States with CSA and AP in force	15 178 197	-	396 077	15 178 197	-	396 077
4.1.4.002 Verification for States with CSA	242 997	-	-	242 997	-	-
4.1.4.003 Verification for States with VOA	940 246	208 083	-	940 246	208 083	-
4.1.4 Safeguards Implementation in States Under Responsibility of Division SGOC	**16 361 440**	**208 083**	**396 077**	**16 361 440**	**208 083**	**396 077**
4.1.5.001 Declared information analysis	2 437 303	-	314 104	2 437 303	-	314 104
4.1.5.002 Nuclear fuel cycle information analysis	3 041 466	854 409	1 012 078	3 041 466	854 409	1 012 078
4.1.5.003 State infrastructure analysis	2 498 813	749 112	616 574	2 498 813	749 112	616 574
4.1.5.004 Information collection and analysis	3 448 580	200 968	682 966	3 448 580	200 968	682 966
4.1.5 Information Analysis	**11 426 161**	**1 804 489**	**2 625 721**	**11 426 161**	**1 804 489**	**2 625 721**

Major Programme 4 – Nuclear Verification
Summary of Programme Structure and Resources
(excluding Major Capital Investments)

Table 19 (cont'd)

Programme / Subprogramme / Project	2016 at 2016 prices			2017 at 2016 prices		
	Regular Budget	Extrabudgetary	Unfunded	Regular Budget	Extrabudgetary	Unfunded
4.1.6.001 Portable and resident non-destructive assay equipment	3 487 293	377 866	332 814	3 502 976	377 866	289 479
4.1.6.002 Unattended safeguards instrumentation	6 148 538	377 866	1 180 082	6 166 610	377 866	1 180 082
4.1.6.003 Equipment logistics and storage	2 843 158	-	177 354	2 843 158	-	177 354
4.1.6.004 Systems integration and coordination	5 071 656	941 922	885 812	5 059 005	943 272	1 039 023
4.1.6 Provision of Safeguards Instrumentation	**17 550 644**	**1 697 654**	**2 576 062**	**17 571 748**	**1 699 004**	**2 685 937**
4.1.7.001 Analytical services and sample analysis	10 744 968	331 623	566 508	10 744 968	281 381	566 508
4.1.7 Safeguards Analytical Services	**10 744 968**	**331 623**	**566 508**	**10 744 968**	**281 381**	**566 508**
4.1.8.001 Safeguards effectiveness evaluation	1 550 538	-	-	1 550 538	-	-
4.1.8 Effectiveness Evaluation	**1 550 538**	**-**	**-**	**1 550 538**	**-**	**-**
4.1.9.001 ICT development	3 486 227	-	1 483 438	3 486 227	-	1 483 438
4.1.9.002 ICT infrastructure and support	6 979 784	123 048	3 147 707	6 946 423	123 048	3 078 823
4.1.9 Information Communication Technology (ICT)	**10 466 012**	**123 048**	**4 631 146**	**10 432 650**	**123 048**	**4 562 261**
4.1 Safeguards Implementation	**113 183 014**	**6 427 211**	**11 145 982**	**112 777 625**	**6 378 934**	**11 180 982**
4.2.1.001 Verification activities in the Democratic People's Republic of Korea	451 642	-	-	451 642	-	-
4.2.1.002 Verification activities related to the PMDA	-	180 141	-	-	180 141	-
4.2.1 Other Verification Activities	**451 642**	**180 141**	**-**	**451 642**	**180 141**	**-**
4.2 Other Verification Activities	**451 642**	**180 141**	**-**	**451 642**	**180 141**	**-**
4.3.1.001 Modernization of SG information technology (MOSAIC)	3 900 322	449 467	1 029 441	3 900 322	449 467	1 029 441
4.3.1 Development of Safeguards Information Technology.	**3 900 322**	**449 467**	**1 029 441**	**3 900 322**	**449 467**	**1 029 441**
4.3.2.001 Development of equipment components and stand-alone instruments	1 543 546	-	244 889	1 543 546	-	265 732
4.3.2.002 Development of instrumentation systems and methodology	1 264 437	100 484	183 543	1 264 437	100 484	183 543
4.3.2 Development of Safeguards Instrumentation	**2 807 982**	**100 484**	**428 432**	**2 807 982**	**100 484**	**449 275**
4.3.3.001 Develop and implement a safeguards approach for J-MOX	398 409	-	704 835	398 409	-	555 799
4.3.3.003 Develop and implement safeguards approaches for the Chernobyl NPP	366 409	-	-	366 409	-	-
4.3.3 Special Projects	**764 818**	**-**	**704 835**	**764 818**	**-**	**555 799**
4.3 Development	**7 473 122**	**549 951**	**2 162 708**	**7 473 122**	**549 951**	**2 034 515**
Major Programme 4 - Nuclear Verification	**135 027 060**	**7 681 679**	**13 682 381**	**135 027 315**	**7 483 402**	**13 559 067**

Major Programme 4 – Nuclear Verification

Tasks with not fully funded activities (in euros)

Table 20

Project	Tasks	2016 Unfunded	2017 Unfunded
4.0.0.001 Overall management and coordination	Communication with internal and external stakeholders	15 059	15 059
	Contribute to the IAEA anniversary	30 120	-
	Corporate shared services	308 500	308 500
4.0.0.003 Resources management	Resource management and health and safety activities	20 011	20 011
4.1.1.001 Strategic planning and coordination	Coordinate Member State support programme	13 705	10 422
	Strategic planning and stakeholder outreach	10 798	5 211
4.1.1.004 Safeguards staff training and traineeship	Development and evaluation of training courses	100 484	100 484
	Training implementation	107 382	110 262
4.1.2.001 Verification for States with CSA and AP in force	Verification for States with a CSA and AP in force in SGOA	18 072	18 072
4.1.3.001 Verification for States with CSA and AP in force	Verification for States with a CSA and AP in force in SGOB	89 607	89 607
4.1.3.002 Verification for States with CSA	Verification for States with a CSA in force in SGOB	10 422	10 422
4.1.4.001 Verification for States with CSA and AP in force	Verification for States with a CSA and AP in force in SGOC	396 077	396 077
4.1.5.001 Declared Information Analysis	Receive, process analyse and maintain nuclear material accounting information	314 104	314 104
4.1.5.002 Nuclear fuel cycle information analysis	Evaluation and comparison of data from State declarations and from IAEA in-field verification activities, i.e. NDA measurements and analysis of samples taken for ES, DA and material characterisation	906 405	906 405
	Support tasks carried out in support of Departmental and external partners	105 673	105 673
4.1.5.003 State infrastructure analysis	Collecting and Analyzing Commercial Satellite Imagery	473 445	473 445
	Research, Development and Integration Activities	68 218	68 218
	Technology Assessments	74 911	74 911
4.1.5.004 Information collection and analysis	Information analysis and support to the departmental State evaluation process	577 293	577 293
	Research and development activities	105 673	105 673
4.1.6.001 Portable and resident non-destructive assay equipment	Expert support in the area of non-destructive assay activities	140 560	140 560
	Provision and maintenance of portable and resident non-destructive assays	192 254	148 919

Major Programme 4 – Nuclear Verification
Tasks with not fully funded activities (in euros)

Table 20 (cont'd)

Project	Tasks	2016 Unfunded	2017 Unfunded
4.1.6.002 Unattended safeguards instrumentation	Provision and maintenance of surveillance instrumentation	659 006	659 006
	Provision of unattended monitoring systems	521 076	521 076
4.1.6.003 Equipment logistics and storage	Manage assets, store and track safeguards verification equipment and system components	125 058	125 058
	Receive and deliver new and used equipment and supplies for safeguards verification purposes	52 296	52 296
4.1.6.004 Systems integration and coordination	Develop safeguards technical and scientific services project engineering	338 154	338 154
	Provide and maintain remote monitoring instrumentation	100 184	100 184
	Provide and maintain seals and containment equipment	447 475	600 685
4.1.7.001 Analytical services and sample analysis	Perform analysis of environmental samples	290 337	290 337
	Perform analysis of nuclear material samples	276 170	276 170
4.1.9.001 ICT development	Develop and maintain the SG core business ICT system	536 380	536 380
	Manage the ICT business analysis, architecture, quality assurance and project management	947 058	947 058
4.1.9.002 ICT Infrastructure and support	Provide ICT infrastructure operations and security services	2 601 138	2 621 447
	Provide ICT users support	546 570	457 375
4.3.1.001 Modernisation of SG information technology (MOSAIC)	Consolidate with Agency-wide systems	14 982	14 982
	Develop new capabilities to support safeguards implementation	444 082	444 082
	Enhance existing capabilities to support safeguards implementation	495 466	495 466
	Strengthening information security	74 911	74 911
4.3.2.001 Development of equipment components and stand-alone instruments	Development of sealing and containment instruments/components	110 709	131 552
	Development of surveillance instruments/components	29 964	29 964
	Development of unattended monitoring hardware	104 215	104 215
4.3.2.002 Development of instrumentation systems and methodology	Development of integrated sg instrumentation systems	62 529	62 529
	Development of remote data transmission infrastructure	36 475	36 475
	Quality management in development activities (processes, standards, procedures, documentation)	84 539	84 539
4.3.3.001 Develop and implement a SG approach for J-MOX	Development and implementation of a safeguards approach for J-MOX - activities in SGIS	50 915	50 915
	Development and Implementation of a safeguards approach for J-MOX - activities in SGTS	249 474	100 438
	Development and implementation of a safeguards approach for J-MOX in Japan - activities in SGOA	404 446	404 446

Major Programme 5
Policy, Management and Administration Services

Objectives:

— *To fully institute the one house and results based approach to ensure the relevance, effectiveness and efficiency of all Agency programmes and the use of resources.*

— *To improve and enhance understanding of the work of the Agency and to ensure timely access by stakeholders to relevant scientific and technical information.*

Introduction:

Under the leadership, direction and authority of the Director General, the Agency's programme seeks to achieve the goals and objectives of its Member States. This requires effective coordination to ensure a one house approach, particularly with respect to:

- Overall policies;
- Interactions with Member States;
- Policy planning and strategy in line with the Medium Term Strategy (MTS);
- The setting of priorities;
- The development and implementation of programmes;
- The evaluation and assessment of performance;
- Risk management
- Management of the exchange of information within the Secretariat, between the Secretariat and Member States, and for the benefit of the general public and the media.

In addition, a wide range of administrative and legal services will continue to be provided to support Agency programmes in efficiently and effectively fulfilling the organization's mandate. It should be noted that approximately 24% of the budget for Major Programme 5 is related to the cost of buildings management and the common security services of the Vienna International Centre (VIC).

Major Programme 5 will take the lead to coordinate security efforts through a centralized security coordination function for the Agency. There will be an increased focus on information and communication technology (ICT) security to address the severe and escalating threats in this area. This major programme will also continue to have a leadership role in respect to further improving efficiency and effectiveness in programme delivery and implementation of the last plateau of the Agency-wide Information System for Programme Support (AIPS) project. The focus for the Agency will be to achieve results, deliver with desired quality, ensure clear accountability and manage risks proactively.

The oversight activities of the Agency will continue to strengthen accountability, efficiency and effectiveness through audits, evaluations, investigations and the provision of advisory support to senior management and the Board of Governors. To better reflect the costs, the provision for the Joint Inspection Unit fees has been reallocated from the Office of Internal Oversight Services (OIOS) and consolidated under the Executive Leadership and Policy. The provision for the External Auditor fees has been transferred from the Executive Leadership and Policy and consolidated under the Division of Budget and Finance.

Medium Term Strategy

The planning process takes into account the Medium Term Strategy 2012–2017 (MTS) so that the programmes, subprogrammes and projects are generally linked to one or more of the following Medium Term Strategy objectives and sub-objectives having direct relevance to this major programme.

F. Providing efficient, innovative management and strategic planning

- F01 Under the results based management approach, seek efficiency gains in management and focus on priority areas, while meeting demands for the Agency's unique services in the use of nuclear technology without increasing the risk of proliferation;
- F02 Provide overarching guidance, direction and support in relation to the planning, and efficient and effective implementation of the Agency's programme;
- F03 Provide effective coordination within the Secretariat, for example by sharpening lines of authority and accountability, with due regard to quality and risk management;
- F04 Ensure targeted prioritization of the Agency's activities to derive maximum benefit from the Agency's programme, with activities closely focused on areas in which the Agency can make a unique impact by inter alia strengthening strategic and policy planning and policy coordination;
- F05 Implement and manage the range of functions provided by the Agency's enterprise resource planning system (the Agency-wide Information System for Programme Support (AIPS)), thereby establishing a common information and management system for support functions;
- F06 Use the International Public Sector Accounting Standards (IPSAS) to provide transparent reporting to Member States on the exact cost of operations and projects;
- F07 Using best practice tools, including comprehensive application of quality management and benchmarking, improve the Agency's efficiency in its programme activities and management practices;

— F08 Reinforce the Agency's commitment to a more systematic approach to identifying, quantifying and reporting on efficiency gains by inter alia improving coordination between staff and the programme, and introducing greater flexibility in meeting emerging programmatic challenges;

— F09 Adopt advances in information technology in areas such as translation, printing and outreach to the media and the public, and ensure the continued security of the information with which the Agency is entrusted, especially in connection with safeguards and nuclear security;

— F10 While reducing administrative costs, adopt more innovative techniques in finding and justifying additional sources of funds;

— F11 Apply more targeted recruitment procedures, and adopt more attractive non-monetary conditions of employment in accordance with standards set by the International Civil Service Commission (ICSC);

— F12 Adopt enhanced policies and guidelines to sharpen lines of authority and accountability;

— F13 Promote gender equality and equitable geographical representation in the Agency, especially at managerial levels.

In addition, several projects due to their cross-cutting nature also link to the following MTS objectives and sub-objectives. In such cases, Major Programme 5 provides support to activities led within other Major Programmes.

A. Facilitating access to nuclear power

— A07 Act as an objective and reliable source of information on issues related to nuclear power and nuclear science.

B. Strengthening promotion of nuclear science, technology, and applications

— B07 Maintain and distribute objective and reliable sources of information on atomic, molecular and nuclear data.

C. Improving nuclear safety and security

— C04 Help to build national, regional and international capacity to respond to nuclear and radiological incidents and emergencies and assist in case of a nuclear or radiological incident or emergency.

E. Strengthening the effectiveness and improving the efficiency of the Agency's safeguards and other verification activities

— E06 Strengthen physical and information security to protect safeguards information, confidentiality and integrity; employ modern and secure safeguards information systems;

— E08 Deploy state of the art equipment and advanced information and communication technologies; increase the use information and communication technologies to enhance the efficiency of the Agency's daily operations, both in the field and at Headquarters; strengthen the analytical capabilities of the Safeguards Analytical Laboratories and expand the Agency's Network of Analytical Laboratories.

Outcomes	Performance Indicators
• Planning, formulation, implementation, assessment and evaluation of the Agency's programme in a fully coordinated manner.	• Absence of duplication in the Agency's programme.
• Timely and appropriate administrative and legal services provided to the scientific and technical programmes of the Agency.	• Degree of satisfaction regarding the efficiency of administrative and legal services.
• Efficient and effective information support services and communications strategies.	• Within the Agency rules regarding information security, ease of access to Agency information by the Secretariat, Member States, the media and the general public.

5.0.1 Executive Leadership and Policy

Objectives:

— *To provide leadership and coordination for Agency activities at the executive level and achieving an integrated and results based management approach.*

Outcomes	Performance Indicators
• Effective, efficient and transparent execution of Agency programmes and activities relevant to Member States.	• Satisfaction of Member States with the efficiency, effectiveness and transparency of the programme delivered.

Programmatic changes and trends: Policy planning remains a priority to ensure that all activities are in line with guidance from Member States as well as the MTS. Initiatives to further improve efficiency have been launched and focus on prioritization of activities underpins strategic formulation. However, given current resource constraints, implementation of all priority areas remains a challenge. The policy coordination and implementation activities have been strengthened to continue to ensure timely and effective policy implementation and programme delivery. The Agency risk management system now forms part of the regular planning and ensures consistent identification, consideration and mitigation of risks in decision making.

Subfunctions

Title	Main Planned Outputs
5.0.1.001 Executive leadership	Direction and issuance of policy; coordination of Secretariat activities; and liaison with Member States and inter- and non-governmental organizations.
5.0.1.002 Policy-making Organs	Meetings of Policy-Making Organs (PMOs) and subsidiary bodies; assistance to Presiding Officers; documents PMO meetings; assistance to Member States on PMO issues; coordination with in-house departments; compilation of PMO decisions/resolutions for publication; and communication of documents (GovAtom/GC Archives).
5.0.1.003 General coordination and management	Providing overarching direction for support services and related internal communication; lead optimization of operational efficiency; liaison with United Nations system organizations and the Host Government; coordination of programme and budget; and reviews of security and coordination with other VIC based organizations.

5.0.2 Legal Services

Objectives:

— *To achieve higher quality in programme implementation following timely and appropriate legal advice.*

Outcomes	Performance Indicators
• Highest standard of legal advice provided to the Director General, the Secretariat and the organs and bodies of the Agency, and on request to Member States.	• Appropriateness and timeliness of the legal support provided to Member States and in-house.

Programmatic changes and trends: The increase is expected to continue for general legal support and substantial work in connection with strengthened safeguards and other verification activities, nuclear applications, nuclear safety, for protection against nuclear terrorism and for technical cooperation. This is also true for the demand from Member States for assistance in the preparation of national legislation in particular for countries embarking on nuclear power, in regard to the implementation of international agreements to which they are a party. In addition, the areas of personnel and management continue to require an increasing amount of legal advice.

Subfunctions

Title	Main Planned Outputs
5.0.2.001 Legal services	To provide the highest standard of legal services to the Director General, Secretariat, PMOs and Member States in the development and implementation of Agency activities.

5.0.3 Oversight Services

Objectives:

— *To provide independent and objective assurances to the Director General, Senior Management and other stakeholders that the Agency activities are carried out efficiently, effectively and in compliance with the Regulations and Rules, policies and procedures.*

Outcomes	Performance Indicators
• Fulfilment of the maximum number of assignments within the annual work plan.	• Percentage of finalized assignments within the work plan cycle.
• Assessment of stakeholders on the quality and utility of OIOS results.	• Stakeholders' response to the Customer Satisfaction Survey Questionnaire of OIOS assignments during the work plan cycle (percentage of a "satisfactory" rating).

Programmatic changes and trends: The Agency focuses on results, efficiency, effectiveness, quality, accountability and risk management. The increased emphasis of Member States on accountability and transparency means that the Agency's oversight services will continue to strengthen its activities.

Subfunctions

Title	Main Planned Outputs
5.0.3.001 Oversight services	High quality reports on the efficiency; effectiveness and compliance of the work of the Agency as defined in the approved work plan of OIOS.

5.0.4 Public Information and Communications

Objectives:

— *To promote clear public understanding, positive public engagement and accurate media reporting of nuclear issues and the Agency's work, including the role of the Director General, to enhance public and Member State support.*

Outcomes	Performance Indicators
• The Agency's work is positively recognised and acknowledged by the media and the general public.	• Number of media interviews (with the Director General and others), news conferences, briefings, written replies and information visits provided to the media; and number of video and audio downloads and views by broadcasters and others users from available platforms per year. • Number of visits to the iaea.org web site; and audience on social media channels.

Programmatic changes and trends: The Agency is widely acknowledged as the major global source of authoritative assessments concerning nuclear related issues. Member States, the media, the general public and staff members expect and rely upon timely, consistent, easily understandable and actionable information that is presented in an integrated manner. The Agency will therefore need to ensure that its wide range of activities is promoted at a high level and in the regions where it is active. At the same time, the Agency needs to keep pace in a quickly expanding technological environment, making sure that web governance is in place to deal with an increasing flow of information and to be prepared for emergency communication.

Subfunctions

Title	Main Planned Outputs
5.0.4.001 Public information and communications	Enhanced public understanding of the benefits of the Agency's work; and stronger public support for the Agency's work and for its mandate.

5.0.5 Information Communication Technology

Objectives:

— *To meet, in the most efficient and effective way, the IT needs of Agency programmes and Member States.*

Outcomes	Performance Indicators
• IT services and infrastructure are delivered and optimized to meet Agency programmatic requirements and those of the Member States.	• Agency staff satisfaction with IT services. • Availability — defined as a percentage of uptime per month outside scheduled maintenance windows — of critical IT applications and infrastructure services.

Programmatic changes and trends: To provide the Agency's IT services and infrastructure in a cost effective and efficient manner, IAEA IT services will adapt not only to changes in technology and in the requirements of the Agency's programmes, but also to industry trends and best practices towards collaboration, virtualization and mobility. Containing cost by leveraging economies of scale and new technology trends such as cloud services for efficiency of delivery is a priority. Special attention will be given to ensuring the continued security of the information with which the Agency is entrusted. IT security will remain the highest priority due to the escalating sophistication of threats and attacks. To avoid duplication of effort Major Programme 5 will continue to support IT infrastructure for the entire Agency and implement security standards necessary for protecting confidential information.

Subfunctions

Title	Main Planned Outputs
5.0.5.001 Information communication technology	IT end-user services; IT infrastructure services; IT solutions; IT security; and programme management, information architecture; and IT policy.

5.0.6 Financial Management and Services

Objectives:

— *To ensure the continued confidence of Member States in the financial management of the Agency, and to deliver relevant services efficiently and effectively in support of all Agency programmes.*

Outcomes	Performance Indicators
• Sound and timely financial planning and budgeting, accurate and reliable financial reporting.	• Number of budget and financial documents that are not issued to the Board of Governors/General Conference by agreed deadlines • Timely implementation of identified improvements to processes, systems and policies that support financial practices and reporting.
• Efficient financial administration of the Agency.	• Timely payments related to payroll, staff entitlements, travel and procurement of goods and services.
• External Auditor endorsement of the Agency's financial statements.	• Unqualified opinion of the External Auditor.

Programmatic changes and trends: In 2011, the Agency issued its first IPSAS compliant financial statements, utilizing AIPS. Improving and streamlining the business processes supporting IPSAS, including focusing on effective and efficient internal controls, continues to be a focus. Supporting the implementation of future AIPS plateaus is an additional focus. A new payroll solution with increased automation has been implemented for 2015. In 2016–2017, supporting the implementation of the last plateau of AIPS, addressing travel and meeting management, will be a priority to ensure appropriate and efficient handing of all related financial transactions.

Subfunctions

Title	Main Planned Outputs
5.0.6.001 Financial management and services	The Agency's programme and budget; the Agency's financial statements; reports to governing bodies and donors; effective management of funds entrusted by Member States; and timely payments to all vendors and staff.

5.0.7 Human Resources Management

Objectives:

— *To provide effective human resources management advice and support through the recruitment, development and performance management of fully competent and diverse staff; to optimize the health and well-being of staff.*

Outcomes	Performance Indicators
• Staff of the Agency, individually and collectively, fully meet programmatic requirements.	• Percentage of staff who have an agreed development plan. • Improved uptake of mobility opportunities within and outside the Agency.

Programmatic changes and trends: The subprogramme is affected by: increasing global demand for talented staff, particularly in the nuclear industry; decreasing competitiveness of United Nations salaries, especially at senior levels; funding pressures on the Agency in the context of the worldwide financial crisis; a new enterprise resource planning (ERP) system, with go-live risks and benefits; enhanced emphasis on quality management; and demands for efficiency gains and accountability. All these will have a strong impact on the delivery of programmes. In turn, this will significantly affect demands on human resources management services. The major focus is a shift toward high value services, including organizational development and workforce planning to optimize human resource capacity with restricted resources, greater demands on policy development, resolution of staff problems, use of best practices and streamlining of processes.

Subfunctions

Title	Main Planned Outputs
5.0.7.001 HR advisory and Administration Services	Staffing plans; talent acquisition and outreach actions; selection tools; gender equality reports and action plans; staff from different Member States; and medical examinations.

5.0.8 General Services

Objectives:

— *Allocation of office space, storage facilities; alterations and refurbishment works; installation and maintenance of safety and security systems; technical support for meetings; coordinated facility management, receiving and inspection; distributions; and coordination of safety and security requirements.*

— *Coordinate and manage travel related issues, and develop strategic travel policies; coordinate matters related to privileges and immunities, imports, tax refunds and visas; and manage official vehicles and shipments.*

— *Updated policies and procedures; records registration, filing, distribution and disposal; mail management; services for information retrieval and messaging; preservation of records; and digitalization of archives.*

Outcomes	Performance Indicators
• Highest quality and effective customer service in provision and delivery of general support and administrative services.	• Increased customer satisfaction with the quality of general support services provided.
• Delivery of support service in a coordinated, efficient and timely manner.	• Services requests completed on time.

Programmatic changes and trends: General Services will continue to provide effective and efficient services to ensure uninterrupted provision and delivery of general administrative support to the Agency programmes. Supporting the implementation of a new travel solution in AIPS will be a priority. Increasing awareness of the effective management of records will result in greater demand for efficient services from the Archives and Records Management Section (ARMS). The Seibersdorf Facilities Management Section (SFMS) will be focused on continued integration of the new Nuclear Material Laboratory (NML) in the Seibersdorf site operations. Supporting the construction and the related operations of the new laboratory facilities — Renovation of the Nuclear Applications Laboratories (ReNuAL) — will also be a key activity. A new web site to provide easier and effective tools for the clients is planned and an electronic process to handle client requests related to facilities management will also be introduced to ensure efficient delivery of these services.

Subfunctions

Title	Main Planned Outputs
5.0.8.001 General Services Management	To enable the Agency to perform its function by providing efficient and effective general administrative and support services.

5.0.9 Conference, Languages and Publishing Services

Objectives:

— *To enable effective exchange and dissemination of information relevant to the Agency's work and mandate between the Secretariat and Member States by organizing meetings and conferences, issuing documents in the six official languages of the Agency, and preparing and distributing publications.*

Outcomes	Performance Indicators
• Enhanced and efficient multilingual dialogue and communication between the Agency and major stakeholders and Member States.	• Languages services: productivity as measured by number of words translated per hour worked. • Percentage of clients satisfied by the Agency's conference services over total number of clients having answered the satisfaction survey, over the year.
• Foster the exchange of scientific and technical information on peaceful uses of atomic energy through timely dissemination of IAEA publications.	• Publishing: timely processing of Agency publications.

Programmatic changes and trends: The ever increasing application of IT in tasks related to conference, translation and publishing services is seen as a key factor now and in the future. The focus will be on improving the quality and consistency of documentation and correspondence submitted to Member States. The outsourcing of appropriate jobs in the publishing area will continue at the current level.

Subfunctions

Title	Main Planned Outputs
5.0.9.001 Conference, Languages and Publishing Services	Translated documents and summary records in the six official languages of the IAEA; organizational support and administrative and logistical services to close to 2000 Agency meetings; and production of over 200 publications and items of advocacy materials[1].

5.0.10 Procurement Services

Objectives:

— *To achieve the Agency's programmatic goals and objectives.*

— *To achieve best value for money, through fair, transparent and effective competition.*

Outcomes	Performance Indicators
• Achievement of the best value for money for the Agency in procuring goods and services by considering this element in every phase of the procurement process and through fair, transparent and effective international competition.	• Number of procurements greater than €150 000 that are competitively bid using Financial rule 110.38 (VI) and (VII). • Savings to the Agency.

Programmatic changes and trends: Innovations include: reduced transactional costs for low value procurements; reduced risk for critical procurements through considered planning and risk reduction measures by Agency wide procurement teams; reduced staffing through direct procurement of low value and standard items; best value for money improvements as measured by the performance indicators in significant procurement projects.

[1] The budget of planned meetings of conventions for which the Agency is depository (according to the rules of procedures of the respective conventions) form part of a project within the approved relevant scientific and technical programme.

Subfunctions

Title	Main Planned Outputs
5.0.10.001 Procurement Services	Ensure the purchase and delivery of goods, equipment and services are carried out in a way that meets the Agency's programmatic goals and objectives and achieves best value for money through fair, transparent and effective competition.

Major Programme 5 – Policy, Management and Administration Services
Summary of Programme Structure and Resources
(excluding Major Capital Investments)

Table 21

Function / Subfunction	2016 at 2016 prices			2017 at 2016 prices		
	Regular Budget	Extrabudgetary	Unfunded	Regular Budget	Extrabudgetary	Unfunded
5.0.1.001 Executive leadership	4 822 494	221 048	25 100	4 476 481	123 048	-
5.0.1.002 Policy-making organs	2 276 190	-	11 044	2 294 925	98 000	11 044
5.0.1.003 General coordination and management	1 235 719	-	-	1 247 522	-	-
5.0.1 Executive Leadership and Policy	**8 334 404**	**221 048**	**36 144**	**8 018 928**	**221 048**	**11 044**
5.0.2.001 Legal services	2 797 286	343 196	180 056	2 820 369	210 196	180 056
5.0.2 Legal Services	**2 797 286**	**343 196**	**180 056**	**2 820 369**	**210 196**	**180 056**
5.0.3.001 Oversight services	3 181 799	111 000	35 140	3 208 066	-	165 660
5.0.3 Oversight Services	**3 181 799**	**111 000**	**35 140**	**3 208 066**	**-**	**165 660**
5.0.4.001 Public information and communications	3 104 640	-	12 960	3 130 212	-	21 492
5.0.4 Public Information and Communications	**3 104 640**	**-**	**12 960**	**3 130 212**	**-**	**21 492**
5.0.5.001 Information communication technology	9 140 264	98 000	1 128 922	9 216 271	98 000	1 128 922
5.0.5 Information Communication Technology	**9 140 264**	**98 000**	**1 128 922**	**9 216 271**	**98 000**	**1 128 922**
5.0.6.001 Financial management and services	7 181 099	772 154	50 200	7 238 561	187 154	50 200
5.0.6 Financial Management and Services	**7 181 099**	**772 154**	**50 200**	**7 238 561**	**187 154**	**50 200**
5.0.7.001 HR advisory and administration services	6 543 032	233 495	-	6 396 976	-	-
5.0.7 Human Resources Management	**6 543 032**	**233 495**	**-**	**6 396 976**	**-**	**-**
5.0.8.001 General services management	27 684 456	377 000	22 314	27 912 317	-	-
5.0.8 General Services	**27 684 456**	**377 000**	**22 314**	**27 912 317**	**-**	**-**
5.0.9.001 Conference, languages and publishing services	4 965 171	-	-	5 005 960	-	-
5.0.9 Conference, Languages and Publishing Services	**4 965 171**	**-**	**-**	**5 005 960**	**-**	**-**
5.0.10.001 Procurement services	1 957 845	788 000	97 565	1 973 972	-	97 565
5.0.10 Procurement Services	**1 957 845**	**788 000**	**97 565**	**1 973 972**	**-**	**97 565**
5.S Corporate Shared Services	**3 721 531**	**93 340**	**161 038**	**3 691 268**	**93 340**	**161 038**
Major Programme 5 - Policy, Management and Administration Services	**78 611 528**	**3 037 233**	**1 724 338**	**78 612 900**	**809 738**	**1 815 977**

Major Programme 5 – Policy, Management and Administration Services
Tasks with not fully funded activities (in euros)

Table 22

Subfunction	Tasks	2016 Unfunded	2017 Unfunded
5.0.1.001 Executive leadership	Overall management	25 100	-
5.0.1.002 Policy-making organs	SEC-PMO general services	11 044	11 044
5.0.2.001 Legal services	Overall management and coordination activities	180 056	180 056
5.0.3.001 Oversight services	Director's Office of the Office of Internal Oversight Services	35 140	35 140
	Management Services function of the Office of Internal Oversight Services	-	130 520
5.0.4.001 Public information and communications	Interactive Media and Print	5 020	21 492
	Media and Outreach	7 940	-
5.0.5.001 Information communication technology	Develop and maintain IT software solutions in order to meet the requirements of Agency programmes and Agency Member States	-	-
	IT infrastructure services	860 294	860 294
	IT practices and policy	123 048	123 048
	Provide IT end-user services	145 580	145 580
5.0.6.001 Financial management and services	Financial management and services	50 200	50 200
5.0.8.001 General services management	Archives, records and mail management	22 314	-
5.0.10.001 Procurement services	Procurement services	97 565	97 565
5.S Corporate shared services	Corporate shared services	161 038	161 038

Major Programme 6
Management of Technical Cooperation for Development

Objectives: *To enhance the relevance, socioeconomic impact and efficiency of technical cooperation support to member States by planning and implementing a needs based, responsive and sustainable technical cooperation programme (TCP), and by seeking continuously increasing effectiveness.*

Introduction:

Major Programme 6 encompasses specifically the development, implementation and management of technical cooperation projects in the framework of biannual TCPs.

The TCP consists of national, regional and interregional projects funded from the Technical Cooperation Fund (TCF) and from extrabudgetary contributions. In September 2014, 140 Member States were participating in the TCP, including 120 States with a national programme.

There are a number of major issues and challenges for the major programme. These include:

Ensuring the Agency's continued capability to swiftly and adequately respond to Member States' requests for support through the TCP;

Ensuring adequate support to a growing number of Member States; up to 12 more Member States may have a national programme;

Strengthening technical cooperation support to Member States with regard to radiation safety and regulatory infrastructure;

Enhancing technical cooperation support to Member States that embark on, or expand, nuclear power programmes;

Enhancing the visibility, promotion and outreach efforts related to the Agency's TCP, with a focus on the development community, including potential donors and partners;

Achieving a rate of attainment of a minimum of 95% of the TCF for 2016 and 2017;

Ensuring the timely availability of sufficient, additional funds to sustain and enhance the programmatic work of the Programme of Action for Cancer Therapy (PACT);

Enhancing the effectiveness of the TCP and ensuring progressive implementation of outcome monitoring and evaluation measures.

Medium Term Strategy

The planning process takes into account the Medium Term Strategy 2012–2017 (MTS) so that the programmes, subprogrammes and projects are generally linked to one or more of the following Medium Term Strategy objectives and sub-objectives having direct relevance to this major programme.

D. Providing effective technical cooperation

- D01 Ensure support in areas of increasing demand and interest, such as nuclear power for newcomer States, safety and security infrastructures, health, water, food and agriculture and relevant industrial applications;
- D02 Facilitate cooperation among Member States bilaterally and regionally;
- D03 Advance partnerships with the United Nations and other multilateral organizations, regional development bodies and other relevant intergovernmental and non-governmental bodies;
- D04 Mobilize extrabudgetary contributions to respond to the growing needs and demands of Member States, including for footnote-a projects;
- D07 Promote best practices in project formulation, management, monitoring and evaluation.

In addition, several of the projects due to their cross-cutting nature also link to the following MTS objectives and sub-objectives.

B. Strengthening promotion of nuclear science, technology, and applications

- B01 Improve human health by supporting: the use of nuclear techniques in nutrition; the safe and effective use of radiation medicine for the diagnosis and treatment of patients; the development of integrated, comprehensive national programmes through partnerships, especially the Joint World Health Organization (WHO)/IAEA Programme on Cancer Control and the education and training of practitioners;
- B04 Facilitate the utilization of isotopes and nuclear techniques to gain a better understanding of the environment and to support the addressing of environmental sustainability;
- B05 Support the building of capacities in the areas of production of radioisotope and radiopharmaceuticals and applications of radiation technologies.

C. Improving nuclear safety and security

— C03 Assist Member States to develop and strengthen safety and security capacity building.

F. Providing efficient, innovative management and strategic planning

— F01 Under the results based management approach, seek efficiency gains in management and focus on priority areas, while meeting demands for the Agency's unique services in the use of nuclear technology without increasing the risk of proliferation;

— F02 Provide overarching guidance, direction and support in relation to the planning, and efficient and effective implementation of the Agency's programme.

Outcomes	Performance Indicators
• Development and implementation of an effectively and efficiently coordinated TCP.	• Percentage of technical cooperation projects that are completed within the approved time frame. • Percentage increase of valid Country Programme Frameworks (CPFs) where cancer is a national priority, which reflect imPACT review recommendations.
• Continuously improved quality of the TCP.	• Percentage of projects with an annual progress assessment report. • Percentage of completed technical cooperation projects during the previous year that fully achieved the established objectives at the output level.
• Enhanced engagement of Member States in the TCP, with commitment to the principles of ownership, relevance and sustainability, as well as strengthened relations with partners.	• Percentage of Member States with national TCPs that have valid CPFs.

6.0.1 Management of the Technical Cooperation Programme

Objectives:

— *To enhance the relevance, socioeconomic impact and efficiency of technical cooperation to Member States by planning and implementing a needs based, responsive and sustainable TCP, and by seeking continuously increasing effectiveness.*

Outcomes	Performance Indicators
• Development and implementation of an effectively and efficiently coordinated TCP.	• Percentage of completed technical cooperation projects during the previous cycle that fully achieved the established objectives at the output level. • Percentage of technical cooperation projects that are completed within approved time frame.
• Continuously improved quality of the TCP.	• Percentage of projects with an annual progress assessment report.
• Enhanced engagement of Member States in the TCP, with commitment to the principles of ownership, relevance and sustainability, as well as strengthened relations with partners.	• Percentage of Member States with national TCPs that have valid CPFs. • Percentage of valid partnership agreements.

Programmatic changes and trends: The TCP will continue to be strengthened through earlier engagement with national stakeholders in upstream planning, and by facilitating systematic reporting. Emphasis will be placed on engaging with potential partners during the concept phase of technical cooperation projects, including the identification and promotion of opportunities for extrabudgetary support. Engagement with partners from the private sector, private foundations and other non-traditional entities is expected to yield first results with regard to jointly implemented and/or financed activities.

Outcome monitoring and evaluation measures will be implemented on a pilot basis, with a view to systematically consider such measures in appropriate technical cooperation projects — in close cooperation with relevant Member States. Some Member States may request technical cooperation support in such areas as 'climate smart agriculture', ocean acidification or enhanced response capabilities in relation to human, animal or plant disease outbreaks, or floods to mitigate the impact of climate change.

Adequate emergency preparedness and response capabilities remain a priority for Member States, and, consequently, Member States' request for tailor made assistance in strengthening national radiation safety infrastructures is likely to grow.

The increasing cancer burden is likely to lead to greater demands for support to Member States in radiation medicine within a comprehensive cancer control strategic framework. Some Member States may request dedicated support to enhance relevant cancer facilities and to introduce more advanced technologies to improve diagnosis and treatment. The implementation of comprehensive cancer control programmes — within the framework of the PACT with relevant partners, subject to the partners respective mandates, governing regulations, rules, policies, procedures and resources — in selected Member States (PACT Flagship/PACT Model Demonstration Site (PMDS) countries) remain priority activities.

Projects

Title	Main Planned Outputs
6.0.1.001 Overall management and strategic guidance	Departmental and technical cooperation related policies and guidance; statements at major meetings and events; reports to Policy-Making Organs (PMOs); travel reports; concept notes and papers; strategic analyses and action plans; and reports of advisory groups.
6.0.1.002 Coordination of and support to the TC programme	CPFs; Technical Assistance and Cooperation Committee (TACC) documentation; Technical Cooperation Annual Report; General Conference support documents; briefing notes; partnership documents; outreach material, sustainable development goal (SDG) input; Quality Review Reports for the TCP, Project Performance Reports, and guidelines for output and outcome monitoring; National Participation Costs (NPCs) invoices; and new resources identified and mobilized.
6.0.1.003 Management of the TC programme for Africa	Drafted/Signed/updated CPFs; United Nations Development Assistance Framework (UNDAF) and regional strategic cooperative framework; TACC documentation 2018–2019; Country Programme Notes (CPNs); expert missions, fellowships, training courses, procurement requested/processed, briefing notes;; programme and monitoring reports; ; partnership documents; and extrabudgetary resources mobilised.
6.0.1.004 Management of the TC programme for Asia and the Pacific	Drafted/signed/updated CPFs; TACC documentation 2018–2019; CPNs; expert missions, fellowships, training courses, procurement requested/processed, briefing notes; programming and monitoring reports; partnership documents and extra budgetary resources mobilized..
6.0.1.005 Management of the TC programme for Europe	Drafted/signed/updated CPFs; TACC documentation 2018–2019; CPNs; expert missions; fellowships; training courses; procurements requested/processed; briefing notes; programming and monitoring reports; partnership documents; and extrabudgetary resources mobilized.
6.0.1.006 Management of the TC programme for Latin America	Drafted/signed/updated CPFs; TACC documentation 2018–2019; CPNs; expert missions; fellowships; training courses; procurement requests/processed; briefing notes; programming and monitoring reports; partnership documents; and extra budgetary resources mobilized.
6.0.1.007 Procurement services	Ensure the purchase and delivery of goods, equipment and services are carried out in a way that meets the Agency's programmatic goals and objectives, and achieves best value for money through fair, transparent and effective competition.
6.0.1.008 Coordination of and support to the PACT	Resource mobilization and communications strategy; standard operating procedures (SOPs); country cancer profiles; imPACT; joint integrated work plans in flagship Member States; PMDS plan of activities; resource mobilization training; outreach materials; Virtual University for Cancer Control (VUCC) e-learning modules; Advisory Group on Increasing Access to Radiotherapy Technology (AGaRT) report.

Major Programme 6 – Management of Technical Cooperation for Development
Summary of Programme Structure and Resources
(excluding Major Capital Investments)

Table 23

Function / Subfunction	2016 at 2016 prices			2017 at 2016 prices		
	Regular Budget	Extrabudgetary	Unfunded	Regular Budget	Extrabudgetary	Unfunded
6.0.1.001 Overall management and strategic guidance	1 047 083	422 000	-	1 047 083	-	-
6.0.1.002 Coordination of and support to the TC programme	4 403 155	-	123 048	4 450 660	422 000	123 048
6.0.1.003 Management of the TC programme for Africa	4 368 183	100 484	60 374	4 358 674	100 484	60 374
6.0.1.004 Management of the TC programme for Asia and the Pacific	3 659 382	100 484	60 374	3 659 382	100 484	60 374
6.0.1.005 Management of the TC programme for Europe	3 208 643	-	-	3 208 643	-	-
6.0.1.006 Management of the TC programme for Latin America	2 783 505	100 484	60 374	2 783 505	100 484	60 374
6.0.1.007 Procurement services	1 683 682	-	-	1 633 676	-	17 245
6.0.1.008 Coordination of and support to the PACT	2 292 115	306 469	-	2 292 115	306 469	-
6.0.1 Management of the Technical Cooperation Programme	**23 445 748**	**1 029 921**	**304 169**	**23 433 738**	**1 029 921**	**321 414**
6.S Corporate Shared Services Attribution to Major Programme 6	**1 090 936**	**32 310**	**51 485**	**1 102 932**	**32 310**	**51 485**
Major Programme 6 - Management of Technical Cooperation for Development	**24 536 684**	**1 062 231**	**355 654**	**24 536 669**	**1 062 231**	**372 899**

Major Programme 6 – Management of Technical Cooperation for Development
Tasks with not fully funded activities (in euros)

Table 24

Subfunction	Tasks	2016 Unfunded	2017 Unfunded
6.0.1.002 Coordination of and support to the TC programme	Coordination of and support to the TC programme	123 048	123 048
6.0.1.003 Management of the TC programme for Africa	Management of the TC Programme for Africa	60 374	60 374
6.0.1.004 Management of the TC programme for Asia and the Pacific	Management of the TC programme for Asia and the Pacific	60 374	60 374
6.0.1.006 Management of the TC programme for Latin America	Management of the TC programme for Latin America	60 374	60 374
6.0.1.007 Procurement services	Procurement services	-	17 245
6.S Corporate Shared Services Attribution to Major Programme 6	Corporate shared services	51 485	51 485

ANNEXES

Annex 1. List of Acronyms

ACABQ	Advisory Committee on Administrative and Budgetary Questions
AGaRT	Advisory Group on Increasing Access to Radiotherapy Technology
AIPS	Agency-wide Information System for Programme Support
AKP	Accelerator Knowledge Portal
ALADDIN	A Labelled Atomic Data Interface
ALMERA	Analytical Laboratories for the Measurement of Environmental Radioactivity
AMBDAS	Atomic and Molecular Bibliographical Data System
AP	additional protocol (applicable in the text of Major Programme 4)
AP	IAEA Action Plan on Nuclear Safety (applicable in the text of Major Programmes 1, 2 and 3)
APHL	Animal Production and Health Laboratory
ARMS	Archives and Records Management Section
ARTEMIS	Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Remediation
BSL	Biosafety level
BSS	Basic Safety Standards
CA	complementary access
CEB	United Nations System Chief Executives Board for Coordination
CLP4NET	Cyber Learning Platform for Nuclear Education and Training
CMG	Crisis Management Group
CNS	Convention on Nuclear Safety
ConvEx	Convention Exercise
CPF	Country Programme Framework
CPN	Country Programme Note
CPPNM	Convention on the Physical Protection of Nuclear Material
CRP	coordinated research project
CSA	comprehensive safeguards agreement
CSC	Central Security Coordinator
CSS	Commission on Safety Standards
CT	computed tomography
DE-TOP	Desalination Thermodynamic Optimization Program
DEEP	Desalination Economic Evaluation Program
DEMO	demonstration fusion power plant
D&ER	decommissioning and environmental remediation
DER	data evaluation report
DGOC	Director General's Office for Coordination
DIV	design information verification
DSARS	Design and Safety Assessment Review Service
DSRS	disused sealed radioactive source
3E	energy–economy–environment
ECAS	Enhancing Capabilities of the Safeguards Analytical Services

ENVIRONET	Network on Environmental Management and Remediation
EPGR	encapsulation plant and geological repository
EPR	emergency preparedness and response
EPREG	Emergency Preparedness and Response Expert Group
EPREV	Emergency Preparedness Review
EPRIMS	Emergency Preparedness and Response Information Management System
ER	emergency response
ERF	Equipment Replacement Fund
ERP	enterprise resource planning
EU	European Union
Euratom	European Atomic Energy Community
FAO	Food and Agriculture Organization of the United Nations
FINAS	Fuel Incident Notification and Analysis System
FORATOM	European Atomic Forum
GC	General Conference
GHG	greenhouse gas
GIF	Generation IV International Forum
GSAN	Global Safety Assessment Network
GSR	General Safety Requirements
HAB	harmful algal bloom
HEEP	Hydrogen Economic Evaluation Program
HEU	high enriched uranium *or* highly enriched uranium
HICP	Harmonized Indices of Consumer Prices
HLCM	High-Level Committee on Management
HR	human resources
HTGR	high temperature gas cooled reactor
IACRNE	Inter-Agency Committee on Radiological and Nuclear Emergencies
IAEA	International Atomic Energy Agency
IBANDL	Ion Beam Analysis Nuclear Data Library
ICERR	IAEA-designated International Centre based on Research Reactor
ICSC	International Civil Service Commission
ICSRS	International Catalogue of Sealed Radioactive Sources and Devices
ICT	information and communication technology
ICTP	International Centre for Theoretical Physics
IDN	International Decommissioning Network
IEC	Incident and Emergency Centre
IES	Incident and Emergency System
IFRC	International Fusion Research Council
IGALL	International Generic Ageing Lessons Learned
IHL	IAEA Isotope Hydrology Laboratory
IMF	International Monetary Fund
imPACT	integrated missions of PACT

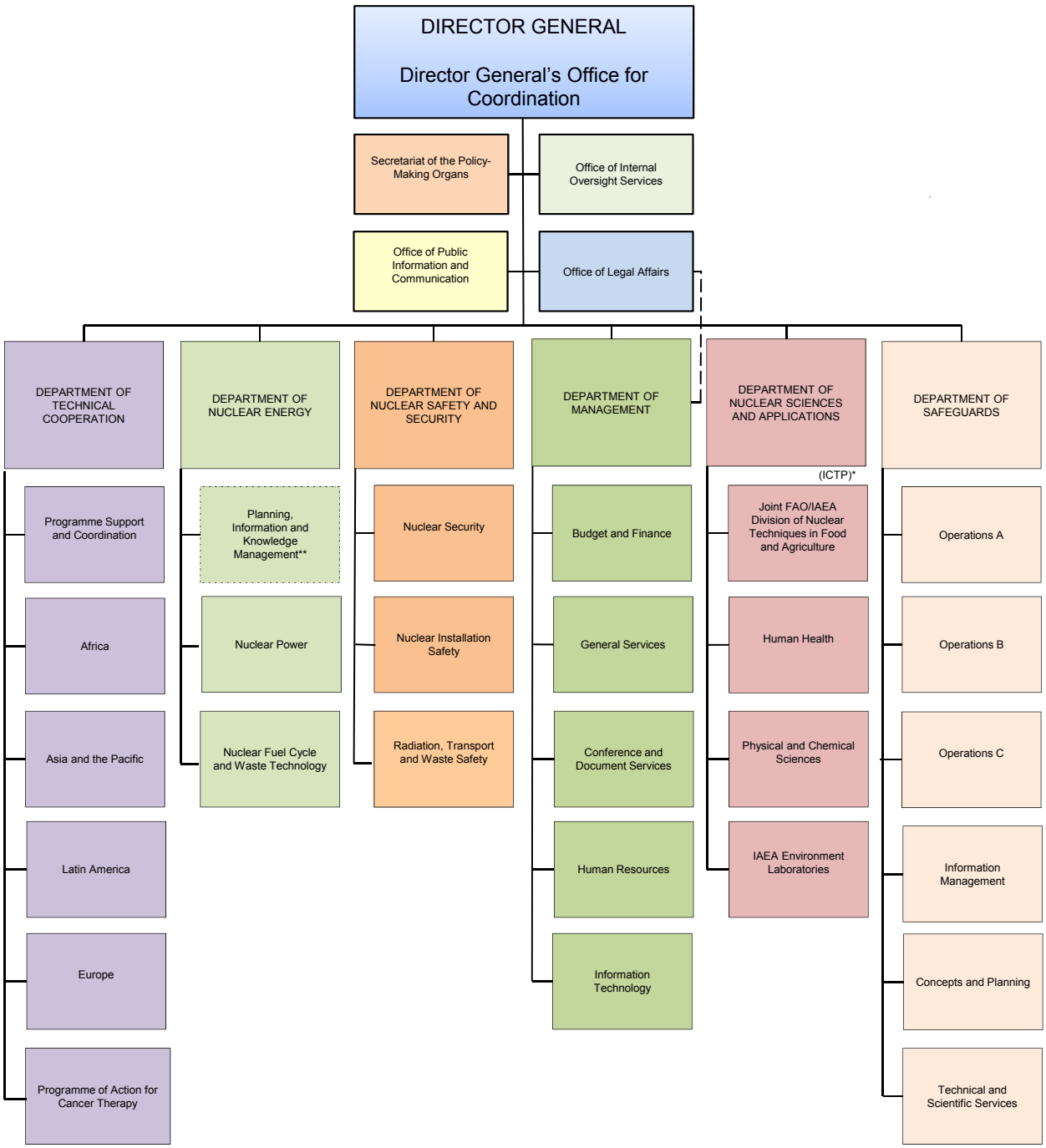
INES	International Nuclear and Radiological Event Scale
INIR	Integrated Nuclear Infrastructure Review
INIS	International Nuclear Information System
INLN	International Nuclear Library Network
INPRO	International Project on Innovative Nuclear Reactors and Fuel Cycles
INSAG	International Nuclear Safety Group
INSEN	International Nuclear Security Education Network
INSSP	Integrated Nuclear Security Support Plan
IPF	indicative planning figure
IPSAS	International Public Sector Accounting Standards
IRDFF	International Reactor Dosimetry and Fusion File
IRRS	Integrated Regulatory Review Service
IRSRR	Incident Reporting System for Research Reactors
ISSC	International Seismic Safety Centre
IT	information technology
ITER	International Thermonuclear Experimental Reactor
J-MOX	Japan Mixed Oxide Fuel Fabrication Plant
JPA	Joint Plan of Action
JPLAN	Joint Radiation Emergency Management Plan of the International Organizations
JRC	Joint Research Centre
KPS	knowledge preservation system
LEU	low enriched uranium
MARIS	Marine Information System
MCIF	Major Capital Investment Fund
MCIP	Major Capital Investment Plan
MOSAIC	Modernization of Safeguards Information Technology
MP	Major Programme
MRI	magnetic resonance imaging
MSSP	Member State Support Programme
MTS	Medium Term Strategy
NA	Department of Nuclear Sciences and Applications
NAEL	IAEA Environment Laboratories
NDA	non-destructive assay
NE	Department of Nuclear Energy
NE-PIK	Division of Planning, Information and Knowledge Management
NES	IAEA Nuclear Energy Series
NESA	Nuclear Energy System Assessment
NFC	nuclear fuel cycle
NFCIS	Nuclear Fuel Cycle Information System
NFCSS	Nuclear Fuel Cycle Simulation System
NGSS	next generation surveillance system
NIDS	Nuclear Infrastructure Development Section

NIS	Nuclear Information Section
NKM	nuclear knowledge management
NKMS	Nuclear Knowledge Management Section
NMDI	Nuclear Medicine and Diagnostic Imaging Section
NML	Nuclear Material Laboratory
NNWS	non-nuclear-weapon State
NPCs	National Participation Costs
NPP	nuclear power plant
NPSG	Nuclear Power Support Group
NPT	Treaty on the Non-Proliferation of Nuclear Weapons
NSAP	IAEA Action Plan on Nuclear Safety
NSF	Nuclear Security Fund
NSGC	Nuclear Security Guidance Committee
NSIL	Nuclear Science and Instrumentation Laboratory
NSP	Nuclear Security Plan
NSRW	Division of Radiation, Transport and Waste Safety
NSS	IAEA Nuclear Security Series
NSSC	Nuclear Security Support Centre
NUMDAB	Nuclear Medicine Database
NUSEC	Nuclear Security Information Portal
NUSIMS	Nuclear Security Information Management System
NUSSC	Nuclear Safety Standards Committee
NWAL	Network of Analytical Laboratories
OA-ICC	Ocean Acidification International Coordination Centre
OASIS	On-line Administrative Staff Information System
OECD	Organisation for Economic Co-operation and Development
OECD/NEA	OECD Nuclear Energy Agency
OIOS	Office of Internal Oversight Services
OPIC	Office of Public Information and Communication
ORPAS	Occupational Radiation Protection Appraisal Service
ORPNET	Occupational Radiation Protection Networks
OSART	Operational Safety Review Team
OSMIR	OSART Mission Results
PACT	Programme of Action for Cancer Therapy
PBC	Programme and Budget Committee
PCI	Partnership for Continuous Improvement
PESS	Planning and Economic Studies Section
PET	positron emission tomography
PIGE	particle induced gamma ray emission
PMDA	Agreement between the Government of the Russian Federation and the Government of the United States of America Concerning the Management and Disposition of Plutonium Designated as No Longer Required for Defense Purposes and Related Cooperation

PMDS	PACT Model Demonstration Site
PMO	Policy-Making Organs
PROSPER	Peer Review of Operational Safety Performance Experience
PSC	Programme Support Costs
PUI	Peaceful Uses Initiative
QUAADRIL	Quality Assurance Audit for Diagnostic Radiology Improvement and Learning
QUANUM	Quality Assurance in Nuclear Medicine
QUATRO	Quality Assurance Team for Radiation Oncology
RADSED	Enhancing Radiation Safety through Efficient and Modern Dosimetry
RANET	Response and Assistance Network
RASIMS	Radiation Safety Information Management System
RBI	Ruđer Bošković Institute
RBM	results based management
RCM	Research Coordination Meeting
R&D	research and development
RDS	Reference Data Series
RegNet	International Regulatory Network
ReNuAL	Renovation of the Nuclear Applications Laboratories
REPLIE	Response Plan for Incidents and Emergencies
RPOP	Radiation Protection of Patients website
RSAC	regional system of accounting for and control of nuclear material
RWM	radioactive waste management
SAET Programme	Safety Assessment Education and Training Programme
SAGNA	Standing Advisory Group on Nuclear Applications
SAGNE	Standing Advisory Group on Nuclear Energy
SAGSI	Standing Advisory Group on Safeguards Implementation
SALTO	Safety Aspects of Long Term Operation
SARCoN	Guidelines for Systematic Assessment of Regulatory Competence Needs
SDG	sustainable development goal
SEE	safeguards effectiveness evaluation
SEED	Site and External Events Design
SFS	spent fuel storage
SG	Department of Safeguards
SGIS	Office of Information and Communication Systems
SGTS	Division of Technical and Scientific Services
SGOA	Division of Operations A
SGOB	Division of Operations B
SGOC	Division of Operations C
SIR	Safeguards Implementation Report
SIT	sterile insect technique
SLA	service level agreement
SMART	specific, measurable, achievable, relevant and time-bound

SMRs	small and medium sized reactors
SOP	standard operating procedure
SPECT	single photon emission computed tomography
SSAC	State system of accounting for and control of nuclear material
STEP	Sandwich Training Educational Programme
TACC	Technical Assistance and Cooperation Committee
TAD	transboundary animal disease
TC	Department of Technical Cooperation
TCF	Technical Cooperation Fund
TCP	technical cooperation programme
TECDOC	publication in the IAEA-TECDOC series
ThDEPO	World Thorium Deposits and Resources
TLD	thermoluminescence dosimetry
TSO	technical and scientific support organization
TWG-ND	Technical Working Group on Nuclear Desalination
UDEPO	World Distribution of Uranium Deposits
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNDAF	United Nations Development Assistance Framework
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNESCO-IHE	Institute for Water Education
UNICEF	United Nations Children’s Fund
UNIDO	United Nations Industrial Development Organization
UNODC	United Nations Office on Drugs and Crime
UNSCEAR	United Nations Scientific Committee on the Effects of Atomic Radiation
UPC	uranium production cycle
VIC	Vienna International Centre
VOA	voluntary offer agreement
VUCC	Virtual University for Cancer Control
WAMP	Water Management Program in Nuclear Power Plants
WANO	World Association of Nuclear Operators
WATEC	International Radioactive Waste Technical Committee
WCF	Working Capital Fund
WGFAA	Working Group on Financing the Agency's Activities
WHO	World Health Organization
WISER	Water Isotope System for Data Analysis, Visualization, and Electronic Retrieval
XRF	X-ray fluorescence

Annex 2. Organizational Chart
(as of 1 January 2016)



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** Indicates area of proposed change.

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