The Agency's Programme and Budget 2020–2021

IAEA
International Atomic Energy Agency
Atoms for Peace and Development

GC(63)/2

The Agency's Programme and Budget 2020–2021

IAEA
International Atomic Energy Agency
Atoms for Peace and Development

GC(63)/2

Printed by the
International Atomic Energy Agency
July 2019

Contents

Introduction

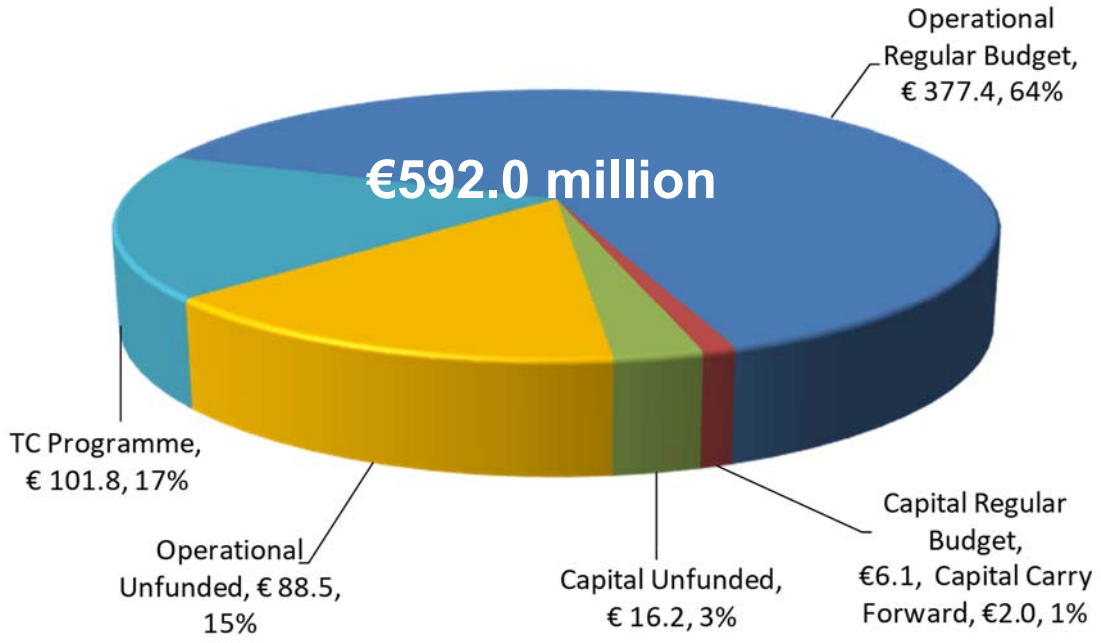
The Agency's membership continues to grow, as does the use of nuclear technologies and applications, with an associated increase in the amount of nuclear and radioactive materials in the world. Countries' adherence to international legal instruments in the areas of nuclear safety, nuclear security and safeguards also continue to grow. In recent years, the implementation of the Joint Comprehensive Plan of Action led to an increase in the Agency's verification work. Recognizing the Agency's statutory objective of seeking to "accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world", and the important contribution of its work in support of the Sustainable Development Goals (SDGs), appropriate emphasis is placed on the Agency's activities supporting the implementation of the SDGs in Member States.

All of these developments have led to an increase in demand from Member States for the Agency's services. At the same time, reflecting the financial constraints in many Member States, the Agency has been experiencing limited growth in its Regular Budget, and in 2019 the Regular Budget is seeing a decrease in real terms. This will impact the Agency's ability to deliver concrete results for the benefit of Member States. The one house approach and Results Based Management in all areas of the Agency's work will continue to be further strengthened to provide high quality support to Member States while finding more efficiencies and savings.

2020–2021 Programme and Budget at a Glance

2020 Total Resources at a Glance

(in million euros at 2020 prices)[1]



€383.5 million	*2020 Regular Budget (operational €377.4 and capital €6.1)*
*2.2%** — *0.6%*	*Real growth over 2019 for the operational Regular Budget*
*2.2%** — *3.5%*	*Decrease over 2019 for the capital Regular Budget*
*2.2%** — *1.7%*	*Price adjustment for 2020*
Zero real growth	*2021 Regular Budget over 2020*
€6.7 million	*Savings and efficiencies in the Regular Budget for 2020, of which:*
	€5.2 million — *Savings and efficiencies other than travel*
	€1.5 million — *Savings related to travel*
67 GS positions	*Reduced since the AIPS implementation started in 2011 (7%)*

**As compared with the approved 2019 Regular Budget.*

[1] All figures in this document are presented in euros at 2020 prices, unless otherwise indicated. Figures in tables might not add up to corresponding sums owing to rounding.

PART I

The Agency's Programme and Budget 2020–2021

I.1 Overview

Overview

1. The Agency's membership continues to grow, as does the use of nuclear technologies and applications, with an associated increase in the amount of nuclear and radioactive materials in the world. Countries' adherence to international legal instruments in the areas of nuclear safety, nuclear security and safeguards also continue to grow.

2. All of these developments have led to an increase in demand from Member States for the Agency's services. At the same time, reflecting the financial constraints in many Member States, the Agency has been experiencing limited growth in its Regular Budget, and in 2019 the Regular Budget is seeing a decrease in real terms. This will impact the Agency's ability to deliver concrete results for the benefit of Member States. Understanding that the Agency's budget cannot be expected to grow to match the increase in demand for its services, the Director General is proposing a modest increase for the coming biennium. The one house approach and Results Based Management in all areas of the Agency's work will continue to be further strengthened to provide high quality support to Member States while finding more efficiencies and savings.

3. Recognizing the Agency's statutory objective of seeking to "accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world", and the important contribution of its work in support of the Sustainable Development Goals (SDGs), the Agency will continue to work closely with Member States and support them, mainly through its technical cooperation projects with contribution from a wide range of its programmatic activities, in their efforts to achieve the SDGs.

4. For 2020, the Secretariat is proposing a total Regular Budget of €383.5 million, which represents an overall increase of €8.4 million or 2.2% over 2019. This includes a price adjustment of 1.7%.

5. The operational Regular Budget for 2020 is proposed at €377.4 million, including price adjustment (an €8.5 million increase). The capital Regular Budget is retained at €6.0 million (€6.1 million, including price adjustment).

6. All figures in this document are presented in euros, at 2020 prices, unless otherwise specified.

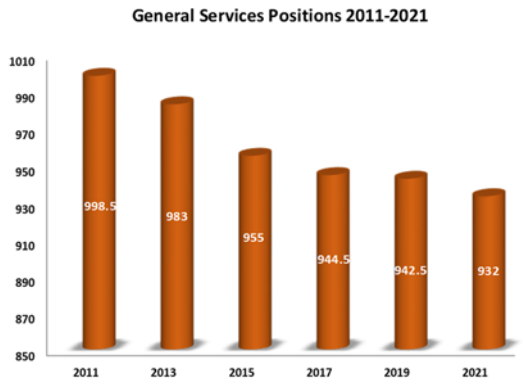
Efficiencies

7. In June 2018, the Board of Governors requested the Secretariat to "strengthen efforts to further identify and implement cross-cutting savings and efficiencies to be outlined in an annex to *The Agency's Programme and Budget 2020–2021"* (GOV/2018/30 para 11). In this context, the Secretariat was "also requested to conduct a holistic review of the Agency's travel policy, taking into account recommendations from the Office of Internal Oversight Services and the best practices of other United Nations system organizations, carefully evaluating their potential financial and programmatic impact and bearing in mind the importance of avoiding a negative impact on the participation of experts from Member States in the Agency's activities". Annex 1 to *The Agency's Programme and Budget 2020–2021* highlights cost savings and efficiencies of €6.7 million, including those of a cross-cutting nature, identified through these efforts.

8. A holistic review of travel was conducted with the goal of identifying the potential for efficiencies and cost savings. Travel patterns were analysed, and alignment to UN system organizations' best practices was also considered. Several policy and procedural changes are now being implemented. In addition, the Secretariat has also reduced the proposed travel budget in absolute terms for 2020 and 2021 compared with 2019 (Annex 1, paras 5 and 6). The total estimated cost savings and efficiencies resulting from the holistic review of the travel policy and procedures and

the rationalization of travel amount to €1.5 million.

9. The number of General Services positions is to be further reduced, mainly in the Department of Management, by the end of 2021 compared with 2019, resulting in a total reduction of 67 General Services positions since 2011. This reflects an overall reduction of 7% compared with the period prior to the implementation of the Agency-wide Information System for Programme Support (AIPS). However, the potential for further reductions will be limited due to the increasing demand for General Services positions to carry out activities in relation to the implementation of technical cooperation projects and technical work, such as at laboratories.



10. The AIPS implementation is complete. Through AIPS, the Agency has established a sustainable and well-functioning application support environment and is on its way to ensuring the availability of real time, consistent and accurate information at all levels.

Managing for Results

11. The IAEA follows a results-based approach when developing its Programme and Budget. This approach is focused on achieving results, improving performance, integrating lessons learned into management decisions, and monitoring and reporting on performance. During programme planning, guidance and feedback from Member States are analysed and translated into objectives, outcomes, outputs and activities/tasks so as to ensure that the proposed resource allocations are commensurate to the planned outcomes.

12. In preparing *The Agency's Programme and Budget 2020–2021*, specific emphasis has been placed on a more thorough application of the results-based approach that has allowed a better definition of clear, outcome-oriented results and indicators, while also mainstreaming cross-cutting issues. Additionally, training on results-based management was provided to project managers. While it is recognized that the results-based approach remains a continuous work in progress, substantial progress is being made, particularly in the following four areas:

Outcomes and Performance Indicators

13. The outcomes focus on the Agency's contributions and support to Member States. A thorough review has been undertaken to ensure that the outcomes reflect the change to which the Agency contributes. During the planning, the increased use of results chains has further supported this results-based focus.

14. Performance indicators are used to show progress being made towards achieving the defined outcomes. Each indicator is accompanied by baselines, targets and means of verification that specify the scope and the qualitative dimensions of the change. A review of the performance indicators has been undertaken to improve their robustness and to ensure that the means of verification produce useful data about the Agency's performance.

Risk Management Process

15. Identifying, assessing, mitigating and planning for risks that might negatively affect the Agency's ability to deliver results is a fundamental part of results-based management. Risk management continues to be fully integrated with major Agency processes — including Programme and Budget development and work planning — to ensure consistent identification, consideration and mitigation of risks in decision making.

Cross-cutting Issues

16. Cross-cutting issues such as the SDGs and gender equality are, to varying degrees, relevant to all aspects of the Agency's activities. Mainstreaming cross-cutting issues means that these themes are an integral dimension for consideration during the design, implementation, monitoring and evaluation of the Agency's programmes.

17. Project managers analysed the Agency's contribution to the implementation of the SDGs. Each project identified the SDGs and targets to which it directly contributes, where applicable. The analysis gave support to the direct contributions made by the Agency to attaining nine of the SDGs. Project managers also conducted a gender analysis when planning *The Agency's Programme and Budget 2020–2021* to assess whether their respective projects are gender-sensitive or gender-neutral. Managers were encouraged to mainstream gender concerns into outcomes and performance indicators, where relevant.

Synergies and Partnerships for Results

18. To ensure efficient and effective programme delivery, *The Agency's Programme and Budget 2020–2021* reflects sustained efforts to continuously strengthen the one house approach. The aim is to avoid duplication, maximize synergies and continually make efforts to better utilize available resources and increase efficiencies and effectiveness in all of the Agency's programmes.

19. Flexibility for sharing resources (financial, human, information, skills) and enhanced coordination across Major Programmes will be pursued in programme and financial planning, implementation and assessment of results.

20. Coordination, cooperation and collaboration with international organizations, governments and non-traditional partners will continue. The Secretariat has enhanced partnerships and resource mobilization through improved processes and procedures as well as strengthened coordination and monitoring of partnerships and will continue these efforts.

I.2 Financial Overview

Total Resources

21. The Agency's total resources consist of the Regular Budget, extrabudgetary resources and resources for the technical cooperation programme (TCP). For the 2020–2021 biennium, the Agency's total resources amount to €1 179.9 million at 2020 prices.

2020-2021 Total Resources at a Glance (in millions)

Funding Source	2020	2021	Total
Operational Regular Budget	377.4	377.4	754.9
Capital Regular Budget	6.1	6.1	12.2
Capital Carry Forward	2.0	2.0	4.1
Operational Unfunded	88.5	88.0	176.5
Capital Unfunded	16.2	12.1	28.3
TC Programme	101.8	102.2	204.0
TOTAL	**592.0**	**587.9**	**1 179.9**

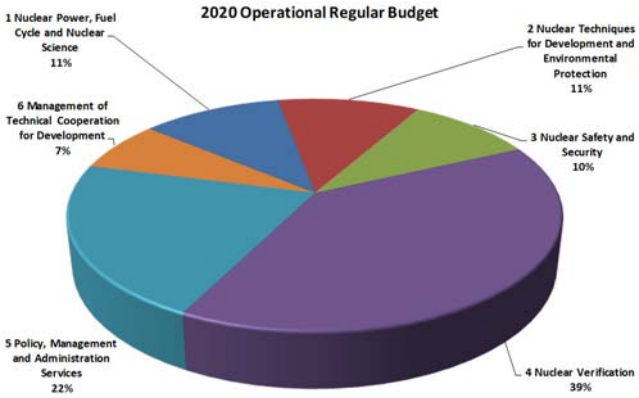
22. The Regular Budget consists of an operational component and a capital component used to fund major infrastructure investments in line with the Major Capital Investment Plan (MCIP). Regular Budget estimates are presented in six Major Programmes (Major Programmes 1 to 6), in accordance with the structure of the Agency's programme of work.

23. The Agency continues to rely on extrabudgetary funds, mostly from Member States, to carry out some of its activities for which funding is not foreseen in the Regular Budget. For 2020, activities currently unfunded in the Regular Budget for which extrabudgetary resources would be required amount to €88.5 million and are shown as 'operational unfunded' in the budget tables of this document.

24. For the TCP, €101.8 million is expected to be available in 2020 — €82.8 million for estimated core project funding, supplemented by €2.0 million of National Participation Costs and €17.0 million in extrabudgetary contributions in support of the TCP. For 2021, a total amount of €102.2 million is expected.

Operational Regular Budget Resources

25. *The Agency's Programme and Budget 2020–2021* has been prepared using a two-step approach, as in previous years. The first stage involved setting budget ceilings at 95% of the 2019 budget. The aim was to identify efficiencies and low priority activities that could be discontinued or reduced. In the second stage of the process, final budget ceilings were established for each Major Programme to provide funding for new high priority activities or to expand established ones. The chart and the table below depict the operational Regular Budget.



2020-2021 Operational Regular Budget (in millions)

Major Programme	2020	2021
1 Nuclear Power, Fuel Cycle and Nuclear Science	41.4	41.4
2 Nuclear Techniques for Development and Environmental Protection	42.1	42.1
3 Nuclear Safety and Security	37.1	37.1
4 Nuclear Verification	148.7	148.7
5 Policy, Management and Administration Services	81.4	81.4
6 Management of Technical Cooperation for Development	26.7	26.7
TOTAL	**377.4**	**377.4**

Capital Resources

26. The capital resources for 2020 have been allocated with a view to addressing the continuing capital needs of the Agency while minimizing the overall growth of the Regular Budget. The Director General is proposing an allocation of the Major Capital Investment Fund (MCIF) at the €8.1 million level, after price adjustment, to finance major infrastructure investments in line with the MCIP. At the same time, the capital Regular Budget funding to be assessed to Member States will be reduced by €2.0 million, after price adjustment, from €8.1 million to €6.1 million for 2020, offset by a carry forward amount of €2.0 million from unspent balances of operational Regular Budget appropriations from prior years previously transferred to the MCIF.

27. The following table depicts the 2020-2021 capital investments. Details are provided in Section I.4.

2020-2021 Capital Investments (in millions)

Major Programme	2020	2021
2 Nuclear Techniques for Development and Environmental Protection	2.0	2.0
3 Nuclear Safety and Security	0.3	0.3
4 Nuclear Verification	1.0	1.0
5 Policy, Management and Administration Services	4.8	4.8
TOTAL	**8.1**	**8.1**

Other Financial Considerations

Price Adjustment

28. The price adjustment applied to 2020 is 1.7%. This percentage is based on the Harmonized Index of Consumer Prices (HICP) forecast for the euro area for 2020 of 1.5%, as provided in the second quarter report of the European Central Bank (ECB) Survey of Professional Forecasters (SPF), issued in April 2019, and a correction to the 2019 price adjustment of 0.2%, so as to partially reflect the impact of the higher than anticipated increase in the Agency's Professional staff costs, following the ICSC review of the post adjustment classification for Professional staff.

After-Service Health Insurance Liabilities (ASHI)

29. The Agency fulfils its obligations in respect of the financing of health insurance for former officials from the Regular Budget, on a pay-as-you-go basis. It does not currently set aside any funds to meet this long term financial liability, which amounts to €213 million.[2] Most United Nations system organizations are facing the issue of funding after-service staff liabilities. A formal recommendation from the External Auditors to the Agency to consider the implementation of a long term funding strategy for ASHI was first made in 2013 and was reiterated by the External Auditors in their reports of 2014 and 2017. The Secretariat is taking steps to address this recommendation.

30. Following the proposal to establish an After-Service Health Insurance liability funding mechanism, presented to Member States in document GOV/2019/7, the Secretariat was requested to keep Member States abreast of relevant processes and discussions in the UN General Assembly. The Secretariat was also requested to present more options for addressing the important issue of ASHI, taking into account good practices from the UN Family and other international organizations and considering cost containment measures that would mitigate ASHI liabilities.

Miscellaneous Income, Budget Currency and Exchange Rate

31. Compared with 2019, there is an increase in the overall projections for the Miscellaneous Income, due to the increased estimates of the Reimbursable Work for Others such as amounts recoverable under Safeguards Agreements, income from Nuclear Fusion Journal and the

[2] As contained in *The Agency's Financial Statements for 2017* (document GC(62)/5).

move of laboratory income and publications of the Agency from Other income. This increase is partially offset by the reclassification of laboratory services as on-demand service to better reflect the nature of the relevant income and a decrease in estimates for printing and medical services. The impact to Other income resulting from the move mentioned above is offset by an addition of income expected from travel rebates and an increase in the investment and interest income owing to improved financial investment opportunities.

32. 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. The Secretariat will monitor any changes in the proportion of the currency of expenditures and report to Member States, if required.

Report on the Budget to the United Nations General Assembly

33. 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.

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

Programme/Major Programme	2019 Budget	2020					2021	
		2020 Estimates at 2019 Prices	Variance over 2019 EUR	Variance over 2019 %	2020 Estimates at 2020 Prices	Price Adjustment	2021 Preliminary Estimates at 2020 Prices	2021 Preliminary Estimates at 2021 Prices
1. Nuclear Power, Fuel Cycle and Nuclear Science								
Overall Management, Coordination and Common Activities	3 184 785	3 252 141	67 356	2.1%	3 307 427	1.7%	3 307 432	3 363 658
Nuclear Power	8 841 191	8 941 981	100 790	1.1%	9 093 995	1.7%	9 094 118	9 248 718
Nuclear Fuel Cycle and Waste Management	7 467 818	7 671 298	203 479	2.7%	7 801 710	1.7%	7 789 578	7 922 001
Capacity Building and Nuclear Knowledge for Sustainable Energy Development	10 473 766	10 579 937	106 170	1.0%	10 759 795	1.7%	10 753 024	10 935 826
Nuclear Science	10 494 976	10 275 088	(219 888)	(2.1%)	10 449 764	1.7%	10 468 544	10 646 510
Major Programme 1	**40 462 537**	**40 720 444**	**257 907**	**0.6%**	**41 412 691**	**1.7%**	**41 412 696**	**42 116 712**
2. Nuclear Techniques for Development and Environmental Protection								
Overall Management, Coordination and Common Activities	7 978 595	8 142 340	163 745	2.1%	8 280 760	1.7%	8 281 368	8 422 151
Food and Agriculture	11 817 017	11 863 614	46 597	0.4%	12 065 295	1.7%	12 065 295	12 270 405
Human Health	8 666 935	8 700 589	33 654	0.4%	8 848 499	1.7%	8 847 803	8 998 215
Water Resources	3 666 420	3 690 396	23 976	0.7%	3 753 133	1.7%	3 753 129	3 816 932
Environment	6 557 374	6 580 671	23 297	0.4%	6 692 542	1.7%	6 692 670	6 806 445
Radioisotope Production and Radiation Technology	2 421 962	2 432 500	10 538	0.4%	2 473 852	1.7%	2 473 822	2 515 877
Major Programme 2	**41 108 303**	**41 410 110**	**301 807**	**0.7%**	**42 114 082**	**1.7%**	**42 114 086**	**42 830 026**
3. Nuclear Safety and Security								
Overall Management, Coordination and Common Activities	3 978 652	4 013 657	35 005	0.9%	4 081 889	1.7%	4 081 894	4 151 286
Incident and Emergency Preparedness and Response	4 393 537	4 393 537	(0)	(0.0%)	4 468 227	1.7%	4 468 227	4 544 187
Safety of Nuclear Installations	10 524 029	10 524 029	0	0.0%	10 702 937	1.7%	10 702 937	10 884 887
Radiation and Transport Safety	7 536 756	7 536 756	(0)	(0.0%)	7 664 880	1.7%	7 664 878	7 795 181
Radioactive Waste Management and Environmental Safety	3 800 859	3 800 858	(0)	(0.0%)	3 865 473	1.7%	3 865 473	3 931 186
Nuclear Security	5 934 522	6 200 367	265 845	4.5%	6 305 773	1.7%	6 305 773	6 412 972
Major Programme 3	**36 168 354**	**36 469 203**	**300 849**	**0.8%**	**37 089 180**	**1.7%**	**37 089 182**	**37 719 698**
4. Nuclear Verification								
Overall Management, Coordination and Common Activities	14 273 041	13 889 295	(383 746)	(2.7%)	14 125 413	1.7%	14 125 429	14 365 562
Safeguards Implementation	124 751 186	129 201 624	4 450 438	3.6%	131 398 051	1.7%	131 398 051	133 631 818
Other Verification Activities	2 843 747	3 132 670	288 923	10.2%	3 185 925	1.7%	3 185 925	3 240 086
Development	3 428 805	-	(3 428 805)	(100.0%)	-	-	-	-
Major Programme 4	**145 296 779**	**146 223 589**	**926 810**	**0.6%**	**148 709 390**	**1.7%**	**148 709 406**	**151 237 466**
5. Policy, Management and Administration Services								
Policy, Management and Administration Services	79 978 272	80 016 672	38 400	0.0%	81 376 955	1.7%	81 376 968	82 760 376
Major Programme 5	**79 978 272**	**80 016 672**	**38 400**	**0.0%**	**81 376 955**	**1.7%**	**81 376 968**	**82 760 376**
6. Management of Technical Cooperation for Development								
Management of Technical Cooperation for Development	25 941 045	26 284 576	343 531	1.3%	26 731 414	1.7%	26 731 414	27 185 848
Major Programme 6	**25 941 045**	**26 284 576**	**343 531**	**1.3%**	**26 731 414**	**1.7%**	**26 731 414**	**27 185 848**
Operational Regular Budget	**368 955 290**	**371 124 594**	**2 169 304**	**0.6%**	**377 433 712**	**1.7%**	**377 433 751**	**383 850 125**
Major Capital Investment Funding Requirements								
Capital Regular Budget	**6 214 868**	**6 000 000**	**(214 868)**	**(3.5%)**	**6 102 000**	**1.7%**	**6 102 000**	**6 205 734**
Total Agency Programmes	**375 170 158**	**377 124 594**	**1 954 436**	**0.5%**	**383 535 712**	**1.7%**	**383 535 751**	**390 055 859**
Reimbursable Work for Others	2 835 725	3 077 043	241 318	8.5%	3 129 353	1.7%	3 129 353	3 182 552
Total Regular Budget	**378 005 883**	**380 201 637**	**2 195 754**	**0.6%**	**386 665 065**	**1.7%**	**386 665 104**	**393 238 411**
Less Miscellaneous Income	3 385 725	3 627 043	241 318	8.5%	3 679 353	1.7%	3 679 353	3 732 552
Assessment on Member States	**374 620 158**	**376 574 594**	**1 954 436**	**0.5%**	**382 985 712**	**1.7%**	**382 985 751**	**389 505 859**

Table 2. The Regular Budget – Summary of Income

	2019 Budget at 2019 Prices	2020 Estimates at 2019 Prices	Variance 2020 over 2019	2020 Estimates at 2020 Prices	2021 Estimates at 2020 Prices	2021 Estimates at 2021 Prices
Operational Regular Budget[a]	368 405 290	370 574 594	2 169 304	376 883 712	376 883 751	383 300 125
Capital Regular Budget	6 214 868	6 000 000	(214 868)	6 102 000	6 102 000	6 205 734
Assessed Contributions on Member States	**374 620 158**	**376 574 594**	**1 954 436**	**382 985 712**	**382 985 751**	**389 505 859**
Miscellaneous Income						
Reimbursable Work for Others						
Printing Services	477 626	415 000	(62 626)	422 055	422 055	429 230
Medical Services	863 780	835 973	(27 807)	850 185	850 185	864 638
Nuclear Fusion Journal	336 037	392 657	56 620	399 332	399 332	406 121
Laboratory Services	128 394	-	(128 394)	-	-	-
Publications of the Agency – Other	-	40 000	40 000	40 680	40 680	41 372
Laboratory Income	-	250 000	250 000	254 250	254 250	258 572
Amounts Recoverable Under Safeguards Agreements	1 029 888	1 143 413	113 525	1 162 851	1 162 851	1 182 619
Subtotal Reimbursable Work for Others	**2 835 725**	**3 077 043**	**241 318**	**3 129 353**	**3 129 353**	**3 182 552**
Other						
Publications of the Agency – Other	150 000	-	(150 000)	-	-	-
Laboratory Income	300 000	-	(300 000)	-	-	-
Travel Rebates	-	200 000	200 000	200 000	200 000	200 000
Investment and Interest Income	100 000	350 000	250 000	350 000	350 000	350 000
Subtotal Other	**550 000**	**550 000**	**-**	**550 000**	**550 000**	**550 000**
Total Miscellaneous Income	**3 385 725**	**3 627 043**	**241 318**	**3 679 353**	**3 679 353**	**3 732 552**
Total Regular Budget Income	**378 005 883**	**380 201 637**	**2 195 754**	**386 665 065**	**386 665 104**	**393 238 411**

[a] Does not include estimates for Other Miscellaneous Income.

Table 3 (a). Total Resource Requirements for 2020 – By Programme and Major Programme (at 2020 prices)

Programme / Major Programme	Regular Budget		Unfunded		TC Programme	Total
	Operational	Capital	Operational	Capital		
1. Nuclear Power, Fuel Cycle and Nuclear Science						
Overall Management, Coordination and Common Activities	3 307 427	-	103 229	1 052 299	-	4 462 955
Nuclear Power	9 093 995	-	3 605 573	-	5 400 799	18 100 367
Nuclear Fuel Cycle and Waste Management	7 801 710	-	3 535 494	-	2 424 988	13 762 192
Capacity Building and Nuclear Knowledge for Sustainable Energy Development	10 759 795	-	628 557	-	1 679 896	13 068 248
Nuclear Science	10 449 764	-	2 120 420	193 230	5 715 558	18 478 972
Major Programme 1	**41 412 691**	**-**	**9 993 273**	**1 245 529**	**15 221 242**	**67 872 735**
2. Nuclear Techniques for Development and Environmental Protection						
Overall Management, Coordination and Common Activities	8 280 760	2 034 000	-	2 034 000	-	12 348 760
Food and Agriculture	12 065 295	-	4 697 916	-	13 867 905	30 631 116
Human Health	8 848 499	-	602 662	203 400	27 740 512	37 395 073
Water Resources	3 753 133	-	-	-	2 555 710	6 308 844
Environment	6 692 542	-	1 966 828	-	3 898 333	12 557 703
Radioisotope Production and Radiation Technology	2 473 852	-	166 678	-	11 081 482	13 722 012
Major Programme 2	**42 114 082**	**2 034 000**	**7 434 084**	**2 237 400**	**59 143 942**	**112 963 508**
3. Nuclear Safety and Security						
Overall Management, Coordination and Common Activities	4 081 889	305 100	1 885 189	1 905 665	-	8 177 843
Incident and Emergency Preparedness and Response	4 468 227	-	1 468 082	-	2 526 426	8 462 735
Safety of Nuclear Installations	10 702 937	-	5 802 152	-	6 462 774	22 967 863
Radiation and Transport Safety	7 664 880	-	3 900 830	-	9 321 485	20 887 195
Radioactive Waste Management and Environmental Safety	3 865 473	-	2 288 790	-	8 580 783	14 735 046
Nuclear Security	6 305 773	-	21 585 586	-	-	27 891 359
Major Programme 3	**37 089 180**	**305 100**	**36 930 629**	**1 905 665**	**26 891 468**	**103 122 041**
4. Nuclear Verification						
Overall Management, Coordination and Common Activities	14 125 413	-	-	-	-	14 125 413
Safeguards Implementation	131 398 051	1 017 000	28 551 335	4 418 466	-	165 384 852
Other Verification Activities	3 185 925	-	4 207 558	-	-	7 393 484
Major Programme 4	**148 709 390**	**1 017 000**	**32 758 893**	**4 418 466**	**-**	**186 903 749**
5. Policy, Management and Administration Services						
Policy, Management and Administration Services	81 376 955	2 745 900	850 082	6 385 743	520 689	91 879 369
Major Programme 5	**81 376 955**	**2 745 900**	**850 082**	**6 385 743**	**520 689**	**91 879 369**
6. Management of Technical Cooperation for Development						
Management of Technical Cooperation for Development	26 731 414	-	516 147	-	-	27 247 560
Major Programme 6	**26 731 414**	**-**	**516 147**	**-**	**-**	**27 247 560**
Total Agency Programmes	**377 433 712**	**6 102 000**	**88 483 107**	**16 192 803**	**101 777 340**	**589 988 962**
Reimbursable Work for Others	3 129 353	-	-	-	-	3 129 353
Total	**380 563 065**	**6 102 000**	**88 483 107**	**16 192 803**	**101 777 340**	**593 118 315**

Table 3 (b). Total Resource Requirements for 2021 – By Programme and Major Programme (at 2021 prices)

Programme / Major Programme	Regular Budget		Unfunded		TC Programme	Total
	Operational	Capital	Operational	Capital		
1. Nuclear Power, Fuel Cycle and Nuclear Science						
Overall Management, Coordination and Common Activities	3 363 658	-	104 984	1 127 591	-	4 596 233
Nuclear Power	9 248 718	-	3 775 634	-	5 422 406	18 446 758
Nuclear Fuel Cycle and Waste Management	7 922 001	-	3 422 800	-	2 434 690	13 779 490
Capacity Building and Nuclear Knowledge for Sustainable Energy Development	10 935 826	-	639 242	-	1 686 617	13 261 685
Nuclear Science	10 646 510	-	2 057 969	165 486	5 738 424	18 608 389
Major Programme 1	**42 116 712**	**-**	**10 000 628**	**1 293 077**	**15 282 137**	**68 692 555**
2. Nuclear Techniques for Development and Environmental Protection						
Overall Management, Coordination and Common Activities	8 422 151	2 068 578	-	2 068 578	-	12 559 307
Food and Agriculture	12 270 405	-	4 651 104	-	13 923 386	30 844 895
Human Health	8 998 215	-	602 975	-	27 851 494	37 452 684
Water Resources	3 816 932	-	-	-	2 565 935	6 382 867
Environment	6 806 445	-	2 010 238	-	3 913 929	12 730 612
Radioisotope Production and Radiation Technology	2 515 877	-	169 512	-	11 125 815	13 811 204
Major Programme 2	**42 830 026**	**2 068 578**	**7 433 828**	**2 068 578**	**59 380 558**	**113 781 568**
3. Nuclear Safety and Security						
Overall Management, Coordination and Common Activities	4 151 286	310 287	1 922 771	49 293	-	6 433 637
Incident and Emergency Preparedness and Response	4 544 187	-	1 199 026	-	2 536 534	8 279 747
Safety of Nuclear Installations	10 884 887	-	6 152 173	-	6 488 629	23 525 689
Radiation and Transport Safety	7 795 181	-	3 927 479	-	9 358 777	21 081 437
Radioactive Waste Management and Environmental Safety	3 931 186	-	2 195 219	-	8 615 112	14 741 517
Nuclear Security	6 412 972	-	21 952 541	-	-	28 365 512
Major Programme 3	**37 719 698**	**310 287**	**37 349 209**	**49 293**	**26 999 053**	**102 427 539**
4. Nuclear Verification						
Overall Management, Coordination and Common Activities	14 365 562	-	-	-	-	14 365 562
Safeguards Implementation	133 631 818	1 034 289	29 086 261	3 625 125	-	167 377 493
Other Verification Activities	3 240 086	-	4 279 087	-	-	7 519 173
Major Programme 4	**151 237 466**	**1 034 289**	**33 365 348**	**3 625 125**	**-**	**189 262 228**
5. Policy, Management and Administration Services						
Policy, Management and Administration Services	82 760 376	2 792 580	864 533	5 276 942	522 772	92 217 204
Major Programme 5	**82 760 376**	**2 792 580**	**864 533**	**5 276 942**	**522 772**	**92 217 204**
6. Management of Technical Cooperation for Development						
Management of Technical Cooperation for Development	27 185 848	-	524 921	-	-	27 710 769
Major Programme 6	**27 185 848**	**-**	**524 921**	**-**	**-**	**27 710 769**
Total Agency Programmes	**383 850 125**	**6 205 734**	**89 538 468**	**12 313 016**	**102 184 520**	**594 091 864**
Reimbursable Work for Others	3 182 552	-	-	-	-	3 182 552
Total	**387 032 677**	**6 205 734**	**89 538 468**	**12 313 016**	**102 184 520**	**597 274 415**

I.3 Programme and Budget Overview by Major Programme

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

34. Major Programme 1 provides scientific and technical support to Member States through the provision of guidance, technical reports; publications, databases and e-learning, the provision of review services; coordinated research projects (CRP); the facilitation of discussions and the sharing of lessons learned on relevant topics; and the dissemination of information and knowledge. It also designs and, in partnership with Major Programme 6, delivers training in, and supports interested Member States to, build capacity and develop the infrastructure necessary to manage various phases of a nuclear programme.

35. For mitigating the effects of climate change, nuclear power could become an integral component in the national energy mix of Member States that opt for it, supporting energy security and the achievement of relevant SDGs, in particular SDG 7 "Affordable and Clean Energy" and SDG 13 "Climate Action". The Agency will continue to support interested Member States to assess their future energy needs and to evaluate and understand the potential for nuclear power to be part of their energy strategies. The Major Programme provides support for Member States considering, embarking on or expanding nuclear power programmes. It also supports Member States with operating nuclear power plants in the areas of performance; life management; and safe, secure, efficient and reliable long term operation. Support will continue to be provided for the development and deployment of small and medium sized or modular reactors and innovative reactor systems and associated fuel cycles, along with the non-electric applications of nuclear power and cogeneration technologies.

36. The Major Programme supports Member States in uranium exploration, mining and milling; and fuel cycle activities, including spent fuel integrity, design vulnerabilities, defueling and storage. Technical assistance will continue to be provided for radioactive waste management, decommissioning of nuclear facilities and management of disused radioactive sealed sources, as well as on-site and off-site remediation. The Major Programme will continue to support Member States with an interest in building, operating or accessing research reactors — including via the IAEA designated International Centre based on Research Reactors (ICERRs) scheme — and, upon request, to those transitioning away from the use of high enriched uranium in research reactors. Support will also continue in the field of nuclear knowledge management, including information management, dissemination and preservation.

37. The Agency will remain a reliable source of nuclear, atomic and molecular data. Training and facilitation of experiments using various types of particle accelerator and other nuclear instrumentation will continue. The Major Programme will continue to support Member States in their fusion research activities and exchange of knowledge, including cooperation with the International Thermonuclear Experimental Reactor. Collaboration 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, will focus more in the areas of relevance to the Agency such as basic nuclear sciences and nuclear energy.

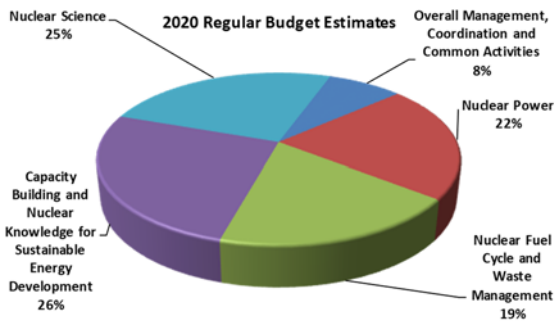


Table 4. Major Programme 1 – Nuclear Power, Fuel Cycle and Nuclear Science

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

Subprogramme / Programme		2019 Budget	2020 Estimates at 2019 prices	2020 Variance over 2019 EUR	2020 Variance over 2019 %	2021 Preliminary Estimates at 2019 prices	2021 Variance over 2020 EUR	2021 Variance over 2020 %
1.0 Overall Management, Coordination and Common Activities	↑	**3 184 785**	**3 252 141**	***67 356***	***2.1%***	**3 252 145**	***5***	***0.0%***
1.1.1 Strengthening Integrated Engineering Support for Nuclear Power Programmes	–	1 614 069	1 633 139	*19 070*	*1.2%*	1 633 140	*1*	*0.0%*
1.1.2 Management and Human Resource Development for Nuclear Power Programmes	–	1 022 245	1 031 732	*9 487*	*0.9%*	1 031 852	*120*	*0.0%*
1.1.3 Infrastructure and Planning for New Nuclear Power Programmes	–	2 594 333	2 638 107	*43 775*	*1.7%*	2 638 107	*(0)*	*(0.0%)*
1.1.4 International Project on Innovative Nuclear Reactors and Fuel Cycles	–	1 139 566	1 158 538	*18 972*	*1.7%*	1 158 538	-	-
1.1.5 Technology Development for Advanced Reactors and Non-Electric Applications of Nuclear Power	–	2 470 978	2 480 465	*9 487*	*0.4%*	2 480 465	*0*	*0.0%*
1.1 Nuclear Power Total	–	**8 841 191**	**8 941 981**	***100 790***	***1.1%***	**8 942 102**	***121***	***0.0%***
1.2.1 Uranium Resources and Processing	↓	1 285 262	1 158 036	*(127 226)*	*(9.9%)*	1 154 839	*(3 197)*	*(0.3%)*
1.2.2 Nuclear Power Reactor Fuel nd Fuel Cycle Facilities	↑	868 990	1 073 655	*204 665*	*23.6%*	1 036 810	*(36 846)*	*(3.4%)*
1.2.3 Management of Spent Fuel from Nuclear Power Reactors and Radioactive Material Transportation	↓	1 283 802	1 217 524	*(66 278)*	*(5.2%)*	1 255 273	*37 748*	*3.1%*
1.2.4 Radioactive Waste Management	–	2 808 212	2 801 364	*(6 847)*	*(0.2%)*	2 801 279	*(85)*	*(0.0%)*
1.2.5 Decommissioning and Environmental Remediation	↑	1 221 552	1 420 718	*199 166*	*16.3%*	1 411 168	*(9 550)*	*(0.7%)*
1.2 Nuclear Fuel Cycle and Waste Management Total*	↑	**7 467 818**	**7 671 298**	***203 479***	***2.7%***	**7 659 369**	***(11 929)***	***(0.2%)***
1.3.1 Energy Modelling, Data and Capacity Building	↑	1 859 064	1 915 645	*56 582*	*3.0%*	1 915 645	-	-
1.3.2 Energy Economy Environment (3E) Analysis	–	1 573 340	1 592 439	*19 099*	*1.2%*	1 592 439	-	-
1.3.3 Nuclear Knowledge Management (NKM)	–	2 330 857	2 351 287	*20 430*	*0.9%*	2 351 065	*(222)*	*(0.0%)*
1.3.4 Nuclear Information	–	4 710 506	4 720 566	*10 060*	*0.2%*	4 714 130	*(6 436)*	*(0.1%)*
1.3 Capacity Building and Nuclear Knowledge for Sustainable Energy Development Total	–	**10 473 766**	**10 579 937**	***106 170***	***1.0%***	**10 573 279**	***(6 658)***	***(0.1%)***
1.4.1 Atomic and Nuclear Data	–	2 983 182	2 992 656	*9 474*	*0.3%*	3 007 570	*14 914*	*0.5%*
1.4.2 Research Reactors	–	1 797 315	1 801 213	*3 898*	*0.2%*	1 805 694	*4 481*	*0.2%*
1.4.3 Accelerator Applications and Nuclear Instrumentation	–	2 555 018	2 558 588	*3 569*	*0.1%*	2 560 088	*1 500*	*0.1%*
1.4.4 Nuclear Fusion Research and Technology	–	849 907	849 981	*74*	*0.0%*	849 981	-	-
1.4.5 Support to the Abdus Salam International Centre for Theoretical Physics (ICTP)	↓	2 309 554	2 072 650	*(236 904)*	*(10.3%)*	2 070 221	*(2 429)*	*(0.1%)*
1.4 Nuclear Science Total	↓	**10 494 976**	**10 275 088**	***(219 888)***	***(2.1%)***	**10 293 554**	***18 466***	***0.2%***
Total for Nuclear Power, Fuel Cycle and Nuclear Science	–	**40 462 537**	**40 720 444**	***257 907***	***0.6%***	**40 720 448**	***4***	***0.0%***

* The variance shown within Programme 1.2 is affected by the movements between the subprogrammes without affecting relevant programmatic activities.

Major Programme 2: Nuclear Techniques for Development and Environmental Protection

38. Major Programme 2 supports the peaceful uses of nuclear science and applications, providing Member States with science based advice, educational materials, standards, guidance on best practices and reference materials, and technical documents. Major Programme 2 encompasses activities in five thematic areas: food and agriculture, human health, water resources, environment, and radioisotope production and radiation technology. Member States' demand for assistance continues to increase in the areas of food security and safety, water availability, human health, transboundary animal and plant diseases, environmental impacts of climate change and industrial applications of nuclear technology.

39. The Agency's laboratories at Headquarters and in Seibersdorf and Monaco remain an essential vehicle for programme delivery. These laboratories need to remain capable of meeting the increasing and changing needs of Member States. Enhancing quality assurance and maximizing the use of the new facilities acquired through the Renovation of the Nuclear Applications Laboratories (ReNuAL/ReNuAL+) projects will help the Agency provide enhanced services to Member States.

40. Partnerships will continue to be an important way to strengthen programmatic activities and engage with Member States. The Agency will continue to enhance key partnerships with United Nations system organizations such as the Food and Agriculture Organization of the United Nations and the World Health Organization. Networks of Member States' scientific and research institutions, such as the network of Analytical Laboratories for the Measurement of Environmental Radioactivity (ALMERA) and the Veterinary Diagnostic Laboratory (VetLab) Network, will be expanded. The Agency's Collaborating Centre scheme remains a valuable arrangement for working jointly with Member States' institutions. Efforts will be made to make more efficient use of the scheme for more cost effective implementation of the Major Programme through arrangements with Collaborating Centres.

41. Education and training will continue to be fundamental to this Major Programme. To reach a wider audience and achieve greater cost savings, the development of e-learning tools and on-line education platforms such as webinars will continue to be emphasized. To increase public awareness of the work and contributions of this Major Programme, efforts initiated in previous budget cycles aimed at developing specific communication strategies will continue.

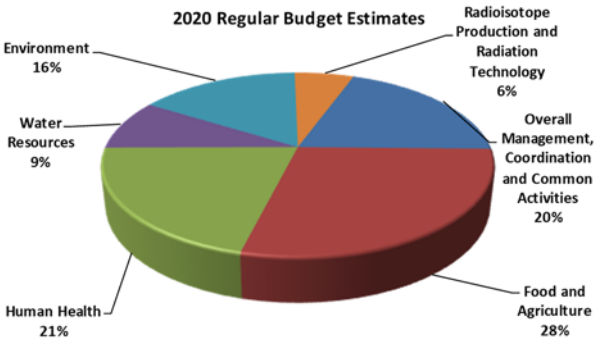


Table 5. Major Programme 2 – Nuclear Techniques for Development and Environmental Protection

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

Subprogramme / Programme		2019 Budget	2020 Estimates at 2019 prices	2020 Variance over 2019 EUR	2020 Variance over 2019 %	2021 Preliminary Estimates at 2019 prices	2021 Variance over 2020 EUR	2021 Variance over 2020 %
2.0 Overall Management, Coordination and Common Activities	↑	**7 978 595**	**8 142 340**	***163 745***	***2.1%***	**8 142 938**	***598***	***0.0%***
2.1.1 Sustainable Land and Water Management	–	2 186 732	2 176 332	*(10 400)*	*(0.5%)*	2 176 332	*(0)*	*(0.0%)*
2.1.2 Sustainable Intensification of Livestock Production Systems	–	2 289 301	2 278 301	*(11 000)*	*(0.5%)*	2 278 301	-	-
2.1.3 Improvement of Food Safety and Food Control Systems	↑	1 773 378	1 861 377	*87 999*	*5.0%*	1 861 377	-	-
2.1.4 Sustainable Control of Major Insect Pests	–	3 628 621	3 608 620	*(20 001)*	*(0.6%)*	3 608 620	*(0)*	*(0.0%)*
2.1.5 Crop Improvement for Intensification of Agricultural Production Systems	–	1 938 985	1 938 984	*(1)*	*(0.0%)*	1 938 984	*0*	*0.0%*
2.1 Food and Agriculture Total	–	**11 817 017**	**11 863 614**	***46 597***	***0.4%***	**11 863 614**	***(0)***	***(0.0%)***
2.2.1 Nutrition for Improved Human Health	–	1 719 939	1 721 319	*1 380*	*0.1%*	1 765 883	*44 564*	*2.6%*
2.2.2 Nuclear Medicine and Diagnostic Imaging	–	1 986 494	2 004 334	*17 840*	*0.9%*	1 973 922	*(30 412)*	*(1.5%)*
2.2.3 Radiation Oncology and Cancer Treatment	–	1 884 744	1 884 749	*5*	*0.0%*	1 900 908	*16 159*	*0.9%*
2.2.4 Dosimetry and Medical Physics for Imaging and Therapy	–	3 075 758	3 090 186	*14 429*	*0.5%*	3 059 191	*(30 996)*	*(1.0%)*
2.2 Human Health Total	–	**8 666 935**	**8 700 589**	***33 654***	***0.4%***	**8 699 904**	***(685)***	***(0.0%)***
2.3.1 Isotope Data Networks for Hydrology and Climate Studies	–	1 230 716	1 229 320	*(1 396)*	*(0.1%)*	1 260 725	*31 405*	*2.6%*
2.3.2 Isotope Based Assessment and Management of Water Resources	↑	1 161 906	1 219 135	*57 229*	*4.9%*	1 124 002	*(95 133)*	*(7.8%)*
2.3.3 Radio-isotope Applications for Hydrology	↓	1 273 799	1 241 941	*(31 857)*	*(2.5%)*	1 305 665	*63 724*	*5.1%*
2.3 Water Resources Total	–	**3 666 420**	**3 690 396**	***23 976***	***0.7%***	**3 690 392**	***(4)***	***(0.0%)***
2.4.1 IAEA Reference Products for Science and Trade	↑	2 471 093	2 522 879	*51 787*	*2.1%*	2 517 065	*(5 815)*	*(0.2%)*
2.4.2 Nuclear Techniques to Understand Climate and Environmental Change	–	1 529 693	1 547 308	*17 615*	*1.2%*	1 549 812	*2 504*	*0.2%*
2.4.3 Nuclear Techniques to Monitor and Assess Pollution	–	789 514	781 681	*(7 833)*	*(1.0%)*	796 681	*15 000*	*1.9%*
2.4.4 Applying Analytical Techniques to Protect Biodiversity and Ecosystem services	↓	1 767 074	1 728 803	*(38 271)*	*(2.2%)*	1 717 239	*(11 564)*	*(0.7%)*
2.4 Environment Total	–	**6 557 374**	**6 580 671**	***23 297***	***0.4%***	**6 580 797**	***125***	***0.0%***
2.5.1 Radioisotope Products for Cancer Management and Non-communicable Diseases	–	1 105 216	1 111 303	*6 087*	*0.6%*	1 143 250	*31 946*	*2.9%*
2.5.2 Radiation Technology Applications in Healthcare, Industries and Environment	–	1 316 746	1 321 197	*4 450*	*0.3%*	1 289 220	*(31 977)*	*(2.4%)*
2.5 Radioisotope Production and Radiation Technology Total	–	**2 421 962**	**2 432 500**	***10 538***	***0.4%***	**2 432 470**	***(30)***	***(0.0%)***
Total for Nuclear Techniques for Development and Environmental Protection	–	**41 108 303**	**41 410 110**	***301 807***	***0.7%***	**41 410 114**	***4***	***0.0%***

Major Programme 3: Nuclear Safety and Security

42. 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. It supports Member States in meeting the demand for a higher level of safety at the growing number of nuclear installations — including uranium mining facilities — and at existing nuclear power plants and research reactors, whose average age continues to increase. It also supports Member States in addressing 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. In conducting these activities, the Agency fosters a strong safety and security culture.

43. Through Major Programme 3, the Agency performs its statutory function of establishing safety standards and providing for their application in Member States, upon request, and in its own operations. Major Programme 3 assists Member States in building national capacities by promoting international cooperation and by transferring nuclear safety knowledge from States with mature nuclear energy programmes to States with emerging nuclear energy programmes through knowledge networks. The activities under this Major Programme will continue to cover: strengthening nuclear, radiation, transport and waste safety in a comprehensive manner, including design safety, external hazard assessment, safety culture, communication on safety, severe accident management, post-accident remediation and transition to recovery, as well as those aspects related to extension of the operating life of nuclear power plants, decommissioning of facilities, disposal of high level radioactive waste, innovative technologies such as fast reactors and small and medium sized or modular reactors, and the safety of radiation sources used in non-power applications.

44. 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 nuclear security programme in 2020–2021 is aligned with the Nuclear Security Plan 2018–2021.

45. Despite the nuclear safety and security arrangements in place, the risk of a nuclear or radiological emergency — of various origins or severity — cannot be entirely eliminated. This Major Programme also focuses on providing assistance for developing and strengthening national and international capacities to prepare to respond effectively to, and to mitigate, the consequences of such an emergency. The Agency is the global focal point for international preparedness and response to nuclear and radiological incidents or emergencies and implements its response roles under this Major Programme. During this biennium, internal regulation of radiation safety and nuclear security will be strengthened. There will be a focus on enhancing timely coordination within this Major Programme and with other Major Programmes to build synergies, increase effectiveness and efficiency, and reduce duplication in the planning and implementation of activities.

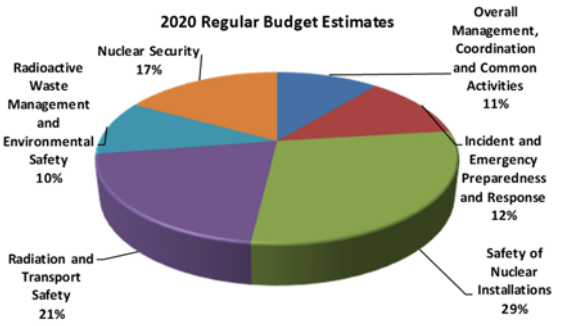


Table 6. Major Programme 3 – Nuclear Safety and Security

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

Subprogramme / Programme		2019 Budget	2020 Estimates at 2019 prices	2020 Variance over 2019 EUR	2020 Variance over 2019 %	2021 Preliminary Estimates at 2019 prices	2021 Variance over 2020 EUR	2021 Variance over 2020 %
3.0 Overall Management, Coordination and Common Activities		**3 978 652**	**4 013 657**	***35 005***	***0.9%***	**4 013 662**	***5***	***0.0%***
3.1.1 National and International Emergency Preparedness	↑	1 513 680	1 643 312	*129 632*	*8.6%*	1 713 312	*70 000*	*4.3%*
3.1.2 IAEA IES and Operational Arrangements with MSs and IOs	↓	2 879 857	2 750 224	*(129 633)*	*(4.5%)*	2 680 226	*(69 999)*	*(2.5%)*
3.1 Incident and Emergency Preparedness and Response Total		**4 393 537**	**4 393 537**	***(0)***	***(0.0%)***	**4 393 537**	***1***	***0.0%***
3.2.1 Governmental Regulatory Framework and Safety Infrastructure Development		3 099 346	3 105 101	*5 755*	*0.2%*	3 128 390	*23 289*	*0.8%*
3.2.2 Safety Assessment of Nuclear Installations		2 229 599	2 234 055	*4 456*	*0.2%*	2 232 495	*(1 560)*	*(0.1%)*
3.2.3 Safety and Protection Against External Hazards		1 220 461	1 211 617	*(8 844)*	*(0.7%)*	1 171 899	*(39 718)*	*(3.3%)*
3.2.4 Safe Operation of Nuclear Power Plants		2 647 683	2 634 827	*(12 856)*	*(0.5%)*	2 576 883	*(57 944)*	*(2.2%)*
3.2.5 Safety of Research Reactor and Fuel Cycle Facilities		1 326 939	1 338 429	*11 490*	*0.9%*	1 414 361	*75 932*	*5.7%*
3.2 Safety of Nuclear Installations Total		**10 524 029**	**10 524 029**	***0***	***0.0%***	**10 524 028**	***(1)***	***(0.0%)***
3.3.1 Radiation Safety and Monitoring		4 263 295	4 260 428	*(2 867)*	*(0.1%)*	4 265 339	*4 911*	*0.1%*
3.3.2 Regulatory Infrastructure and Transport Safety		3 273 461	3 276 328	*2 866*	*0.1%*	3 271 414	*(4 913)*	*(0.1%)*
3.3 Radiation and Transport Safety Total		**7 536 756**	**7 536 756**	***(0)***	***(0.0%)***	**7 536 753**	***(3)***	***(0.0%)***
3.4.1 Safety of Spent Fuel and Radioactive Waste Management		1 808 985	1 773 121	*(35 864)*	*(2.0%)*	1 772 060	*(1 061)*	*(0.1%)*
3.4.2 Safety of Decommissioning, Remediation and Environmental Releases		1 991 873	2 027 737	*35 863*	*1.8%*	2 028 798	*1 061*	*0.1%*
3.4 Radioactive Waste Management and Environmental Safety Total		**3 800 859**	**3 800 858**	***(0)***	***(0.0%)***	**3 800 858**	***(0)***	***(0.0%)***
3.5.1 Information Management	↑	1 433 090	1 467 849	*34 759*	*2.4%*	1 467 849	-	-
3.5.2 Nuclear Security of Materials and Facilities	↑	1 529 835	1 745 467	*215 632*	*14.1%*	1 746 083	*616*	*0.0%*
3.5.3 Nuclear Security of Materials outside of Regulatory Control	↓	1 613 555	1 551 467	*(62 088)*	*(3.8%)*	1 551 467	-	-
3.5.4 Programme Development and International Cooperation	↑	1 358 042	1 435 584	*77 541*	*5.7%*	1 434 968	*(616)*	*(0.0%)*
3.5 Nuclear Security Total	↑	**5 934 522**	**6 200 367**	***265 845***	***4.5%***	**6 200 367**	***0***	***0.0%***
Total for Nuclear Safety and Security		**36 168 354**	**36 469 203**	***300 849***	***0.8%***	**36 469 205**	***2***	***0.0%***

Major Programme 4: Nuclear Verification

46. 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.

47. 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 the analysis of safeguards relevant information, installation of safeguards instrumentation, in field inspections and sample analysis required for implementing safeguards. These activities enable the Agency to draw soundly based safeguards conclusions. In addition, the Agency, in accordance with its Statute, assists with other verification tasks, including in connection with nuclear disarmament or arms control agreements as requested by States and approved by the Board of Governors.

48. For the 2020–2021 period, the main challenges for Major Programme 4 include:

- Increasing safeguards responsibilities as a result of an increasing number of safeguards agreements and additional protocols and growing numbers of nuclear facilities and quantities of nuclear material under safeguards;
- Implementing the necessary verification and monitoring of Iran's nuclear-related commitments as set out in the Joint Comprehensive Plan of Action (JCPOA) in light of United Nations Security Council resolution 2231 (2015);
- Planning for and conducting verification activities at nuclear facilities that are being decommissioned;
- Preparing to safeguard new types of nuclear facilities and more complex or larger scale nuclear facilities;
- Intensifying efforts to enhance the Agency's readiness to play its essential role in monitoring and verifying the DPRK's nuclear programme, in accordance with its mandate;
- Ensuring the availability of a safeguards workforce with the necessary skills and expertise, and maintaining critical institutional knowledge;
- Modernizing the technical systems, services and instrumentation that underpin effective and efficient safeguards implementation;
- Operating in a challenging security environment, which may require additional measures to ensure the physical safety of staff operating in the field and to ensure information security.

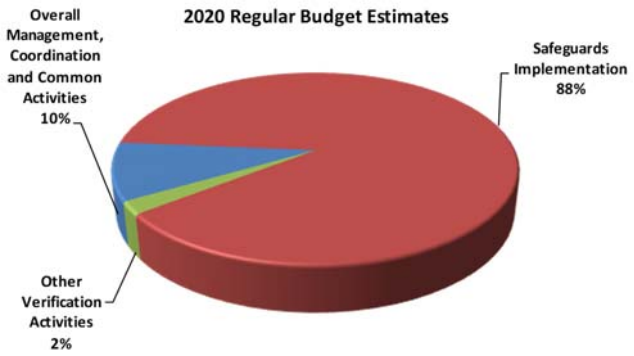


Table 7. Major Programme 4 – Nuclear Verification
Summary of Regular Budget Resources for the Biennium
(excluding Major Capital Investments)

Subprogramme / Programme			2019 Budget	2020 Estimates at 2019 prices	2020 Variance over 2019 EUR	2020 Variance over 2019 %	2021 Preliminary Estimates at 2019 prices	2021 Variance over 2020 EUR	2021 Variance over 2020 %
4.0 Overall Management, Coordination and Common Activities		↓	**14 273 041**	**13 889 295**	***(383 746)***	***(2.7%)***	**13 889 311**	***16***	***0.0%***
4.1.1	Concepts and Planning	↑	7 688 692	8 732 874	*1 044 182*	*13.6%*	8 732 875	*0*	*0.0%*
4.1.2	Safeguards Implementation for States under responsibility of Division SGOA	–	16 666 543	16 938 414	*271 871*	*1.6%*	16 938 414	-	-
4.1.3	Safeguards Implementation for States under responsibility of Division SGOB	–	25 170 836	25 096 855	*(73 982)*	*(0.3%)*	25 096 855	*(0)*	*(0.0%)*
4.1.4	Safeguards Implementation for States under responsibility of Division SGOC	–	17 196 941	17 323 105	*126 165*	*0.7%*	17 323 105	*(0)*	*(0.0%)*
4.1.5	Information Analysis	–	12 455 535	12 621 879	*166 344*	*1.3%*	12 621 879	*(0)*	*(0.0%)*
4.1.6	Provision and Development of Safeguards Instrumentation	↑	18 557 374	21 637 685	*3 080 311*	*16.6%*	21 637 684	*(0)*	*(0.0%)*
4.1.7	Analytical Services	–	10 926 169	10 923 350	*(2 819)*	*(0.0%)*	10 923 350	-	-
4.1.8	Special Projects	–	-	565 869	*565 869*	-	565 869	*(0)*	*(0.0%)*
4.1.8 (OLD)	Effectiveness Evaluation	↓	1 436 791	-	*(1 436 791)*	*(100.0%)*	-	-	-
4.1.9	Safeguards Information Communication Technology (ICT)	↑	14 652 305	15 361 593	*709 287*	*4.8%*	15 361 593	*(0)*	*(0.0%)*
4.1 Safeguards Implementation Total*		↑	**124 751 186**	**129 201 624**	***4 450 438***	***3.6%***	**129 201 624**	***0***	***0.0%***
4.2.1	Other Verification Activities	↑	2 843 747	3 132 670	*288 923*	*10.2%*	3 132 670	-	-
4.2 Other Verification Activities Total		↑	**2 843 747**	**3 132 670**	***288 923***	***10.2%***	**3 132 670**	**-**	**-**
4.3.2	Development of Safeguards Instrumentation	↓	2 707 534	-	*(2 707 534)*	*(100.0%)*	-	-	-
4.3.3	Special Projects	↓	721 271	-	*(721 271)*	*(100.0%)*	-	-	-
4.3 Development Total*		↓	**3 428 805**	**-**	***(3 428 805)***	***(100.0%)***	**-**	**-**	**-**
Total for Nuclear Verification		–	**145 296 779**	**146 223 589**	***926 810***	***0.6%***	**146 223 605**	***16***	***0.0%***

* The activities under previous Programme 4.3 are moved to Programme 4.1.

Major Programme 5: Policy, Management and Administration Services

49. Under the leadership, direction and authority of the Director General, the Agency's programmes seek to achieve the objectives of its Member States. This requires effective coordination to ensure a one house approach, particularly with respect to: overall directions and priorities; interactions with Member States; development and implementation of programmes; results based management, including performance assessment and risk management; gender mainstreaming; partnerships and resource mobilization; and the management of information within the Secretariat, between the Secretariat and Member States, and for the benefit of the general public and the media. The independent ethics function will continue to promote and sustain an ethical organizational culture of integrity, accountability and transparency, and continue to assist the Director-General in ensuring that all staff members observe and perform their functions consistent with the highest standards of integrity.

50. 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 mandate.

51. It should be noted that approximately 25% 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. Major Programme 5 coordinates security activities through a centralized security coordination function for the Agency, including integrated management of facilities and site security for the Agency's laboratories at Seibersdorf. The need to enhance the Agency's information security infrastructure, processes and capabilities to address the severe and escalating threats will continue to grow, in particular to ensure the security of information entrusted to the Agency.

52. Major Programme 5 continues to focus on continuous improvement of management services through innovation and the drive for achieving greater efficiencies. These services are essential to the delivery of the activities of the other Major Programmes and the effects of improvements to management services will be realised across the Agency. The effectiveness of this internal client orientation in achieving concrete results is determined through close monitoring and feedback from all Departments inside the Secretariat.

53. Integrated management of maintenance and operation will enable greater efficiency in managing the increased number of facilities at the Seibersdorf site. Implementation of the Agency-wide Information System for Programme Support (AIPS) continues to generate efficiencies through automation of processes. Efforts continued to increase efficiency and rationalize work, and to reduce the amount of material printed, while continuing to meet Member State needs. The work of this Major Programme will continue to focus on providing innovative solutions and achieving greater efficiency and accountability across the Agency.

54. The Agency will continue to strengthen accountability, efficiency and effectiveness through the activities of the Office of Internal Oversight Services (OIOS) — including audits, evaluations, investigations and the provision of advisory support to senior management and Member States — as well as through the Secretariat's support to the External Auditors.

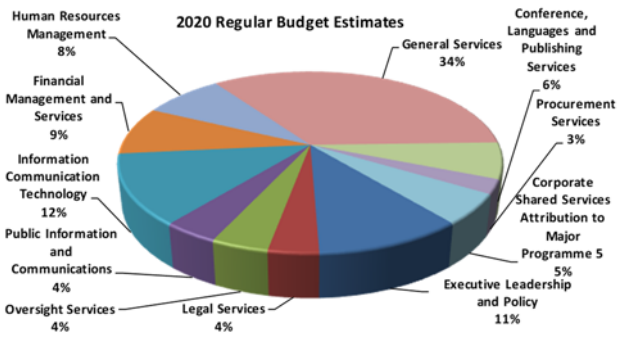


Table 8. Major Programme 5 – Policy, Management and Administration Services

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

Subprogramme / Programme			2019 Budget	2020			2021		
				Estimates at 2019 prices	Variance over 2019		Preliminary Estimates at 2019 prices	Variance over 2020	
					EUR	%		EUR	%
5.0.1	Executive Leadership and Policy	▬	8 338 509	8 397 539	*59 030*	*0.7%*	8 397 538	*(1)*	*(0.0%)*
5.0.2	Legal Services	▬	2 855 643	2 855 631	*(12)*	*(0.0%)*	2 855 631	-	-
5.0.3	Oversight Services	▬	3 255 672	3 255 672	*0*	*0.0%*	3 255 672	-	-
5.0.4	Public Information and Communications	▬	3 178 382	3 167 381	*(11 000)*	*(0.3%)*	3 167 382	*1*	*0.0%*
5.0.5	Information Communication Technology	↑	9 389 331	9 975 862	*586 531*	*6.2%*	9 926 290	*(49 572)*	*(0.5%)*
5.0.6	Financial Management and Services	▬	6 998 634	6 890 001	*(108 633)*	*(1.6%)*	6 976 103	*86 102*	*1.2%*
5.0.7	Human Resources Management	▬	6 464 917	6 464 935	*18*	*0.0%*	6 464 921	*(14)*	*(0.0%)*
5.0.8	General Services	↓	28 435 064	27 526 387	*(908 678)*	*(3.2%)*	27 489 870	*(36 516)*	*(0.1%)*
5.0.9	Conference, Languages and Publishing Services	↑	5 025 426	5 158 854	*133 427*	*2.7%*	5 158 854	-	-
5.0.10	Procurement Services	▬	2 032 011	2 031 971	*(39)*	*(0.0%)*	2 031 971	-	-
5.0.11	Corporate Shared Services Attribution to Major Programme 5	↑	4 004 683	4 292 440	*287 757*	*7.2%*	4 292 452	*12*	*0.0%*
Total for Policy, Management and Administration Services		▬	**79 978 272**	**80 016 672**	***38 400***	***0.0%***	**80 016 684**	***12***	***0.0%***

Major Programme 6: Management of Technical Cooperation for Development

55. Major Programme 6 enables the development, implementation and management of technical cooperation projects within the framework of the biennial technical cooperation programme (TCP). The TCP will continue to serve as the major vehicle for the transfer of nuclear science and technology and to build capacity — with an emphasis on human resource development — in nuclear applications in Member States, contributing to Member State efforts to achieve the SDGs. The Major Programme also supports Member States in their activities related to addressing climate change. The Major Programme will continue to facilitate partnership building, support knowledge sharing, and build and reinforce scientific networks.

56. The TCP consists of national, regional and interregional projects funded from the Technical Cooperation Fund, extrabudgetary resources and in-kind contributions. Technical cooperation projects are developed through a consultative process that address national development priorities outlined in Country Programme Frameworks (CPFs) and national development plans, as well as issues of common interest and needs identified through various regional frameworks.

57. Under the 2020–2021 TCP, a total of 142 Member States and Territories (including 35 least developed countries) will have a national TCP.

58. For planning purposes, it is assumed that the overall rate of attainment of the Technical Cooperation Fund will reach 94%. The TCP for the 2020–2021 project cycle was formulated with an emphasis on the following:

- Ensuring adequate support to the growing number of Member States that participate in the TCP and to the increasing needs of Member States to use nuclear technology for sustainable development, including work toward achieving SDGs 2, 3, 6, 7, 9, 13, 14, 15 and 17;
- Providing support to those Member States that require assistance with building and expanding cancer care capacity by integrating radiotherapy, diagnostic imaging and nuclear medicine services into a comprehensive cancer control programme;
- Ensuring the Agency's continued capability to deliver the programme and to swiftly and adequately respond to Member State emerging and urgent requests for support through the TCP;
- Enhancing the effectiveness, efficiency and quality of the TCP by further strengthening the results-based approach and enhancing in-house coordination with technical departments;
- Strengthening partnerships, including public to private partnership and resource mobilization;
- Enhancing the visibility of the TCP through promotion and outreach efforts;
- Further advancing gender mainstreaming in the TCP.

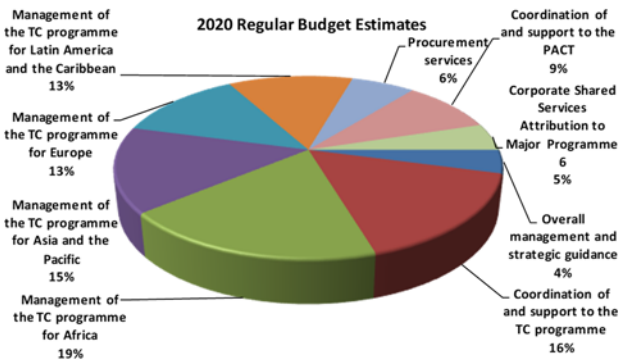


Table 9. Major Programme 6 – Management of Technical Cooperation for Development

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

Subprogramme / Programme		2019 Budget	2020			2021		
			Estimates at 2019 prices	Variance over 2019		Preliminary Estimates at 2019 prices	Variance over 2020	
				EUR	%		EUR	%
6.0.1.001 Overall management and strategic guidance		1 094 997	1 089 509	(5 488)	(0.5%)	1 089 509	-	-
6.0.1.002 Coordination of and support to the TC programme		4 386 362	4 261 533	(124 829)	(2.8%)	4 261 529	(4)	(0.0%)
6.0.1.003 Management of the TC programme for Africa		4 716 920	4 902 796	185 877	3.9%	4 902 796	-	-
6.0.1.004 Management of the TC programme for Asia and the Pacific		3 895 260	3 977 724	82 464	2.1%	3 977 724	-	-
6.0.1.005 Management of the TC programme for Europe		3 338 299	3 362 325	24 026	0.7%	3 362 325	-	-
6.0.1.006 Management of the TC programme for Latin America and the Caribbean		3 184 513	3 286 431	101 917	3.2%	3 286 431	-	-
6.0.1.007 Procurement services		1 676 283	1 672 469	(3 814)	(0.2%)	1 672 469	-	-
6.0.1.008 Coordination of and support to the PACT		2 434 021	2 465 796	31 775	1.3%	2 465 796	-	-
6.0.1.009 Corporate Shared Services Attribution to Major Programme 6		1 214 390	1 265 992	51 603	4.2%	1 265 997	4	0.0%
Total for Management of Technical Cooperation for Development		**25 941 045**	**26 284 576**	**343 531**	**1.3%**	**26 284 576**	**0**	**0.0%**

I.4 Major Capital Investments

Major Capital Investment Plan

59. The Major Capital Investment Plan (MCIP) outlines the Agency's major capital projects for the next ten years. It is updated annually and is based on Agency requirements for maintaining an adequate, up to date and well-functioning infrastructure. An overview of the plan with annual projections is presented in Table 10.

60. For 2020, major capital investment requirements total €24.3 million. The breakdown is shown in the table below.

Major Programme/Major Capital Item (in € millions)	2020
1. Nuclear Power, Fuel Cycle and Nuclear Science	
Integrated Information Management Systems Upgrade	1.1
Neutron Science Facility based on DD and DT Neutron Generators	0.2
Major Programme 1	**1.2**
2. Nuclear Techniques for Development and Environmental Protection	
ReNuAL+	4.1
Calibration and Auditing Services for the Dosimetry Laboratory (Seibersdorf)	0.2
Major Programme 2	**4.3**
3. Nuclear Safety and Security	
Enhancing Radiation Safety through Efficient and Modern Dosimetry (RADSED)	0.5
Seibersdorf Infrastructure and Common Facilities*	1.7
Major Programme 3	**2.2**
4. Nuclear Verification	
Develop and Implement a Safeguards Approach for J-MOX	3.1
Develop and implement SG Approaches for a SF EPGR	2.4
Major Programme 4	**5.4**
5. Policy, Management and Administration Services	
Provision for IT Infrastructure and Information Security Investment	8.4
Seibersdorf Infrastructure and Common Facilities*	2.7
Major Programme 5	**11.2**
Major Capital Investment Plan Total	**24.3**

* Jointly financed by Major Programmes 3 and 5.

61. The Major Capital Investment Fund (MCIF) is a reserve fund established in accordance with Financial Regulation 4.06 to help provide for those Agency major infrastructure requirements that are included in the MCIP. It provides an opportunity to fund capital requirements that could otherwise face continued deferral or require substantial increases in annual Member States' contributions.

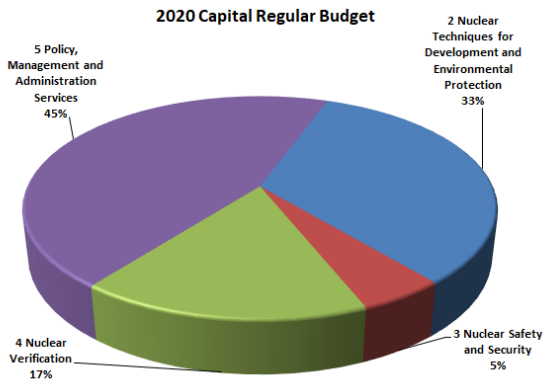
The MCIF is reviewed by the Board of Governors in the framework of the established Programme and Budget approval process.

62. As indicated in document GC(53)/5, the MCIF is funded by the entire amount appropriated for the capital portion of the Regular Budget, unspent budgetary balances from the operational Regular Budget in prior years, if any, and any other source as the Board of Governors may determine.

63. Since the inception of the MCIF in 2009,[3] unspent balances from past operational Regular Budget appropriations have been transferred to the MCIF and reported in the respective financial statements in accordance with Financial Regulation 7.02(b)(4). In the same manner, unspent budgetary balances from the 2018–2019 operational Regular Budget will also be transferred to the MCIF.

Capital Investments

64. The Director General is proposing, as in the 2019 Budget, to offset €2.0 million in 2020 capital Regular Budget funding by the same amount from the unspent balances of prior years' operational Regular Budget appropriations previously transferred to the MCIF. The same arrangement is expected to continue in 2021.



65. A total of €8.0 million of MCIF funding, before price adjustment, will be distributed to the following projects:

[3] See documents GOV/2009/1 and GOV/2009/52/Rev.1.

- Renovation of the Nuclear Applications Laboratories (ReNuAL+) — Major Programme 2 — €2.0 million.
- Enhancing Radiation Safety through Efficient and Modern Dosimetry (RADSED) — Major Programme 3 — €0.3 million.
- Develop and Implement a Safeguards Approach for J-MOX — Major Programme 4 — €1.0 million.
- Seibersdorf Infrastructure and Common Facilities — Major Programme 5 — €1.0 million.
- Provision for IT Infrastructure and Information Security Investment — Major Programme 5 — €3.7 million.

66. While this document presents the MCIP for the period 2020–2029, a significant amount of capital investments proposed for 2020 remains unfunded. Currently, a total of €16.2 million in capital requirements remains unfunded for 2020, while investments unfunded for 2021 amount to €12.1 million. It is hoped that these requirements will be funded through extrabudgetary contributions. The unfunded requirements for both 2020 and 2021 are presented in Table 12.

Overview by Major Programme

67. The following paragraphs provide an overview of those major capital investments that are part of the MCIP for 2020–2029.

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

Integrated Information Management Systems Upgrade

68. Major Programme 1 maintains a set of information systems for the collection and timely dissemination of validated, authoritative nuclear data, information and knowledge resources on peaceful uses of nuclear energy. However, these systems are currently at the end of their life cycle and need to be updated to ensure the integrity of the information and their access by Member States. The objective of this project is to update and secure these information systems, and to ensure their continuity.

69. The NE integrated information management system comprises several information systems, which include:

- Advanced Reactors Information System (ARIS);
- International Catalogue of Sealed Radioactive Sources and Devices (ICSRS);
- Integrated Nuclear Fuel Cycle Information System (INFCIS);
- International Nuclear Information System (INIS);
- Net Enabled Waste Management Database (NEWMDB);
- Power Reactor Information System (PRIS);
- Radioactive Waste Management Registry (RWMR);
- Research Reactor Database (RRDB).

70. Efforts within this project will focus on modernization, security upgrades and greater integration of the information systems to reduce operational and maintenance costs. This will be accomplished by harmonizing the IT architecture of each system and standardizing the development framework elements. These systems will become more closely integrated, and duplication and inconsistencies in data will be eliminated.

71. The overall project needs for the period 2020–2029 are estimated at €5.6 million and are currently unfunded.

Neutron Science Facility based on DD and DT Neutron Generators

72. The Nuclear Science and Instrumentation Laboratory (NSIL) helps Member States to establish, operate and maintain various nuclear instrumentation and spectrometry techniques in support of a wide range of applications in areas such as health care, food, agriculture, the environment, forensics, cultural heritage and materials science. The in-house laboratory's

facilities are currently limited to X-ray based analytical techniques and gamma spectrometry. These will be expanded to neutron based techniques based on deuterium-deuterium (DD) and deuterium-tritium (DT) neutron generators. The following neutron techniques will be developed (including capacity building in these areas):

- Neutron activation analysis;
- Neutron radiography;
- Non-destructive testing using active interrogation;
- Demonstration of radiotracer production and usage;
- Radiation protection with neutron fields;
- Neutron instrumentation;
- Operation and maintenance of DD and DT neutron generators.

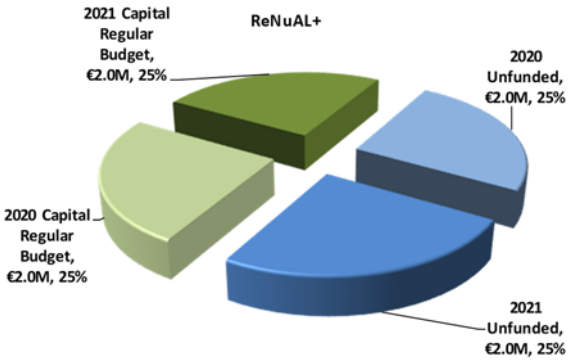
73. The overall project needs for the period 2020–2022 are estimated at €0.5 million and are currently unfunded.

Major Programme 2 – Nuclear Techniques for Development and Environmental Protection

Renovation of the Nuclear Applications Laboratories (ReNuAL+)

74. In 2020–2021, the follow-up to ReNuAL (referred to as ReNuAL+) project will focus on completion of the furnishing and equipment of buildings already built under the project, transition of laboratories into these buildings, and carrying out capacity enhancement activities in existing laboratory space. These activities will represent the completion of the overall ReNuAL initiative and will result in significantly enhanced capabilities to ensure that the Agency's laboratories in Seibersdorf can continue to meet the needs of Member States.

75. The overall project needs for the period 2020–2021 are estimated at €8.1 million, €2.0 million of which will be offset from the MCIF for each year of the biennium.



Calibration and Auditing Services for the Dosimetry Laboratory (Seibersdorf)

76. The Agency's Dosimetry Laboratory supports Member States by providing dosimetry of various types of diagnostic and treatment equipment. A key element of quality assurance is an independent verification or audit of radiation dose delivery at a radiotherapy centre. In response to requests by Member States, the Agency provides dose quality audits to radiotherapy centres in Member States. This project aims at acquiring the following types of equipment to ensure the continuity of the delivery of these services:

- The Dosimetry Laboratory (DOL) X-ray system is used for dosimetry calibration services provided to Member States. To be able to continue providing these services, the equipment needs to be replaced at the end of its useful lifetime (approximately 15 years). Its replacement is planned for 2020.
- The ^{60}Co unit (X-200) is used for dosimetry calibration and audit services for Member States. The ^{60}Co source should be replaced at regular intervals, depending on the source strength at the installation and typically not exceeding ten years. Its next replacement is included under this new project for 2025.
- The DOL high dose rate brachytherapy system contains two different types of source, namely ^{60}Co and ^{192}Ir. To continue to provide dosimetry calibration services to Member States, the system will need to be replaced owing to anticipated wear and tear of equipment. The replacement for this system is planned for 2027.

- The Agency's linac will be used for dosimetry standards, audit services and education and training of medical physicists and secondary standards dosimetry laboratory officers in Member States as of 2019. To continue to provide these services, the system will need to be replaced by 2028 owing to anticipated wear and tear of the mechanical systems, lack of availability of spare parts and the need to replace those hardware and software components having an impact on the latest developments in dosimetry.

77. The overall project needs for the period 2020–2028 are estimated at €3.7 million and are currently unfunded.

Major Programme 3 – Nuclear Safety and Security

Enhancing Radiation Safety through Efficient and Modern Dosimetry (RADSED)

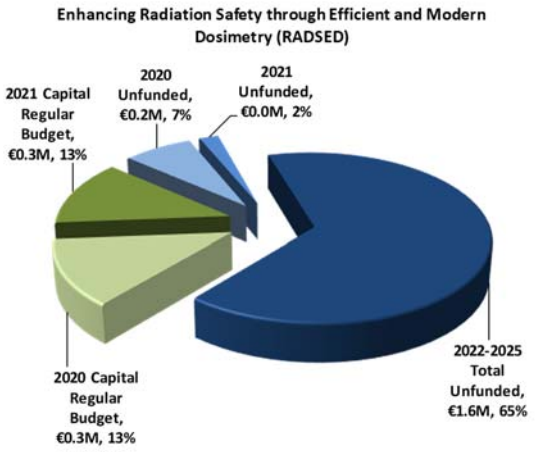
78. This project, over a period of ten years, aims at implementing the best of dose assessment technologies in order to compare their efficiencies to the endpoint of biodosimetry. This endpoint has the potential to include other modalities such as those currently in use and those in advanced stages of development. It will be determined which modalities can be replaced by biodosimetry and which can be partially replaced. Programmes will be implemented to better and more accurately:

- Assess doses to Agency staff and participants in Agency-sponsored activities;
- Provide recommendations to Member States on accurate and efficient modalities while understanding the trade-offs depending on radiation exposure types and levels;
- Provide recommendations for non-routine planned operations regarding different dosimetry modalities.

79. Major actions taken to date include: procurement of a radiophotoluminescent glass based dosimetry system for replacement of external whole body thermoluminescence dosimetry; procurement of an inductively coupled plasma mass spectrometry (ICP-MS) system for rapid bioassay sample screening; implementation of numerical methods and voxelized phantoms for flexible calibration of the whole body counter; and procurement of electronically cooled high purity beryllium window germanium detectors for in vivo dosimetry.

80. Plans for 2020–2021 include procurement of a neutron dosimetry system incorporating significant improvements in the precision, efficiency and robustness of measurements; implementation of ICP-MS techniques combined with procurement and implementation of a dosimetry system based on personal air sampling with windowless gas flow counting to address detection challenges in actinide based exposures; and implementation of sensitive self-service whole body contamination friskers at the Vienna International Centre and at the Agency's laboratories in Seibersdorf for the rapid assessment of external contamination of personnel. Plans for future biennia include procurement of a laboratory information management system and modern dose registry system and the implementation of retrospective and accident dosimetry for assessment of exposures in unplanned and unmonitored situations.

81. The overall project needs for the period 2020–2025 are estimated at €2.4 million. For 2020–2021, requirements of €0.8 million are presented, €0.3 million of which will be offset from the MCIF for each year of the biennium.



Radiation Safety Technical Services

82. The Division of Radiation, Transport and Waste Safety in Major Programme 3 provides direct support to Agency managers and radiation protection officers to meet their regulatory obligations to monitor and evaluate doses to staff and doses to participants in Agency sponsored activities worldwide. Monitoring is required routinely and for emergency purposes. This project aims to improve the equipment replacement planning process for radiation monitoring and protection services by providing for the timely replacement of essential equipment of a significant value before it exceeds its service life and either fails or becomes non-functional. It also provides for a backup equipment programme as required by the ISO/IEC-17025 accreditation.

83. This project is required to ensure that dose assessment capabilities are consistently available for routine or emergency monitoring needed by the Agency for staff or participants in Agency sponsored activities to ensure they are being adequately protected. The laboratory's ISO/IEC-17025 accreditation, and its being a model for Member States, are dependent on having a replacement plan in place for when equipment fails.

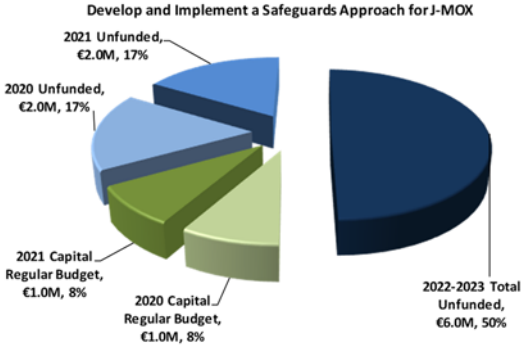
84. The overall project needs of €0.6 million for the period 2023–2026 are currently unfunded.

Major Programme 4 – Nuclear Verification

Develop and Implement a Safeguards Approach for J-MOX

85. Japan Nuclear Fuel Limited is building a large scale plant to produce mixed uranium and plutonium oxide fuel for light water reactors at its site in Rokkasho-mura. Construction started in 2010, was suspended in 2011, and resumed in 2014. According to the latest officially supplied information, the construction and commissioning of the facility will be completed by the end of 2022. Although there are still uncertainties about that deadline, the development, manufacture, testing and installation of equipment and software are necessary in order to have all safeguards systems available for use for the operation of the facility. The relevant plans include funding from the MCIF for major equipment and software required for safeguarding the plant.

86. The overall project needs for the period 2020–2023 are estimated at €12.1 million. For 2020–2021, requirements of €6.1 million are presented, €1.0 million of which will be offset from the MCIF for each year of the biennium.

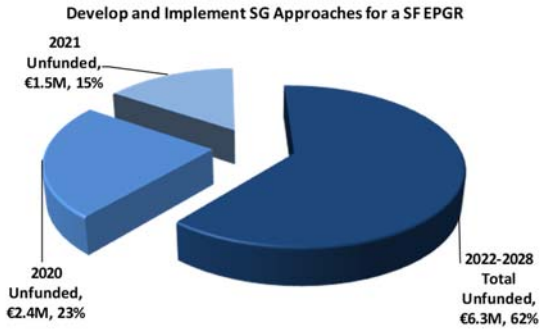


Develop and Implement Safeguards Approaches for a Spent Fuel Encapsulation Plant and Geological Repository (EPGR) in Finland and Sweden

87. Finland and Sweden are each planning to construct an encapsulation plant and geological repository (EPGR) to permanently store their spent fuel. In Finland, the construction licence was granted in 2015 and operation is planned to commence in 2024. In Sweden, it is planned to begin operation around 2030. The construction of EPGRs represents new safeguards challenges, as nuclear material is intended to remain there permanently and traditional access for verification will not be possible. Planning for equipment implementation is also challenging, as equipment development over time needs to be carefully considered.

88. The project coordinates the development of specific safeguards approaches for EPGRs, assesses the existing verification methods, identifies the need for new equipment and techniques for safeguarding these facilities and implements optimized safeguards measures at the time these facilities become operational.

89. The overall project needs of €10.2 million for the period 2020–2028 remain unfunded.



Major Programme 5 – Policy, Management and Administration Services

Provision for IT Infrastructure and Information Security Investment

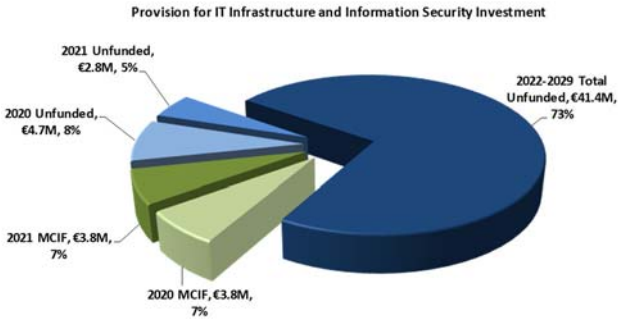
90. Secure, available and reliable information and communication technology (ICT) infrastructure and support systems are essential to programme delivery. This critical project is to cover the ICT costs associated with maintaining up to date ICT infrastructure and services. This project includes replacement of equipment in the areas of telecommunications, data processing, storage, network and applications to ensure that they remain fit for purpose, vendor supported and secure. The project also includes vital upgrades to the data centres in the Vienna International Centre and Seibersdorf. The anticipated measures are based on the industry best practice life cycles of standard ICT equipment.

91. The project also includes disaster recovery infrastructure. The Agency needs to maintain a strong disaster recovery infrastructure and capability. Funding would be used to upgrade critical capabilities to ensure that they remain viable and vendor supported.

92. A third component relates to the need for future upgrades of common support systems. An upgrade of Oracle eBusiness Suite (the platform for AIPS) will be required in the future, as extended support for the Agency's current version of Oracle eBusiness Suite will end in 2019. A new version has already been released, and several technology changes need to be analysed and tested as part of the upgrade. The ten year plan foresees an upgrade every five years, starting in 2018.

93. A fourth component is related to a new data integration framework. The benefits of this investment in the Agency's application data integration architecture include protection of sensitive data in the Agency, improving the accuracy of the data and increasing the efficiency of the Agency's application data integration technology investment.

94. The overall project needs for the period 2020–2029 are estimated at €56.4 million. For 2020–2021, requirements of €15.0 million are presented, which will be offset by €3.8 million from the MCIF for each year of the biennium.



Jointly Financed Project (Major Programmes 3 and 5)

Seibersdorf Infrastructure and Common Facilities

95. The objective of this project is to ensure the safety and security of the Seibersdorf site through fitting and upgrading of the physical safety and security as well as integration of surveillance and other security systems. The project also includes investment in infrastructure, related to decommissioning of obsolete buildings; the replacement of non-laboratory-specific equipment in line with standard life cycles required to support site infrastructure and buildings; and continued investment in physical security, including the renewal and integration of existing physical security systems.

96. One component of the project addresses enhancement of common facilities, including a cafeteria and a visitor outreach point and facilities for nuclear security training at Seibersdorf.

97. The total project needs for the period 2020–2029 are estimated at €16.7 million. It is proposed that these needs be co-financed by Major Programmes 3 and 5, providing €1.7 million and €15.0 million, respectively. The 2020–2021 funding requirement for the project is €7.9 million, €1.0 million of which will be offset from the MCIF for each year of the biennium.

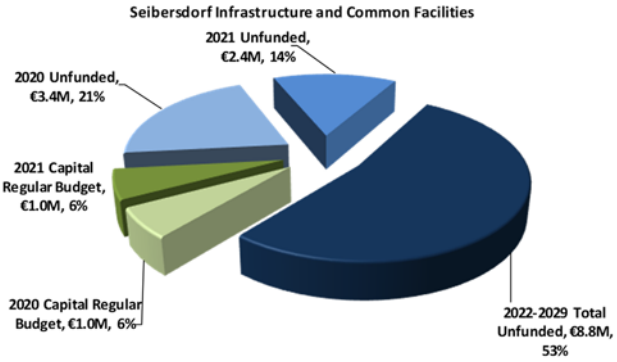


Table 10. Major Capital Investment Plan 2020–2029

Major Programme/Major Capital Item	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	Total
1. Nuclear Power, Fuel Cycle and Nuclear Science											
Integrated Information Management Systems Upgrade	1 052 299	1 108 743	340 695	-	-	-	-	-	1 562 209	1 562 209	5 626 154
Neutron Science Facility based on DD and DT Neutron Generators	193 230	162 720	122 040	-	-	-	-	-	-	-	477 990
Major Programme 1	**1 245 529**	**1 271 463**	**462 735**	**-**	**-**	**-**	**-**	**-**	**1 562 209**	**1 562 209**	**6 104 144**
2. Nuclear Techniques for Development and Environmental Protection											
ReNuAL+	4 068 000	4 068 000	-	-	-	-	-	-	-	-	8 136 000
Calibration and Auditing Services for the Dosimetry Laboratory (Seibersdorf)	203 400	-	-	-	-	203 400	-	254 250	3 051 000	-	3 712 050
Major Programme 2	**4 271 400**	**4 068 000**	**-**	**-**	**-**	**203 400**	**-**	**254 250**	**3 051 000**	**-**	**11 848 050**
3. Nuclear Safety and Security											
Enhancing Radiation Safety through Efficient and Modern Dosimetry (RADSED)	481 865	353 569	455 980	362 795	388 270	372 740	-	-	-	-	2 415 219
Radiation Safety Technical Services	-	-	-	266 535	-	-	305 493	-	-	-	572 028
Seibersdorf Infrastructure and Common Facilities*	1 728 900	-	-	-	-	-	-	-	-	-	1 728 900
Major Programme 3	**2 210 765**	**353 569**	**455 980**	**629 331**	**388 270**	**372 740**	**305 493**	**-**	**-**	**-**	**4 716 147**
4. Nuclear Verification											-
Develop and Implement a Safeguards Approach for J-MOX	3 051 000	3 051 000	3 051 000	2 949 300	-	-	-	-	-	-	12 102 300
Develop and Implement SG Approaches for a SF EPGR	2 384 466	1 530 528	1 187 107	-	-	853 938	1 530 528	1 530 528	1 187 107	-	10 204 204
Major Programme 4	**5 435 466**	**4 581 528**	**4 238 107**	**2 949 300**	**-**	**853 938**	**1 530 528**	**1 530 528**	**1 187 107**	**-**	**22 306 504**
5. Policy, Management and Administration Services											
Provision for IT Infrastructure and Information Security Investment	8 429 913	6 561 684	3 630 690	6 183 360	5 247 720	7 607 160	3 793 410	4 962 960	5 146 020	4 861 260	56 424 177
Seibersdorf Infrastructure and Common Facilities*	2 735 730	3 406 950	1 703 475	1 347 525	1 144 125	991 575	915 300	915 300	915 300	915 300	14 990 580
Major Programme 5	**11 165 643**	**9 968 634**	**5 334 165**	**7 530 885**	**6 391 845**	**8 598 735**	**4 708 710**	**5 878 260**	**6 061 320**	**5 776 560**	**71 414 757**
Major Capital Investment Plan Total	**24 328 803**	**20 243 194**	**10 490 988**	**11 109 516**	**6 780 115**	**10 028 813**	**6 544 731**	**7 663 038**	**11 861 636**	**7 338 769**	**116 389 602**

* Jointly financed by Major Programmes 3 and 5.

Table 11. Capital Regular Budget Details 2020–2021

Major Programme / Major Capital Item	2019 Budget	2020 Estimates at 2019 Prices	2020 Estimates at 2020 Prices	2021 Preliminary Estimates at 2020 Prices	2021 Preliminary Estimates at 2021 Prices
2. Nuclear Techniques for Development and Environmental Protection					
ReNuAL+	2 051 956	2 000 000	2 034 000	2 034 000	2 068 578
Major Programme 2	**2 051 956**	**2 000 000**	**2 034 000**	**2 034 000**	**2 068 578**
3. Nuclear Safety and Security					
Enhancing Radiation Safety through Efficient and Modern Dosimetry (RADSED)	308 146	300 000	305 100	305 100	310 287
Major Programme 3	**308 146**	**300 000**	**305 100**	**305 100**	**310 287**
4. Nuclear Verification					
Develop and Implement a Safeguards Approach for J-MOX	1 027 152	1 000 000	1 017 000	1 017 000	1 034 289
Major Programme 4	**1 027 152**	**1 000 000**	**1 017 000**	**1 017 000**	**1 034 289**
5. Policy, Management and Administration Services					
Provision for IT Infrastructure and Information Security Investment	4 044 925	3 700 000	3 762 900	3 762 900	3 826 869
Seibersdorf Infrastructure and Common Facilities*	782 690	1 000 000	1 017 000	1 017 000	1 034 289
Major Programme 5	**4 827 614**	**4 700 000**	**4 779 900**	**4 779 900**	**4 861 158**
Major Capital Investment Fund	**8 214 868**	**8 000 000**	**8 136 000**	**8 136 000**	**8 274 312**
Capital Carry Forward	**(2 000 000)**	**(2 000 000)**	**(2 034 000)**	**(2 034 000)**	**(2 068 578)**
Capital Regular Budget	**6 214 868**	**6 000 000**	**6 102 000**	**6 102 000**	**6 205 734**

* Jointly financed by Major Programmes 3 and 5.

98. Table 12 lists the 2020–2021 capital needs that will not be funded within the MCIF. It is hoped that these requirements will attract extrabudgetary pledges by Member States.

Table 12. Unfunded 2020–2021 Capital Needs

Major Programme / Major Capital Item	2020	2021
1. Nuclear Power, Fuel Cycle and Nuclear Science		
Integrated Information Management Systems Upgrade	1 052 299	1 108 743
Neutron Science Facility based on DD and DT Neutron Generators	193 230	162 720
Major Programme 1	**1 245 529**	**1 271 463**
2. Nuclear Techniques for Development and Environmental Protection		
ReNuAL+	2 034 000	2 034 000
Calibration and Auditing Services for the Dosimetry Laboratory (Seibersdorf)	203 400	-
Major Programme 2	**2 237 400**	**2 034 000**
3. Nuclear Safety and Security		
Enhancing Radiation Safety through Efficient and Modern Dosimetry (RADSED)	176 765	48 469
Seibersdorf Infrastructure and Common Facilities*	1 728 900	-
Major Programme 3	**1 905 665**	**48 469**
4. Nuclear Verification		
Develop and Implement a Safeguards Approach for J-MOX	2 034 000	2 034 000
Develop and Implement SG Approaches for a SF EPGR	2 384 466	1 530 528
Major Programme 4	**4 418 466**	**3 564 528**
5. Policy, Management and Administration Services		
Provision for IT Infrastructure and Information Security Investment	4 667 013	2 798 784
Seibersdorf Infrastructure and Common Facilities*	1 718 730	2 389 950
Major Programme 5	**6 385 743**	**5 188 734**
Unfunded Capital Needs Total	**16 192 803**	**12 107 194**

* Jointly financed by Major Programmes 3 and 5.

I.5 Draft Resolutions for 2020

99. This section presents the draft resolutions for 2020, including the appropriations for the 2020 Regular Budget, the allocation for the Technical Cooperation Fund (TCF) in 2020 and the Working Capital Fund (WCF) in 2020.

A. The Regular Budget

100. Regular Budget appropriations for 2020 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 3–5 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.

101. 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 2019.

B. Technical Cooperation Programme

102. The technical cooperation activities of the Agency are financed from the TCF and extrabudgetary contributions. The TCF mainly comprises 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 amounts to €88 061 000 for 2020 and to €89 558 000 for 2021.

103. The forecast of the resources for the technical cooperation programme for 2020 amounts to €101 777 340, comprising €82 777 340 for estimated core project funding, €2 000 000 for National Participation Costs (to be added to the estimated core funding) and €17 000 000 for the estimated implementation levels of extrabudgetary activities.

104. The forecast for 2021 amounts to €102 184 520, comprising €84 184 520 for estimated core project funding, €1 000 000 for National Participation Costs (to be added to the estimated core funding) and €17 000 000 for the estimated implementation levels of extrabudgetary activities.

105. These amounts do not constitute a target for, or limitation on, funds and do not in any way prejudge the technical cooperation programme for 2020 and 2021.

C. Working Capital Fund

106. During its 62nd regular session, the General Conference approved a continuation of the WCF at the level of €15 210 000 for 2019. No change in this level is proposed for 2020, 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 2020

The General Conference,

Accepting the recommendations of the Board of Governors relating to the Regular Budget of the Agency for 2020,[1]

1. Appropriates, on the basis of an exchange rate of US $1.00 to €1.00, an amount of €380 563 065 for the operational portion of the Regular Budget expenses of the Agency in 2020 as follows:[2]

		€
1.	Nuclear Power, Fuel Cycle and Nuclear Science	41 412 691
2.	Nuclear Techniques for Development and Environmental Protection	42 114 082
3.	Nuclear Safety and Security	37 089 180
4.	Nuclear Verification	148 709 390
5.	Policy, Management and Administration Services	81 376 955
6.	Management of Technical Cooperation for Development	26 731 414
	Subtotal of Major Programmes	377 433 712
7.	Reimbursable work for others	3 129 353
	TOTAL	380 563 065

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, at an exchange rate of US $1.00 to €1.00, to €376 883 712 (€323 455 151 plus US $53 428 561), in accordance with the scale of assessment fixed by the General Conference in resolution GC(63)/RES/ ;

[1] Document GC(63)/2.

[2] Appropriation Sections 1–6 represent the Agency's Major Programmes.

3. Appropriates, on the basis of an exchange rate of US $1.00 to €1.00, an amount of €6 102 000 for the capital portion of the Regular Budget expenses of the Agency in 2020 as follows:[3]

		€
1.	Nuclear Power, Fuel Cycle and Nuclear Science	-
2.	Nuclear Techniques for Development and Environmental Protection	2 034 000
3.	Nuclear Safety and Security	305 100
4.	Nuclear Verification	1 017 000
5.	Policy, Management and Administration Services	2 745 900
6.	Management of Technical Cooperation for Development	-
	TOTAL	6 102 000

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, at an exchange rate of US $1.00 to €1.00, to €6 102 000 (€6 062 674 plus US $39 326), in accordance with the scale of assessment fixed by the General Conference in resolution GC(63)/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 2020, 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 2020; 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.

[3] See footnote 2.

ATTACHMENT

A.1. APPROPRIATIONS FOR THE OPERATIONAL PORTION OF THE REGULAR BUDGET IN 2020

ADJUSTMENT FORMULA IN EUROS

		€		US$
1.	Nuclear Power, Fuel Cycle and Nuclear Science	35 156 085	+ (	6 256 606 /R)
2.	Nuclear Techniques for Development and Environmental Protection	37 344 609	+ (	4 769 473 /R)
3.	Nuclear Safety and Security	30 375 340	+ (	6 713 840 /R)
4.	Nuclear Verification	125 309 895	+ (	23 399 495 /R)
5.	Policy, Management and Administration Services	73 030 601	+ (	8 346 354 /R)
6.	Management of Technical Cooperation for Development	22 788 621	+ (	3 942 793 /R)
	Subtotal of Major Programmes	324 005 151	+ (	53 428 561 /R)
7.	Reimbursable work for others	3 129 353	+ (	- /R)
	TOTAL	327 134 504	+ (	53 428 561 /R)

Note: R is the average United Nations dollar to euro exchange rate which will be experienced during 2020.

ATTACHMENT

A.2. APPROPRIATIONS FOR THE CAPITAL PORTION OF THE REGULAR BUDGET IN 2020

ADJUSTMENT FORMULA IN EUROS

		€	US$
1.	Nuclear Power, Fuel Cycle and Nuclear Science	- + (	- /R)
2.	Nuclear Techniques for Development and Environmental Protection	1 994 674 + (	39 326 /R)
3.	Nuclear Safety and Security	305 100 + (	- /R)
4.	Nuclear Verification	1 017 000 + (	- /R)
5.	Policy, Management and Administration Services	2 745 900 + (	- /R)
6.	Management of Technical Cooperation for Development	- + (	- /R)
	TOTAL	6 062 674 + (	39 326 /R)

Note: R is the average United Nations dollar to euro exchange rate which will be experienced during 2020.

B. TECHNICAL COOPERATION FUND ALLOCATION FOR 2020

The General Conference,

(a) Noting the decision of the Board of Governors of June 2019 to recommend the Technical Cooperation Fund target of €88 061 000 for voluntary contributions to the Agency's Technical Cooperation Fund for 2020; and

(b) Accepting the foregoing recommendation of the Board,

1. Decides that for 2020 the target figure for voluntary contributions to the Technical Cooperation Fund shall be €88 061 000;

2. Allocates, in euros, contributions of €88 061 000 for the Agency's technical cooperation programme for 2020; and

3. Urges all Member States to make voluntary contributions for 2020 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 2020

The General Conference,

Accepting the recommendations of the Board of Governors relating to the Agency's Working Capital Fund for 2020,

1. Approves a level of €15 210 000 for the Agency's Working Capital Fund for 2020;

2. Decides that the Fund shall be financed, administered and used in 2020 in accordance with the relevant provisions of the Agency's Financial Regulations;[4]

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.

[4] Document INFCIRC/8/Rev.4.

PART II

The Agency's Programme and Budget 2020–2021
Details by Major Programme

Major Programme 1
Nuclear Power, Fuel Cycle and Nuclear Science

Introduction

Major Programme 1 provides scientific and technical support to Member States through the provision of guidance, technical reports; publications, databases and e-learning, the provision of review services; coordinated research projects (CRP); the facilitation of discussions and the sharing of lessons learned on relevant topics; and the dissemination of information and knowledge. It also designs and, in partnership with Major Programme 6, delivers training in, and supports interested Member States to, build capacity and develop the infrastructure necessary to manage various phases of a nuclear programme.

For mitigating the effects of climate change, nuclear power could become an integral component in the national energy mix of Member States that opt for it, supporting energy security and the achievement of relevant SDGs, in particular SDG 7 "Affordable and Clean Energy" and SDG 13 "Climate Action". The Agency will continue to support interested Member States to assess their future energy needs and to evaluate and understand the potential for nuclear power to be part of their energy strategies. The Major Programme provides support for Member States considering, embarking on or expanding nuclear power programmes. It also supports Member States with operating nuclear power plants in the areas of performance; life management; and safe, secure, efficient and reliable long term operation. Support will continue to be provided for the development and deployment of small and medium sized or modular reactors and innovative reactor systems and associated fuel cycles, along with the non-electric applications of nuclear power and cogeneration technologies.

The Major Programme supports Member States in uranium exploration, mining and milling; and fuel cycle activities, including spent fuel integrity, design vulnerabilities, defueling and storage. Technical assistance will continue to be provided for radioactive waste management, decommissioning of nuclear facilities and management of disused radioactive sealed sources, as well as on-site and off-site remediation. The Major Programme will continue to support Member States with an interest in building, operating or accessing research reactors — including via the IAEA designated International Centre based on Research Reactors (ICERRs) scheme — and, upon request, to those transitioning away from the use of high enriched uranium in research reactors. Support will also continue in the field of nuclear knowledge management, including information management, dissemination and preservation.

The Agency will remain a reliable source of nuclear, atomic and molecular data. Training and facilitation of experiments using various types of particle accelerator and other nuclear instrumentation will continue. The Major Programme will continue to support Member States in their fusion research activities and exchange of knowledge, including cooperation with the International Thermonuclear Experimental Reactor. Collaboration 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, will focus more in the areas of relevance to the Agency such as basic nuclear sciences and nuclear energy.

Objectives:	
— *To expand and improve the use of nuclear technologies in support of sustainable development, advance nuclear science and technology, catalyse innovation, and build capacity to support the existing and expanded use of nuclear power and nuclear science applications.*	
Outcomes	**Performance Indicators**
• Increased Member States' use of Agency information and resources for lifecycle management of existing, expanded and new nuclear programmes, including fuel cycles, decommissioning, and environmental remediation and radioactive waste management.	• Number of Member States using Agency information and resources for managing the life cycle of their nuclear programmes.
• Improved Member States understanding of the potential role of nuclear technologies, including electrical and non-electrical applications of nuclear power, through the wide use of Agency tools, methodologies, information, databases, training and expertise.	• Number of Member States and other international organizations using the Agency's modelling and analysis tools for energy planning. • Number of Member States considering embarking on nuclear programmes using Agency's guidance publications, tools and services.

Outcomes	Performance Indicators
• Increased international cooperation in nuclear sciences for technological advancement.	• Number of Member States engaged in and contributing to the Agency's nuclear science activities.
Projects	
Title	**Main Planned Outputs**
1.0.0.001 Overall management, coordination and common activities	Programmatic and administrative guidance documents, internal reports, Agency policy and reporting documents, internal and external communications products, services for information gathering and sharing.

Programme 1.1 Nuclear Power

Programme 1.1 supports the operation of nuclear power plants in Member States in their effort for better performance and safe, secure, efficient and reliable long term operation. Support is provided to expanding nuclear programmes, including human resource development and the implementation of integrated management systems. The programme also continues to support Member States embarking on new nuclear power programmes by assisting them in building 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 and in particular the Department of Nuclear Safety and Security.

The programme provides a forum for technology users and holders to jointly consider innovations and supports Member States in their long term planning through the International Project on Innovative Nuclear Reactors and Fuel Cycles (INPRO). INPRO implements collaborative projects and provides services including scenario based nuclear energy system (NES) analysis and assessment of sustainability. Furthermore, the programme supports Member States' activities in research, innovation and technical advancement associated with advanced nuclear power reactors and their non-electric applications. This is implemented by coordinating research, promoting the exchange of information, supporting education and training, developing toolkits and analysing data and results for various advanced reactor technologies.

Lessons learned from reviews, assessment, evaluations: Member States operating nuclear facilities and Member States interested in expanding or starting nuclear power programmes are expecting that the Agency continues to disseminate good practices through new and updated publications, continues to support the exchange of information on technical engineering and human resource developments, and continues to provide tailored review and assistance services. Member States appreciate support including nuclear power plant life management, the Milestones approach to new nuclear power programmes, and the regional training workshop activities and services that INPRO provides. Member States have recommended that assistance and support should continue to be provided for development and deployment of evolutionary and innovative nuclear technologies and their non-electric applications, including support for reactor technology assessment.

Specific criteria for prioritization:

1. Activities supporting Member States' efforts for better performance and safe, secure, efficient and reliable long term operation of both existing and new nuclear power plants.
2. Activities supporting the development of nuclear infrastructure and human resource capacity building in Member States embarking on a nuclear power programme.
3. Activities to maintain and increase international dialogue and cooperation to promote long term nuclear energy strategies and innovations in nuclear energy related technology in support of nuclear energy systems sustainability.
4. Activities supporting Member States and stakeholders in development and deployment of advanced reactor technologies and related applications by sharing up to date information and providing methods and tools in support of the sustainable use of nuclear energy.

Programmatic changes and trends

Subprogramme 1.1.1 Strengthening Integrated Engineering Support for Nuclear Power Programmes continues its focus on existing nuclear power plants and new nuclear power projects. This includes support to Member States in plant life management for enhanced performance and safe, secure, efficient, reliable and economically sustainable long term operation of nuclear power plants. This subprogramme also assists Member States in their engineering support for all stages of nuclear projects, including Member States embarking on or expanding their nuclear power programme. To optimize the operating costs, Member States can benefit from operational efficiencies and effectiveness identified by the work of this subprogramme. Member States expanding nuclear

power programmes will also benefit from the subprogramme's collection and dissemination of good practices and lessons learned in the construction, commissioning, and operation of nuclear power plants.

Subprogramme 1.1.2 Management and Human Resource Development for Nuclear Power Programmes continues to focus its support on the management and human resource development in Member States operating nuclear power plants, and embarking on or expanding their nuclear power programmes. This includes the areas of the management system, human resource development and stakeholder involvement.

Subprogramme 1.1.3 Infrastructure and Planning for New Nuclear Power Programmes is the point of integration for such activities throughout Major Programme 1 and for their coordination across the Agency. Some of these activities are implemented in conjunction with technical staff from other sections. The current workload is mostly supported by extrabudgetary funds. In 2020–2021, the activities will be prioritized to support Member States progressing through Phase 2 and Phase 3 of the Milestones approach and those Member States expanding their nuclear power programmes. Efforts will be also enhanced towards improving the quality, consistency and effectiveness of Agency assistance to Member States that are embarking on, or expanding their nuclear power programmes.

Subprogramme 1.1.4 International Project on Innovative Nuclear Reactors and Fuel Cycles will continue to focus on national, regional and global nuclear energy sustainability issues and related cooperation among INPRO members. INPRO activities will continue to include assistance to Member States with nuclear energy system assessments (NESAs), nuclear energy scenario analysis, collaborative projects, and further development of tools for NESA and sustainable NES planning services. Provision of training services and guidance to Member States on the application of INPRO products will continue. The INPRO Strategic Plan 2018–2023, endorsed by the INPRO Steering Committee in 2017, will continue to be implemented in 2020–2021.

Subprogramme 1.1.5 Technology Development for Advanced Reactors and Non-Electric Applications of Nuclear Power supports the development and deployment of evolutionary and innovative nuclear power reactors and their non-electric applications. Deployment of advanced water-cooled reactors and non-electric applications of nuclear power, as well as development of fast reactors by Member States is expected to increase. Member State interest in small and medium sized or modular reactors, including high temperature gas cooled reactors, is increasing, and this subprogramme addresses specific development and deployment challenges and opportunities. The subprogramme will also assist Member States in developing and applying modelling and simulation tools validated by experimental data. Focus will continue on facilitating the deployment of non-electric applications and nuclear cogeneration for increasing the thermal efficiency of nuclear power plants.

Objectives, Outcomes and Performance Indicators by Programme

<table>
<tr><th colspan="2">Programme 1.1 Nuclear Power</th></tr>
<tr><td colspan="2">Objectives:</td></tr>
<tr><td colspan="2">— To support Member States with existing nuclear power plants to enhance operating performance and safe, secure, efficient and reliable long term operation, including development of human resource capability, leadership and management systems.
— To support Member States embarking on new nuclear power programmes in planning and building their national nuclear infrastructures, including development of human resource capability, leadership and management systems.
— To provide methods and tools to support modelling, analyses and assessments of future nuclear energy systems for sustainable development of nuclear energy, and collaborative frameworks and support for technology development and deployment of advanced nuclear reactors and non-electric applications.</td></tr>
<tr><th>Outcomes</th><th>Performance Indicators</th></tr>
<tr><td>● Increased Member States' use of Agency resources for efficient and reliable long term operation and life cycle management of existing nuclear power plants, including improved management system, human resource and workforce capability.</td><td>● Number of Member States using relevant Agency resources, including Nuclear Energy Series publications, guidelines, recommendations and databases.
● Number of Member States using Agency resources for management system, human resource and workforce capability within existing nuclear power programmes.</td></tr>
</table>

Outcomes	Performance Indicators
• Increased use of Agency services for development of infrastructure in Member States embarking on a nuclear power programme.	• Number of self-evaluation support, pre-Integrated Nuclear Infrastructure Review (INIR), INIR and INIR follow-up missions completed. • Number of Member States using guidance material for nuclear power infrastructure development.
• Increased cooperation among Member States on global nuclear energy sustainability, long term nuclear energy strategies, and on nuclear reactor technology development and non-electric applications.	• Number of INPRO members participating in INPRO collaborative projects, the INPRO Dialogue Forum, and using INPRO tools, services and publications. • Number of Member States and stakeholders cooperating in evolutionary and innovative nuclear reactor technology development and applications through CRPs, technical meetings and training courses.

Subprogramme 1.1.1 Strengthening Integrated Engineering Support for Nuclear Power Programmes

Objectives:

— *To support Member States for the safe, secure, efficient, and reliable long term operation of nuclear power plants.*

— *To support Member States in effective operation, maintenance and engineering processes for new nuclear power plant projects.*

Outcomes	Performance Indicators
• Increased Member States' use of Agency guidance and services on nuclear power plant performance and sustainability.	• Number of Member States using Agency publications, and number of training conferences and symposia held on nuclear power plant performance and sustainability.
• Increased Member States' use of Agency guidance and services in the implementation of new nuclear power projects in Member States.	• Number of Member States accessing Agency guidance and requesting Agency services to support efficient and effective implementation of new nuclear power programmes.

Projects

Title	Main Planned Outputs
1.1.1.001 Engineering support for operating nuclear power plants	Publications on specific aspects of ageing management, and exchange of information and national experience among Member States through technical meetings, workshops or conferences for the promotion of networking, as experience sharing in the field of nuclear power plant operation.
1.1.1.002 Engineering support for expanding and new nuclear power projects	Publications on specific aspects of expanding nuclear power projects as well as the exchange of information and national experience among Member States through technical meetings and workshops in the field of nuclear power plant construction management and technology.

Subprogramme 1.1.2 Management and Human Resource Development for Nuclear Power Programmes

Objectives:

— *To support Member States in the development of human resource capability, capacity building, leadership, management systems, supply chain and stakeholder involvement for safe, secure, efficient and reliable long term nuclear power programmes.*

Outcomes	Performance Indicators
• Increased Member State use of Agency guidance and services for development and implementation of management systems in relevant Member States' nuclear power organizations.	• Number of Member States using Agency resources for the development and implementation of management systems in their organizations.
• Increased Member States' use of Agency guidance and services for development and implementation of stakeholder involvement strategies in relevant Member States.	• Number of Member States using Agency resources for the development and implementation of stakeholder involvement strategies.
• Increased Member States' use of Agency guidance and services for implementation of human resource development strategies in relevant Member States, including workforce planning, and training and qualification systems.	• Number of Member States using Agency resources for the implementation of human resource development strategies.

Projects

Title	Main Planned Outputs
1.1.2.001 Support to management systems, leadership and stakeholder involvement	Agency guidance documents, training courses, workshops, e-learning modules and completed review services.
1.1.2.002 Human resource development for nuclear power programmes	Agency guidance documents, training courses, workshops, e-learning modules and completed review services.

Subprogramme 1.1.3 Infrastructure and Planning for New Nuclear Power Programmes

Objectives:

— *To support Member States in enhancing their understanding of the responsibilities and obligations essential to implementing safe, secure, efficient and reliable long term nuclear power programmes.*

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

— *To provide integrated and coordinated Agency support to Member States embarking on a nuclear power programme.*

Outcomes	Performance Indicators
• Increased Member States' use of Agency services in support of their planning and development of the infrastructure for national nuclear power programmes.	• Number of self-evaluation reports and status of implementation of INIR recommendations and suggestions from reports submitted to the Agency. • Percentage of INIR recommendations and suggestions implemented.
• Improved Member States' use of Agency resources on specific nuclear power infrastructure issues, including the management of new or expanding nuclear power programmes.	• Number of technical meetings or workshops and number of participants.

Projects

Title	Main Planned Outputs
1.1.3.001 Nuclear power infrastructure development	Updates of the INIR methodology; implementation of INIR services; development or updating of integrated work plans and country nuclear infrastructure profiles; coordination and implementation of assistance to Member States embarking and expanding their nuclear power programmes.
1.1.3.002 Support to capacity building for nuclear power infrastructure	Training and competence building packages (including e-learning) for issues addressed in the Milestone approach; refinement of the Newcomer Platform, including nuclear infrastructure development activities and competency framework; publications; and advisory and information sharing activities.

Subprogramme 1.1.4 International Project on Innovative Nuclear Reactors and Fuel Cycles	
Objectives:	
— *To increase international dialogue and strengthen cooperation among Member States regarding the development of sustainable nuclear energy.* — *To develop and provide standardized analysis and assessment tools for nuclear energy system development from both the front and the back end.*	
Outcomes	**Performance Indicators**
• Enhanced Member States' understanding of and cooperation on actions to achieve NES sustainability.	• Number of Member States participating in INPRO collaborative projects, the INPRO Dialogue Forum and training, and using INPRO tools, services and publications.
• Increased Member States' use of the INPRO tool set, including NES scenario modelling and analysis and the INPRO Methodology to measure and indicate progress towards NES sustainability.	• Number of Member States using and contributing to development of INPRO tools (INPRO Methodology and NES modelling and analysis tools).
• Broadened communication between Member States and training on INPRO tools to evaluate technological and institutional issues associated with NES sustainability.	• Number of Member States participating in the INPRO Dialogue Forum, regional training and other INPRO training opportunities that enhance Member States' knowledge and communication on NES sustainability.
Projects	
Title	**Main Planned Outputs**
1.1.4.001 International project on innovative nuclear reactors and fuel cycles	Publications on NES scenario modelling; collaborative projects on NES innovations; application of INPRO Methodology for NES sustainability assessment; introduction of service on sustainable NES planning; INPRO Dialogue Forums on NES sustainability; and related training and outreach.

Subprogramme 1.1.5 Technology Development for Advanced Reactors and Non-electric Applications of Nuclear Power	
Objectives:	
— *To provide a collaborative framework to Member States on the development and deployment of advanced reactor technologies for safe, secure and efficient use of nuclear power plants.* — *To support Member States in evolution and innovation in nuclear reactor technology and non-electric applications, in particular for their near-term deployment.* — *To support Member States in the demonstration of nuclear desalination and cogeneration projects and in the use of nuclear power in the area of non-electric applications for advancing the thermal efficiency of nuclear power plants.*	
Outcomes	**Performance Indicators**
• Increased Member States' use of Agency resources and platforms on technology development and deployment of advanced reactors and non-electric applications of nuclear power.	• Number of Member States and stakeholders collaborating through the Agency to share information, and number of Member States using Agency guidance and services to develop and deploy their advanced reactor technologies and non-electric applications of nuclear power.
• Increased Member States' use of Agency services on capacity building and human resources development in the area of advanced reactors and non-electric applications.	• Number of Member States using Agency expertise for conducting workshops and training.
• Increased international cooperation on technology development of advanced reactors and non-electric applications.	• Number of Member States participating in CRPs and other design oriented activities.

Projects	
Title	**Main Planned Outputs**
1.1.5.001 Technology development for advanced water-cooled reactors	Publications of reports; databases; CRPs on advanced water-cooled reactor technology advancements; technical meetings and workshops; expert missions within the technical cooperation programme; international conferences and training materials.
1.1.5.002 Technology development for small and medium sized or modular reactors	Technical meetings, workshops, CRPs, e-tools, toolkits, databases, and publications on key technologies, validation testing, design features and topics of common technical interest for small and medium sized or modular reactors (including high temperature gas cooled reactors and other advanced technologies).
1.1.5.003 Technology development for fast reactors	Technical meetings, workshops, Education & Training seminars, CRPs, technical studies, Nuclear Energy Series publications, TECDOC publications, status reports, websites, databases, e-platforms and simulators related to research and technology development and deployment of fast nuclear systems. Organization of the FR21 Conference.
1.1.5.004 Non-electric applications of nuclear power	Nuclear Energy Series publication on vendor–user interface in nuclear cogeneration projects; release of updated and improved Agency tools on hydrogen production, nuclear desalination and water management; collection and exchange of results of CRP on nuclear hydrogen production.

Programme 1.2 Nuclear Fuel Cycle and Waste Management

Programme 1.2 supports Member States in the management of radioactive waste related to all areas of peaceful uses of nuclear technologies from waste minimization to processing and disposal. This includes the nuclear fuel cycle from uranium exploration to spent fuel management, and the end of life of nuclear related facilities or sites from planning for decommissioning to environmental remediation. Capacity building and sharing of information are priorities in all areas.

With growing interest in the peaceful applications of nuclear science and technology, including nuclear power in some Member States, it is expected that demand for support and reference information on good practice will also increase. The programme will continue to support scientific and technological innovation in relevant areas. The retirement of nuclear facilities generates an increased demand of effective solutions for decommissioning and waste management. In addition, the programme will: (i) increase the outreach and access to information and good practices through developing and updating different tools such as e-learning, databases and web based networks of practitioners; (ii) encourage and support the development of a centre of reference in each region on topics such as source management and decommissioning; and (iii) further strengthen coordination within the Agency to provide Member States with a comprehensive approach as well as integrated services in relevant areas.

The programme will continue to support Member States in: (i) the assessment of uranium resources for the sustainability of nuclear energy, (ii) analysis of fuel cycle and waste management aspects of innovative technologies, (iii) research for optimizing waste management for small programmes, and (iv) identification of good practices including for procurement.

Lessons learned from reviews, assessment, evaluations: Implementing topical projects of cross-cutting nature requires better interdepartmental cooperation to cover different technical aspects. This particularly applies when addressing the impact of design and operation on waste type, quantity and their management. It also provides a stronger sense of engagement of the experts of involved Member States. The cooperation with the Department of Nuclear Safety and Security will be further enhanced to deliver integrated support to Member States. Peer reviews benefit from the availability of reference publications and information resources, and from a documented process. Regular gap analysis needs to be performed to ensure completeness of this reference base.

Specific criteria for prioritization:

1. Support Member States in capacity building and the transfer of experience, especially those without (or with small) nuclear power programmes, including embarking countries.
2. Support Member States for the sustainable use of nuclear technologies, including safety and innovation, in the nuclear fuel cycle, nuclear facilities life cycle and waste management.
3. Dissemination of information, through activities fostering international cooperation, the exchange of information, and the development and promotion of e-Tools such as reference databases, information resources or e-learning.

Programmatic changes and trends

Subprogramme 1.2.1 Uranium Resources and Processing will continue to support Member States in improving their capacity to understand, plan and develop activities in the uranium (and thorium) production cycle, as their interest remains strong.

Subprogramme 1.2.2 Nuclear Power Reactor Fuel and Fuel Cycle Facilities supports Member States regarding technical and operational issues of existing nuclear fuel cycle facilities, especially the technical challenges they face when implementing IAEA safety standards to upgrade ageing nuclear fuel cycle facilities. New activities also reflect Member State interests in emerging technologies in the areas of advanced nuclear fuels and materials, such as those used for fast reactors. The IAEA Low Enriched Uranium Bank (LEU Bank)[1] which is fully funded through extrabudgetary contributions is expected to become operational before 2020–2021 biennium.

Subprogramme 1.2.3 Management of Spent Fuel from Nuclear Power Reactors and Radioactive Material Transportation will strengthen its activities to support Member States in the fields of transportation of nuclear materials (including spent fuel) generated in the fuel cycle, and spent fuel management.

Subprogramme 1.2.4 Radioactive Waste Management will further strengthen its activities to support Member States in the fields of radioactive waste management and the effective management of Disused Sealed Radioactive Sources (DSRSs), along with reinforcing cooperation with other international organizations.

Subprogramme 1.2.5 Decommissioning and Environmental Remediation was created in the 2018–2019 cycle in response to a growing request for guidance and support from Member States in these areas. This subprogramme will be further strengthened in 2020–2021.

Objectives, Outcomes and Performance Indicators by Programme

Programme 1.2 Nuclear Fuel Cycle and Waste Management	
Objectives:	
— *To support Member States in raising awareness and promoting sustainable (safe, secure, effective, innovative) fuel cycle and life cycle management for nuclear energy programmes and nuclear applications users, and contingency planning for a post-incident situation.* — *To support Member States in strengthening their capabilities and human resources, or having access to the best available knowledge, technologies and services.*	
Outcomes	**Performance Indicators**
• Increased Member States' use of Agency guidance, resources and services on the sustainability dimension in fuel cycle programmes, decommissioning and environmental remediation strategies and waste management, including DSRSs.	• Number of Member States using Agency resources for awareness of the sustainability of fuel cycle programmes and waste management policies, including DSRSs. • Number of Member States requesting or providing experts in peer review services, such as ARTEMIS.
• Increased international cooperation to develop innovative, effective and safe technologies in the fields of nuclear fuel, radioactive waste management, decommissioning and environmental remediation.	• Number of Member States participating in relevant Agency driven CRPs. • Number of Member States participating in technical meetings, forums and networks.

[1] Other assurance of supply mechanisms established with the Agency include a guaranteed physical reserve of low enriched uranium 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 low enriched uranium enrichment services (ref: GOV/2011/10 and GOV/2011/17).

Outcomes	Performance Indicators
• Increased Member States' use of Agency resources in areas such as uranium mining, spent fuel management, decommissioning and environmental remediation, and management of radioactive waste arising from nuclear applications.	• Number of technical centres for the management of DSRSs. • Number of Member States using Agency e-learning and other on-line training materials, including case studies.

Subprogramme 1.2.1 Uranium Resources and Processing

Objectives:

— *To support Member States in improving their capacity to understand, plan and develop activities in the uranium (and thorium) production cycle.*

Outcomes	Performance Indicators
• Increased knowledge and information on uranium (and thorium) resources worldwide.	• Number of new types of complementary data relating to new and existing uranium (and thorium) deposits in the UDEPO (ThDEPO) databases.
• Increased Member States' use of technical information on technologies relating to the exploration and production of uranium (and thorium).	• Number of publications on technologies relating to the exploration and production of uranium (and thorium).
• Increased Member States' use of the Agency guidance, resources and services on good practices in the uranium (and thorium) production cycle (from resources exploration to production).	• Number of participants in Agency meetings related to good practices in the uranium (and thorium) production cycle. • Person-hours of training imparted through training courses in good practices in the uranium (and thorium) production cycle.

Projects

Title	Main Planned Outputs
1.2.1.001 Exploration, mining and processing	Agency meetings, training activities, reports and TECDOCs on good practices in uranium and thorium production cycles (from exploration to milling); tools and review services for a Milestones approach in uranium mining to support Member States requesting technical cooperation programme support.
1.2.1.002 Resources data analytics	Biennial publication of the joint Agency and OECD Nuclear Energy Agency publication entitled Uranium Resources, Production and Demand; well-maintained and updated uranium and thorium deposits databases.

Subprogramme 1.2.2 Nuclear Power Reactor Fuel and Fuel Cycle Facilities

Objectives:

— *To support Member States in understanding and addressing the factors affecting the design, fabrication and in-pile behaviour of currently operated and innovative nuclear fuels and materials.*

— *To support Member States in identifying and implementing technical measures for IAEA safety standards when operating or upgrading nuclear fuel cycle facilities.*

Outcomes	Performance Indicators
• Increased Member States' use of Agency guidance, resources and services on research and development challenges associated with the design, manufacture and operation of advanced, innovative fuels for water cooled and fast reactors (including small and medium sized or modular reactors).	• Number of experts participating in Agency's technical meetings on research and development challenges associated with the design, manufacture, operation and performance assessment of advanced, innovative fuels for water cooled and fast reactors (including small and medium sized or modular reactors). • Number of CRPs supported.

Outcomes	Performance Indicators
• Increased Member States' use of Agency guidance, resources and services on technical issues related to the ageing and upgrading of nuclear fuel cycle facilities.	• Number of participants in Agency meetings on technical issues related to ageing and upgrade of nuclear fuel cycle facilities.
Projects	
Title	**Main Planned Outputs**
1.2.2.001 Nuclear power reactor fuel engineering and operation	CRPs, Agency meetings, publication of reports and TECDOCs on the development of and operational challenges with existing and innovative fuels for current and new generation nuclear power reactors (light and heavy water reactors and fast reactors, including small and medium sized or modular reactors) and related materials.
1.2.2.002 Low Enriched Uranium Bank	Operation of the IAEA LEU Bank in accordance with GOV/2010/67 and GOV/2010/70.
1.2.2.003 Fuel cycle facilities operation and life management	Publications on technical issues and best practices relating to the daily operation of nuclear fuel cycle facilities (especially the upgraded or ageing ones) and the management of their life cycle.

Subprogramme 1.2.3 Management of Spent Fuel from Nuclear Power Reactors and Radioactive Material Transportation

Objectives:

— *To support Member States in addressing the challenges of effective and safe management of spent nuclear fuels at operating or prematurely shutdown sites.*

— *To support Member States in addressing the technical challenges for effective and safe transport of all types of nuclear materials used or generated within the fuel cycle.*

— *To facilitate discussion and sharing of information among Member States on recent and future developments in fuel recycling technologies for current and next generations of nuclear power reactors (including small and medium sized or modular reactors).*

Outcomes	Performance Indicators
• Increased Member States' use of Agency guidelines on effective and safe management of spent nuclear fuel through dry and/or wet storage at operating sites.	• Number of participants in Agency technical meetings using Agency guidelines. • Number of Member States participating in Agency driven CRPs.
• Increased Member States' use of technical information on effective and safe transport of nuclear materials used or generated within the fuel cycle.	• Number of participants in Agency meetings on effective and safe transportation of all kinds of nuclear materials used or generated within the fuel cycle, who acknowledge using the scientific information delivered by the Agency through its meetings or publications in their professional activities.
• Increased Member States' use of Agency guidance, resources and services on technological issues in advanced processes for closing the fuel cycles of current and next generation nuclear power reactors.	• Number of participants in Agency meetings on advanced fuel cycles, using the scientific information delivered by the Agency through its meetings or publications in their professional activities. • Number of Member States participating in Agency coordinated CRPs.

Projects	
Title	**Main Planned Outputs**
1.2.3.001 Spent fuel storage	TECDOCs on spent fuel inventories and storage technologies, coordination of research projects on performance assessment and demonstration of spent fuel safe long term storage and on ageing management programmes; development of e-learning modules.
1.2.3.002 Spent fuel recycling	Technical meetings on closed fuel cycle status and development and on advanced fuel cycles; CRP on advanced recycling paths; e-learning modules development; International Conference FR21.
1.2.3.003 Radioactive materials transportation	TECDOCs on technical and operational issues related to the transportation of high burnup and mixed oxide fuels, on the transportability of spent fuel after long storage periods and on the societal aspects of spent fuel transportation to storage facilities; and coordination of research projects on spent fuel characterization.

Subprogramme 1.2.4 Radioactive Waste Management

Objectives:

— *To support Member States in strengthening their infrastructure and capabilities, and in improving their practices in Radioactive Waste Management (RWM).*

Outcomes	Performance Indicators
• Increased Member States' use of the Agency's services on good practices in radioactive waste management.	• Number of Member States using or requesting the Agency's services in formulating their national policy and strategy for RWM.

Projects	
Title	**Main Planned Outputs**
1.2.4.001 Predisposal management	Publications, development of lecture materials (e-learning) and training activities.
1.2.4.002 Waste disposal	Publications; web based information material; training material; meetings and workshops; and maintenance of networks reflecting a global community of professionals focused on disposal.
1.2.4.003 Managing disused sealed radioactive sources (DSRS)	Guidance documents on the management of DSRSs; training to Member States on DSRS conditioning, and removal and securing, upon request, high activity DSRSs through repatriation, recycling or consolidation in a national store.
1.2.4.004 Capacity building and knowledge sharing	Maintained, updated and improved web based systems on RWM.

Subprogramme 1.2.5 Decommissioning and Environmental Remediation

Objectives:

— *To support Member States in strengthening their capabilities and improving their practices in decommissioning of nuclear installations and remediation of contaminated sites.*

— *To facilitate experience sharing and knowledge transfer on effective applications of practical measures in decommissioning of nuclear installations and environmental remediation of contaminated sites.*

Outcomes	Performance Indicators
• Increased Member States' use of the Agency guidance, resources and services in developing human resources and their national infrastructure for the decommissioning of nuclear installations and remediation of contaminated sites.	• Number of Member States having used Agency services in developing a national policy and strategy for decommissioning and environmental remediation. • Number of practical case studies posted and described in the International Decommissioning Network Decommissioning Wiki and other shared networks.
• Increased use of Agency guidance, resources and services by Member States embarking on nuclear power programmes related to the importance of addressing decommissioning and environmental remediation issues in early stages of their programmes.	• Number of Member States embarking on nuclear power using Agency guidance, resources and services in developing a national policy and strategy for decommissioning and environmental remediation.
Projects	
Title	**Main Planned Outputs**
1.2.5.001 Decommissioning	Publications; activities organized within the International Decommissioning Network; decommissioning wiki and e-learning modules development; update of decommissioning databases; cooperation with other international organizations.
1.2.5.002 Environmental remediation	Publications; activities organized within the Network on Environmental Management and Remediation; organization of international conference on naturally occurring radioactive material (NORM) management; databases and e-learning modules developed; cooperation with other international organizations.

Programme 1.3 Capacity Building and Nuclear Knowledge for Sustainable Energy Development

Programme 1.3 supports interested Member States in formulating sustainable energy strategies and improving the understanding of the potential role of nuclear energy in addressing the SDGs through capacity building and knowledge management with improved energy models, comprehensive information repositories and tailored training tools.

Through its publications, methodologies and services, the Agency's nuclear knowledge management framework supports Member States in preserving nuclear knowledge and implementing effective nuclear management programmes. The programme continues to disseminate information, foster education networking, offer targeted training and services, and provide Member States with knowledge management methodologies and guidance. The Agency's International Nuclear Information System (INIS) and the IAEA Library continue to provide comprehensive, objective and reliable information and data to support Member States in increasing their capacity to use nuclear energy technology in a safe, secure and sustainable manner.

Lessons learned from reviews, assessment, evaluations: Taking into account feedback from Member States, energy planning models will be improved and optimized to ensure that high quality service is maintained, while increasing distribution of models and methodologies. E-learning will be increased and deployed through a standardized platform such as the Cyber Learning Platform for Nuclear Education and Training; guidance on nuclear cost estimation and financing schemes will be provided within the mandate of the Agency; Nuclear Energy Management School structure and curriculum will be streamlined to ensure its sustainability; tailored knowledge management services will be developed to meet different requirements of the Member States; advances in information and network technology will be leveraged to improve collection and dissemination of nuclear information; and high impact CRPs relating to the SDGs and climate change will be organized.

Specific criteria for prioritization:

1. To support Member States in their capacity building to perform sustainable energy planning and understand the implications of using nuclear energy within the context of the SDGs and the Paris Agreement.
2. To support Member States in improving understanding of the potential uses of nuclear energy to mitigate climate change and achieve the SDGs by providing objective and accurate technoeconomic

information.

3. To support Member States in accessing and sharing nuclear information and data by means of modern information technology.

Programmatic changes and trends

Subprogramme 1.3.1 Energy Modelling, Data and Capacity Building will strengthen support to Member States in integrating the SDGs and Paris Agreement targets through national and regional energy studies. Energy planning models will be enhanced and integrated to evaluate multiple objectives. Development activities will continue to be informed through feedback from Member States and international organizations using these tools. E-learning content will be increased and promoted through standardized Agency platforms, and will be used in combination with face to face training. Energy and technology data sharing with other UN agencies and international organizations will be further expanded.

Subprogramme 1.3.2 Energy-Economy-Environment (3E) Analysis will strengthen support to Member States in the assessment of uses of nuclear energy within the context of the SDGs. New areas include efforts: (i) to understand the economics of nuclear energy in markets with increased shares of renewable energy; (ii) to establish guidelines, tools and approaches for developing consistent cost estimates of nuclear energy technology and fuel cycle costs, and to continue development of nuclear cost modelling capabilities in partnership with other international organizations; (iii) to support the adoption and application of integrated assessment methods and approaches such as the Climate, Land, Energy, Water framework, particularly for newcomer countries; and (iv) to assist Member States in developing their nationally determined contributions in consideration of the SDGs and the Paris Agreement under a range of deployment scenarios.

Subprogramme 1.3.3 Nuclear Knowledge Management (NKM) will continue to expand support to Member States through the Nuclear Energy Management School, the International Nuclear Management Academy and the Human Resource and Knowledge Development networking initiative. Member State participation continues to increase in the Agency's NKM programmes, including activities on nuclear education and networking, NKM schools and e-learning tools and material made available through the Cyber Learning Platform for Nuclear Education and Training. Priorities include NKM methodology development supporting education at the university level with a focus on nuclear energy, knowledge organization system technology and life cycle management of design knowledge, and establishing and strengthening knowledge networks, such as technical communities of practice.

Subprogramme 1.3.4 Nuclear Information will continue to gather and make available to Member States and to the IAEA Secretariat relevant, reliable, and up to date nuclear information on the peaceful use of nuclear energy through INIS, the IAEA Library and the International Nuclear Library Network. It will also provide access to the OECD Nuclear Energy Agency databank for Agency Member States that are not members of the OECD Nuclear Energy Agency.

Objectives, Outcomes and Performance Indicators by Programme

<table>
<tr><th colspan="2">Programme 1.3 Capacity Building and Nuclear Knowledge for Sustainable Energy Development</th></tr>
<tr><td colspan="2">Objectives:</td></tr>
<tr><td colspan="2">— To support Member States in strengthening their capacities to formulate robust energy strategies, plans and programmes, and to improve the understanding of nuclear technology's contribution to achieving the SDGs, with an emphasis on mitigating climate change.
— To support Member States in strengthening their capacities to establish, manage and use their nuclear knowledge base by disseminating knowledge management methodologies, guidance and tools; providing relevant training and service; and fostering international networking.
— To acquire, preserve and provide Member States with access to information in the area of nuclear science and technology to facilitate sustainable information sharing among Member States.</td></tr>
<tr><th>Outcomes</th><th>Performance Indicators</th></tr>
<tr><td>● Increased Member States' use of energy planning tools and expertise on the potential role of nuclear power under the Paris Agreement and broader sustainable energy strategies.</td><td>● Number of professionals from Member States trained in the use of Agency energy models.
● Number of instances where Agency analysis, expertise, or expert contributions are requested by Member States and other international organizations.</td></tr>
</table>

Outcomes	Performance Indicators
• Increased Member States' use of Agency guidance, resources and services related to NKM.	• Number of Member States using or requesting Agency methodology and guidance for their NKM programmes, initiatives or projects. • Number of Member States participating in Agency supported nuclear education networks.
• Increased Member States' access to nuclear information provided by the IAEA Library and INIS.	• Number of INIS repository web page views. • Number of records available in the INIS repository.

Subprogramme 1.3.1 Energy Modelling, Data and Capacity Building

Objectives:

— *To support Member States in strengthening their capacities to formulate robust energy strategies, plans and programmes for achieving the SDGs and mitigating climate change, by conducting studies for energy system and electricity sector development, investment planning and sustainable energy policy formulation.*

Outcomes	Performance Indicators
• Enhanced Member States' access to, and effective use of, Agency energy planning tools for designing energy strategies to meet their SDGs.	• Number of professionals from Member States trained in the use of Agency energy models.
• Increased Member States' use of the Agency data on energy and nuclear power status and trends.	• Number of requests from Member States and international organizations for data on energy and nuclear power.

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 for Member State energy planning studies offered on-line or through fellowships; enhanced analytical tools (models) applicable in widely diverse country situations; and training courses.

Subprogramme 1.3.2 Energy-Economy-Environment (3E) Analysis

Objectives:

— *To support Member States in their understanding of the potential roles of nuclear energy in achieving the SDGs and mitigating climate change by providing technical tools for evaluating economic aspects, including costs of current and advanced reactor concepts, funding/financing and integration with renewables in future energy markets.*

— *To support Member States in their understanding of the nexus between energy (SDG7) goals and other SDGs by developing integrated assessment frameworks (e.g. climate, land, energy, water) and assessing the effect of government policy mechanisms on investment of low carbon technologies, including nuclear.*

Outcomes	Performance Indicators
• Increased Member States' use of Agency tools to improve understanding of the role of nuclear power in climate change and sustainable energy development.	• Number of instances where the Agency's economic or 3E analysis relating to nuclear technology are requested or incorporated into the decision making process of Member States and other international organizations.
• Increased Member States' use of Agency references and tools to evaluate the potential role of nuclear in nationally determined contributions under the Paris Agreement and to analyse broader sustainable energy strategies.	• Number of instances where the Agency's economic or 3E analysis relating to nuclear technology are requested or incorporated in Member State inputs to their nationally determined contributions.

Projects	
Title	**Main Planned Outputs**
1.3.2.001 Technoeconomic analysis	Economic studies and reports (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 small and medium sized or modular reactors; and comparative assessments of energy systems or their attributes.
1.3.2.002 Topical issues related to sustainable energy development	Reports and presentations on the potential contribution of nuclear energy to the SDGs and Paris Agreement objectives; case studies and country profiles analysing sustainable energy and low carbon energy development strategies focusing on the potential for nuclear energy.

Subprogramme 1.3.3 Nuclear Knowledge Management	
Objectives:	
— *To support Member States in their application and implementation of national nuclear knowledge management strategies and approaches through the development and dissemination of Agency methodology, guidance and tools and by providing knowledge management services and assistance.* — *To enhance Agency nuclear information, knowledge resources and services that are providing support to Member States in applying advanced technologies for sustainable nuclear information management over the life cycle.* — *To support Member States in strengthening academic education in the areas of nuclear technology management; nuclear engineering; nuclear science and applications; networking, collaboration, methodology development; and resource development and sharing.*	
Outcomes	**Performance Indicators**
• Increased Member States' use of the Agency guidance, resources and services on the application of NKM strategies and approaches and 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.
• Increased Member States' use of the Agency guidance, resources and services in strengthening academic nuclear education 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 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 participating in Agency supported nuclear education networks.
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 services, tools and products (e.g. Knowledge Management Assist Visits) knowledge organization systems and databases.
1.3.3.002 Facilitating sustainable education in nuclear science and technology	One school on NKM and one school on nuclear energy management per year; regional schools, as requested by Member States; publications on nuclear education; annual regional and interregional meetings to facilitate networking for nuclear education; additional e-learning opportunities for Member States; NKM 4th International Conference in 2020.

Projects	
Title	**Main Planned Outputs**
1.3.3.003 Nuclear knowledge organizational systems and technology	Knowledge systems and tools for the organization of nuclear data, information and knowledge; platforms for collaboratively managing glossaries, thesauri, taxonomies and knowledge models; publications, reports and proceedings on topical issues; continuously updated and maintained Cyber Learning Platform for Nuclear Education and Training.

Subprogramme 1.3.4 Nuclear Information	
Objectives:	
— *To provide Member States, the IAEA Secretariat, and other users with access to relevant, reliable and up to date information in the area of nuclear science and technology.* — *To facilitate the sustainable sharing of information generated by Member States on the peaceful uses of nuclear energy.*	
Outcomes	**Performance Indicators**
• Increased Member States' use of relevant and reliable information and data on the peaceful uses of nuclear science and technology through the INIS.	• Number of records available in the INIS repository. • Number of INIS repository web page views.
• Increased Agency and Member States' access to library based, relevant, reliable and up to date print and electronic resources, such as documents, monographs and serial publications.	• Annual number of information resources acquired by the IAEA Library (books, articles, documents, databases). • Number of IAEA Library catalogue searches.
• Increased membership and use of the International Nuclear Library Network.	• Number of members participating in the International Nuclear Library Network. • Number of nuclear information requests from International Nuclear Library Network members.
Projects	
Title	**Main Planned Outputs**
1.3.4.001 IAEA Library information resources and services	Accessible, relevant and up to date information resources in print and electronic format, including monographs and serial publications. Research support, reference services and training sessions. Operational and active International Nuclear Library Network.
1.3.4.002 INIS collection and services	Openly accessible, up to date, contextually relevant and trusted digital repository of INIS bibliographic and full text documents; cooperation and information exchange with national INIS centres; high quality thesaurus using relevant knowledge organization standards.

Programme 1.4 Nuclear Science

Programme 1.4. supports Member States in the provision of nuclear, atomic and molecular data; research reactors; particle accelerators; nuclear fusion research and nuclear instrumentation. The Agency's nuclear, atomic and molecular data libraries on all nuclear applications, are evolving and continuously updated. The programme supports Member States to address the challenges related to the sustainable operation of existing research reactors, most of which are aged, as well as to build new research reactors.

The programme continues to support the introduction and operation of accelerator applications in Member States. Worldwide advances in nuclear fusion research have led to increased interest in some Member States in this field. The Agency facilitates exchange of information on fusion research between Member States including with International Thermonuclear Experimental Reactor and through demonstration fusion power plant workshops (DEMO Programme Workshops). Support to the ICTP will aim to enable scientists from developing countries to enhance their research capabilities, focusing more on the areas of relevance to the Agency.

Lessons learned from reviews, assessment, evaluations: Nuclear fusion has the potential to be a future source of energy, and the Agency's assistance in bringing Member States together for research and dissemination of knowledge is important. It is also important to provide support to Member States for sustainable long term operation and effective utilization of research reactors, as they are vital for several applications, including capacity building in nuclear sciences and engineering.

Specific criteria for prioritization:

1. Supporting Member States capacity building in basic nuclear sciences through international cooperation to address emerging needs in nuclear power and other non-power industries.
2. Fostering international cooperation and information exchange in nuclear fusion research and plasma physics.
3. Provision of nuclear, atomic and molecular data services.
4. Provision of laboratory services, advanced training and materials for human resource development.
5. Supporting Member States in strengthening research reactor sustainable operation, their effective utilization, and, upon request, the transition away from the use of high enriched uranium.

Programmatic changes and trends

Subprogramme 1.4.1 Atomic and Nuclear Data will continue in the areas of nuclear and atomic data evaluation and compilation, provision of data services to Member States, close cooperation with collaborating Nuclear Data Centres and support for the exchange of information. The key steps in the production of databases include modelling and measurements, evaluation, processing, benchmarking and validation. They are typically supported by a large number of experts, many of whom are from outside the Agency, over a long period of time.

Subprogramme 1.4.2 Research Reactors will continue to address the main challenges related to sustainable operation, including long term operation and effective utilization of research reactors, supporting regional and interregional collaboration through coalitions, networking and IAEA-designated International Centres Based on Research Reactors to improve utilization and enhance access to research reactors. The subprogramme also supports Member States in (i) improvement in operation and maintenance to optimize operational performances; (ii) dissemination of good practices on modernization and refurbishment and ageing management; (iii) national planning and implementation of a first or new research reactor; (iv) strategic and business planning and developing market analyses and marketing skills for research reactor goods and services; (v) spent fuel management; (vi) use and access to research reactors, including distance learning tools (e.g. the Internet Reactor Laboratory) for nuclear capacity building in Member States developing nuclear science and technology programmes, including nuclear power programmes; and (vii) transition away from the use of high enriched uranium in research reactors for Member States, upon their request.

Subprogramme 1.4.3 Accelerator Applications and Nuclear Instrumentation will continue to support Member States in the applications of accelerators and nuclear instrumentation, which are seen to be growing based on the number of facilities and laboratories in the world and the emerging publications on the topic. In view of this trend and based on the growing requests for assistance in applications of accelerators, the projects relating to accelerator applications will be strengthened. In this regard, x-ray fluorescence as an analytical tool will be pursued and neutron based analytical tools will be developed as complimentary techniques using portable neutron generators.

Subprogramme 1.4.4 Nuclear Fusion Research and Technology will continue to facilitate information dissemination in the area of fusion research among Member States and support cross-cutting activities such as a CRP on the use of ion beams for irradiation and characterization of materials relevant to fusion technology. The continuation of periodic DEMO Programme Workshop series, the biennial Fusion Energy Conference and other coordinating activities will enhance international cooperation in nuclear fusion overall.

Subprogramme 1.4.5 Support to Abdus Salam International Centre for Theoretical Physics supports joint activities between the Agency and ICTP, which are found to be effective in reaching out to professionals, especially from academia, to disseminate knowledge in nuclear sciences, nuclear power and non-power applications. While ICTP activities have, in the past few years, grown beyond basic theoretical physics areas, not all of these are of relevance to the Agency. Hence, the Agency's contribution will focus on the areas of mutual relevance and benefit, such as basic nuclear sciences and nuclear energy.

Objectives, Outcomes and Performance Indicators by Programme

Programme 1.4 Nuclear Science	
Objectives:	
— *To support Member States in strengthening their capabilities in the development and application of nuclear science as a tool for their technological and economic development.* — *To support Member States in enhancing sustainable operation, including effective utilization, of research reactors and implementing new research reactor projects and nuclear capacity building programmes based on access to research reactors.*	
Outcomes	**Performance Indicators**
• Increased Member States' use of Agency services and guidance in the areas of strengthening capacity in nuclear sciences for technological advancement.	• Number of scientific events conducted. • Number of participants in the scientific events, workshops and training courses in nuclear science areas.
• Increased Member States' use of Agency guidance, resources and services for sustainable operation and effective utilization of research reactors and accelerators.	• Number of Member States seeking the Agency's support in the sustainable management and enhanced utilization of research reactors. • Number of Member States seeking the Agency's support in establishment, management and applications of accelerators.

Subprogramme 1.4.1 Atomic and Nuclear Data	
Objectives:	
— *To support Member States in increasing their capabilities and expertise for the safe and economic adoption of nuclear technologies by providing rapid access to reliable nuclear and atomic data for nuclear power and non-power applications.*	
Outcomes	**Performance Indicators**
• Increased Member States' use of the Agency's atomic and nuclear data for nuclear power and non-power applications.	• Number of Member States accessing and retrieving atomic and nuclear data from Agency web sites.
Projects	
Title	**Main Planned Outputs**
1.4.1.001 Provision of data services	Easy on-line access by improved searching and visualization tools; documentation and reports to enable efficient data use; new and improved atomic and nuclear databases; coordinated data networks and training courses; and support of data standards development.
1.4.1.002 Nuclear data developments	Update of the fission yield data library; evaluated files of important actinides and structural materials for the International Nuclear Data Evaluation Network (INDEN); an updated version of the Reference Input Parameter Library (RIPL-4) for nuclear fission reactions; and nuclear data for medical isotope production.
1.4.1.003 Atomic and molecular data developments	Compilation of uncertainty data in the A Labelled Atomic Data Interface (ALADDIN) and the Atomic and Molecular Bibliographic Data System (AMBDAS) databases containing newly evaluated datasets as they become available and improving the corresponding dissemination tools.

Subprogramme 1.4.2 Research Reactors

Objectives:

- *To support Member States in enhancing sustainable operation and effective utilization of existing research reactors.*
- *To support Member States in planning and implementing new research reactor projects, including the development of their national infrastructure.*
- *To support Member States in nuclear capacity building through the use of and access to research reactors.*

Outcomes	Performance Indicators
• Increased Member States' use of guidance, resources and services on sustainable operation and effective utilization of existing research reactors, as well as effective implementation of new research reactor projects.	• Number of research reactors with new or revised strategic and business plans for utilization that were developed based on Agency guidance. • Number of peer review services related to sustainable operation and effective utilization of research reactors (e.g. Operation and Maintenance Assessment for Research Reactors missions, INIR for Research Reactors missions) requested by Member States.
• Increased Member States' use of and access to research reactors for developing their national nuclear programmes and strategies, including for developing human resources.	• Number of Member States engaged as providers in Agency capacity building initiatives based on research reactors (ICERR, hands-on training courses, IRL). • Number of Member States engaged in Agency capacity building initiatives based on research reactors (ICERR, hands-on training courses, IRL).

Projects

Title	Main Planned Outputs
1.4.2.001 Research reactors utilization	Support to Member States on research reactor utilization and applications through training workshops, reviews of strategic plans, proficiency tests, CRPs and expert missions; development of publications and e-learning tools; update of the Research Reactor Database and web portals.
1.4.2.002 Access to research reactors, capacity building and infrastructure development	Support to Member States embarking on new research reactor projects through workshops and expert missions (including INIR for Research Reactors missions); delivery of tools for capacity building based on research reactors (ICERR, hands-on training courses, IRL); and development of relevant publications.
1.4.2.003 Research reactor fuel cycle	Support to Member States on research reactor fuel cycle issues: sharing experience and knowledge through CRPs, training courses, expert missions and the Research Reactor Database; publications; conversion of research reactor fuel and irradiation targets from high to low enriched uranium and return of high enriched uranium fuel to the country of origin, upon Member State request.
1.4.2.004 Research reactors operation, maintenance and upgrade	Support to Member States on research reactor operation and life management through training workshops, CRPs and expert missions including Operation and Maintenance Assessment for Research Reactors missions, and through the Research Reactor Ageing Database, Research Reactor Material Properties Database and other relevant delivery tools for experience and knowledge sharing; and publications.

Subprogramme 1.4.3 Accelerator Applications and Nuclear Instrumentation	
Objectives:	
— *To support Member States in strengthening their capabilities to adopt and benefit from the applications of particle accelerators, spectrometric techniques and nuclear instrumentation.*	
Outcomes	**Performance Indicators**
• Increased Member States' use of Agency guidance, resources and services in establishing well functioning and optimized nuclear science infrastructure and for developing qualified professionals.	• Number of professionals attending Agency meetings, workshops and training events. • Number of publications and reports supported by the Agency and resulting from the use of accelerators, nuclear spectrometry and instrumentation.
• Increased use of Agency guidance, resources and services by Member States on accelerators for research and diverse applications or to establish accelerator facilities.	• Number of Member States requesting Agency assistance with the use of accelerators or associated instrumentation, or to set up new facilities.
Projects	
Title	**Main Planned Outputs**
1.4.3.001 Accelerator applications in multiple disciplines	CRPs; technical meetings and training workshops on a wide variety of accelerator applications in different disciplines, with an emphasis on materials science and energy applications; accelerator knowledge portal and accelerator database.
1.4.3.002 Facilitating experiments with accelerators	Experiments, training courses and workshops with practical components at the Agency beamlines at the Elettra facility and Ruđer Bošković Institute, as well as corresponding CRPs.
1.4.3.003 Nuclear instrumentation and capacity building	Training courses, scientific and technical publications, CRPs and technical meetings on nuclear instrumentation, with an emphasis on applications in environmental monitoring; nuclear spectrometry and accelerator based research and development; training courses and course materials.
1.4.3.004 Equipment development for radioactivity monitoring in the environment	Detectors and analysis software combined with a geoinformation system for in situ mapping of radiological contamination; and unmanned aerial vehicle and backpack based gamma detector systems for the survey of medium sized areas.

Subprogramme 1.4.4 Nuclear Fusion Research and Technology	
Objectives:	
— *To support Member States' research programmes on plasma physics, controlled nuclear fusion and nuclear fusion related technology.* — *To facilitate information exchange among Member States on plasma physics, nuclear fusion and nuclear fusion related technology.*	
Outcomes	**Performance Indicators**
• Increased Member States' use of Agency guidance, resources and services on infrastructure and fusion research	• Number of participants in CRPs, joint experiments, technical meetings, and training workshops and schools.
• Improved exchange of information among Member States in plasma physics, nuclear fusion and nuclear fusion related technology.	• Number of participants in the Fusion Energy Conference and DEMO Programme Workshop series. • Number of users accessing the Agency's Fusion Portal.

Projects	
Title	**Main Planned Outputs**
1.4.4.001 Nuclear fusion research and technology	CRPs, technical meetings and training events on plasma physics, nuclear fusion and related technology development; Fusion Energy Conference 2020; DEMO Programme Workshop series; joint activities in cooperation with the International Thermonuclear Experimental Reactor; updates and promotion of the Agency's Fusion Portal.

Subprogramme 1.4.5 Support to Abdus Salam International Centre for Theoretical Physics (ICTP)	
Objectives:	
— *To support Member States, in particular developing countries, in enhancing their scientific capability through training and the exchange of information between scientists in nuclear and related applications.*	
Outcomes	**Performance Indicators**
• Enhanced knowledge of scientists through their participation in scientific programmes of ICTP, including through exchange of information among scientists.	• Number of ICTP scientific events organized. • Number of scientists participating in ICTP scientific events.
• Increased exchange of information related to the work of the Agency among scientists, including young scientists, especially from developing countries.	• Number of Agency-ICTP joint events conducted. • Number of scientists participating in Agency-ICTP joint events.
• Increased opportunity for scientists from developing countries to carry out doctoral research at an internationally renowned institute.	• Number of Sandwich Training Educational Programme (STEP) fellowships funded by the Agency as well as by the ICTP and others.
Projects	
Title	**Main Planned Outputs**
1.4.5.001 Support to ICTP	Training courses on topics covered by workshops and seminars; and scientific publications.

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

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

Programme / Subprogramme / Project	2020 at 2020 prices		2021 at 2020 prices	
	Regular Budget	Unfunded	Regular Budget	Unfunded
1.0.0.001 Overall management, coordination and common activities	1 651 380	103 229	1 651 380	103 229
1.S Corporate shared services	1 656 047	-	1 656 052	-
	3 307 427	**103 229**	**3 307 432**	**103 229**
1.1.1.001 Engineering support for operating nuclear power plants	1 347 070	585 259	1 347 071	585 259
1.1.1.002 Engineering support for expanding and new nuclear power projects	313 833	-	313 833	-
1.1.1 Strengthening Integrated Engineering Support for Nuclear Power Programmes	1 660 903	585 259	1 660 904	585 259
1.1.2.001 Support to management systems, leadership and stakeholder involvement	561 661	-	561 661	-
1.1.2.002 Human resource development for nuclear power programmes	487 610	-	487 732	-
1.1.2 Management and Human Resource Development for Nuclear Power Programmes	1 049 271	-	1 049 393	-
1.1.3.001 Nuclear power infrastructure development	859 221	1 653 615	834 608	1 760 563
1.1.3.002 Support to capacity building for nuclear power infrastructure	1 823 734	668 740	1 848 347	668 740
1.1.3 Infrastructure and Planning for New Nuclear Power Programmes	2 682 955	2 322 354	2 682 955	2 429 303
1.1.4.001 International project on innovative nuclear reactors and fuel cycles	1 178 233	531 281	1 178 233	531 281
1.1.4 International Project on Innovative Nuclear Reactors and Fuel Cycles	1 178 233	531 281	1 178 233	531 281
1.1.5.001 Technology development for water-cooled reactors	1 015 888	166 678	1 024 584	166 678
1.1.5.002 Technology development for small and medium sized or modular reactors	539 281	-	558 942	-
1.1.5.003 Technology development for fast reactors	523 075	-	494 718	-
1.1.5.004 Non-electric applications of nuclear power	444 390	-	444 390	-
1.1.5 Technology Development for Advanced Reactors and Non-electric Applications of Nuclear Power	2 522 633	166 678	2 522 633	166 678
1.1 Nuclear Power	**9 093 995**	**3 605 573**	**9 094 118**	**3 712 521**
1.2.1.001 Exploration, mining and processing	654 321	52 505	635 921	60 932
1.2.1.002 Resources data analytics	523 402	37 070	538 550	18 866
1.2.1 Uranium Resources and Processing	1 177 723	89 575	1 174 471	79 798
1.2.2.001 Nuclear power reactor fuel engineering and operation	690 181	27 379	653 294	42 163
1.2.2.002 Low Enriched Uranium Bank	-	284 147	-	65 403
1.2.2.003 Fuel cycle facilities operation and life management	401 726	57 210	401 141	39 953
1.2.2 Nuclear Power Reactor Fuel and Fuel Cycle Facilities	1 091 907	368 736	1 054 435	147 519
1.2.3.001 Spent fuel storage	553 410	189 162	506 032	175 890
1.2.3.002 Spent fuel recycling	440 555	40 440	517 345	27 379
1.2.3.003 Radioactive materials transportation	244 257	24 102	253 236	3 277
1.2.3 Management of Spent Fuel from Nuclear Power Reactors and Radioactive Material Transportation	1 238 222	253 703	1 276 612	206 545
1.2.4.001 Predisposal management	1 044 909	343 217	1 052 664	343 217
1.2.4.002 Waste disposal	1 014 814	1 025 605	1 010 621	1 122 880
1.2.4.003 Managing disused sealed radioactive sources (DSRS)	472 041	647 925	468 393	658 892
1.2.4.004 Capacity building and knowledge sharing	317 224	-	317 224	-
1.2.4 Radioactive Waste Management	2 848 987	2 016 746	2 848 901	2 124 989
1.2.5.001 Decommissioning	820 151	762 476	820 944	762 476
1.2.5.002 Environmental remediation	624 720	44 258	614 214	44 258
1.2.5 Decommissioning and Environmental Remediation	1 444 870	806 734	1 435 158	806 734
1.2 Nuclear Fuel Cycle and Waste Management	**7 801 710**	**3 535 494**	**7 789 578**	**3 365 585**

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

	2020 at 2020 prices		2021 at 2020 prices	
Programme / Subprogramme / Project	Regular Budget	Unfunded	Regular Budget	Unfunded
1.3.1.001 Energy, electricity and nuclear power economics: Status and trends	510 509	-	510 509	-
1.3.1.002 Models and capacity building for energy and nuclear power planning	1 437 702	-	1 437 702	-
1.3.1 Energy Modelling, Data and Capacity Building	1 948 211	-	1 948 211	-
1.3.2.001 Technoeconomic analysis	972 905	103 229	972 905	103 229
1.3.2.002 Topical issues relating to sustainable energy development	646 605	-	646 605	-
1.3.2 Energy Economy Environment (3E) Analysis	1 619 510	103 229	1 619 510	103 229
1.3.3.001 Implementing knowledge management in nuclear organizations	893 478	42 467	893 252	42 467
1.3.3.002 Facilitating sustainable education in nuclear science and technology	643 407	261 037	643 407	261 037
1.3.3.003 Nuclear knowledge organizational systems and technology	854 374	84 934	854 374	84 934
1.3.3 Nuclear Knowledge Management (NKM)	2 391 259	388 439	2 391 033	388 439
1.3.4.001 IAEA Library information resources and services	2 714 609	-	2 726 762	-
1.3.4.002 INIS collection and services	2 086 207	136 888	2 067 508	136 888
1.3.4 Nuclear Information	4 800 815	136 888	4 794 270	136 888
1.3 Capacity Building and Nuclear Knowledge for Sustainable Energy Development	**10 759 795**	**628 557**	**10 753 024**	**628 557**
1.4.1.001 Provision of data services	1 119 922	136 888	1 126 024	136 888
1.4.1.002 Nuclear data developments	1 272 591	197 924	1 281 655	197 924
1.4.1.003 Atomic and molecular data developments	651 018	-	651 019	-
1.4.1 Atomic and Nuclear Data	3 043 531	334 812	3 058 698	334 812
1.4.2.001 Research reactors utilization	396 637	15 800	396 967	15 800
1.4.2.002 Access to research reactors, capacity building and infrastructure development	483 492	197 924	485 423	197 924
1.4.2.003 Research reactor fuel cycle	485 584	1 135 296	487 880	1 038 445
1.4.2.004 Research reactors operation, maintenance and upgrade	466 121	166 678	466 121	166 678
1.4.2 Research Reactors	1 831 834	1 515 700	1 836 391	1 418 848
1.4.3.001 Accelerator applications in multiple disciplines	782 650	83 339	782 650	83 339
1.4.3.002 Facilitating experiments with accelerators	568 330	83 339	559 685	83 339
1.4.3.003 Nuclear instrumentation and capacity building	779 778	-	779 778	-
1.4.3.004 Equipment development for radioactivity monitoring in the environment	471 325	-	481 495	-
1.4.3 Accelerator Applications and Nuclear Instrumentation	2 602 084	166 678	2 603 609	166 678
1.4.4.001 Nuclear fusion research and technology	864 431	103 229	864 431	103 229
1.4.4 Nuclear Fusion Research and Technology	864 431	103 229	864 431	103 229
1.4.5.001 Support to the ICTP	2 107 885	-	2 105 415	-
1.4.5 Support to ICTP	2 107 885	-	2 105 415	-
1.4 Nuclear Science	**10 449 764**	**2 120 420**	**10 468 544**	**2 023 568**
Major Programme 1 - Nuclear Power, Fuel Cycle and Nuclear Science	**41 412 691**	**9 993 273**	**41 412 696**	**9 833 460**

Major Programme 1 — Nuclear Power, Fuel Cycle and Nuclear Science
Activities unfunded in the Regular Budget
(excluding Major Capital Investments)

Project	Tasks	2020 Unfunded	2021 Unfunded
1.0.0.001 Overall management, coordination and common activities	Programme coordination and support in the field of communication	103 229	103 229
1.1.1.001 Engineering support for operating nuclear power plants	Expert support of publications, databases and eLearning	585 259	585 259
1.1.3.001 Nuclear power infrastructure development	Expert support in INIR services development and implementation	1 653 615	1 760 563
1.1.3.002 Support to capacity building for nuclear power infrastructure	Support implementation of capacity building in Member States	668 740	668 740
1.1.4.001 International project on innovative nuclear reactors and fuel cycles	Expert support in transition to sustainable Nuclear Energy Systems	531 281	531 281
1.1.5.001 Technology development for water-cooled reactors	Expert support in water cooled reactor technology to cope with severe accidents	166 678	166 678
1.2.1.001 Exploration, mining and processing	Technical information and good practices on Uranium exploration, mining and processing	52 505	60 932
1.2.1.002 Resources data analytics	Uranium and thorium resources information	37 070	18 866
1.2.2.001 Nuclear power reactor fuel engineering and operation	Research and development and operation of fuels for light water reactors	27 379	42 163
1.2.2.002 Low Enriched Uranium Bank	Project team costs	284 147	65 403
1.2.2.003 Fuel cycle facilities operation and life management	General management related to fuel cycle facilities operation and life management	57 210	39 953
1.2.3.001 Spent fuel storage	Activities related to spent fuel storage techniques and transport	189 162	175 890
1.2.3.002 Spent fuel recycling	Activities related to spent fuel recycling, including recycling technologies and fuel cycles for SMRs and HTRs	40 440	27 379
1.2.3.003 Radioactive materials transportation	General management related to radioactive materials transportation	24 102	3 277
1.2.4.001 Predisposal management	Expert support of publications, wiki articles and web based information	343 217	343 217

Major Programme 1 — Nuclear Power, Fuel Cycle and Nuclear Science
Activities unfunded in the Regular Budget
(excluding Major Capital Investments)

Project	Tasks	2020 Unfunded	2021 Unfunded
1.2.4.002 Waste disposal	Expert support of developing a framework for the effective implementation of a borehole disposal system	1 025 605	1 122 880
1.2.4.003 Managing disused sealed radioactive sources (DSRS)	Expert support in capacity building, development of training material and publications	647 925	658 892
1.2.5.001 Decommissioning	Facilitate implementation of projects of International Decommissioning Network	762 476	762 476
1.2.5.002 Environmental remediation	Projects of Environmental Remediation Network	44 258	44 258
1.3.2.001 Technoeconomic analysis	Support on topical energy economic and environmental issues	103 229	103 229
1.3.3.001 Implementing knowledge management in nuclear organizations	Develop and maintain NKM methodology, activities and support	42 467	42 467
1.3.3.002 Facilitating sustainable education in nuclear science and technology	Expert support in maintaining and establishing Educational Networks	261 037	261 037
1.3.3.003 Nuclear knowledge organizational systems and technology	Coordinating activities, CLP4Net activities and costs	84 934	84 934
1.3.4.002 INIS collection and services	Expert support in INIS collection and services	136 888	136 888
1.4.1.001 Provision of data services	Maintain computer and network systems	136 888	136 888
1.4.1.002 Nuclear data developments	Project management and administration	197 924	197 924
1.4.2.001 Research reactors utilization	Capacity building in Member States and collaboration in the area of RR utilization	15 800	15 800
1.4.2.002 Access to research reactors, capacity building and infrastructure development	Expert support in support of the Research Reactor section	197 924	197 924
1.4.2.003 Research reactor fuel cycle	Expert support in minimization of HEU and promotion of technologies using LEU	1 135 296	1 038 445
1.4.2.004 Research reactors operation, maintenance and upgrade	Expert support in RR operation, maintenance and upgrade	166 678	166 678
1.4.3.001 Accelerator applications in multiple disciplines	Project management and administration	83 339	83 339
1.4.3.002 Facilitating experiments with accelerators	Project management and administration	83 339	83 339
1.4.4.001 Nuclear fusion research and technology	Project management and administration for Nuclear Fusion Research and Technology	103 229	103 229
Grand Total		**9 993 273**	**9 833 460**

Major Programme 2
Nuclear Techniques for Development and Environmental Protection

Introduction

Major Programme 2 supports the peaceful uses of nuclear science and applications, providing Member States with science based advice, educational materials, standards, guidance on best practices and reference materials, and technical documents. Major Programme 2 encompasses activities in five thematic areas: food and agriculture, human health, water resources, environment, and radioisotope production and radiation technology. Member States' demand for assistance continues to increase in the areas of food security and safety, water availability, human health, transboundary animal and plant diseases, environmental impacts of climate change and industrial applications of nuclear technology.

The Agency's laboratories at Headquarters and in Seibersdorf and Monaco remain an essential vehicle for programme delivery. These laboratories need to remain capable of meeting the increasing and changing needs of Member States. Enhancing quality assurance and maximizing the use of the new facilities acquired through the Renovation of the Nuclear Applications Laboratories (ReNuAL/ReNuAL+) projects will help the Agency provide enhanced services to Member States.

Partnerships will continue to be an important way to strengthen programmatic activities and engage with Member States. The Agency will continue to enhance key partnerships with United Nations system organizations such as the Food and Agriculture Organization of the United Nations and the World Health Organization. Networks of Member States' scientific and research institutions, such as the network of Analytical Laboratories for the Measurement of Environmental Radioactivity (ALMERA) and the Veterinary Diagnostic Laboratory (VetLab) Network, will be expanded. The Agency's Collaborating Centre scheme remains a valuable arrangement for working jointly with Member States' institutions. Efforts will be made to make more efficient use of the scheme for more cost effective implementation of the Major Programme through arrangements with Collaborating Centres.

Education and training will continue to be fundamental to this Major Programme. To reach a wider audience and achieve greater cost savings, the development of e-learning tools and on-line education platforms such as webinars will continue to be emphasized. To increase public awareness of the work and contributions of this Major Programme, efforts initiated in previous budget cycles aimed at developing specific communication strategies will continue.

Objectives:	
— *To support Member States in enhancing their science and application capabilities through the integration into sustainable development programmes of nuclear and isotopic techniques where these techniques have comparative advantages*	
Outcomes	**Performance Indicators**
• Increased Member States' use of nuclear and isotopic techniques in the areas of food and agriculture, human health, water resources management, management of marine and terrestrial environments, and industrial development.	• Number of Member States with active R&D activities in non-power nuclear applications. • Number of Member States using non-power nuclear applications developed in collaboration with the Agency.
Projects	
Title	**Main Planned Outputs**
2.0.0.001 Overall management, coordination and common activities	Annual Report; Nuclear Technology Review; Mid-Term Progress Report; Programme Performance Report; reports to the General Conference; briefings, meetings of the Standing Advisory Group on Nuclear Applications (SAGNA); meetings with Member States.

Projects	
Title	**Main Planned Outputs**
2.0.0.002 Management of the coordinated research projects and IAEA collaborating centres	Completed coordinated research projects; completed research; technical and doctoral documents; contracts and research agreements; Technical Meetings (research coordination meetings); publications; dissemination of databases and techniques; Collaborating Centre agreements.

Programme 2.1 Food and Agriculture

Programme 2.1 will continue to support Member States in achieving the SDGs with the help of nuclear technologies, to foster efficient use of resources, enhance productivity and improve food safety.

The programme deploys a range of applied and adaptive R&D activities using nuclear technology to support Member States in: (i) enhancing agricultural productivity to meet increasing demand; (ii) fostering a sustainable natural resource base; (iii) addressing climate change issues and intensification of natural hazards; and (iv) tackling transboundary and emerging threats to agriculture and food systems.

Lessons learned from reviews, assessment, evaluations: Strong cooperation with FAO continues to be essential for the Joint FAO/IAEA Programme of Nuclear Techniques in Food and Agriculture in terms of expertise and programmatic synergies. More emphasis is being placed on utilising opportunities to collaborate at the regional, subregional and national levels, with a special focus on coordinated activities in the field.

Specific criteria for prioritization:

1. To support Member States in achieving sustainable food and agriculture production, support implementing actions to achieve SDGs, and address emerging threats to agriculture and food systems, particularly in response to the impacts of climate change.
2. To support Member States in addressing challenges posed by global trends pertaining to agriculture development and food security, with focus on emerging issues and challenges requiring further research, development and technology transfer.
3. Develop scientific and technical knowledge addressing current and future challenges for the agriculture and food sector, using nuclear and related techniques.

Programmatic changes and trends

Subprogramme 2.1.1 Sustainable Land and Water Management continues to address Member State interest in the management of soil and water resources for sustainable food production, particularly in response to the impacts of climate change and climate variability. Climate-smart agriculture requires the development of tools and technologies for improving on-farm and area-wide land and water management practices, and the development and assessment of good agricultural practices for food production and improved soil and water quantity and quality in both cropping and integrated cropping livestock farming systems, including conservation agriculture. This subprogramme will continue to provide assistance to Member States for preparedness and response to nuclear and/or radiological emergencies affecting food and agriculture.

Subprogramme 2.1.2 Sustainable Intensification of Livestock Production Systems reflects the continual programmatic shift from traditional technologies towards nuclear and nuclear related or derived immunological and molecular based technologies to: optimize the use of available animal feed resources (while promoting climate-smart agriculture); improve the production traits of locally available livestock breeds (i.e. greater yields, better quality milk and meat); develop and transfer early and rapid diagnostic technologies for transboundary animal and zoonotic diseases; and enable Member States to respond to the risks posed by such events earlier and with greater effectiveness. The use of gamma irradiated diagnostic reagents and components and inactivated or killed disease pathogens as vaccine components, and the use of stable isotopes to trace and monitor pathways of disease carriers in a non-invasive way will continue to form the basis of the activities of Subprogramme 2.1.2 in this biennium.

Subprogramme 2.1.3 Improvement of Food Safety and Food Control Systems focuses on addressing Member State demand for assistance and collaboration in achieving SDGs in the areas of food quality, food security and food safety control procedures. This includes innovative analytical methods for measuring agrochemical and environmental contaminants in foods and for combating food fraud to assist Member States in ensuring the authenticity, traceability and integrity of the food supply chain. The subprogramme will continue to develop machine generated irradiation technologies for phytosanitary, sanitary and food quality applications to complement existing radionuclide based technologies.

Subprogramme 2.1.4 Sustainable Control of Major Insect Pests is responding to growing Member State demand for environmentally friendly, and therefore more sustainable, management of key plant pests that cause major economic losses. The demand for development, transfer and application of the sterile insect technique (SIT) continues for plant insect pests. Following increasing outbreaks of mosquito borne diseases, the subprogramme will conduct pilot projects on SIT application for mosquito control in the field to test and demonstrate, under real world conditions, technologies and tools developed in the laboratory.

Subprogramme 2.1.5 Crop Improvement for Intensification of Agricultural Production Systems continues to address Member State concerns about the resilience to the impacts of climate change and climate variability of agro-biodiversity resources for sustainable food production. One effective way to maintain or increase crop production levels in the face of climate change is to improve crop varieties through nuclear techniques. The subprogramme will continue to work on crop improvement for climate change adaptability; priority will be given to promoting diversification of crop production, addressing transboundary plant diseases and developing novel molecular markers for accelerating the crop improvement process.

Objectives, Outcomes and Performance Indicators by Programme

Programme 2.1 Food and Agriculture

Objectives:

— *To support Member States in improving efficiency and sustainable intensification of agricultural production and the improvement of global food security through capacity building through technology transfer to Member States.*

— *To use nuclear technique to increase the resilience of livelihoods to threats and crises that impact agriculture, livestock and food security, including climate change, biothreats, food safety risks, and nuclear or radiological emergencies.*

Outcomes	Performance Indicators
• Increased Member States' use of Agency services in the areas of food security and sustainable use of natural resources through the application of nuclear and related techniques, technology transfer and capacity building.	• Number of Member States applying Agency recommended techniques, guidelines and products in their farming innovation and extension programmes, with increased agricultural production and improved efficiency of natural resource use.
• Increased Member States' use of Agency services in the areas of nuclear techniques for sustainable intensification of agricultural production.	• Number of national agricultural research institutes and other relevant national organizations using Agency recommended techniques, guidelines and products in their agricultural research and development.

Subprogramme 2.1.1 Sustainable Land and Water Management

Objectives:

— *To develop tools and technology packages for the application of nuclear techniques for use by Member States in improving sustainable land and water practices.*

— *To build Member State capacities in the use of isotopic, nuclear and related techniques to assess land and water management practices, climate change impact on soil and water resources for sustainable food production, and response to nuclear and extreme weather emergencies affecting food and agriculture.*

Outcomes	Performance Indicators
• Increased Member States' use of technology developed by the Agency to mitigate or adapt to impacts of climate change on land use, land degradation, soil erosion and greenhouse gas emissions through climate-smart agricultural practices.	• Number of requests by Member States to use isotopic, nuclear and related techniques, developed in collaboration with the Agency, in innovative land and water management packages.
• Increased Member States' use of Agency services in efforts to mitigate or adapt to impacts of nuclear or radiological emergencies and in remediation efforts for food and agriculture.	• Number of guidelines and tools for remediation developed in collaboration with the Agency and used in Member States.

Outcomes	Performance Indicators
• Increased Member States use of isotopic, nuclear and nuclear related techniques to assess the impact of on-farm and area-wide land and water management practices on water quantity and quality; climate change and extreme weather events on soil and water resources for sustainable food production; and nuclear or radiological emergencies affecting food and agriculture.	• Number of Member States using isotopic, nuclear and related techniques to assess the impact of on-farm and area-wide land and water management practices; extreme weather events on soil and water resource conservation; and nuclear or radiological emergencies affecting food and agriculture.

Projects

Title	Main Planned Outputs
2.1.1.001 Land Management for climate smart agriculture	Data on impact of climate change on land productivity and quality, and on the effectiveness of climate-smart soil management practices; protocols and guidelines; data collection, management and visualization tools for crisis management; training.
2.1.1.002 Water management for resource saving agriculture	Protocols, guidelines and sensor technology to improve crop water productivity, minimize agricultural pollution, and respond to drought and flooding emergencies in agriculture.

Subprogramme 2.1.2 Sustainable Intensification of Livestock Production Systems

Objectives:

— *To support Member States in enhancing livestock nutrition and reproduction as well as breeding systems to sustainably improve farmers livelihoods by developing, transferring and applying nuclear and nuclear related techniques, while mitigating climate change.*

— *To support Member States in the control of animal and zoonotic disease risks, including those with a biothreat potential to improve animal production, by developing, transferring and applying atomic, nuclear and nuclear derived/related technologies, while promoting climate smart agriculture.*

Outcomes	Performance Indicators
• Increased Member States' use of Agency services to improve locally available feed resources, including non-traditional feed resources.	• Number of Member States adopting Agency recommended feeding and nutrition strategies for locally available feed resources.
• Increased Member States' use of technology developed by the Agency in reproduction and breeding strategies and practices to improve productivity in medium and low input and smallholder production systems.	• Number of Member States implementing livestock breeding services and introducing animal genetic characterization and/or breeding strategies based on Agency recommendations to improve reproduction practices.
• Increased Member States' use of Agency guidelines on animal health systems to diagnose and control transboundary animal and zoonotic diseases, including those with a biothreat potential.	• Number of Member States implementing animal and zoonotic disease diagnostic and control technologies to ensure timely actions (vaccination or disease elimination) using Agency guidelines.

Projects

Title	Main Planned Outputs
2.1.2.001 Improving animal production and breeding	Publications; guidelines and standard operating procedures; reports; training courses and workshops; database for recording production data; International Symposium on sustainable animal production and health – current status and way forward.

Projects	
Title	**Main Planned Outputs**
2.1.2.002 Decreasing Transboundary Animal and Zoonotic Disease Threats	Development and transfer of atomic, nuclear and nuclear derived or related technologies for the early and rapid diagnosis and control of transboundary animal and zoonotic diseases to enhance livestock productivity and promote biosecurity.

Subprogramme 2.1.3 Improvement of Food Safety and Food Control Systems	
Objectives:	
— *To support Member States in strengthening their capacity to improve food safety and food control systems, as well as environmental protection, including preparedness and response to a nuclear or radiological emergency affecting food and agriculture.* — *To support Member States in enhancing international food trade through the use of nuclear and related techniques for food safety, sanitary and phytosanitary purposes.*	
Outcomes	**Performance Indicators**
• Increased Member States' use of technology developed by the Agency based on established and novel food irradiation technologies for food quality and sanitary and phytosanitary purposes.	• Number of Member States requesting technology developed by the Agency based on nuclear and related techniques for food safety, sanitary and phytosanitary purposes. • Number of food treatment facilities that adopt nuclear and related techniques for food safety, sanitary and phytosanitary purposes using technology developed by the Agency.
• Increased Member States' use of technology developed by the Agency on integrated food forensic, traceability and contaminant control; improved agricultural practices for the use of agrochemicals to optimize food production and environmental sustainability.	• Number of laboratories in Member States using Agency technology in developing and/or applying food control techniques and methods. • Number of Agency validated analytical methods for food safety and integrity transferred to or implemented in Member States.
• Increased Member States' use of the harmonized procedures and international standards developed by the Agency for preparedness and response to a nuclear or radiological emergency; development and dissemination of guidelines and protocols for agricultural countermeasures and remediation strategies for agricultural production, land and water.	• Number of harmonized administrative arrangements, procedures and international standards developed by the Agency and disseminated to Member States. • Number of Agency guidelines on agricultural countermeasures and remediation strategies, including monitoring and sampling protocols, developed and disseminated to Member States.
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; sanitary and phytosanitary irradiation using electron beams, X-rays and relevant radionuclide source technology; new radiation technologies and support to Member States in the adoption and use of food irradiation applications.
2.1.3.002 Traceability for food safety, quality and to enhance international trade	Validated methods for food authenticity, traceability and contaminant control to improve food safety and quality, and to strengthen trade; laboratory staff training; procedures to support food control programmes implemented in Member State laboratories; laboratory networks established or enhanced.

Projects	
Title	**Main Planned Outputs**
2.1.3.003 Preparation & response to radiological emergencies: food & agriculture	Revised and up-to-date Joint Radiation Emergency Management Plan of the International Organizations (JPLAN); network of key institutions including international organizations.

Subprogramme 2.1.4 Sustainable Control of Major Insect Pests	
Objectives:	
— *To support Member States in increasing their capacity in the area-wide control of key pests which threaten crops, livestock and humans, by developing and integrating SIT with other methods to support Member States to reduce losses and insecticide use the risk of introduction of exotic insect pests and facilitate trade.* — *To help Member States control mosquito populations that spread diseases through the development, validation and transfer of SITs.*	
Outcomes	**Performance Indicators**
• Increased Member States use of improved SITs and related technologies, and decision support systems to create optimal insect pest control strategies.	• Number of Member States using training, support and improved technologies, feasibility and decision support studies, guidelines, manuals and standards developed by the Agency.
• Validation in the field of the SIT package for the control of invasive mosquitoes as part of an area-wide integrated vector management strategy.	• Number of Member States where the SIT package against invasive mosquitoes has been tested in the field.
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 insect mass-rearing facilities; post-harvest treatments; guidelines; databases and models; shipment of strains and materials; training.
2.1.4.002 Management of livestock insect pests for sustainable agriculture	Improved procedures to mass-rear, separate by sex, sterilize, release and monitor; capacity building; provision of materials, feasibility assessments and facility designs; strategy and policy advice; harmonized approaches among key international partners.
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* and *A. aegypti*, and *Anopheles arabiensis*; sexing systems and strains; male mosquito behaviour assessments; release systems; guidelines, manuals, facility designs and training.

Subprogramme 2.1.5 Crop Improvement for Intensification of Agricultural Production Systems
Objectives:
— *To support Member States in enhancing their capacity to use nuclear and nuclear related technologies for crop improvement.* — *To support Member States in addressing major constraints of crop production through mutation breeding techniques.*

Outcomes	Performance Indicators
• Increased Member States' use of mutation breeding techniques and efficiency enhancing technologies for developing improved crop varieties.	• Number of Member States using nuclear and related technologies in crop improvement. • Number of mutant varieties and mutant lines adaptable to climate change (tolerant to abiotic and biotic stresses, improved yield and quality) developed and transferred to Member States.
• Increased Member States' use of technology packages to address major agricultural constraints.	• Number of Member States applying developed technology packages.
Projects	
Title	**Main Planned Outputs**
2.1.5.001 Mutation induction for better adaptation to climate change	Protocols, guidelines, database, training, improved crop varieties and mutant lines with broadened adaptability to climate change.
2.1.5.002 Integrated techniques for mutation breeding and biodiversity	Protocols, guidelines, database, training, enhanced crop biodiversity (mutant/advanced lines) as breeding resources.

Programme 2.2 Human Health

Nuclear and related techniques contribute to sustainable development in human health by supporting Member States in achieving SDG 3 "Good Health and Well-Being" across the spectrum of clinical management, including prevention, diagnosis and treatment of many health issues, or to complement non-nuclear techniques. The programme includes medical imaging and radiation therapy, the use of stable isotopes to combat malnutrition in all its forms, and quality management to support Member States in establishing safe and effective use of these modalities. The programme supports Member States in their review and assessment of new technologies; implementation and strengthening of medical imaging, radiation therapy and related treatment modalities; enhancing safety and quality in the use of nuclear techniques; through guidance documents, codes of practice, audits, calibrations and quality assurance services, and the establishment of techniques and guidance on their implementation. Capacity building will be enhanced by strengthening the education of professionals to improve clinical practice and nutritional programmes. Partnerships with the World Health Organization, other United Nations organizations, and international agencies and professional bodies will lead to enhanced synergies and harmonized good practice and quality guidelines. The beneficiaries of the programme are patients, health professionals, hospitals, nutritionists, laboratories and research centres in Member States.

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 in Member States should be deployed to strengthen the central role for capacity building, especially during the transition to new technology.
— The implementation of Agency guidelines to enhance quality assurance in Member States is challenging due 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. To support Member States in activities that have the greatest impact on effectiveness of diagnosis and treatment of patients, while ensuring safety of patients, staff and public.
2. To support Member States in activities to support the implementation and sustainability of existing technologies.
3. To support Member States in the safe transitioning to new and proven modalities, including those relating to capacity building of professionals.
4. To support Member States in activities that have greatest impact on improving the effectiveness of nutrition programmes to combat malnutrition in all its forms.
5. Emerging nuclear technologies that reflect priorities identified by Member States.

Programmatic changes and trends

Subprogramme 2.2.1 Nutrition for Improved Human Health will continue to focus on early life nutrition and the double burden of malnutrition — the coexistence of both undernutrition and overweight and obesity. New areas in the field of health effects of the environment include the assessment of nutrient absorption in gut dysfunctions and the role of endocrine disruptors such as persistent organic pollutants in early child growth and obesity. The subprogramme will expand the public health perspective to include clinical applications in the area of nutritional care during diagnosed cancer. Other areas of importance include expansion of partnerships, an increased focus on quality assurance of measurements made both in the field and in the laboratory, and capacity building.

Subprogramme 2.2.2 Nuclear Medicine and Diagnostic Imaging will continue to focus on the use of radionuclide therapies and integrated diagnostic medical imaging to address the growing requests to support applications of nuclear medicine and diagnostic imaging techniques (e.g. computed tomography (CT), magnetic resonance imaging, single photon emission computed tomography (SPECT), SPECT/CT, positron emission tomography (PET), PET/CT) to tackle noncommunicable diseases, in particular cardiovascular diseases and cancer, which are also a focus of the World Health Organization. Applications of nuclear medicine and radiology will be addressed from a clinical and a research standpoint. Professional education and training will continue to use different outreach tools, including guidance documents and web based e-learning resources, conferences, specific training, and, from a research point of view, new coordinated research projects focusing on areas of interest and filling the existing gaps in clinical practice in Member States.

Subprogramme 2.2.3 Radiation Oncology and Cancer Treatment will increase the use of modern tools, including e-learning strategies, for the delivery of training in low resource environments and in line with the overall objectives of the Human Health programme. Areas addressed include novel techniques and the exploration of their feasibility for effective use in Member States. The subprogramme will increase the use of web based educational resources.

Subprogramme 2.2.4 Dosimetry and Medical Physics for Imaging and Therapy will focus on developing new quality assurance and quality control guidance in medical physics, updating existing guidelines and enhancing databases. Support for the recognition, education and training of medical physicists in Member States will continue. Guidelines for the establishment of quality dosimetry laboratory services for Member States will be developed. The expansion of the dosimetry laboratory services to include high dose rate brachytherapy and advanced linear accelerator technology will offer new opportunities for education and the development of guidelines. Support will be provided for coordinated research projects aimed at developing and updating dosimetry protocols and quality assurance and quality control guidelines. The monitoring of new technology and assessment of its efficacy will be conducted through consultancies with professional societies and international organizations. Guidelines for a safe and effective transition to new technology in radiation medicine will be developed.

Objectives, Outcomes and Performance Indicators by Programme

Programme 2.2 Human Health	
Objectives:	
— *To support Member States in enhancing their capability to address needs relating to nutrition and the prevention, diagnosis and treatment of health problems through the development and application of nuclear and related techniques within a quality assurance framework.*	
Outcomes	**Performance Indicators**
• Increased use of nuclear techniques by institutions in Member States supported by the Agency to develop more effective programmes in health.	• Number of institutions in Member States engaged in Agency studies and activities using nuclear and related techniques in health.
• Enhanced competencies of health care professionals working in radiation medicine in Member States using the Agency online platform.	• Number of Member States participating in Agency activities in the use of nuclear, nuclear derived or isotopic techniques in human health. • Number of professionals trained through human health related activities.

Subprogramme 2.2.1 Nutrition for Improved Human Health	
Objectives:	
— *To support Member States in enhancing their capability to improve nutrition for better human health.*	
Outcomes	**Performance Indicators**
• Increased Member States' use of Agency services to conduct studies using nuclear techniques and develop informed nutrition policies and programmes.	• Number of institutions in Member States engaging in Agency studies and activities using nuclear and related techniques in nutrition including research, publications and quality assurance.
• Enhanced use of nuclear techniques by Member States with Agency support to develop more effective nutrition programmes.	• Number of Member States involved in Agency activities sharing results of studies using nuclear and related techniques to inform nutrition programmes.
Projects	
Title	**Main Planned Outputs**
2.2.1.001 Health effects of nutrition and the environment	Research studies and improved data quality; guidelines, on-line education resources, publications, and standard quality control procedures made available to Member States; new and stronger partnerships developed.

Subprogramme 2.2.2 Nuclear Medicine and Diagnostic Imaging	
Objectives:	
— *To support Member States in improving the management of health conditions through effective application of nuclear medicine and diagnostic imaging techniques, with a special focus on non-communicable diseases.*	
Outcomes	**Performance Indicators**
• Increased Member States' use of Agency services to manage health conditions such as cardiovascular diseases and cancer by applying nuclear medicine and radiological techniques.	• Number of institutions in Member States engaged in Agency studies and activities including: Agency research, publications and quality management in nuclear medicine and radiology. • Number of professionals in Member States trained in nuclear medicine and radiology.
• Increased number of professionals in Member States using the Agency platform on nuclear medicine and radiology clinical practices.	• Number of professionals accessing Agency educational materials or engaging in Agency activities for continuous professional development.
Projects	
Title	**Main Planned Outputs**
2.2.2.001 Nuclear medicine and radiology techniques in health condition	Research activities (coordinated research projects); publications, guidance, guidelines and meeting reports available to Member States; implementation of quality management programmes in nuclear medicine and/or radiology; quality management audits.
2.2.2.002 Clinical data management and education in nuclear techniques in health	Updates of nuclear medicine and radiology content on the Agency's Human Health Campus; interactive e-learning and other educational materials; seminars and international conferences of Agency partners made available on-line; International conference on Molecular Imaging and Clinical PET-CT: paving the way towards personalized medicine and Theranostics (IPET-2020); promotion of leadership and other soft skills; harmonized nuclear medicine training curriculum.

Subprogramme 2.2.3 Radiation Oncology and Cancer Treatment	
Objectives:	
— *To support Member States' in enhancing their capability for radiotherapy and cancer treatment and other applications of radiation in human health, and for the effective, efficient and safe utilization of current and future advanced radiotherapy technologies.*	
Outcomes	**Performance Indicators**
• Increased Member State use of Agency guidelines to improve management of cancer cases through implementation of evidence based approaches.	• Number of Member States trained through Agency led activities in radiotherapy and radiobiology. • Number of institutions in Member States using or taking part in Agency research, publications and quality management activities in radiotherapy and radiation biology.
Projects	
Title	**Main Planned Outputs**
2.2.3.001 Clinical Radiation Oncology	Publications; databases; teaching materials and e-learning resources; International Conference on Advances in Radiation Oncology (ICARO-3).
2.2.3.002 Biological effects of radiation	Training materials; provision of expertise for clinical trials using novel strategies, including clinical biodosimetry; research in radiation sterilization in tissue banking, tissue engineering, and stem cell therapy.

Subprogramme 2.2.4 Dosimetry and Medical Physics for Imaging and Therapy	
Objectives:	
— *To support Member States in enhancing their capacity to implement radiation imaging and treatment modalities safely and effectively through optimized dosimetry and medical physics practice.*	
Outcomes	**Performance Indicators**
• Increased use of Agency guidelines and dosimetry services to enhance quality assurance and dosimetry in national calibration laboratories and hospitals.	• Number of Member States using Agency dosimetry services and implementing Agency guidelines on dosimetry and quality assurance. • Number of institutions and organizations in Member States using Agency research and publications and taking part in Agency quality improvement activities in medical physics and dosimetry; establishment of national dosimetry audit services.
Projects	
Title	**Main Planned Outputs**
2.2.4.001 Calibration and auditing services	Results of dosimetry postal audit services; results of calibration of national dosimetry standards; results of comparisons; resolution of discrepancies of beam calibrations in Member States; updated databases.
2.2.4.002 Developments in radiation dosimetry	Publications; training materials on radiation dosimetry; database development.

Projects	
Title	**Main Planned Outputs**
2.2.4.003 Clinical medical radiation physics	Publications on quality assurance guidelines for the physical, technical, dosimetry and safety aspects of clinical medical physics; dosimetry codes of practice; educational materials for medical physicists working in medical radiation imaging and treatment; methodologies on auditing procedures in radiation medicine.

Programme 2.3 Water Resources

The availability of and access to fresh water is a key factor for human well-being, as is recognized in SDG 6 "Clean Water and Sanitation". Groundwater is expected to play a key role in ensuring food and water security. Estimates of available fresh water, its replenishment and its flow patterns, and the factors controlling its availability and quality are not always well understood. Increased use of previously untapped resources often leads to environmental degradation and declining water levels. Increasing demand for food and energy also requires that governments be able to allocate water rationally between different economic activities. Additional uncertainties are related to the impact of climate change on water resources.

Comprehensive water resource assessment and management requires multidisciplinary approaches that need to be strongly supported by scientific data on the occurrence, distribution and flow of water resources. The absence of national water assessments (including groundwater) limits a Member State's ability to meet the demands for water supply and better address water security. Each subprogramme of Programme 2.3 addresses an SDG 6 target and considers the contribution of isotope hydrology to increasing national hydrological understanding. The programme continues to prioritize increasing capacity and self-reliance in Member States in the use of isotopic tools for the assessment and management of water resources.

***Lessons learned from reviews, assessment, evaluations*:** A key lesson learned is the importance of formulating hydrological studies and water resource assessment projects based on clearly identified water issue priorities of Member States, identifying specific gaps in hydrological information and establishing an appropriate institutional and legal framework for collaboration among institutes with various mandates. The experience gained in the pilot phase of the IAEA Water Availability Enhancement (IWAVE) Project illustrated the importance of the commitment and involvement of key institutions with a clear mandate on water resources, as well as the need to involve the water authorities concerned. Additionally, a preliminary assessment of the role of isotopic and related techniques in addressing specific problems needs to be completed to ensure that the proposed work plan has an advantage compared with approaches based on conventional hydrological techniques. There has been a major expansion in the use of stable isotopes, radioisotopes and noble gases in numerous Member States, leading to increasing self-reliance in obtaining analytical results. The Agency will continue to support Member States in improving their level of analytical performance. The number of projects relating to the use of artificial radioisotopes, geothermal reservoirs, salinity issues and dam leakage continues to be reduced.

Specific criteria for prioritization:

1. To support Member States in their prioritized area for their development needs and efforts relating to water resources.
2. Existence of specific information on the institutional and legal framework, as well as in needs for hydrological information at national and regional levels.
3. Comparative advantages of isotope and nuclear techniques compared to non-nuclear alternatives for the proposed application.

Programmatic changes and trends

Subprogramme 2.3.1 Isotope Data Networks for Hydrology and Climate Studies compiles and provides access to the Agency's global isotope databases — the Global Network of Isotopes in Precipitation (GNIP) and the Global Network of Isotopes in Rivers (GNIR) — for hydrological and climatological studies. The demand for these products is increasing, mainly because other environmental disciplines related to water and climate now use isotope tools. At the same time, wider access to cheaper laser absorption spectrometers is leading to an expansion in the number of teams able to generate their own isotope data. The Agency's Isotope Hydrology Laboratory provides assistance to Member States aimed at enhancing self-reliance and ensuring adequate performance of established and new laboratories, complementing other training activities on hydrological sciences and isotope data interpretation.

Subprogramme 2.3.2 Isotope Based Assessment and Management of Water Resources is supporting a growing number of Member States that are focusing on the urgent need to conduct comprehensive water resources assessments at the national and regional levels. The support will be based on the experience gained from the three pilot case studies of the IAEA Water Availability Enhancement (IWAVE) Project. Through its technical cooperation programme, as well as through collaborative projects with other United Nations organizations, the Agency has a unique role in helping Member States to conduct comprehensive, science based assessments using isotope techniques. Definitions of projects and work plans will be based on the water issue priorities identified by Member States, the need to fill specific gaps in hydrological information, and the existing institutional and legal framework. Projects on dam safety and geothermal studies will continue to be phased out.

Subprogramme 2.3.3 Radioisotope Applications for Hydrology aims to facilitate access to and expand the use of environmental radionuclides, dissolved noble gases and their isotopes in the context of water resources assessment and management. The planned activities in this cycle will consolidate the efforts to expand the routine use of these tracers in technical cooperation projects and coordinated research activities, to broaden the use of both long lived and short lived radionuclides for groundwater age dating and recharge assessments, and to map renewable resources and trace sources and the dynamics of pollution. Several of these activities aim at developing and testing simpler field and laboratory methodologies to facilitate the routine application of these new approaches, in combination with other hydrological and geochemical tools, in Member States.

Objectives, Outcomes and Performance Indicators by Programme

Programme 2.3 Water Resources	
Objectives:	
— *To support Member States in using isotope hydrology for assessment and management of their water resources, including characterization of climate change impacts on water availability.*	
Outcomes	**Performance Indicators**
• Increased Member States' use of Agency services for sustainable water resources management and related legal and policy development based on a scientifically sound evaluation of water resource availability and quality.	• Number of Member States using Agency services, isotope hydrology methodologies and global isotope data sets for water resources assessment and management, including adaptation to climate change.
• Trained human resources and available infrastructure in Member States using Agency services for the integration and routine use of isotope hydrology methods in water resource assessments.	• Number of Member States that have implemented or initiated water resources assessment programmes using isotope techniques with Agency assistance. • Number of laboratories in Member States able to produce good quality stable isotope and tritium analyses of water samples as a result of Agency assistance.

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 use by Member State institutions of the isotope technology developed by the Agency for water resources assessment and management.	• Number of Member States having implemented or initiated water resources assessment programmes using isotope techniques developed by the Agency.
Projects	
Title	**Main Planned Outputs**
2.3.1.001 IAEA isotope data networks for precipitation, rivers and groundwater	Regular updates of the Agency's global water isotope databases, a growing number of monitoring sites worldwide, and training courses on analytical methods.

Projects	
Title	**Main Planned Outputs**
2.3.1.002 Synthesis and dissemination of global isotope data and related information	Training courses, e-learning materials, maps, atlases, databases, newsletters and other outreach materials produced by the Agency or in collaboration with various partners.

Subprogramme 2.3.2 Isotope Based Assessment and Management of Water Resources	
Objectives:	
— *To support Member States in using isotope techniques for local to national scale water resource assessment and surface water or groundwater management.*	
Outcomes	**Performance Indicators**
• Increased Member States' use of Agency isotope hydrology methods as part of their water resources assessment and management efforts.	• Number of Member States regularly using Agency isotope hydrology methods as part of their water resources assessment and management efforts.
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	Reports on the assessment of transboundary watersheds and major aquifers.

Subprogramme 2.3.3 Radioisotope Applications for Hydrology	
Objectives:	
— *To support Member States in using radioisotopes of carbon and noble gases for river and groundwater management.* — *To support Member States in strengthening their capacity in the analysis of environmental tritium in water samples.*	
Outcomes	**Performance Indicators**
• Increased Member States' use of Agency assistance in improving assessment and management of surface water and groundwater systems using radioisotopes.	• Number of Member States where radionuclides and noble gas isotopes have been used with Agency assistance for water resource assessment.
• Increased Member States' use of Agency services in the analysis of environmental tritium in water samples.	• Number of isotope hydrology laboratories in Member States able to produce high quality tritium isotope data because of the assistance of the Agency.
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 and measurement protocols for noble gases and radioisotope sampling and analysis.
2.3.3.002 Noble gas isotopes for groundwater recharge and pollution studies	Improved sampling and analysis protocols for helium isotope; technical water resources reports illustrating the use of noble gases; training courses, reports of proficiency tests.

Programme 2.4 Environment

Protecting the natural environment is one of the three fundamental pillars of sustainable development, and ensuring effectiveness and efficiency in environmental management is fundamental to realizing the SDGs, especially SDG 13 "Climate Action" on biodiversity and SDG 14 "Life Below Water" on the oceans. Major threats to the environment such as overexploitation, 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 poverty reduction.

Nuclear and isotopic techniques have an important role to play in the management of the environment and in the development of mitigation and adaptation strategies. The objective of Programme 2.4 is to support Member States in enhancing their capacity to use nuclear and isotopic techniques 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.

The activities of the programme support Member States in improving the analytical capabilities of their laboratories involved in Agency activities at the interregional, regional to national levels, thus contributing to international trade, ecological sustainability, effective environmental risk assessment and remediation of polluted environments. The programme further supports Member States in building their capacity to deal with elevated levels of radioactive or other environmental contaminants, and to sustainably manage terrestrial and marine environments and their natural resources. The programme also provides scientific information to other international organizations.

Lessons learned from reviews, assessment, evaluations: The Agency's active role in international bodies such as the International Organization for Standardization and the International Committee of Weights and Measures of the International Bureau of Weights and Measures has raised awareness of the Agency within metrological institutes worldwide. This is expected to facilitate wide dissemination of Agency guides and standards for use in Member States. The subprogramme will continue the following activities:

— Strengthening the 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 of Member States to respond to a nuclear or radiological emergency.
— Facilitating the provision of reference products.
— Enhancing collaboration with key partners.
— Improving communication and outreach activities.

These activities will be assisted by the implementation and expansion of a quality assurance system, providing a model for Member State laboratories. The Agency is also working with Member State laboratories to contribute to the United Nations Decade of Ocean Science for Sustainable Development.

Specific criteria for prioritization:

1. To support Member States in activities that make a significant contribution to reach their SDGs.
2. To support Member State laboratories through networking and development of guidelines, and enhance their environmental awareness using nuclear techniques.
3. To support Member States in activities conducive to lowering technical barriers to trade and supporting the competitiveness of least developed and developing countries.
4. To enhance cooperation with Member State institutions via networks (e.g. the ALMERA network), through Agency Collaborating Centres and other partnerships at national, regional and international levels.

Programmatic changes and trends

Subprogramme 2.4.1 IAEA Reference Products for Science and Trade will continue to focus on reference materials and proficiency tests, which, together with support to the ALMERA network, remain the core activities of the subprogramme. The establishment and expansion of an internal laboratory quality system at the Agency enhances its reliability as a provider of high quality products for quality assurance and quality control in the field of environmental nuclear techniques.

Subprogramme 2.4.2 Nuclear Techniques to Understand Climate and Environmental Changes will continue to focus on nuclear and isotopic techniques to further improve understanding of the impacts of current and future ocean acidification on coastal and marine ecosystems, their resources and their socioeconomic value. The Agency is recognized by Member States and partner organizations as a key player in global ocean acidification activities, including field and laboratory based investigations, modelling and international coordination activities through the Ocean Acidification International Coordination Centre (OA-ICC), operated by the IAEA Environment Laboratories. The Agency will continue to integrate marine, terrestrial and atmospheric activities using nuclear and isotopic techniques to study climate change. For example, atmospheric carbon dioxide studies are being developed to gain a more robust understanding of the interconnection and complexities of the carbon and hydrologic cycles.

Subprogramme 2.4.3 Nuclear Techniques to Monitor and Assess Pollution provides Member States with nuclear and isotopic tools to measure and assess radioactive and non-radioactive pollution in both terrestrial and marine environments. Efforts include fostering international collaboration and implementation of monitoring and assessment programmes and standardized data repositories. The subprogramme also addresses pollution trends and the behaviour and effects of radionuclides in the environment. Support for environmental database development and modelling will also be strengthened in this subprogramme. In particular, the Agency's web based Marine Information System (MARiS) will continue to be expanded and networked to serve a broader stakeholder community and to provide instant access to comprehensive data and information resources on key environmental pollutants.

Subprogramme 2.4.4 Applying Analytical Techniques to Protect Biodiversity and Ecosystem Services will continue to focus on analysing the biological and ecological impacts of contaminants such as radionuclides, trace elements, persistent organic pollutants and biotoxins, which represent a major threat to human health, biodiversity and the productive functioning of marine and terrestrial ecosystems. This subprogramme will continue to develop nuclear and isotopic techniques to provide Member States with powerful tools to assess contaminant levels and to study their sources, behaviour and impact on marine and terrestrial ecosystem services. Increasingly, this subprogramme will support Member States in better understanding and using ecosystem services for disaster risk reduction. It will continue to focus on knowledge development, strengthening analytical capacities of Member States and transferring know-how on environmental assessments and on remediation of contaminated sites, through multilateral collaboration.

Objectives, Outcomes and Performance Indicators by Programme

<table>
<tr><th colspan="2">Programme 2.4 Environment</th></tr>
<tr><td colspan="2">Objectives:</td></tr>
<tr><td colspan="2">— To support Member States in identifying environmental problems caused by radioactive and non-radioactive pollutants and climate change using nuclear, isotopic and related techniques, and to propose mitigation and adaptation strategies and tools.
— To support Member States in enhancing their capability to develop strategies for sustainable management of terrestrial, marine and atmospheric environments and their natural resources in order to effectively and efficiently address their environment related development priorities.</td></tr>
<tr><th>Outcomes</th><th>Performance Indicators</th></tr>
<tr><td>● Increased Member States' use of nuclear, isotopic and related techniques with Agency assistance for identifying environmental problems caused by radioactive and non-radioactive pollutants, climate change and the loss of natural habitat, and for developing mitigation and adaptation strategies and tools.</td><td>● Number of Member States identifying environmental impacts caused by pollution, climate change or loss of habitat through the technical support of the Agency.
● Number of new certified reference materials produced and analytical methodologies published and/or validated.</td></tr>
<tr><td>● Increased Member States' use of Agency services to enhance their capability 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.</td><td>● Number of Member States participating in Agency research, monitoring or training activities to enhance their capability to develop strategies to protect the environment and use natural resources sustainably.</td></tr>
</table>

Subprogramme 2.4.1 IAEA Reference Products for Science and Trade	
Objectives:	
— *To support Member States in enhancing the reliability and comparability of measurement results obtained by nuclear analytical techniques in their laboratories.*	
Outcomes	**Performance Indicators**
• Increased use by Member State laboratories of the assistance of reference materials provided by the Agency to carry out sampling and measurement	• Number of designated Member State laboratories contributing to the ALMERA network. • Number of Member State participants in proficiency tests and interlaboratory comparisons conducted by the Agency.
Projects	
Title	**Main Planned Outputs**
2.4.1.001 Provision of reference products and laboratory performance support	Production and distribution of analytical standards (reference materials) to laboratories worldwide; conduct of proficiency tests; consolidated Agency web site for customer interaction; harmonization of Agency reference material production and certification process.
2.4.1.002 Quality management and supporting network activities	Continuation and extension of quality management at the Agency's laboratories with accreditation of analytical procedures; advice to Member State laboratories on analytical performance; operational ALMERA network; personnel training; recommended analytical procedures.

Subprogramme 2.4.2 Nuclear Techniques to Understand Climate and Environmental Changes	
Objectives:	
— *To support Member States in developing and applying nuclear and related techniques to assess climate and environmental changes and their effects on environmental contamination by radioactive and non-radioactive pollutants.* — *To support Member States in developing and applying nuclear and related techniques for identifying, monitoring and mitigating impacts of climate and environmental changes on ecosystem services.*	
Outcomes	**Performance Indicators**
• Increased Member States' use of Agency services to develop and apply nuclear and related techniques to assess the effect of climate and environmental change on pollution.	• Number of Member State experts trained by the Agency in the use of nuclear and isotopic techniques to assess pollution effects in relation to climate and environmental change.
• Increased Member States' use of Agency services to develop and apply nuclear and related techniques to assess climate and environmental change in marine ecosystems, including ocean acidification.	• Number of Member State experts trained by the Agency in the use of nuclear and isotopic techniques to assess changes in climate and environmental impacts including ocean acidification. • Number of Member State experts searching the OA-ICC for information on ocean acidification and potential socioeconomic impacts.
Projects	
Title	**Main Planned Outputs**
2.4.2.001 Isotopic tools to study climate and environmental change	Publications and guidelines on the application of nuclear, isotopic and related techniques to studies of past climatic and environmental change.

Projects	
Title	**Main Planned Outputs**
2.4.2.002 Assessing carbon cycle and impacts of ocean acidification	Publications and guidelines on the application of nuclear, isotopic and related techniques to studies of the marine carbon cycle and associated climate change impacts; updates of the OA-ICC web site; training course reports.

Subprogramme 2.4.3 Nuclear Techniques to Monitor and Assess Pollution	
Objectives:	
— *To support Member States in enhancing their capability to apply nuclear, isotopic and related techniques for monitoring environmental contamination by radioactive and non-radioactive pollutants.* — *To support Member States in applying analytical, tracer and numerical tools to assess the origins, behaviour and trends of radioactive and non-radioactive pollutants, and their impact on the environment in support of environmental management decisions in routine and emergency situations.*	
Outcomes	**Performance Indicators**
• Increased Member States' use of Agency services for the use of nuclear and related techniques for monitoring the occurrence, dispersion and trends of radioactive and non-radioactive pollutants and for assessments of their origin, behaviour and impacts on the environment.	• Number of Member State experts receiving support from the Agency to efficiently use their nuclear and isotopic techniques capabilities to assess radioactive and non-radioactive pollution and impacts of contaminants on the environment.
• Increased use of information, data, real time measurements and numerical tools by Member State experts in support of environmental management and decision making for routine and emergency situations.	• Number of Member State experts accessing the MARiS database.
Projects	
Title	**Main Planned Outputs**
2.4.3.001 Radioactive and non-radioactive pollution and impact on environment	Publications and guidelines on the application of nuclear, isotopic and related techniques to the study of environmental pollution.

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 the transfer, behaviour and impact of contaminants, biotoxins and radionuclides with regard to biodiversity, food safety and ecosystem services.* — *To develop procedures for the determination of nuclear and non-nuclear pollutants in the environment and guidelines on the behaviour and impact of radionuclides in the environment.* — *To increase knowledge on accumulation and transfer of contaminants (radioactive and non-radioactive biotoxins relating to harmful algal blooms (HABs)) in organisms, especially those of socioeconomic importance.*	
Outcomes	**Performance Indicators**
• Increased Member States' use of Agency services to apply nuclear and non-nuclear techniques to assess the occurrence, transfer and impact of contaminants with regard to the environment.	• Number of Member State laboratories with increased understanding of transfer processes, behaviour and impact of pollutants and radionuclides in various marine and terrestrial ecosystems as a result of Agency support.
• Increased Member States' use of Agency services to assess nuclear and non-nuclear pollutants in the environment.	• Number of novel analytical procedures developed and made available by the Agency to Member States to assess the occurrence and fate of pollutants in the environment.

Outcomes	Performance Indicators
• Increased Member States' use of Agency services in the accumulation and transfer of contaminants (radioactive and non-radioactive biotoxins relating to HABs) in organisms.	• Number of Member States that have gained expertise from the Agency's programme using nuclear techniques for accumulation and transfer of contaminants.
Projects	
Title	**Main Planned Outputs**
2.4.4.001 Developing methodologies for environmental monitoring and assessment	Analytical methodologies for the 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 service	Publications and training course reports relating to HAB programmes.

Programme 2.5 Radioisotope Production and Radiation Technology

Radioisotopes and radiation technology have numerous beneficial applications in diverse areas such as health care, food safety and security, the environment and industry. Programme 2.5 will continue to focus on applications in these diverse areas to address the needs of Member States.

In response to increasing demand, the programme's technical activities will be aimed at supporting Member States in building their capacity for the sustainable use of such technologies, with an emphasis on best laboratory/industrial work practice, quality assurance, safety, compliance with relevant national regulatory requirements and certification. These technical activities will be complemented by the development of technical documents, guidelines, web based educational materials and e-learning modules.

In health care, the focus will continue to be on activities relating to the production of medical radioisotopes, including ^{99}Mo/^{99m}Tc and other alternative diagnostic isotopes; emerging therapeutic radionuclides, including alpha emitters; and theragnostic and molecular targeting radiopharmaceuticals, with an emphasis on the regulatory aspects of their use. Activities in industrial applications of radiotracers and radiation technology will continue to focus on training and certification to support Member States in enabling the safe use of such technologies. Another area of focus is radiation technologies that address emerging needs such as (i) phytosanitary treatment of industrial effluents or potential biohazards; (ii) preservation of cultural heritage objects; and (iii) production of high value products such as nanomaterials. Practical training will be provided and e-learning tools will be produced in cooperation with collaborating institutes.

Lessons learned from reviews, assessment, evaluations: Successful, sustainable deployment and applications of nuclear techniques in Member States needs engagement of all stakeholders from the beginning, including appropriate training and certification of personnel. Although applications of radiotracer and radiation based techniques in industry are well established in many countries, these applications are continually evolving and being optimized to suit emerging needs. In the aftermath of recent natural disasters, the Agency has provided support to Member States in the use of non-destructive testing for evaluation of structural integrity. This has highlighted the need to be ready to respond to such events, as well as the need to provide training in non-destructive testing techniques.

Specific criteria for prioritization:

1. To support Member States in their use of nuclear techniques that have a clear advantage.
2. To support Member States in developing holistic training strategies for skilled human resource, safe working practices and compliance with national regulatory requirements.
3. To support Member States in global production and supply of radioisotopes

Programmatic changes and trends

Subprogramme 2.5.1 Radioisotope Products for Cancer Management and Non-communicable Diseases will address alternative technologies for producing ^{99}Mo/^{99m}Tc, novel ^{99}Mo/^{99m}Tc generators and emerging therapeutic radionuclides and radiopharmaceuticals as a response to Member State interest in a stable supply of medical isotopes. The subprogramme will focus on supporting Member States in developing diagnostic radiopharmaceuticals (based on ^{64}Cu, ^{68}Ga, ^{99m}Tc and ^{89}Zr) and therapeutic radiopharmaceuticals (based on ^{177}Lu, and new beta and alpha emitters). It will also assist Member States in implementing good manufacturing practice

and quality assurance programmes in radioisotope and radiopharmaceutical production. Education and training, including e-learning and certification programmes, will be pursued in collaboration with selected universities. Close coordination with Programmes 1.4 and 2.2 will continue in relevant areas. Industrial radiotracers and radionuclide generators will also be addressed.

Subprogramme 2.5.2 Radiation Technology Applications in Health care, Industry and the Environment will focus on the use of emerging radiation technologies for material modification to produce high performing, environmentally friendly materials; deactivation of bio-threats and other toxic materials; cultural heritage preservation; and use of radiotracers, non-destructive techniques and nucleonic gauges in industry. The emphasis will be on supporting Member States in education, training and quality assurance aspects of these technologies through training workshops, training meetings, e-learning (web based) tools and the establishment of a repository of the most important literature. Efforts will be made to carry out practical training activities in cooperation with Agency Collaborating Centres. Activities will also aim at providing technical support in the aftermath of natural disasters at the request of Member States.

Objectives, Outcomes and Performance Indicators by Programme

Programme 2.5 Radioisotope Production and Radiation Technology	
Objectives:	
— *To support Member States in strengthening their capability to produce radioisotopes and radiopharmaceuticals.* — *To support Member States in applications of radiotracers and radiation technology for industrial use, environmental remediation, preservation of cultural heritage artefacts and production of novel high performance, environmentally friendly materials for diverse purposes.*	
Outcomes	**Performance Indicators**
• Increased Member State's use of Agency services to produce radioisotopes and radiolabelled products for use in health care, industry, research and other suitable areas.	• Number of Member State laboratories adapting or contributing to development and improvement of, (i) methodologies aimed at developing various products and techniques, and (ii) their application, with support by the Agency.
• Increased Member States' use of Agency services in the use of radiotracers and radiation technologies for industrial applications, environmental remediation and production of novel high performance materials, and in other areas of global importance.	• Number of the Agency publications, guideline documents, training materials, including e-learning modules, and databases accessed by Member States.

Subprogramme 2.5.1 Radioisotope Products for Cancer Management and Non-communicable Diseases	
Objectives:	
— *To support Member States in enhancing their capability to locally produce radioisotopes and/or radiopharmaceuticals for use in support of the management of cancer and other non-communicable diseases.*	
Outcomes	**Performance Indicators**
• Increased Member States' use of Agency services in producing radioisotopes and/or radiopharmaceuticals that contribute to improving health care.	• Number of Member State laboratories supported by the Agency in developing and using methodologies for radioisotope and radiopharmaceutical production. • Number of technical documents and e-learning tools accessed by Member States on the topics of radioisotope and radiopharmaceutical production.

Projects	
Title	**Main Planned Outputs**
2.5.1.001 Development and production of medical radioisotopes	Guidelines on quality assurance for the production processes of radioisotopes and radiopharmaceuticals; alternative technologies for production of ^{99}Mo/^{99m}Tc and ^{99m}Tc generators; production methodologies for ^{68}Ga, ^{89}Zr, and new theranostic, beta and alpha emitters.
2.5.1.002 Development of diagnostic and therapeutic radiopharmaceuticals	Guidelines on procedures and regulatory issues on radiopharmaceutical production; projects on the development of new radiopharmaceuticals; educational and training programmes, including e-learning.

Subprogramme 2.5.2 Radiation Technology Applications in Health Care, Industries and the Environment

Objectives:

— *To support Member States in enhancing their capability to adopt and use radiation technologies for the development of products for health care and industry, environmental remediation, preservation of artefacts, and cleaner and safer industrial processes.*

Outcomes	**Performance Indicators**
• Increased Member States' use of Agency services for the use of radiotracers and radiation technologies for improved health care, safe and clean industrial development and environmental protection in Member States.	• Number of Member State laboratories supported by Agency activities and involved in developing and utilizing (i) radiation technology for material processing/modification and (ii) radiotracers and nuclear techniques for industrial applications. • Number of Agency technical publications, guideline documents and training materials, including e-learning modules, accessed by Member States.

Projects	
Title	**Main Planned Outputs**
2.5.2.001 Applications of radiotracers and radiation techniques	Manuals, e-learning modules, guidelines and training materials on sealed radiation source and radioactive tracer applications in industry; projects and meetings dealing with new technologies for the same applications; support of activities involving Agency Collaborating Centres; ICARST-2021.
2.5.2.002 Radiation processing: technologies and applications	Methodologies and standard procedures for radiation application for food safety, health care, industry and remediation of pollutants; e-learning modules for radiation technologists; workshops and meetings on emerging techniques; ICARST-2021.

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

	2020 at 2020 prices		2021 at 2020 prices	
Programme / Subprogramme / Project	Regular Budget	Unfunded	Regular Budget	Unfunded
2.0.0.001 Overall management, coordination and common activities	1 893 065	-	1 893 668	-
2.0.0.002 Management of the coordinated research projects and IAEA collaborating centres	784 970	-	784 970	-
2.S Corporate shared services	5 602 725	-	5 602 730	-
	8 280 760	**-**	**8 281 368**	**-**
2.1.1.001 Land management for climate smart agriculture	1 198 262	193 333	1 198 262	193 333
2.1.1.002 Water management for resource saving agriculture	1 015 068	261 446	1 015 068	261 446
2.1.1 Sustainable Land and Water Management	2 213 330	454 779	2 213 330	454 779
2.1.2.001 Improving animal production and breeding	790 373	95 639	709 434	57 684
2.1.2.002 Decreasing Transboundary Animal and Zoonotic Disease Threats	1 526 659	963 610	1 607 598	877 005
2.1.2 Sustainable Intensification of Livestock Production Systems	2 317 032	1 059 249	2 317 032	934 689
2.1.3.001 Food irradiation applications using novel radiation technologies	360 239	180 720	360 649	180 720
2.1.3.002 Traceability for food safety, quality and to enhance international trade	1 319 507	439 294	1 324 863	439 294
2.1.3.003 Preparation & response to radiological emergencies: food & agriculture	213 275	21 422	207 508	21 422
2.1.3 Improvement of Food Safety and Food Control Systems	1 893 020	641 436	1 893 020	641 436
2.1.4.001 SIT and related technologies to manage major insect plant pests	1 616 651	414 378	1 661 805	414 378
2.1.4.002 Management of livestock insect pests for sustainable agriculture	1 012 364	200 999	1 021 516	200 999
2.1.4.003 Development of the SIT for the control of disease transmitting mosquitoes	1 040 952	1 205 157	986 645	1 205 157
2.1.4 Sustainable Control of Major Insect Pests	3 669 966	1 820 534	3 669 966	1 820 534
2.1.5.001 Mutation induction for better adaptation to climate change	956 712	256 168	908 879	256 168
2.1.5.002 Integrated techniques for mutation breeding and biodiversity	1 015 234	465 750	1 063 068	465 750
2.1.5 Crop Improvement for Intensification of Agricultural Production Systems	1 971 947	721 918	1 971 947	721 918
2.1 Food and Agriculture	**12 065 295**	**4 697 916**	**12 065 295**	**4 573 356**
2.2.1.001 Health effects of nutrition and the environment	1 750 581	-	1 795 903	-
2.2.1 Nutrition for improved human health	1 750 581	-	1 795 903	-
2.2.2.001 Nuclear medicine and radiology techniques in health condition	1 340 952	-	1 309 439	-
2.2.2.002 Clinical data management and education in nuclear techniques in health	697 456	477 520	698 040	435 177
2.2.2 Nuclear Medicine and Diagnostic Imaging	2 038 408	477 520	2 007 479	435 177
2.2.3.001 Clinical Radiation Oncology	1 420 501	-	1 496 849	-
2.2.3.002 Biological effects of radiation	496 289	81 614	436 374	81 614
2.2.3 Radiation Oncology and Cancer Treatment	1 916 790	81 614	1 933 224	81 614
2.2.4.001 Calibration and auditing services	1 416 091	-	1 354 916	-
2.2.4.002 Developments in radiation dosimetry	563 922	-	549 236	-
2.2.4.003 Clinical medical radiation physics	1 162 707	43 528	1 207 045	76 104
2.2.4 Dosimetry and Medical Physics for Imaging and Therapy	3 142 720	43 528	3 111 197	76 104
2.2 Human Health	**8 848 499**	**602 662**	**8 847 803**	**592 896**

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

	2020 at 2020 prices		2021 at 2020 prices	
Programme / Subprogramme / Project	Regular Budget	Unfunded	Regular Budget	Unfunded
2.3.1.001 IAEA isotope data networks for precipitation, rivers and groundwater	765 406	-	797 129	-
2.3.1.002 Synthesis and dissemination of global isotope data and related information	484 813	-	485 028	-
2.3.1 Isotope Data Networks for Hydrology and Climate Studies	1 250 219	-	1 282 157	-
2.3.2.001 Comprehensive assessment of resources	760 503	-	653 592	-
2.3.2.002 Management strategies for groundwater and surface water resources	479 357	-	489 518	-
2.3.2 Isotope Based Assessment and Management of Water Resources	1 239 860	-	1 143 110	-
2.3.3.001 Characterization of fossil groundwater using long lived radionuclides	521 602	-	535 411	-
2.3.3.002 Noble gas isotopes for groundwater recharge and pollution studies	741 452	-	792 450	-
2.3.3 Radio-isotope Applications for Hydrology	1 263 054	-	1 327 862	-
2.3 Water Resources	**3 753 133**	**-**	**3 753 129**	**-**
2.4.1.001 Provision of reference products and laboratory performance support	1 523 315	170 846	1 502 313	181 728
2.4.1.002 Quality management and supporting network activities	1 042 454	35 485	1 057 542	59 425
2.4.1 IAEA Reference Products for Science and Trade	2 565 768	206 331	2 559 855	241 153
2.4.2.001 Isotopic tools to study climate and environmental change	701 863	87 055	701 863	65 291
2.4.2.002 Assessing carbon cycle and impacts of ocean acidification	871 749	666 215	874 296	720 625
2.4.2 Nuclear Techniques to Understand Climate and Environmental Changes	1 573 612	753 270	1 576 159	785 916
2.4.3.001 Radioactive and non-radioactive pollution and impact on environment	794 969	396 673	810 225	244 326
2.4.3 Nuclear Techniques to Monitor and Assess Pollution	794 969	396 673	810 225	244 326
2.4.4.001 Developing methodologies for environmental monitoring and assessment	993 209	560 054	981 448	657 576
2.4.4.002 Nuclear techniques for management of ecosystem service	764 984	50 501	764 984	47 664
2.4.4 Applying Analytical Techniques to Protect Biodiversity and Ecosystem Services	1 758 193	610 554	1 746 432	705 240
2.4 Environment	**6 692 542**	**1 966 828**	**6 692 670**	**1 976 635**
2.5.1.001 Development and production of medical radioisotopes	520 819	-	538 067	-
2.5.1.002 Development of diagnostic and therapeutic radiopharmaceuticals	609 377	-	624 618	-
2.5.1 Radioisotope Products for Cancer Management and Non-communicable Diseases	1 130 195	-	1 162 685	-
2.5.2.001 Applications of radiotracers and radiation techniques	529 848	-	514 489	-
2.5.2.002 Radiation processing: technologies and applications	813 809	166 678	796 648	166 678
2.5.2 Radiation Technology Applications in Health Care, Industries and the Environment	1 343 657	166 678	1 311 137	166 678
2.5 Radioisotope Production and Radiation Technology	**2 473 852**	**166 678**	**2 473 822**	**166 678**
Major Programme 2 - Nuclear Techniques for Development and Environmental Protection	**42 114 082**	**7 434 084**	**42 114 086**	**7 309 566**

Major Programme 2 — Nuclear Techniques for Development and Environmental Protection
Activities unfunded in the Regular Budget
(excluding Major Capital Investments)

Project	Tasks	2020 Unfunded	2021 Unfunded
2.1.1.001 Land management for climate smart agriculture	Soil management for climate-smart agriculture and crisis response in food and agriculture	193 333	193 333
2.1.1.002 Water management for resource saving agriculture	Technologies and practices for sustainable use and management of water in agriculture	261 446	261 446
2.1.2.001 Improving animal production and breeding	Enhanced sustainable animal nutrition, reproduction and breeding through climate-smart agriculture CRP on Nuclear and Related Techniques for Analysing Forage Including Grassland and Rangelands and Improving Feed Digestibility CRP on Selection of Livestock with Enhanced Productivity Traits	95 639	57 684
2.1.2.002 Decreasing Transboundary Animal and Zoonotic Disease Threats	Reducing risks from transboundary animal and zoonotic diseases, including those with biothreat potential to promote biosecurity and increased livestock productivity, utilizing the VETLAB (Veterinary Diagnostic Laboratory Network) network of veterinary diagnostic laboratories CRP on Veterinary Diagnostic Laboratory Network ("VETLAB Network") to Prevent and Control Transboundary Animal and Zoonotic Diseases CRP on Improvement of Diagnostic and Vaccine Tools for Emerging and Re-emerging Animal Health Threats CRP on Irradiation of Transboundary Animal Disease Pathogens as Vaccines and Immune Inducers CRP on Diagnosis and control of Animal Trypanosomosis	963 610	877 005
2.1.3.001 Food irradiation applications using novel radiation technologies	Expansion and development of new and established food irradiation techniques to ensure food quality and safety, control pests, facilitate international trade and offer resilience to climate change impacts on food security.	180 720	180 720
2.1.3.002 Traceability for food safety, quality and to enhance international trade	Traceability to improve food safety and quality, enhance international trade, promote climate smart agriculture and provide resilience to climate change	439 294	439 294
2.1.3.003 Preparation & response to radiological emergencies: food & agriculture	Preparedness and response to nuclear and radiological emergencies and development of standards related to radionuclides in agricultural and fishery commodities	21 422	21 422
2.1.4.001 SIT and related technologies to manage major insect plant pests	Improvement and transfer to Member States of the Sterile Insect Technique (SIT) in support of the area-wide integrated suppression of major plant pests to reduce losses and insecticide use and to facilitate international trade	414 378	414 378
2.1.4.002 Management of livestock insect pests for sustainable agriculture	Technical support to SIT (Sterile Insect Technique) development and transfer for the area-wide management of major transboundary livestock insect pests for sustainable agriculture and rural development	200 999	200 999

Major Programme 2 — Nuclear Techniques for Development and Environmental Protection
Activities unfunded in the Regular Budget
(excluding Major Capital Investments)

Project	Tasks	2020 Unfunded	2021 Unfunded
2.1.4.003 Development of the SIT for the control of disease transmitting mosquitoes	Development of the Sterile Insect Technique to contribute to the sustainable and environmentally friendly control of selected mosquitoes that are vectors of major human diseases Implementation of a field pilot projects to validate Sterile Insect Technique (SIT) to supress Aedes mosquito population and improve the technology for the benefit of the Member States	1 205 157	1 205 157
2.1.5.001 Mutation induction for better adaptation to climate change	Crop improvement for better adaptation to climate change and variability through mutation breeding and related technologies	256 168	256 168
2.1.5.002 Integrated techniques for mutation breeding and biodiversity	Increase biodiversity by more efficient mutation induction and broadening crop diversity for sustainable agriculture	465 750	465 750
2.2.2.002 Clinical data management and education in nuclear techniques in health	Development of comprehensive eLearning platform for radiation therapy (CeLP-RT) - The CeLP-RT aims at supplementing basic education and clinical training, and providing a comprehensive framework for continuous professional development and interdisciplinary training to achieve best practice in radiation therapy	477 520	435 177
2.2.3.002 Biological effects of radiation	CRP on Clinical Applications of Biodosimetry (E35010) - Setting up and preparing an intercomparison exercise for the CRP in order to standardize the capacity of participating institutes/labs; funds would be used for procuring supplies and associated postal expenses	81 614	81 614
2.2.4.003 Clinical medical radiation physics	Doctoral CRP on Advances in Radiotherapy Techniques (CRP2203) - The training of specialized medical physicists, through this specific PhD programme, will allow Member States to enhance radiotherapy techniques including image-guided radiation therapy (IGRT). PhD candidates under the guidance of supervisors will be involved in research, associated with the implementation of advanced radiotherapy techniques	43 528	76 104
2.4.1.001 Provision of reference products and laboratory performance support	Production of IAEA reference materials and conducting proficiency tests	170 846	181 728
2.4.1.002 Quality management and supporting network activities	Research and development activities, establishment of a quality management system at NAEL	35 485	59 425
2.4.2.001 Isotopic tools to study climate and environmental change	Research and development activities	87 055	65 291
2.4.2.002 Assessing carbon cycle and impacts of ocean acidification	Monegasque government annual contribution to the IAEA	666 215	720 625
2.4.3.001 Radioactive and non-radioactive pollution and impact on environment	Monegasque government annual contribution to the IAEA	396 673	244 326
2.4.4.001 Developing methodologies for environmental monitoring and assessment	Technology transfer and cooperation with Member States and international programmes for improving management and safe use of ecosystem	560 054	657 576
2.4.4.002 Nuclear techniques for management of ecosystem service	Improving knowledge and tools for sustainable and safe use of seafood (PUI on Seafood Safety implementation)	50 501	47 664
2.5.2.002 Radiation processing: technologies and applications	Supporting Member States on the use of radiation technologies	166 678	166 678
Grand Total		**7 434 084**	**7 309 566**

Major Programme 3
Nuclear Safety and Security

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. It supports Member States in meeting the demand for a higher level of safety at the growing number of nuclear installations — including uranium mining facilities — and at existing nuclear power plants and research reactors, whose average age continues to increase. It also supports Member States in addressing 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. In conducting these activities, the Agency fosters a strong safety and security culture.

Through Major Programme 3, the Agency performs its statutory function of establishing safety standards and providing for their application in Member States, upon request, and in its own operations. Major Programme 3 assists Member States in building national capacities by promoting international cooperation and by transferring nuclear safety knowledge from States with mature nuclear energy programmes to States with emerging nuclear energy programmes through knowledge networks. The activities under this Major Programme will continue to cover: strengthening nuclear, radiation, transport and waste safety in a comprehensive manner, including design safety, external hazard assessment, safety culture, communication on safety, severe accident management, post-accident remediation and transition to recovery, as well as those aspects related to extension of the operating life of nuclear power plants, decommissioning of facilities, disposal of high level radioactive waste, innovative technologies such as fast reactors and small and medium sized or modular reactors, and the safety of radiation sources used in non-power applications.

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 nuclear security programme in 2020–2021 is aligned with the Nuclear Security Plan 2018–2021.

Despite the nuclear safety and security arrangements in place, the risk of a nuclear or radiological emergency — of various origins or severity — cannot be entirely eliminated. This Major Programme also focuses on providing assistance for developing and strengthening national and international capacities to prepare to respond effectively to, and to mitigate, the consequences of such an emergency. The Agency is the global focal point for international preparedness and response to nuclear and radiological incidents or emergencies and implements its response roles under this Major Programme. During this biennium, internal regulation of radiation safety and nuclear security will be strengthened. There will be a focus on enhancing timely coordination within this Major Programme and with other Major Programmes to build synergies, increase effectiveness and efficiency, and reduce duplication in the planning and implementation of activities.

Objectives:	
— *To continuously improve global safety and security through the establishment and application of safety standards and security guidance, worldwide adherence to international legal instruments, strengthened peer reviews and advisory 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.*	
Outcomes	**Performance Indicators**
• Increased Member States' use of Agency tools, methodologies and expertise to strengthen nuclear safety and security at the national, regional and international levels.	• Number of peer review and advisory services conducted in the areas of nuclear safety and security. • Percentage of Agency recommendations from safety and security services addressed by Member States.
• An integrated and comprehensive set of up to date safety standards and security guidance available to Member States.	• Number of new or revised safety standards and security guidance.

Outcomes	Performance Indicators
• Enhanced global knowledge sharing network on nuclear safety.	• Number of thematic safety areas within the safety networks. • Number of safety network partners.
Projects	
Title	**Main Planned Outputs**
3.0.0.001 Overall management, coordination, communication and common activities	Nuclear Safety Review, Programme Performance Report, reports responding to General Conference resolutions on nuclear safety and security, International Nuclear Safety Group (INSAG) publications, outreach materials.
3.0.0.002 Capacity building, knowledge networks and partnerships	Capacity building self-assessment, Nuclear Safety Knowledge Base, international conferences, and senior level meetings.
3.0.0.003 Coordination of safety standards and security guidance	Safety Requirements and Safety Guides; Nuclear Security Recommendations, Implementing Guides and Technical Guidance.
3.0.0.004 Internal control for radiation safety and nuclear security	Procedures and guidelines, reports from inspections of Agency laboratories, guidance on the protection of individuals participating in Agency activities, quality management system documents.

Programme 3.1 Incident and Emergency Preparedness and Response

Member States and the international community need to be prepared to respond effectively to nuclear and radiological emergencies should they occur. Programme 3.1 supports Member States in enhancing specific elements of emergency preparedness and response (EPR), for example developing and maintaining national infrastructure elements; improving cooperation between the safety and security communities; assessing hazards and emergency management, in particular, in severe accidents; and keeping the international community and the general public well informed. The programme also assists Member States in developing effective national and global response capabilities and arrangements to minimize the impacts of nuclear or radiological events.

An effective response to nuclear or radiological emergencies requires a coherent initial assessment followed by adequate emergency management, 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 Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, as well as the Agency's 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 area of EPR. The Agency also has a statutory function to develop safety standards 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.

Lessons learned from reviews, assessment, evaluations: This programme takes into account Member States' needs and lessons identified during the performance assessment of the previous programmatic cycle, particularly in relation to peer review missions, establishment of capacity building centres, and arrangements for notification, reporting and information sharing, including public communication.

Specific criteria for prioritization:

1. Activities necessary to fulfil obligations under the Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency.
2. Activities to support Member States in enhancing EPR in line with IAEA Safety Standards Series No. GSR Part 7, Preparedness and Response for a Nuclear or Radiological Emergency.
3. Activities enhancing international EPR.
4. Activities to address lessons from the ConvEx-3 (2017) exercise.

Programmatic changes and trends

Subprogramme 3.1.1 National and International Emergency Preparedness will continue to follow up relevant EPR activities from the preceding biennial programme cycle. The subprogramme's activities have been prepared based on EPR needs identified through assessment and evaluation of national and international EPR, taking into account the long term recommendations of the International Action Plan for Strengthening the International Preparedness and Response System for Nuclear and Radiological Emergencies, and the conclusions of meetings of the Competent Authorities and meetings of the Inter-Agency Committee on Radiological and Nuclear Emergencies (IACRNE). In particular, these activities will improve the capability of the Agency and Member States to communicate the technically challenging topic of radiological monitoring data to the public during a nuclear or radiological emergency through the broader use of the International Radiation Monitoring Information System (IRMIS).

Subprogramme 3.1.2 IAEA Incident and Emergency System (IES) and Operational Arrangements with Member States and International Organizations will continue to follow up relevant activities aimed at maintaining and continuously enhancing the Agency's IES and operational arrangements with Member States and relevant international organizations. The subprogramme's activities have been prepared on the basis of needs identified through the evaluation of EPR exercises and the conclusions of meetings of the Competent Authorities.

Objectives, Outcomes and Performance Indicators by Programme

Programme 3.1 Incident and Emergency Preparedness and Response	
Objectives:	
— *To maintain and further enhance efficient Agency, national and international EPR capabilities and arrangements for effective response to nuclear or radiological incidents and emergencies independent of the triggering event(s).* — *To improve exchange of information on nuclear or radiological incidents and emergencies among Member States, international stakeholders, and the public and media in the preparedness stage and during response to nuclear or radiological incidents and emergencies, independent of the triggering events.*	
Outcomes	**Performance Indicators**
• IAEA contributions to enhanced EPR arrangements and capabilities to effectively respond to an incident or emergency at the national and international levels.	• Percentage of recommendations from peer review missions for the improvement of national and international EPR addressed.
• Enhanced EPR arrangements and capabilities to effectively respond to an incident or emergency at the Agency level.	• Percentage of recommendations from internal full response exercises for improvement of the Agency's Incident and Emergency System addressed.
• Improved information systems (Unified System for Information Exchange in Incidents and Emergencies (USIE), IRMIS, Emergency Preparedness and Response Information Management System (EPRIMS) for providing and sharing technical information and monitoring data in a nuclear or radiological incident or emergency.	• Percentage of recommendations from the use of information systems for improvement of the information sharing systems in a nuclear or radiological incident or emergency addressed.

Subprogramme 3.1.1 National and International Emergency Preparedness
Objectives:
— *To strengthen EPR arrangements and capabilities at the national level by developing and providing assistance in the application of safety standards, operational guidelines and tools through capacity building activities and EPR peer reviews.* — *To enhance transparency and knowledge sharing in the area of EPR through more effective and comprehensive use of peer review missions and collaborative networks.* — *To strengthen the international EPR framework.*

Outcomes	Performance Indicators
• IAEA contributions to strengthened national EPR arrangements and capabilities and enhanced transparency in sharing of information on EPR and in incidents and emergencies.	• Number of Member States that have provided or updated input in the Emergency Preparedness and Response Information Management System (EPRIMS). • Percentage of Member States in EPRIMS with high implementation of IAEA safety standards in EPR.
• Strengthened inter-agency EPR arrangements and enhanced international cooperation and coordination in EPR.	• Percentage of recommendations from IACRNE meetings and related exercises and/or lessons for improvement of international EPR arrangements addressed.

Projects

Title	Main Planned Outputs
3.1.1.001 Member State emergency preparedness	IAEA safety standards in EPR, technical guidance documents and tools; training events and materials; capacity building centres; EPRIMS database as tool for self-assessment of Member State EPR arrangements; EPR educational and training networks; peer review and advisory mission reports.
3.1.1.002 International emergency management	Joint Radiation Emergency Management Plan of the International Organizations reviewed; IACRNE meeting reports; Competent Authorities Meeting 2020 report; IACRNE procedures reviewed and updated; IACRNE web site maintained; coordinated EPR activities at the international level; harmonized inter-agency response to a nuclear or radiological emergency, irrespective of the triggering event(s).

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

Objectives:

— *To maintain and continuously enhance arrangements for effective IAEA emergency response: notification, exchange of information, assessment and prognosis, international assistance, public communication and coordination of inter-agency response.*

— *To respond effectively to nuclear or radiological incidents and emergencies independent of the triggering event(s).*

— *To develop, maintain and continuously improve systems facilitating the exchange of specific information in a nuclear or radiological incident and emergency.*

Outcomes	Performance Indicators
• Increased effectiveness of the Secretariat's response and response coordination with relevant international organizations in a nuclear or radiological incident or emergency.	• Percentage of recommendations by competent authorities addressed.
• Increased efficiency of the international assistance mechanism and effectiveness of the provision of requested assistance.	• Number of Member States registering or updating their national assistance capabilities.

Projects

Title	Main Planned Outputs
3.1.2.001 Preparedness of Incident and Emergency System	Annual training programme, schedule and training records; maintained and enhanced response arrangements (appendices to the Response Plan for Incidents and Emergencies (REPLIE), procedures, checklists and instructions); updated contact point lists; ConvEx-1 reports.

Projects	
Title	**Main Planned Outputs**
3.1.2.002 Response and assistance arrangements with Member States and international organizations	Effective response to nuclear or radiological emergencies; operational protocols with international organizations; Member States trained in operational arrangements; conduct of exercises, including on assessment and prognosis, public information and events with nuclear security aspects; updated arrangements for international assistance.
3.1.2.003 Public communication in emergencies	Agency publications; implementation of the new International Nuclear and Radiological Event Scale (INES) guidance; training materials; outreach activities (newsletter, tweets, web articles, brochures); workshops and training activities.

Programme 3.2 Safety of Nuclear Installations

Programme 3.2 supports Member States in establishing the appropriate safety infrastructure and in continuously improving the safety of nuclear installations through the availability and application of up to date safety standards. The Agency will continue to draw on relevant lessons learned from the IAEA Action Plan on Nuclear Safety and the IAEA report on the Fukushima Daiichi accident, as well as on lessons and feedback from safety review services. Application of the safety standards will continue to be actively promoted, including through the conduct, upon request, of safety review services. As important components of assisting Member States in their efforts to continuously improve the regulatory infrastructure and the safety of nuclear installations, the overall structure and effectiveness and efficiency of peer review services will be assessed and enhanced as necessary. In addition, Member States will be supported in building their capacity and developing their safety infrastructure through enhanced international cooperation closely aligned with the global nuclear safety framework. To support greater effectiveness and sustainability of Member State capacity building, the programme will focus on: safety assessment capabilities based on recent advances in technology; safety assessment methods and tools for existing and advanced reactor designs; safety design requirements and management systems; operational safety and long term operation of research and power reactors, and leadership and safety culture. The results of these activities, including research and development findings, will be more widely disseminated for the benefit of all Member States.

Lessons learned from reviews, assessment, evaluations: The programme takes into account the results of the Seventh Review Meeting of Contracting Parties to the Convention on Nuclear Safety (CNS) and the conclusions of Agency conferences on regulatory effectiveness and on design and operational safety of nuclear installations. Findings from safety review services on the independence of regulatory bodies, the competence of human resources, safety assessments, safety of long term operation of nuclear installations, and leadership and management for safety will be addressed. The programme also considers lessons from operating and regulatory experience shared, respectively, through the international event reporting systems and regulatory forums and networks.

Specific criteria for prioritization:

1. Activities necessary for establishing up to date safety standards and supporting conventions and codes of conduct.
2. Activities providing for the effective application of safety standards.
3. Activities to support Member States in their capacity building through education and training, including the exchange of information and operating experience.
4. Activities to strengthen international cooperation, including enhanced coordination of research and development activities.

Programmatic changes and trends

Subprogramme 3.2.1 Governmental Regulatory Framework and Safety Infrastructure Development will take account of Countries which continue to enhance their regulatory framework and implementation of core regulatory functions, both in countries with mature nuclear power programmes and in those either restarting or embarking on a nuclear power programme. The projects in this sub-programme build upon the Agency's work on assisting Member States in developing their governmental and regulatory frameworks, including addressing the results of peer review missions in the regulatory area. Enhancing the technical and managerial capacity of regulatory body staff for nuclear installations, including leadership and safety culture, is specifically addressed.

Subprogramme 3.2.2 Safety Assessment of Nuclear Installations will, in the light of new construction projects for existing and advanced reactor designs and the intended long term operation of nuclear installations worldwide, continue to revise the safety assessment and design safety standards to be complemented by more detailed technical documentation. A thorough application of the safety standards will be supported through Technical Safety Review (TSR) peer reviews and the deployment of safety assessment and design safety competency building programmes. Emphasis will be placed on effective assistance on emerging topics, such as new design features, updated safety demonstration and small and medium sized or modular reactors.

Subprogramme 3.2.3 Safety and Protection Against External Hazards will address many challenges to safety and protection against external hazards, including the following, highlighted by recent experiences: the effects of low probability events beyond the design basis; the importance of accurate knowledge and scientific evidence in periodic safety reviews; combined external hazards that simultaneously affect multiple units on a site; and mechanisms for sharing operating experience in case of external events. It is expected that requests from Member States for technical insights on these issues will increase. The subprogramme will deliver safety documents and safety review services containing practical advice to Member States in an effective and efficient manner.

Subprogramme 3.2.4 Safe Operation of Nuclear Power Plants will continue to support Member States in enhancing their capability to review long term operation and ageing management and to implement the safety requirements established in IAEA Safety Standards Series No. GSR Part 2, Leadership and Management for Safety. These areas are now included in the Operational Safety Review Team (OSART) service and the Independent Safety Culture Assessment (ISCA) process, and in capacity building through assistance to Member States for self-assessment and continuous improvement. The Agency will continue to support Member States on the use of operating experience for safety performance improvement.

Subprogramme 3.2.5 Safety of Research Reactor and Fuel Cycle Facilities will address the increased focus on updating the safety standards and developing supporting documents, and organizing safety review services and capacity building activities, including those that support application of the IAEA safety standards and the Code of Conduct on the Safety of Research Reactors. The projects of the subprogramme are focused on assisting Member States in addressing identified challenges, particularly in relation to regulatory effectiveness, leadership and management for safety, ageing management and long term operation, and safe operation of the facilities, as well as developing safety infrastructure for new research reactors and fuel cycle facilities.

Objectives, Outcomes and Performance Indicators by Programme

<table>
<tr><th colspan="2">Programme 3.2 Safety of Nuclear Installations</th></tr>
<tr><td colspan="2">Objectives:</td></tr>
<tr><td colspan="2">— To support Member States in improving the safety of nuclear installations during site evaluation, design, construction and operation through the development and maintenance of an up to date set of safety standards and providing for their effective application.
— To support Member States in establishing and enhancing their safety infrastructure through review services, and in improving the safety of nuclear installations by assisting their adherence to, and facilitating implementation of, the Convention on Nuclear Safety and the Code of Conduct on the Safety of Research Reactors.
— To support Member States in capacity building through education and training, and by encouraging the exchange of information and operating experience and international cooperation, including enhanced coordination of research and development activities.</td></tr>
<tr><th>Outcomes</th><th>Performance Indicators</th></tr>
<tr><td>• An integrated and comprehensive set of up-to-date safety standards in the general areas of legal and governmental framework and the safety of nuclear installations during their entire lifetime available to Member States.</td><td>• Number of new and revised safety standards and supporting documents in this area.</td></tr>
<tr><td>• Increased Member States’ use of Agency services for establishing the appropriate safety infrastructure and improving the safety of nuclear installations.</td><td>• Number of safety review services conducted.
• Percentage of Agency recommendations from safety review services addressed by Member States.</td></tr>
<tr><td>• Increased Member States’ use of Agency services in the areas of safety infrastructure and safety of nuclear installations focusing on the effectiveness of regulatory control, leadership and management for safety, and design and operational safety, including long term operation.</td><td>• Number of Member States participating in training activities.
• Number of training events conducted in the areas of safety infrastructure and safety of nuclear installations.</td></tr>
</table>

Subprogramme 3.2.1 Governmental Regulatory Framework and Safety Infrastructure Development

Objectives:

- *To support Member States in establishing and maintaining effective, independent and sustainable governmental, regulatory and safety frameworks for nuclear installations through the development of up to date safety standards.*
- *To support Member States in enhancing their governmental and regulatory frameworks for nuclear installations through peer reviews, advisory services and activities supporting the application of IAEA safety standards.*
- *To support Member State regulatory bodies in enhancing their regulatory and safety capacity building process, and in fostering strong leadership and safety culture.*

Outcomes	Performance Indicators
• An integrated, comprehensive and consistent set of up to date safety standards in the area of governmental and regulatory framework and safety of nuclear installations.	• Number of new and revised safety standards and supporting documents in this area.
• Increased Member States' use of Agency services on safety standards to support regulatory infrastructure.	• Number of Integrated Regulatory Review Service (IRRS) missions conducted. • Percentage of recommendations from IRRS missions addressed.
• Increased use of Agency competency assessment tools and training programmes by Member State regulatory bodies to support the safety of nuclear installations for emerging and mature nuclear programmes.	• Number of Member States using Agency training materials in the regulatory area to support sustainable education and training programmes. • Number of Member States using the Guidelines for Systematic Assessment of Regulatory Competence Needs (SARCoN) tool and methodology for competency building.

Projects

Title	Main Planned Outputs
3.2.1.001 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); coordination and provision of expert support to embarking countries.
3.2.1.002 Safety standards and CNS support	Safety standards and reports.
3.2.1.003 Capacity building for installations safety and regulatory functions	Reports, self-assessment tools, training materials and enhanced web platforms.

Subprogramme 3.2.2 Safety Assessment of Nuclear Installations

Objectives:

- *To support Member States in achieving a high level of safety in nuclear power plant design and excellence in safety assessment through the provision of up-to-date safety assessment and design safety standards based on current technology and best practices and providing for their application.*
- *To support Member States in the implementation of safety assessment and design safety standards.*
- *To support Member States in safety assessment competency building and assisting in topical issues on safety assessment and design safety.*

Outcomes	Performance Indicators
• An integrated, comprehensive and consistent set of up-to-date safety standards and supporting documents in the areas of safety assessment and design safety available to Member States.	• Number of new and revised safety assessment and design safety standards and supporting documents in this area.

Outcomes	Performance Indicators
• Increased Member States' use of the Agency services on safety standards to support safety of nuclear power plant design and safety assessment performance	• Number of safety review services conducted. • Percentage of Agency recommendations from safety review services addressed by Member States.
• Increased Member States' use of Agency training methodologies in the area of safety assessment and design safety including topical issues.	• Number of Member States participating in training activities. • Number of training activities conducted in the areas of safety assessment and design safety.

Projects

Title	Main Planned Outputs
3.2.2.001 Safety standards for NPP design and safety assessment	New and revised safety standards and associated technical documents and reports; review reports and documents.
3.2.2.002 Safety assessment competency building, methods and approaches	Training materials, training and workshop sessions, Safety Assessment Education and Training (SAET) Programme activities and implementation of safety assessment competency building programmes, including advisory services; documents and reports on topical issues in the areas of safety assessment and design safety.

Subprogramme 3.2.3 Safety and Protection Against External Hazards

Objectives:

— *To support Member States in enhancing site and installation design safety with respect to external hazards, including hazards resulting from human activity, through the development of safety standards and by providing for their application.*

— *To support Member States in enhancing site and installation design safety with respect to external hazards, including hazards resulting from human activity, through periodic safety reviews and peer review services.*

— *To support Member States in capacity building through education and training.*

Outcomes	Performance Indicators
• An integrated, comprehensive and consistent set of up to date safety standards in the area of safety and protection against external hazards available to Member States.	• Number of new and revised safety standards and supporting documents in this area.
• Increased Member States' use of Agency services on safety standards to support safety and protection against external hazards	• Number of Site and External Events Design (SEED) review missions conducted. • Percentage of recommendations from SEED missions addressed.
• Increased Member State use of Agency training methodologies in the area of safety and protection against external hazards and external hazard assessment.	• Number of Member States participating in training activities. • Number of training activities conducted in the area of safety and protection against external hazards and external hazard assessment.

Projects

Title	Main Planned Outputs
3.2.3.001 Site evaluation and installation design safety	Safety standards and supporting documents in the areas of site selection and evaluation, and protection of nuclear installations against external hazards; safety review services, expert missions and workshops.

Projects	
Title	**Main Planned Outputs**
3.2.3.002 Site evaluation methods and tools for installation safety assessment	Safety reports and TECDOCs on technical methods and tools required for implementing safety standards for site evaluation and safety assessment; workshops for building capacity of institutions in Member States; dissemination and sharing of information.

Subprogramme 3.2.4 Safe Operation of Nuclear Power Plants	
Objectives:	
— *To support Member States in improving operational safety through the development of safety standards and other publications and by providing support for their application.* — *To support Member States in improving operational safety through review services for operational safety, safe long term operation and ageing management, operating experience, and leadership, management and culture for safety.* — *To support Member States in capacity building by arranging training and workshops and by providing self-assessment advice.*	
Outcomes	**Performance Indicators**
• An integrated, comprehensive and consistent set of up to date safety standards in the areas of operational safety, safe long term operation and ageing management, operating experience and management, and leadership and culture for safety available to Member States.	• Number of new and revised safety standards and supporting documents in this area.
• Increased Member States' use of Agency services on safety standards to support operational safety at nuclear power plants.	• Number of OSART, Safety Aspects of Long Term Operation (SALTO), Peer Review of Operational Safety Performance Experience (PROSPER), and Independent Safety Culture Assessment (ISCA) review missions. • Percentage of Agency recommendations from safety review services addressed by Member States.
• Increased Member State use of Agency training methodologies in the areas of operational safety, safe long term operation, ageing management, operating experience, and management, leadership and culture for safety.	• Number of training events conducted in the areas of OSART, long term operation, ageing management, operating experience, and management, leadership and culture for safety.
Projects	
Title	**Main Planned Outputs**
3.2.4.001 Operational safety performance	OSART mission reports; training materials on corporate and plant self-assessment; enhanced safety review mission databases; integrated revision of operational safety guides; publication of mission highlights; dissemination of OSART related information on a dedicated web site.
3.2.4.002 Sharing and use of international operating experience	Nuclear power plant event reports shared through the Incident Reporting System (IRS); IRS topical reports (IRS Blue Books and Highlights); Peer Review of Operational Safety Performance Experience (PROSPER) mission reports; Safety Guides and TECDOCs on operating experience and continuous performance improvement; training courses on performance improvement, operating experience and root cause analysis.

Projects	
Title	**Main Planned Outputs**
3.2.4.004 Safety of long term operation	SALTO mission reports; ageing management and time limited ageing analyses; new and revised guidance on ageing management and long term operation; revised International Generic Ageing Lessons Learned Safety Report; dissemination of consensus documents such as time limited ageing analyses.
3.2.4.003 Leadership, management for safety and safety culture in Member States	Revised Safety Guides on leadership and management for safety; safety culture continuous improvement programmes for Member States; independent safety culture assessments, on request; reports on topics and issues; training activities, meetings and workshops.

Subprogramme 3.2.5 Safety of Research Reactor and Fuel Cycle Facilities

Objectives:

- *To support Member States in improving the safety of research reactors and fuel cycle facilities through the development of safety standards and providing for their application, and the implementation of the Code of Conduct on the Safety of Research Reactors.*
- *To support Member States to establish and maintain safety infrastructure for research reactors and fuel cycle facilities.*
- *To support international exchange of information on operating experience and capacity building for research reactors and fuel cycle facilities.*

Outcomes	**Performance Indicators**
• An integrated, comprehensive and consistent set of up to date safety standards in the area of safety of research reactors and nuclear fuel cycle facilities available to Member States.	• Number of new and revised safety standards and supporting documents in this area.
• Increased Member States' use of Agency services on safety standards to support safety of research reactors and nuclear fuel cycle facilities	• Number of safety review services conducted. • Percentage of Agency recommendations from safety review services addressed by Member States.
• Increased Member States' use of Agency training methodologies in the areas of safety of research reactors and nuclear fuel cycle facilities.	• Number of Member States participating in training activities. • Percentage of Member States with research reactors and fuel cycle facilities participating in the Agency platform for information sharing and activities to exchange operating experience.

Projects	
Title	**Main Planned Outputs**
3.2.5.001 Safety of research reactors	Safety standards and supporting documents; meeting and mission reports; conference proceedings; training materials; Member State self-assessments; the Incident Reporting System for Research Reactors (IRSRR) database.
3.2.5.002 Safety of fuel cycle facilities	Safety standards and supporting documents; meeting and mission reports; training materials; the Fuel Incident Notification and Analysis System (FINAS) database.

Programme 3.3 Radiation and Transport Safety

Programme 3.3 focuses on the protection of people and the environment from harmful effects of ionizing radiation. It covers the establishment of safety standards and the provision for their application — both being statutory functions of the Agency. Capacity building, including education and training, and networking, as well as communication strategies on radiation risks, are cross-cutting key elements of the global safety framework, and they are included throughout the Programme. The importance of international undertakings such as applicable conventions and codes of conduct, as an element of the safety framework, is also recognized. The activities within the Programme are mainly ongoing with some changes of emphasis. 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 will continue to be reviewed. This includes providing for the implementation of IAEA safety standards and the Code of Conduct on the Safety and Security of Radioactive Sources. This is done through various means, including peer review and advisory services, outreach and the exchange of information, guidance and training materials. These activities provide essential feedback and assurances on the overall effectiveness of the programme, and facilitate planning and anticipating future issues.

Lessons learned from reviews, assessment, evaluations: In the light of the 2018 revision of IAEA Safety Standards Series No. SSR-6, Regulations for the Safe Transport of Radioactive Material, there is a need for their adoption into the global transport regulations for air, land and sea modes and by Member States through their national land transport regulations for road and rail. The interaction with other international organizations involved in the transport of dangerous goods will continue. Peer review and advisory missions are in strong demand and show the importance of stable, adequately resourced and effectively independent regulatory systems. The Agency will tailor its approach to the delivery of IRRS and ARTEMIS (Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Remediation) missions to better meet the needs of individual Member States requesting combined or separate missions. Support by Member States for the Code of Conduct on the Safety and Security of Radioactive Sources, with its supplementary Guidance on the Import and Export of Radioactive Sources and on the Management of Disused Radioactive Sources remains strong. The Agency's strategic approach to education and training continues to assist Member States in strengthening radiation safety infrastructure.

Specific criteria for prioritization:

1. Activities that strengthen the global safety framework by establishing safety standards and cooperating with other international organizations which also assist harmonization and international undertakings.
2. Activities that support Member States in strengthening regulatory infrastructure through peer review and advisory missions.
3. Activities that promote the Code of Conduct on the Safety and Security of Radioactive Sources and assist Member States in strengthening national strategies with regard to the end of life for sealed sources to avoid sources being orphaned.

Programmatic changes and trends

Subprogramme 3.3.1 Radiation Safety and Monitoring focuses on assistance to Member States in reaching or maintaining the highest level of radiation safety. In 2020–2021, the Agency will continue to provide for application of IAEA Safety Standards Series No. GSR Part 3, Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards, and associated Safety Guides. The Agency will continue to advise Member States on enhancing safety in relevant medical procedures, and to assist in implementation of justification and optimization principles. The Agency will revise or develop safety guidance on protection of workers, focusing on areas such as uranium mining, industries processing naturally occurring radioactive material and the industrial uses of radioactive sources.

Subprogramme 3.3.2 Regulatory Infrastructure and Transport Safety will continue to address the increasing demand from Member States for independent peer reviews and advisory missions supported by self-assessments in the area of regulatory infrastructure and transport of radiation sources. Recognizing the need to build competence in radiation safety in a sustainable manner, the number of Member States that are developing and implementing their own national strategy based on a national needs analysis in-line with IAEA safety standards and guidance is expected to continue to increase. In transport safety, the revision of relevant IAEA Safety Standards will continue.

Objectives, Outcomes and Performance Indicators by Programme

Programme 3.3 Radiation and Transport Safety	
Objectives:	
— *To support Member States in improving radiation safety of people and the environment through the development of safety standards and by providing for their application.* — *To support Member States in establishing the appropriate safety infrastructure through support and implementation of the Code of Conduct on the Safety and Security of Radioactive Sources and Supplementary Guidance, as well as through safety reviews and advisory services.* — *To support Member States in capacity building, through education and training, and in encouraging the exchange of information and experience.*	
Outcomes	**Performance Indicators**
• An integrated, comprehensive and consistent set of up to date safety standards in the area of radiation safety available to Member States.	• Number of new and revised safety standards and supporting documents in this area.
• Increased Member States' use of Agency services on safety standards to support radiation safety	• Number of safety review, appraisal and advisory missions conducted. • Percentage of Agency recommendations from safety review, appraisal and advisory missions addressed.
• Increased Member States' use of Agency methodologies for analysing training needs in the area of radiation safety.	• Number of Member States having carried out an analysis of training and education needs in radiation, transport and waste safety.

Subprogramme 3.3.1 Radiation Safety and Monitoring	
Objectives:	
— *To support Member States in reaching the highest level of radiation safety through the development of safety standards and guides and by providing for their application in all sectors of industry, medicine and other applications, and in enhancing communication on radiation risks.* — *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 assistance in technical cooperation projects.*	
Outcomes	**Performance Indicators**
• Strengthened cooperation among relevant international organizations with responsibilities and mandates for radiation safety.	• Number of safety standards, other documents and workshops jointly sponsored by members of the Inter-Agency Committee on Radiation Safety (IACRS). • Number of guidance documents (revision of existing documents or development of new documents) to support implementation of the revised GSR Part 3 jointly sponsored by international organizations.
• Increased efficiency and effectiveness of the dosimetry systems for protection of occupationally exposed workers for Agency staff, and support to Member States in its application.	• Number of Safety Guides and TECDOCs developed in cooperation with the International Labour Organization in the area of the occupational radiation protection. • Number of accredited methods maintained in the Agency's laboratories.
• Increased Member States' use of Agency materials on good practices in medical radiation protection among health professionals and organizations involved in medical radiation exposures.	• Number of downloads of Agency guidance and other information on methods to improve radiation protection of patients from the Radiation Protection of Patients (RPOP) web site.

Projects	
Title	**Main Planned Outputs**
3.3.1.001 Public and environment radiation protection	New and revised safety standards and guidance documents, meetings and workshops for Member States to support implementation of GSR Part 3 (International Basic Safety Standards) and cooperation with relevant international organizations on radiation safety issues.
3.3.1.002 Radiation protection of patients	Safety related documents on the 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	New and revised safety documents supporting the safety standards on occupational radiation protection; new or expanded radiation protection networks; operation of the Information System on Occupational Exposure (ISOE) and promotion and upgrading of the training packages for ISEMIR-IR (Information System on Occupational Exposure in Medicine, Industry and Research: Industrial Radiography); reports and self-assessment tools for ORPAS; and expansion and use of the Occupational Radiation Protection Networks (ORPNET).
3.3.1.004 Radiation safety technical services	Accredited individual and workplace monitoring services; instrument calibration services; emergency services; practices developed and shared with Member States.

Subprogramme 3.3.2 Regulatory Infrastructure and Transport Safety	
Objectives:	
— *To support Member States in strengthening their regulatory infrastructure for radiation and transport safety through the development of safety standards and by providing for their application.* — *To support Member States in strengthening their regulatory infrastructure for radiation and transport safety through peer reviews and advisory services.* — *To support Member States in enhancing their radiation safety capacity building.*	
Outcomes	**Performance Indicators**
• An integrated, comprehensive and consistent set of up to date safety standards in the area of transport safety and regulatory infrastructure available to Member States.	• Number of new and revised safety standards and supporting documents in this area.
• Increased Member States' use of Agency services on safety standards to support transport safety and regulatory infrastructure in Member States.	• Number of safety review services conducted. • Percentage of Agency recommendations from safety review services addressed by Member States.
• Increased Member States' use of Agency methodologies for analysing training needs in radiation, transport and waste safety.	• Number of Member States having carried out an analysis of training and education needs in radiation, transport and waste safety.
Projects	
Title	**Main Planned Outputs**
3.3.2.001 Control of radiation sources	Meetings of legal and technical experts on the implementation of the Code of Conduct on the Safety and Security of Radioactive Sources; regional workshops on the implementation of the Code; revised safety standards; advisory missions; regulatory review services, technical assistance on regulatory aspects.

Projects	
Title	**Main Planned Outputs**
3.3.2.002 Transport safety	A comprehensive set of transport safety standards, TECDOCs and other guidance, and training courses; Technical Meetings and other consultancy meetings to support their implementation.
3.3.2.003 Technical assistance and information management	Updated radiation safety infrastructure profiles in the Radiation Safety Information Management System (RASIMS); reports from the Steering Committee on Education and Training in Radiation, Transport and Waste Safety and the directors of postgraduate educational courses; revised and updated approach to education and training in this area; updated training materials for postgraduate educational courses and 'train the trainer' events for radiation protection officers; updated impact analysis of postgraduate educational courses and 'train the trainer' events.

Programme 3.4 Radioactive Waste Management and Environmental Safety

Programme 3.4 provides support to Member States in establishing a safety framework for the management of radioactive waste and spent fuel, and in planning and implementing safe decommissioning of nuclear installations and other facilities using radioactive material. The Programme includes the development of relevant IAEA safety standards, assistance to Member States in the use and application of these safety standards, coordination of the Waste Safety Standards Committee (WASSC), and providing the secretariat for the meetings of the Contracting Parties of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.

Lessons learned from reviews, assessment, evaluations: Some Member States are nearing high level waste disposal in geologic repositories that involves long storage periods, with useful experiences that can be shared. Member States need plans in place to deal with waste generated in case of an accident. Decommissioning is increasing worldwide as existing facilities close. It is important to provide Member States with guidance on safe practices and lessons learned. The decommissioning of nuclear facilities damaged by severe accidents remains a major challenge. Member States also need assistance in the remediation of legacy sites or advice on how to avoid the creation of new legacies when embarking on uranium mining. The Agency will take into account Member States' views on the flexibility in combining IRRS and ARTEMIS missions.

Specific criteria for prioritization:

1. Activities that support Member States in developing national strategies and routes for disposal of disused sources and radioactive waste.
2. Activities that support Member States in developing plans for the back end of the nuclear fuel cycle and waste disposal, as needed.
3. Activities that support Member States interested in uranium mining to prevent future legacy sites.

Programmatic changes and trends

Subprogramme 3.4.1 Safety of Spent Fuel and Radioactive Waste Management covers projects on predisposal and disposal of spent fuel and radioactive waste. Efforts will continue in the area of disposal of high level waste, addressing the development and review of safety cases for both operational and post-closure safety of disposal facilities. Several Member States are now nearing disposal of high level waste or spent fuel in geologic repositories, and there will be an emphasis on leveraging the implementation of safety from those first experiences to the benefit of other Member States.

Subprogramme 3.4.2 Safety of Decommissioning, Remediation and Environmental Releases consists of projects addressing the safety of the interrelated elements of decommissioning, remediation and environmental monitoring, the management and assessment of radioactive releases to the environment, including decommissioning and remediation after a nuclear accident. Efforts will continue aimed at developing safety standards and guidance and supporting their application by Member States. Decommissioning is expected to increase worldwide as existing

facilities reach their end of service or are subject to early closure decisions, and it is important to provide Member States with updated guidance on safe practices and to facilitate exchange of information and lessons learned.

Objectives, Outcomes and Performance Indicators by Programme

Programme 3.4 Radioactive Waste Management and Environmental Safety	
Objectives:	
— *To support Member States in improving the safety of radioactive waste and spent fuel management, including geologic repositories for high level waste, decommissioning, remediation and environmental releases, through the development of safety standards and providing for their application.* — *To support Member States in improving the safety of radioactive waste and spent fuel management, including geologic repositories for high level waste, decommissioning, remediation and environmental releases through peer reviews and advisory services, and to assist their adherence to, and facilitating implementation of, the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.* — *To support Member States in capacity building through education and training, and encouraging the exchange of information and experience.*	
Outcomes	**Performance Indicators**
• An integrated, comprehensive and consistent set of up to date safety standards in the area of safety of spent fuel and radioactive waste management, including predisposal and disposal (near surface and geologic), and decommissioning, remediation and environmental releases available to Member States.	• Number of new and revised safety standards and supporting documents in this area.
• Increased Member States' use of Agency services on safety standards to support safety of spent fuel and radioactive waste management, including predisposal, disposal, decommissioning, remediation and environmental releases in Member States, and their adherence to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.	• Number of peer review services or other expert mission support activities with regard to spent fuel and radioactive waste management, including predisposal and disposal as well as decommissioning, remediation, and environmental release conducted for organizations, state authorities and/or facilities. • Number of Contracting Parties to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.
• Increased Member States' use of Agency training methodologies in the areas of spent fuel and radioactive waste management, including predisposal and disposal (near surface and geologic) as well as decommissioning, remediation and environmental releases.	• Number of Member States participating in Agency training on decommissioning, remediation and environmental releases.

Subprogramme 3.4.1 Safety of Spent Fuel and Radioactive Waste Management	
Objectives:	
— *To support Member States in improving safety of radioactive waste and spent fuel management through the development of safety standards and providing for their application.* — *To support Member States in improving the safety of radioactive waste and spent fuel management through peer reviews and advisory services, and to assist their adherence to, and facilitating implementation of, the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.* — *To support Member States in capacity building through education and training, and encouraging the exchange of information and experience.*	
Outcomes	**Performance Indicators**
• An integrated, comprehensive and consistent set of up to date safety standards in the area of safety of spent fuel and radioactive waste management, including predisposal and disposal of waste (near surface and geologic) available to Member States.	• Number of new and revised safety standards and supporting documents in this area.

Outcomes	Performance Indicators
• Increased Member States' use of Agency services on safety standards to support safety of spent fuel and radioactive waste management, including predisposal and disposal of waste (near surface and geologic) in Member States, and their adherence to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.	• Number of peer review services conducted in the area of spent fuel and radioactive waste management, including predisposal and disposal. • Number of Contracting Parties to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.
• Increased Member States' use of Agency training methodologies in the areas of spent fuel and radioactive waste management, including predisposal and disposal (near surface and geologic).	• Number of Member States participating in Agency training on spent fuel and radioactive waste management, including predisposal and disposal of waste (near surface and geologic).

Projects

Title	Main Planned Outputs
3.4.1.001 Waste management safety standards and Joint Convention support	Safety standards and supporting documents on the predisposal management and disposal of radioactive waste and spent fuel; Secretariat services to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (including organization of Review Meetings).
3.4.1.002 Application of safety standards & support inter-comparison projects	Coordination of existing and establishment of new projects on the safety of radioactive waste management and peer reviews.

Subprogramme 3.4.2 Safety of Decommissioning, Remediation and Environmental Releases

Objectives:

- *To support Member States in improving the safety of their programmes with regard to decommissioning, remediation and environmental releases, including post-accident situations, through the development of safety standards and by providing for their application.*
- *To support Member States in improving the safety of their programmes with regard to decommissioning, remediation, and environmental releases, including post-accident situations, through peer reviews and advisory services.*
- *To support Member States in capacity building through education and training, and by encouraging the exchange of information and experience.*

Outcomes	Performance Indicators
• An integrated, comprehensive and consistent set of up to date safety standards in the area of safety of decommissioning, remediation and environmental releases, including post-accident situations, available to Member States.	• Number of new and revised safety standards and supporting documents in this area.
• Increased Member States' use of Agency services on safety standards to support safety of decommissioning, remediation and environmental releases, including post-accident situations.	• Number of peer review services in the area of decommissioning, remediation, and environmental release conducted.
• Increased Member States' use of Agency training methodologies in the areas of decommissioning, remediation and environmental releases, including post-accident situations.	• Number of Member States participating in Agency training in the area of decommissioning, remediation and environmental releases, including post-accident situations.

Projects	
Title	**Main Planned Outputs**
3.4.2.001 Safety for decommissioning and remediation	IAEA safety standards pertaining to decommissioning, remediation and residue management from uranium production and processing of naturally occurring radioactive material; supporting documents and training materials to assist Member States with application of these standards; knowledge transfer through communities of practice.
3.4.2.002 Safety for assessment and management of environmental releases	New and revised safety standards, and new technical documents to assist in elaborating examples for the application of safety standards in practice; assistance in performing assessment of radiological impacts and environmental monitoring to enhance nuclear safety.

Programme 3.5 Nuclear Security

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. Much progress has been made in recent years in addressing nuclear security, including via the entry into force of the Amendment to the Convention on Physical Protection of Nuclear Materials in 2016. Efforts will continue to promote the universalization of relevant legally binding instruments and commitment to non-binding instruments under Agency auspices. The responsibility for nuclear security within a State rests entirely with that State. At the same time, Member States have consistently recognised the central role of the IAEA in strengthening the nuclear security framework globally and in coordinating international cooperation in nuclear security. The Programme is designed to assist Member States, upon their 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 builds on the activities set out in the Nuclear Security Plan 2018–2021. Greater emphasis is placed on the publication of comprehensive guidance documents in the IAEA as part of the Nuclear Security Series; promotion of their use, as appropriate, including through peer reviews and advisory services; capacity building, including education, training and professional networks and promotion of nuclear security culture; and ensuring coordination and promotion of international cooperation activities on nuclear security, while avoiding duplication and overlap.

Lessons learned from reviews, assessment, evaluations: The overall priorities remain to develop coordination and priority setting by the Nuclear Security Guidance Committee (NSGC), to release Nuclear Security Series 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. Dialogue with Member States and other relevant organizations and initiatives needs to be maintained to increase awareness of the Agency's central role in facilitating the strengthening of global nuclear security.

Specific criteria for prioritization:

1. Completion and maintenance of universally applicable Nuclear Security Series 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, nuclear security culture and risk reduction activities, inter alia, based on an analysis of needs, including those identified through Integrated Nuclear Security Support Plans (INSSPs).

Programmatic changes and trends

Subprogramme 3.5.1 Information Management continues to respond to interest among Member States in computer and information security at nuclear power plants and nuclear facilities. Attacks on computer systems have increased worldwide, and there is a need for information sharing meetings, consultancy meetings, technical guidance documents and training for the global community. Agency assistance to individual States, upon request, through the development and implementation of Integrated Nuclear Security Support Plans (INSSPs) and self-assessment tools has increased owing to the greater awareness of Agency nuclear security activities on the part of the international nuclear security community.

Subprogramme 3.5.2 Nuclear Security of Materials and Facilities continues to respond to a further increase in demand anticipated for the development of practical technical security guidance and training on the physical protection of nuclear and radioactive material and associated facilities. Nuclear material control and accounting systems at nuclear facilities for security purposes continues to be an important security element. A further increase in States requests for advisory services and assessment missions on the physical protection of materials, facilities and activities is also anticipated.

Subprogramme 3.5.3 Nuclear Security of Material outside of Regulatory Control assists 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.

Subprogramme 3.5.4 Programme Development and International Cooperation 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 documents through membership of the NSGC.

Objectives, Outcomes and Performance Indicators by Programme

Programme 3.5 Nuclear Security

Objectives:

- *To contribute to global efforts to achieve effective nuclear security, by establishing comprehensive nuclear security guidance and promoting 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 in strengthening the international cooperation and coordination of assistance in a manner 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.*

Outcomes	Performance Indicators
• IAEA contributions to continued improvement in the security of nuclear material, other radioactive material, associated facilities and transport.	• Number of States that have established or improved national nuclear security measures and systems on the basis of advice from the Agency.
• IAEA contributions to capacity building of States to implement national nuclear security measures.	• Number of States that requested and received Agency assistance identified in the INSSPs, as appropriate.
• Improved global coordination and cooperation in the delivery of support of national efforts to improve nuclear security.	• Number of participants from relevant stakeholders at events organized by the Agency which addressed coordination and cooperation.

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 States.*
- *To assist States with the timely exchange of authoritative information on incidents involving illicit trafficking and other related unauthorized activities involving nuclear and other radioactive material.*

Outcomes	Performance Indicators
• Planned and implemented INSSPs.	• Number of INSSPs agreed and implemented by States.
• IAEA contributions to 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 IAEA activities to improve computer and information security capabilities.

Outcomes	Performance Indicators
• Maintain and improve the quality and speed of analysis and sharing of information on incidents through the leveraging of information technology tools and services.	• Use of the Nuclear Security Information Portal (NUSEC) and other Agency nuclear security related sites.

Projects

Title	Main Planned Outputs
3.5.1.001 Assessing nuclear security needs and priorities	Development and implementation of INSSPs, where appropriate, development of voluntary self-assessment mechanism or tool for States' use.
3.5.1.002 Information sharing on incidents and trafficking	Information sharing, as appropriate, technical meetings, training of appropriate partner professionals to improve the effectiveness of activities implemented by the Agency including the ITDB.
3.5.1.003 Information and computer security, and information technology services	Information and computer security guidance documents; 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 material and other radioactive material and associated facilities, including transport.*
- *To reduce the risk of malicious acts involving nuclear material and other radioactive material associated facilities and activities, including transport.*

Outcomes	Performance Indicators
• An integrated, comprehensive and consistent set of up-to-date NSS guidance and technical documents available to States.	• Number of IAEA guidance and technical documents.
• IAEA contributions to Member State capacity building.	• Number of professionals trained.
• IAEA contributions to 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 conducted. • Number of Member States, where assistance is provided for Physical Protection systems upgrades.

Projects

Title	Main Planned Outputs
3.5.2.001 Integrated nuclear security approaches	Comprehensive support including guidance, procedures and methodologies, to assist States, upon request, in meeting their obligations under international instruments and the recommendations on the security of the nuclear material and facilities set out in IAEA Nuclear Security Series No. 13.
3.5.2.002 Enhancing security of nuclear material and associated facilities	Comprehensive support including guidance, procedures and methodologies to assist States, upon request, in meeting their obligations under international instruments and the recommendations on nuclear material accounting and control set out in IAEA Nuclear Security Series No. 13.

Projects	
Title	**Main Planned Outputs**
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; 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 model regulatory frameworks 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 response 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,* — *To assist States, upon request, in strengthening their national framework for managing radiological crime scenes, to collect evidence for use in subsequent legal proceedings, undertaking nuclear forensics examinations to support investigations and to help to determine the origin and history of the material.*	
Outcomes	**Performance Indicators**
• IAEA contributions to increased awareness of the need for an effective institutional infrastructure for response in a State to ensure national and international obligations are met.	• Number of relevant IAEA Nuclear Security Series documents. • Number of activities implemented related to institutional infrastructure for managing nuclear and other radioactive material out of regulatory control.
• IAEA contributions to increased probability that any nuclear and other radioactive material out of regulatory control is detected.	• Number of relevant IAEA Nuclear Security Series documents. • Number of activities implemented related to detection to materials outside of regulatory control.
• IAEA contributions to 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 Nuclear Security Series documents. • Number of activities implemented related to radiological crime scene management and nuclear forensics.
Projects	
Title	**Main Planned Outputs**
3.5.3.001 Institutional response infrastructure for material out of regulatory control	Nuclear security guidance; peer review missions; projects arising from INSSPs; support for States to establish a national nuclear security infrastructure for response; assistance in capacity building.
3.5.3.002 Nuclear security detection architecture	NSS guidance in accordance with roadmap approved by NSGC; missions; projects arising from INSSPs; CRPs; technical support to States to establish detection measures; assistance in capacity building and installation of 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 and international, regional and national organizations to strengthen their capacity; CRPs.

Subprogramme 3.5.4 Programme Development and International Cooperation	
Objectives:	
— *To ensure that the NSP is implemented in a coordinated manner within the Agency and 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 Nuclear Security Series and to promote the universalisation of the Convention on the Physical Protection of Nuclear Material (CPPNM) and its Amendment.* — *To provide coordinated education and training programmes that meet the requirements of States and to facilitate delivery of those programmes through the International Nuclear Security Education Network (INSEN) and Nuclear Security Support Centre (NSSC) networks and NUSEC.*	
Outcomes	**Performance Indicators**
• IAEA contributions to improved nuclear security through the production of current nuclear security guidance involving all Member States and adherence to the CPPNM and its Amendment.	• Number of documents produced in the IAEA Nuclear Security Series. • Number of States adhering to the CPPNM and its Amendment.
• IAEA contributions to strengthening Member States' capacity building through the implementation of nuclear security education and training programmes, available to all States through the INSEN and NSSC networks and NUSEC.	• Number of States using Agency developed education and training courses. • Number of 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.
Projects	
Title	**Main Planned Outputs**
3.5.4.001 International cooperation on nuclear security networks & 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 for a master's degree; modular training programmes covering all aspects of nuclear security.
3.5.4.003 Coordinating nuclear security guidance and advice services	Nuclear security guidance documents approved by Member States; 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)

	2020 at 2020 prices		2021 at 2020 prices	
Programme / Subprogramme / Project	Regular Budget	Unfunded	Regular Budget	Unfunded
3.0.0.001 Overall management, coordination, communication and common activities	1 290 312	206 459	1 290 312	228 222
3.0.0.002 Capacity building, knowledge networks and partnerships	432 658	1 441 087	432 658	1 424 764
3.0.0.003 Coordination of safety standards and security guidance	234 563	237 644	234 563	237 644
3.0.0.004 Internal control for radiation safety and nuclear security	225 764	-	225 764	-
3.S Corporate shared services	1 898 593	-	1 898 597	-
	4 081 889	**1 885 189**	**4 081 894**	**1 890 630**
3.1.1.001 Member State emergency preparedness	1 494 568	873 558	1 484 398	595 524
3.1.1.002 International emergency management	176 681	49 178	258 040	73 767
3.1.1 National and International Emergency Preparedness	1 671 248	922 737	1 742 438	669 291
3.1.2.001 Preparedness of Incident and Emergency System	1 098 956	-	1 098 956	-
3.1.2.002 Response and assistance arrangements with Member States and international organizations	1 212 943	500 778	1 141 754	509 692
3.1.2.003 Public communication in emergencies	485 079	44 567	485 079	-
3.1.2 IAEA IES and Operational Arrangements with Member States and IOs	2 796 978	545 345	2 725 789	509 692
3.1 Incident and Emergency Preparedness and Response	**4 468 227**	**1 468 082**	**4 468 227**	**1 178 983**
3.2.1.001 Regulatory effectiveness and regulatory networking	1 425 980	1 940 437	1 666 637	2 566 499
3.2.1.002 Safety standards and CNS support	1 455 830	93 393	1 198 500	19 858
3.2.1.003 Capacity building for installations safety and regulatory functions	276 078	3 896	316 435	48 244
3.2.1 Governmental Regulatory Framework and Safety Infrastructure Development	3 157 888	2 037 726	3 181 573	2 634 601
3.2.2.001 Safety standards for NPP design and safety assessment	1 398 484	124 522	1 397 086	136 257
3.2.2.002 Safety assessment competency building, methods and approaches	873 550	880 810	873 361	875 574
3.2.2 Safety Assessment of Nuclear Installations	2 272 034	1 005 332	2 270 448	1 011 831
3.2.3.001 Site evaluation and installation design safety	822 990	45 123	734 534	48 357
3.2.3.002 Site evaluation methods and tools for installation safety assessment	409 225	829 189	457 288	851 546
3.2.3 Safety and Protection Against External Hazards	1 232 214	874 312	1 191 821	899 902
3.2.4.001 Operational safety performance	1 078 914	1 036 058	945 299	1 048 093
3.2.4.002 Sharing and use of international operating experience	874 000	66 748	892 445	67 445
3.2.4.003 Leadership, management for safety and safety culture in Member States	361 822	29 962	370 574	28 336
3.2.4.004 Safety of long term operation	364 884	436 134	412 371	220 585
3.2.4 Safe Operation of Nuclear Power Plants	2 679 619	1 568 902	2 620 690	1 364 458
3.2.5.001 Safety of research reactors	876 814	150 092	918 669	78 512
3.2.5.002 Safety of fuel cycle facilities	484 368	165 789	519 736	60 031
3.2.5 Safety of Research Reactor and Fuel Cycle Facilities	1 361 182	315 881	1 438 405	138 543
3.2 Safety of Nuclear Installations	**10 702 937**	**5 802 152**	**10 702 937**	**6 049 335**

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

	2020 at 2020 prices		2021 at 2020 prices	
Programme / Subprogramme / Project	Regular Budget	Unfunded	Regular Budget	Unfunded
3.3.1.001 Public and environment radiation protection	1 176 967	490 477	1 177 990	530 297
3.3.1.002 Radiation protection of patients	926 980	30 050	925 541	10 564
3.3.1.003 Occupational radiation protection	652 670	103 229	658 082	103 229
3.3.1.004 Radiation safety technical services	1 576 237	269 908	1 576 237	269 908
3.3.1 Radiation Safety and Monitoring	4 332 855	893 663	4 337 849	913 998
3.3.2.001 Control of radiation sources	1 201 392	2 781 986	1 202 004	2 722 650
3.3.2.002 Transport safety	945 714	-	940 104	-
3.3.2.003 Technical assistance and information management	1 184 920	225 180	1 184 920	225 180
3.3.2 Regulatory Infrastructure and Transport Safety	3 332 025	3 007 167	3 327 028	2 947 830
3.3 Radiation and Transport Safety	**7 664 880**	**3 900 830**	**7 664 878**	**3 861 828**
3.4.1.001 Waste management safety standards and Joint Convention support	1 107 032	166 678	1 217 817	166 678
3.4.1.002 Application of safety standards & support to intercomparison projects	696 232	510 304	584 368	510 304
3.4.1 Safety of Spent Fuel and Radioactive Waste Management	1 803 264	676 982	1 802 185	676 982
3.4.2.001 Safety for decommissioning and remediation	1 202 059	1 184 906	1 203 139	1 013 218
3.4.2.002 Safety for assessment and management of environmental releases	860 149	426 902	860 149	468 325
3.4.2 Safety of Decommissioning, Remediation and Environmental Releases	2 062 208	1 611 808	2 063 288	1 481 542
3.4 Radioactive Waste Management and Environmental Safety	**3 865 473**	**2 288 790**	**3 865 473**	**2 158 524**
3.5.1.001 Assessing nuclear security needs and priorities	506 032	1 836 869	506 032	1 836 869
3.5.1.002 Information sharing on incidents and trafficking	396 953	1 357 130	396 953	1 357 130
3.5.1.003 Information and computer security, and information technology services	589 817	1 420 585	589 817	1 420 585
3.5.1 Information Management	1 492 802	4 614 584	1 492 802	4 614 584
3.5.2.001 Integrated nuclear security approaches	664 200	1 813 433	664 826	1 813 433
3.5.2.002 Enhancing security of nuclear material and associated facilities	522 178	1 851 293	522 178	1 851 293
3.5.2.003 Upgrading security of radioactive material and associated facilities	259 386	1 968 613	259 386	1 968 613
3.5.2.004 Nuclear security in transportation of nuclear and radioactive material	329 376	1 314 183	329 376	1 314 183
3.5.2 Nuclear Security of Materials and Facilities	1 775 140	6 947 522	1 775 767	6 947 522
3.5.3.001 Institutional response infrastructure for material out of regulatory control	582 883	1 066 656	582 883	1 066 656
3.5.3.002 Nuclear security detection architecture	592 313	2 651 598	592 313	2 651 598
3.5.3.003 Radiological crime scene management and nuclear forensics science	402 646	1 552 845	402 646	1 552 845
3.5.3 Nuclear Security of Material outside of Regulatory Control	1 577 842	5 271 099	1 577 842	5 271 099
3.5.4.001 International cooperation on nuclear security networks & partnerships	686 638	1 991 214	686 012	1 991 214
3.5.4.002 Education and training programmes for human resource development	430 640	1 530 463	430 640	1 530 463
3.5.4.003 Coordinating nuclear security guidance and advice services	342 710	1 230 704	342 710	1 230 704
3.5.4 Programme Development and International Cooperation	1 459 988	4 752 380	1 459 362	4 752 380
3.5 Nuclear Security	**6 305 773**	**21 585 586**	**6 305 773**	**21 585 586**
Major Programme 3 - Nuclear Safety and Security	**37 089 180**	**36 930 629**	**37 089 182**	**36 724 886**

Major Programme 3 — Nuclear Safety and Security
Activities unfunded in the Regular Budget
(excluding Major Capital Investments)

Project	Tasks	2020 Unfunded	2021 Unfunded
3.0.0.001 Overall management, coordination, communication and common activities	Enhancement of effectiveness and efficiency of peer review and advisory services	206 459	228 222
3.0.0.002 Capacity building, knowledge networks and partnerships	Activities on capacity building, knowledge management, networks and partnerships	1 441 087	1 424 764
3.0.0.003 Coordination of safety standards and security guidance	Development and maintenance of processes and tools for safety standards and security guidance	237 644	237 644
3.1.1.001 Member State emergency preparedness	Assistance to Member States in building, maintaining and enhancing their EPR arrangements by: providing capacity building services; developing knowledge sharing tools; and supporting Capacity Building Centres in EPR	873 558	595 524
3.1.1.002 International emergency management	Enhancement of international EPR arrangements and international cooperation in response to nuclear or radiological emergency independent of triggering event(s)	49 178	73 767
3.1.2.002 Response and assistance arrangements with Member States and international organizations	Response to emergencies and enhancement of international response arrangements	500 778	509 692
	Enhancement of international assistance arrangements		
	Enhancement of information exchange supporting the assessment and prognosis process		
3.1.2.003 Public communication in emergencies	Development of guidance and training tools for public communication in nuclear or radiological emergencies for Member States and the Secretariat	44 567	-
3.2.1.001 Regulatory effectiveness and regulatory networking	Support to implementation of the nuclear safety infrastructure based on SSG-16 for Member States embarking on a new nuclear power programme	1 940 437	2 566 499
	Development, review and revision of safety standards and related documents on governmental and regulatory frameworks for nuclear installations		
	Support to application of legal and non-binding instruments in the regulatory bodies and fostering international cooperation, coordination and information exchange activities in the regulatory area		
	Enhancement of the Integrated Regulatory Review Services (IRRS) and assistance to Member States in the implementation of recommendations		
	Development of approaches, methodologies and criteria for determining the technical basis for emergency planning zone for Small Modular Reactor Deployment (CRP)		
3.2.1.002 Safety standards and CNS support	Support to CNS review meetings of the contracting parties, including maintenance of the CNS secure website	93 393	19 858
3.2.1.003 Capacity building for installations safety and regulatory functions	Support to and assisting regulatory training networks and implementing the E&T review and advisory services	3 896	48 244
3.2.2.001 Safety standards for NPP design and safety assessment	Development and review of safety standards and associated documents	124 522	136 257
	Support and implement Technical Safety Review (TSR) Peer Reviews		
	International cooperation, coordination and information exchange		

Major Programme 3 — Nuclear Safety and Security
Activities unfunded in the Regular Budget
(excluding Major Capital Investments)

Project	Tasks	2020 Unfunded	2021 Unfunded
3.2.2.002 Safety assessment competency building, methods and approaches	Development, maintenance and delivery of competency building material Update and implementation of safety assessment competency building programmes Development and review of current practices and Research & Development	880 810	875 574
3.2.3.001 Site evaluation and installation design safety	Conducting SEED review service missions and assisting Member States in implementing their recommendations	45 123	48 357
3.2.3.002 Site evaluation methods and tools for installation safety assessment	Development and revision of supporting documents with technical methods and tools required for implementing safety standards of site evaluation and safety assessment Development of capacity of embarking countries in conducting safety analysis of nuclear installations in light of site evaluation, site-related safety assessments, design and risk reduction	829 189	851 546
3.2.4.001 Operational safety performance	Development, review and revision of safety standards and supporting documents on operational safety of NPPs Conducting Operational Safety Review Team (OSART) missions and assistance to Member States in implementation of the findings Support to international cooperation, coordination and information exchange	1 036 058	1 048 093
3.2.4.002 Sharing and use of international operating experience	Development, review and revision of safety standards and supporting documents on operating experience and continuous performance improvement Conducting operating experience programme review (PROSPER) and assistance to Member States in the implementation of the recommendations Sharing and use of international operating experience	66 748	67 445
3.2.4.003 Leadership, management for safety and safety culture in Member States	Conducting missions and advisory services for Leadership, Management for Safety and Safety Culture and assistance to Member States in implementing the recommendations	29 962	28 336
3.2.4.004 Safety of long term operation	Conducting Safety Aspects of Long Term Operation (SALTO) peer review service and assistance to Member States in preparation for safe Long Term Operation Conducting International Generic Ageing Lessons Learned (IGALL) programme and fostering international exchange of information and knowledge sharing on Ageing Management and Long Term Operation of nuclear power plants	436 134	220 585
3.2.5.001 Safety of research reactors	Support to capacity building for research reactor safety infrastructure Conducting safety review and advisory services missions and assisting Member States in implementing the recommendations	150 092	78 512
3.2.5.002 Safety of fuel cycle facilities	Support to capacity building for fuel cycle facilities' safety infrastructure Conducting safety review and advisory services missions and assisting Member States in implementing the recommendations	165 789	60 031
3.3.1.001 Public and environment radiation protection	Provision of assistance to Member States in application of safety standards	490 477	530 297
3.3.1.002 Radiation protection of patients	Support to implementation of safety standards in imaging and therapy procedures in medicine	30 050	10 564

Major Programme 3 — Nuclear Safety and Security
Activities unfunded in the Regular Budget
(excluding Major Capital Investments)

Project	Tasks	2020 Unfunded	2021 Unfunded
3.3.1.003 Occupational radiation protection	Operation of the ISOE system jointly with OECD/NEA	103 229	103 229
3.3.1.004 Radiation safety technical services	Implementation of accredited individual monitoring services for the Agency staff and workers participating in the Agency operations	269 908	269 908
3.3.2.001 Control of radiation sources	Organization of the Code of Conduct open ended meetings to share experience on its implementation by Member States	2 781 986	2 722 650
3.3.2.003 Technical assistance and information management	Maintenance of radiation safety profiles of recipient Member States in RASIMS	225 180	225 180
	Assistance to Member States in development and implementation of a national strategy for education and training in radiation, transport and waste safety		
	Conducting review and advisory missions to strengthen radiation safety infrastructure		
3.4.1.001 Waste management safety standards and Joint Convention support	Coordination of WASSC and providing the secretariat for the Joint Convention	166 678	166 678
3.4.1.002 Application of safety standards & support to intercomparison projects	Assistance to Member States in the safe management of radioactive waste and spent fuel	510 304	510 304
3.4.2.001 Safety for decommissioning and remediation	Revision and development of safety standards for decommissioning, remediation and uranium and NORM residues management, and assistance in their implementation	1 184 906	1 013 218
3.4.2.002 Safety for assessment and management of environmental releases	Assistance to Member States in the application of safety standards	426 902	468 325
3.5.1.001 Assessing nuclear security needs and priorities	Support to the implementation of the Nuclear Security Plan 2018-2021	1 836 869	1 836 869
3.5.1.002 Information sharing on incidents and trafficking	Support to the implementation of the Nuclear Security Plan 2018-2021	1 357 130	1 357 130
3.5.1.003 Information and computer security, and information technology services	Support to the implementation of the Nuclear Security Plan 2018-2021	1 420 585	1 420 585
3.5.2.001 Integrated nuclear security approaches	Support to the implementation of the Nuclear Security Plan 2018-2021	1 813 433	1 813 433
3.5.2.002 Enhancing security of nuclear material and associated facilities	Support to the implementation of the Nuclear Security Plan 2018-2021	1 851 293	1 851 293
3.5.2.003 Upgrading security of radioactive material and associated facilities	Support to the implementation of the Nuclear Security Plan 2018-2021	1 968 613	1 968 613
3.5.2.004 Nuclear security in transportation of nuclear and radioactive material	Support to the implementation of the Nuclear Security Plan 2018-2021	1 314 183	1 314 183
3.5.3.001 Institutional response infrastructure for material out of regulatory control	Support to the implementation of the Nuclear Security Plan 2018-2021	1 066 656	1 066 656
3.5.3.002 Nuclear security detection architecture	Support to the implementation of the Nuclear Security Plan 2018-2021	2 651 598	2 651 598
3.5.3.003 Radiological crime scene management and nuclear forensics science	Support to the implementation of the Nuclear Security Plan 2018-2021	1 552 845	1 552 845
3.5.4.001 International cooperation on nuclear security networks & partnerships	Support to the implementation of the Nuclear Security Plan 2018-2021	1 991 214	1 991 214
3.5.4.002 Education and training programmes for human resource development	Support to the implementation of the Nuclear Security Plan 2018-2021	1 530 463	1 530 463
3.5.4.003 Coordinating nuclear security guidance and advice services	Support to the implementation of the Nuclear Security Plan 2018-2021	1 230 704	1 230 704
Grand Total		**36 930 629**	**36 724 886**

Major Programme 4
Nuclear Verification

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 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 the analysis of safeguards relevant information, installation of safeguards instrumentation, in field inspections and sample analysis required for implementing safeguards. These activities enable the Agency to draw soundly based safeguards conclusions. In addition, the Agency, in accordance with its Statute, assists with other verification tasks, including in connection with nuclear disarmament or arms control agreements as requested by States and approved by the Board of Governors.

For the 2020–2021 period, the main challenges for Major Programme 4 include:

- Increasing safeguards responsibilities as a result of an increasing number of safeguards agreements and additional protocols and growing numbers of nuclear facilities and quantities of nuclear material under safeguards;
- Implementing the necessary verification and monitoring of Iran's nuclear-related commitments as set out in the Joint Comprehensive Plan of Action (JCPOA) in light of United Nations Security Council resolution 2231 (2015);
- Planning for and conducting verification activities at nuclear facilities that are being decommissioned;
- Preparing to safeguard new types of nuclear facilities and more complex or larger scale nuclear facilities;
- Intensifying efforts to enhance the Agency's readiness to play its essential role in monitoring and verifying the DPRK's nuclear programme, in accordance with its mandate;
- Ensuring the availability of a safeguards workforce with the necessary skills and expertise, and maintaining critical institutional knowledge;
- Modernizing the technical systems, services and instrumentation that underpin effective and efficient safeguards implementation;
- Operating in a challenging security environment, which may require additional measures to ensure the physical safety of staff operating in the field and to ensure information security.

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, and, in accordance with the Agency's Statute, assist with other verification tasks, including in connection with nuclear disarmament or arms control agreements, as requested by States and approved by the Board of Governors.*	
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.
• 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 established safeguards objectives met.
• 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	Procedures, directives, reporting documents; country specific safeguards implementation information; communication plans and dialogue with States on safeguards implementation matters; coordination of planning, monitoring and reporting on results; staffing plans and recruitment coordination; financial reviews.
4.0.0.002 Safeguards effectiveness evaluation	Safeguards Implementation Report (SIR); internal performance monitoring and internal review.

Programme 4.1 Safeguards Implementation

The effective implementation of safeguards requires the Agency to conduct a variety of activities to verify that States are honouring their safeguards obligations. These activities include: the development and/or updating of safeguards approaches to be implemented in States and at specific types of facility; the conduct of in field activities in relevant locations in States; the collection, processing and analysis of safeguards relevant information; the provision, development, standardization and maintenance of safeguards equipment; the analysis of nuclear material and environmental samples; the continued provision of information and communication support; the evaluation of performance; the training of staff. These activities enable the Agency to establish a complete and comprehensive basis upon which safeguards conclusions can be drawn.

Lessons learned from reviews, assessment, evaluations: The continuous collaborative work of multidisciplinary State Evaluation Groups supported planning, conducting and evaluating all safeguards activities for every State with a safeguards agreement in force. In addition, the use of tools, such as modern analytical applications, needs to be continuously provided. There is a need to improve the safeguards equipment performance metrics and to take additional measures for standardization of equipment. Enhanced cooperation of the Network of Analytical Laboratories (NWAL) with service providers and shipping companies is needed to decrease the shipment time of samples and to reduce the complexity of shipment exemption limits. It is expected that demands for States outreach will continue to grow. In particular, further efforts need to be focused on the evaluation and improvement of the technical capabilities of State and regional systems regional system of accounting for and control of nuclear material (SSACs/RSACs).

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.

Programmatic changes and trends

Subprogramme 4.1.1 Concepts and Planning 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, efficiently and consistently. Quality management related activities previously reflected under Project 4.0.0.002 Quality Management at the Major Programme level are now merged with the activities of the previous Project 4.1.1.003 Process design, and conducted in an integrated manner under Project 4.1.1.003 Process design and quality management.

Subprogramme 4.1.2 Safeguards Implementation for States under the Responsibility of Division SGOA There are no substantive programmatic changes in the subprogramme compared with the previous biennium.

Subprogramme 4.1.3 Safeguards Implementation for States under the Responsibility of Division SGOB There are no substantive programmatic changes in the subprogramme compared with the previous biennium. Safeguards activities in the Islamic Republic of Iran under the CSA and the AP (provisionally applied) conducted by the Office of Verification in Iran will continue under this subprogramme. Safeguards activities in the United States of America remain funded by extrabudgetary funding.

Subprogramme 4.1.4 Safeguards Implementation for States under the Responsibility of Division SGOC There are no substantive programmatic changes in this subprogramme compared with the previous biennium. Safeguards

activities in the United Kingdom will not require additional funds under the Regular Budget. Safeguards activities in the Russian Federation remain funded by extrabudgetary funding.

Subprogramme 4.1.5 Information Analysis The subprogramme continues to group all projects dedicated to ongoing safeguards relevant information collection, advanced technical expert's evaluation, and analysis of all safeguards relevant information 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.

Subprogramme 4.1.6 Provision and Development of Safeguards Instrumentation The subprogramme continues to cover all departmental activities related to the development, provision and maintenance of safeguards equipment and instrumentation. The subprogramme is now also encompassing research and development activities aiming at upgrading and standardizing safeguards equipment and instrumentation. Project 4.1.6.005 Development of equipment components and stand-alone instruments and Project 4.1.6.006 Development of instrumentation systems and methodology, previously managed under the discontinued Subprogramme 4.3.2, are now part of this subprogramme. This will allow for better synergies between acquisition, maintenance, upgrades and new developments of safeguards equipment and instrumentation.

Subprogramme 4.1.7 Analytical Services The main tasks covered by this subprogramme as provider of analytical services remain unchanged. Collaboration with the NWAL will continue.

Subprogramme 4.1.8 Special Projects This subprogramme previously addressed effectiveness evaluation activities, which are now regrouped in Project 4.0.0.002 effectiveness evaluation. The subprogramme is now regrouping special projects previously included in the discontinued Programme 4.3. The workload related to the Chernobyl nuclear power plant is expected to diminish over the biennium. Planned activities related to J-MOX in Japan and the spent fuel encapsulation plant and geological repository (EPGR) in Finland and Sweden are following the schedules in the respective States.

Subprogramme 4.1.9 Safeguards Information Communication Technology (ICT) This subprogramme includes the set of activities related to the safeguards centre of competence for the specification, development and maintenance of information and communication technology (ICT) systems and for the management of all safeguards' ICT infrastructure. Following rapidly evolving needs and trends, going from digitalization to collaborative environments with enhanced data analysis, this subprogramme will ensure that specific safeguards ICT systems continue to be available. The previous Project 4.0.004 Security was moved to this subprogramme as Project 4.1.9.003.

Objectives, Outcomes and Performance Indicators by Programme

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 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.*	
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 established safeguards objectives attained.
• 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 safeguards activities that utilized advanced tools, methodologies and technologies.

Subprogramme 4.1.1 Concepts and Planning	
Objectives:	
— *To contribute to setting strategic directions and objectives, prepare for future safeguards relevant challenges and opportunities and coordinate support from Member States* — *To develop safeguards approaches and establish internal procedures and guidance for safeguards implementation at the State level* — *To continually improve safeguards processes and effectively maintain elements of the Department's quality management system.* — *To strengthen safeguards knowledge, skills and abilities within the Department of Safeguards and in States, through training, advisory services, guidance, meetings and dialogue.*	
Outcomes	**Performance Indicators**
• Clearly defined priorities and preparedness for the future, and well coordinated Member State Support Programme (MSSP) support.	• Percentage of Departmental internal planning documents updated in a timely manner in accordance with procedures. • Percentage of all development priorities supported by development and implementation support (D&IS) activities by MSSPs.
• Improved and up to date internal, processes and documentation to support effective, efficient and consistent safeguards implementation.	• Percentage of safeguards implementation processes for which internal procedures and guidance are established and up to date.
• Improved knowledge and skills of Agency staff as well as counterparts in the States to perform and support safeguards implementation.	• Percentage of positive feedback received from supervisors of trained SSAC staff. • Percentage of formalized safeguards training courses carried out, as identified in the annual safeguards training programme.
Projects	
Title	**Main Planned Outputs**
4.1.1.001 Strategic planning and coordination	Internal strategic plan, R&D plan, biennial D&IS programme; MSSP coordination technical meetings with, and guidance to, States on safeguards implementation; reports to Policy-Making Organs; SAGSI reports to the Director General.
4.1.1.002 Safeguards approaches and concepts	Safeguards implementation document reviews; advice to operations and technical divisions on the development of State-Level safeguards approaches (SLA)[1] and subsidiary arrangements; internal procedures and guidance; safeguards approaches for new types of facility.
4.1.1.003 Process design and quality management	Document management and control system; tools to support QMS; process maps and descriptions, procedures, instructions and records system; cost analysis; root cause analysis of identified conditions; training on quality management; knowledge management; support for the Internal Quality Audit programme; annual calculation for safeguards cost per State.
4.1.1.004 SG Staff training and traineeship	Training needs analysis; training curricula; evaluation procedures; training courses for staff; reports and assessment of training courses; teaching materials and training tools; and traineeship programme.
4.1.1.005 Training and assistance to SSAC	Training needs analysis; training curricula; evaluation procedures; training courses for SSACs; reports and assessment of training courses; and teaching materials and training tools.

[1] It is noted that the development and implementation of State-Level approaches is to be carried out in close consultation and coordination with the State and/or regional authority and includes agreement by the State concerned on practical arrangements related to the implementation of safeguards measures identified for use in the field if not already in place.

Subprogramme 4.1.2 Safeguards Implementation for States under the 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 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 all 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.

Projects

Title	Main Planned Outputs
4.1.2.001 Verification for States with CSA and AP in force	State evaluation reports; SLAs[2]; 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; SLAs[3]; 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; 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 the 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 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 all collected safeguards relevant information was processed, evaluated and documented.

[2, 3] See footnote 1 on page 130.

Outcomes	Performance Indicators
• 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 CSA and additional protocol in force, for which the broader conclusion was drawn or reaffirmed.
Projects	
Title	**Main Planned Outputs**
4.1.3.001 Verification for States with CSA and AP in force	State evaluation reports; SLAs[4]; 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; SLAs[5]; 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 agreement	State evaluation reports; 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; annual implementation plans; DIV plans; safeguards approaches and inspection procedures; and statements and documentation on activities, results and conclusions of inspections, CAs, and DIVs.
4.1.3.005 Verification for Iran (CSA and AP (provisionally applied))	State evaluation report; SLA[6]; annual implementation plan; 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 the 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 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 all 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.

[4, 5, 6] See footnote 1 on page 130.

Projects	
Title	**Main Planned Outputs**
4.1.4.001 Verification for States with CSA and AP in force	State evaluation reports; SLAs[7]; annual implementation plans; DIV plans; safeguards approaches and inspection procedures; 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; SLAs[8]; annual implementation plans; DIV plans; safeguards approaches and inspection procedures; statements and documentation on activities, results and conclusions of inspections and DIVs.
4.1.4.003 Verification for States with VOA	State evaluation reports; 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.
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; 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; extensive contribution to field activities and safeguards implementation.

[7, 8] See footnote 1 on page 130.

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

Subprogramme 4.1.6 Provision and Development of Safeguards Instrumentation

Objectives:

- *To enable and improve the implementation of safeguards through the provision of appropriate and reliable safeguards instruments with adequate field support.*
- *To develop innovative approaches and upgrades in safeguards technologies, to evaluate the application of new technologies for the detection of undeclared nuclear material and activities and to ensure synergy between safeguards equipment development and innovations originating from other technical areas.*
- *To enable and maintain a system of asset management and operational equipment tracking compliant with International Public Sector Accounting Standards (IPSAS) and 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 made available for analysis.
• Increased use of improved technologies in safeguards implementation	• Number of upgraded instruments and components.
• Asset management compliant with IPSAS and occupational safety and radiation regulations.	• Ratio of equipment with incomplete tracking information compared to the overall equipment pool at the Agency's Headquarters and the Safeguards Analytical Laboratories. • Percentage of items received from the field that are scanned for contamination.

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; measurement results.
4.1.6.002 Unattended safeguards instrumentation	Prepared, installed and tested surveillance and unattended monitoring systems; field support to inspectors; 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; 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; equipment documentation and authorization records.

Projects	
Title	**Main Planned Outputs**
4.1.6.005 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.
4.1.6.006 Development of instrumentation systems and methodology	New and improved methods implemented in new safeguards equipment systems available for use by Agency inspectors.

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.* — *To strengthen quality assurance and control of nuclear material and environmental sample analyses.* — *To optimize sample logistics and coordinate NWAL management.*	
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 NWAL, including the Safeguards Analytical Laboratories. • Percentage of safeguards samples analysed within agreed timeliness goals.
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; stockpile and provision of sampling kits and materials.

Subprogramme 4.1.8 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 State facilities.	• Percentage of verification equipment, software and systems and associated information made available in accordance with planned schedules.
Projects	
Title	**Main Planned Outputs**
4.1.8.001 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.
4.1.8.002 Develop and implement safeguards approaches for the Chernobyl NPP	Safeguards approaches, equipment requirements defined; equipment installed and tested for spent fuel transfer verification.

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, physical security and business continuity.*	
Outcomes	**Performance Indicators**
• Effective and efficient delivery of ICT projects to address safeguards requirements.	• Satisfaction rate of internal stakeholders of the implemented projects. • Percentage of business processes that integrate data into a single Departmental repository inside the secure integrated safeguards environment (ISE).
• Increased efficiency while providing maintenance and support services for safeguards applications.	• Average response time between change requests or incident reports and solutions.
• Improved information security, physical security and business continuity.	• Maturity level of the critical information and physical security controls. • Maturity level for business continuity and disaster recovery capabilities.
Projects	
Title	**Main Planned Outputs**
4.1.9.001 ICT development	Departmental IT systems implemented (developed in-house or utilizing commercial products) and adequately maintained; software provided to States to support their safeguards reporting responsibilities.
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; mobile platform, disaster recovery and next generation security implementation.
4.1.9.003 Security	Security procedures, response to physical/information security incidents; security awareness campaigns; training to staff on handling sensitive information; coordination/cooperation with the Agency's Central Security Coordinator/Chief Information Security Officer.

Programme 4.2 Other Verification Activities

When requested by States and approved by the Board of Governors, the Agency will respond to requests for additional verification tasks and technical assistance. Since 16 January 2016 (JCPOA Implementation Day), the Agency has verified and monitored Iran's implementation of its nuclear-related commitments under the Joint Comprehensive Plan of Action (JCPOA).

The Agency is intensifying efforts to enhance the Agency's readiness to play its essential role in monitoring and verifying the DPRK's nuclear programme, in accordance with its mandate.

The Agency will assist with other verification tasks, in accordance with its Statute, in connection with nuclear disarmament or arms control agreements, as requested by States and approved by the Board of Governors.

Lessons learned from reviews, assessment, evaluations: In a rapidly evolving external environment, the Agency needs to remain ready to implement its mandate, in an effective and agile manner, as requested by States and approved by the Board of Governors, as was demonstrated in the context of the JCPOA.

To enhance its readiness to play its essential role in monitoring and verifying the DPRK's nuclear programme, in accordance with its mandate, the Agency needs to continue to collect and evaluate safeguards relevant information, update verification approaches and procedures, identify and train inspectors, and ensure the availability of appropriate verification technologies and equipment.

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.

Programmatic changes and trends

Subprogramme 4.2.1 Other Verification Activities The verification and monitoring of Iran's nuclear-related commitments as set out in the JCPOA, in light of United Nations Security Council resolution 2231 (2015), is reflected in this subprogramme. The activities to enhance the Agency's readiness to play its essential role in monitoring and verifying the DPRK's nuclear programme are included in this subprogramme.

Objectives, Outcomes and Performance Indicators by Programme

Programme 4.2 Other Verification Activities	
Objectives:	
— *To assist with other verification tasks, in accordance with the Statute, as requested by States and approved by the Board of Governors.*	
Outcomes	**Performance Indicators**
• Capacity to carry out, upon request, verification tasks.	• Percentage of requests approved by the Board of Governors that were successfully addressed.

Subprogramme 4.2.1 Other Verification Activities	
Objectives:	
— *To implement effective verification and monitoring of Iran's nuclear-related commitments as set out in the JCPOA.* — *To prepare and be ready to verify that the DPRK is fulfilling its obligations under its NPT Safeguards Agreement (INFCIRC/403), and to enhance the Agency's readiness to play its essential role in monitoring and verifying the DPRK's nuclear programme.* — *To follow any evolutions on the disposition of plutonium designated as no longer required for defence purposes, in accordance with verification agreement(s), to be concluded between the Agency and States, when requested by States and as approved by the Board of Governors.*	
Outcomes	**Performance Indicators**
• Verification and monitoring activities performed in relation to Iran's nuclear- related commitments as set out in the JCPOA.	• Timely reports to the Board of Governors and, in parallel, to the United Nations Security Council.
• Enhanced readiness and preparedness to implement safeguards under INFCIRC/403 and to conduct other verification activities in the DPRK, as approved by the Board of Governors.	• Timely reports to the Board of Governors and General Conference. • Percentage of required documents and plans in place to allow for verification activities in the DPRK.
• Necessary legal framework, verification approaches and equipment to conduct verification related to specific verification agreement(s), when concluded.	• Percentage of required arrangements, approaches and systems in place to allow for verification related to specific verification agreement(s), when concluded.
Projects	
Title	**Main Planned Outputs**
4.2.1.001 Verification activities in the Democratic People's Republic of Korea	Regular updates provided to the Board of Governors and General Conference; State evaluation report; plans to implement safeguards or other monitoring and/or verification measures under different scenarios.
4.2.1.002 Verification and monitoring of Iran's nuclear related commitments	Regular updates provided to the Board of Governors and, in parallel, to the United Nations Security Council.

Major Programme 4 — Nuclear Verification
Summary of Programme Structure and Resources
(excluding Major Capital Investments)

	2020 at 2020 prices		2021 at 2020 prices	
Programme / Subprogramme / Project	Regular Budget	Unfunded	Regular Budget	Unfunded
4.0.0.001 Overall management and coordination	2 922 558	-	2 922 558	-
4.0.0.002 Safeguards effectiveness evaluation	1 038 093	-	1 038 093	-
4.S Corporate shared services	10 164 761	-	10 164 778	-
	14 125 413	**-**	**14 125 429**	**-**
4.1.1.001 Strategic planning and coordination	1 437 379	644 168	1 434 588	636 944
4.1.1.002 Safeguards approaches and concepts	2 489 485	467 832	2 485 417	467 832
4.1.1.003 Process design and quality management	1 910 618	377 005	1 910 618	377 005
4.1.1.004 SG Staff training and traineeship	2 429 587	764 499	2 436 445	764 499
4.1.1.005 Training and assistance to SSAC	614 265	531 281	614 265	531 281
4.1.1 Concepts and Planning	8 881 333	2 784 786	8 881 333	2 777 561
4.1.2.001 Verification for States with CSA and AP in force	16 390 955	-	16 390 955	-
4.1.2.002 Verification for States with CSA	352 979	-	352 979	-
4.1.2.003 Verification for States with VOA	482 433	-	482 433	-
4.1.2 Safeguards Implementation in States under responsibility of Division SGOA	17 226 367	-	17 226 367	-
4.1.3.001 Verification for States with CSA and AP in force	8 701 691	-	8 701 691	-
4.1.3.002 Verification for States with CSA	4 964 705	-	4 964 705	-
4.1.3.003 Verification for States with INFCIRC/66-type agreement	3 009 488	-	3 009 488	-
4.1.3.004 Verification for States with VOA	(0)	337 383	(0)	337 383
4.1.3.005 Verification for Iran (CSA and AP (provisionally applied))	8 847 617	-	8 847 617	-
4.1.3 Safeguards Implementation in States under responsibility of Division SGOB	25 523 501	337 383	25 523 501	337 383
4.1.4.001 Verification for States with CSA and AP in force	16 200 240	-	16 200 240	-
4.1.4.002 Verification for States with CSA	355 088	-	355 088	-
4.1.4.003 Verification for States with VOA	1 062 270	515 695	1 062 270	515 695
4.1.4 Safeguards Implementation in States under responsibility of Division SGOC	17 617 598	515 695	17 617 598	515 695

Major Programme 4 — Nuclear Verification
Summary of Programme Structure and Resources
(excluding Major Capital Investments)

	2020 at 2020 prices		2021 at 2020 prices	
Programme / Subprogramme / Project	Regular Budget	Unfunded	Regular Budget	Unfunded
4.1.5.001 Declared information analysis	2 569 653	708 434	2 569 653	708 434
4.1.5.002 Nuclear fuel cycle information analysis	3 432 725	1 245 837	3 432 725	1 245 837
4.1.5.003 State infrastructure analysis	3 052 823	1 253 839	3 052 823	1 253 839
4.1.5.004 Information collection and analysis	3 781 250	1 365 676	3 781 250	1 365 676
4.1.5 Information Analysis	12 836 451	4 573 787	12 836 451	4 573 787
4.1.6.001 Portable and resident non-destructive assay equipment	4 346 830	1 663 548	4 346 830	2 864 851
4.1.6.002 Unattended safeguards instrumentation	7 005 763	855 397	7 005 763	1 166 504
4.1.6.003 Equipment logistics and storage	3 587 879	376 250	3 587 879	323 743
4.1.6.004 Systems integration and coordination	4 311 551	753 897	4 311 551	775 482
4.1.6.005 Development of equipment components and stand-alone instruments	1 516 470	-	1 516 470	-
4.1.6.006 Development of instrumentation systems and methodology	1 237 032	471 950	1 237 032	471 940
4.1.6 Provision and Development of Safeguards Instrumentation	22 005 525	4 121 042	22 005 525	5 602 521
4.1.7.001 Analytical services and sample analysis	11 109 047	861 705	11 109 047	861 705
4.1.7 Analytical Services	11 109 047	861 705	11 109 047	861 705
4.1.8.001 Develop and implement a safeguards approach for J-MOX	425 335	-	425 335	-
4.1.8.002 Develop and implement safeguards approaches for the Chernobyl NPP	150 154	-	150 154	-
4.1.8 Special Projects	575 489	-	575 489	-
4.1.9.001 ICT Development	7 031 763	14 983 799	7 031 763	13 558 270
4.1.9.002 ICT Infrastructure and support	7 137 333	373 137	7 137 333	373 137
4.1.9.003 Security	1 453 644	-	1 453 644	-
4.1.9 Safeguards Information Communication Technology (ICT)	15 622 740	15 356 936	15 622 740	13 931 407
4.1 Safeguards Implementation	**131 398 051**	**28 551 335**	**131 398 051**	**28 600 060**
4.2.1.001 Verification activities in the Democratic People's Republic of Korea	955 041	136 888	955 041	136 888
4.2.1.002 Verification and monitoring of Iran's nuclear related commitments	2 230 885	4 070 670	2 230 885	4 070 670
4.2.1 Other Verification Activities	3 185 925	4 207 558	3 185 925	4 207 558
4.2 Other Verification Activities	**3 185 925**	**4 207 558**	**3 185 925**	**4 207 558**
Major Programme 4 - Nuclear Verification	**148 709 390**	**32 758 893**	**148 709 406**	**32 807 619**

Major Programme 4 — Nuclear Verification
Activities unfunded in the Regular Budget
(excluding Major Capital Investments)

Project	Tasks	2020 Unfunded	2021 Unfunded
4.1.1.001 Strategic planning and coordination	Strategic planning, Member States Support Programme (MSSP) coordination	644 168	636 944
4.1.1.002 Safeguards approaches and concepts	Safeguards approaches and concepts	467 832	467 832
4.1.1.003 Process design and quality management	Quality management system performance and improvement	377 005	377 005
4.1.1.004 SG Staff training and traineeship	Training implementation; Safeguards traineeship programme; Development and evaluation of safeguards training courses	764 499	764 499
4.1.1.005 Training and assistance to SSAC	Training	531 281	531 281
4.1.3.004 Verification for States with VOA	Verification in States with voluntary offer agreements	337 383	337 383
4.1.4.003 Verification for States with VOA	Verification in States with voluntary offer agreements	515 695	515 695
4.1.5.001 Declared information analysis	Development activities and methodology and support tasks	708 434	708 434
4.1.5.002 Nuclear fuel cycle information analysis	Development activities and methodology and support tasks	1 245 837	1 245 837
4.1.5.003 State infrastructure analysis	Development activities and methodology and support tasks	1 253 839	1 253 839
4.1.5.004 Information collection and analysis	Development activities and methodology and support tasks	1 365 676	1 365 676
4.1.6.001 Portable and resident non-destructive assay equipment	Expert support in the area of non-destructive assay activities; Provision and maintenance of portable and resident non-destructive assays	1 663 548	2 864 851
4.1.6.002 Unattended safeguards instrumentation	Provision and maintenance of surveillance instrumentation, provision of unattended monitoring systems	855 397	1 166 504
4.1.6.003 Equipment logistics and storage	Safeguards asset management	376 250	323 743
4.1.6.004 Systems integration and coordination	Provide and maintain seals and containment equipment; Provide and maintain remote monitoring instrumentation; Develop safeguards technical and scientific services project engineering	753 897	775 482
4.1.6.006 Development of instrumentation systems and methodology	Technological foresight and evaluation of innovations	471 950	471 940
4.1.7.001 Analytical services and sample analysis	Coordinate and support the provision of analytical services	861 705	861 705
4.1.9.001 ICT Development	ICT design and management	14 983 799	13 558 270
4.1.9.002 ICT Infrastructure and support	ICT user support	373 137	373 137
4.2.1.001 Verification activities in the Democratic People's Republic of Korea	Maintain readiness and preparedness to implement safeguards under INFCIRC/403 and to conduct other verification activities in the DPRK, as approved by the Board of Governors	136 888	136 888
4.2.1.002 Verification and monitoring of Iran's nuclear related commitments	Nuclear related commitments	4 070 670	4 070 670
Grand Total		**32 758 893**	**32 807 619**

Major Programme 5
Policy, Management and Administration Services

Introduction

Under the leadership, direction and authority of the Director General, the Agency's programmes seek to achieve the objectives of its Member States. This requires effective coordination to ensure a one house approach, particularly with respect to: overall directions and priorities; interactions with Member States; development and implementation of programmes; results based management, including performance assessment and risk management; gender mainstreaming; partnerships and resource mobilization; and the management of information within the Secretariat, between the Secretariat and Member States, and for the benefit of the general public and the media. The independent ethics function will continue to promote and sustain an ethical organizational culture of integrity, accountability and transparency, and continue to assist the Director-General in ensuring that all staff members observe and perform their functions consistent with the highest standards of integrity.

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 mandate.

It should be noted that approximately 25% 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. Major Programme 5 coordinates security activities through a centralized security coordination function for the Agency, including integrated management of facilities and site security for the Agency's laboratories at Seibersdorf. The need to enhance the Agency's information security infrastructure, processes and capabilities to address the severe and escalating threats will continue to grow, in particular to ensure the security of information entrusted to the Agency.

Major Programme 5 continues to focus on continuous improvement of management services through innovation and the drive for achieving greater efficiencies. These services are essential to the delivery of the activities of the other Major Programmes and the effects of improvements to management services will be realised across the Agency. The effectiveness of this internal client orientation in achieving concrete results is determined through close monitoring and feedback from all Departments inside the Secretariat.

Integrated management of maintenance and operation will enable greater efficiency in managing the increased number of facilities at the Seibersdorf site. Implementation of the Agency-wide Information System for Programme Support (AIPS) continues to generate efficiencies through automation of processes. Efforts continued to increase efficiency and rationalize work, and to reduce the amount of material printed, while continuing to meet Member State needs. The work of this Major Programme will continue to focus on providing innovative solutions and achieving greater efficiency and accountability across the Agency.

The Agency will continue to strengthen accountability, efficiency and effectiveness through the activities of the Office of Internal Oversight Services (OIOS) — including audits, evaluations, investigations and the provision of advisory support to senior management and Member States — as well as through the Secretariat's support to the External Auditors.

Objectives:	
— *To continuously improve the one house and results based management approach to ensure the relevance, effectiveness and efficiency of all Agency programmes and the use of resources.* — *To enhance understanding of the work of the Agency and to ensure timely access by stakeholders to relevant scientific and technical information.*	
Outcomes	**Performance Indicators**
• Improved planning, implementation, assessment and evaluation of the Agency's programme in a fully coordinated manner, following the results based approach.	• Degree of achievement of high quality implementation of Agency planned programme.
• Increased timeliness and quality of administrative and legal services provided in relation to the scientific and technical programmes of the Agency.	• Timeliness and quality of legal services. • Timeliness and quality of administrative services.
• Enhanced efficiency and effectiveness of information support services and communications.	• Number of outreach activities to media and the public on the activities of the Agency.

Programmatic changes and trends

Subprogramme 5.0.1 Executive Leadership and Policy will continue to provide coordinated planning and implementation to ensure that all activities are undertaken within the Agency's statutory mandate and in line with the guidance of the Policy-Making Organs (PMOs). The coordination activities have been strengthened to continue to ensure timely and effective implementation of the Agency's programmes and delivery of concrete results, with more consistent integration of cross-organizational issues such as those relating to partnerships, gender and the Sustainable Development Goals. The practice of continually improving efficiency has been embedded in the Agency's Programme and Budget planning process. The results based management approach across the Agency is further strengthened in programme planning, implementation and performance assessment. The Agency's risk management system continues to ensure consistent identification, consideration and mitigation of risks in decision-making. The independent ethics function will continue to assist the Director General in ensuring that all staff members observe and perform their functions consistent with the highest standards of integrity.

Subprogramme 5.0.2 Legal Services will continue to face a high overall workload in providing support across the Agency, in particular as regards support to Member States for assistance in the preparation of national legislation and the implementation of international agreements. Support to senior management also continues to be high. Substantial work continues in support of Agency safeguards and verification, and nuclear safety and security. The increasing programmatic needs are met through further efficiency gains and through decentralization of clearances based on agreed templates and parameters, as well as through staffing stabilized during the biennium.

Subprogramme 5.0.3 Oversight Services will continue to support the Agency in delivering efficient, effective, high quality results; in managing risks; and in demonstrating accountability to Member States. Through its investigations and advisory services, OIOS also contributes to the Agency's focus on ensuring that it operates in an ethical working environment in line with its values.

Subprogramme 5.0.4 Public Information and Communications will continue to promote the Agency's activities and achievements, using traditional communication channels (web, relations with the media) as well as social media. Particular attention will be given to providing scientific information using plain language and videos. The Office of Public Information and Communication (OPIC) will also increase its production of videos. The Agency will continue its efforts to provide information in all official United Nations languages.

Subprogramme 5.0.5 Information Communication Technology will continue to invest in information technology (IT) to address the growth and sophistication of IT and information security threats. The Agency will evaluate industry trends to identify those that may further enhance the Agency's technology investment and support for Agency programmes. The Agency will continue to enhance its application portfolio to introduce additional operational efficiencies.

Subprogramme 5.0.6 Financial Management and Services will continue to benefit from efficiencies brought about by AIPS. The implementation of AIPS and the International Public Sector Accounting Standards (IPSAS) were major projects that, although completed, continue to require fine-tuning, adjustments, improvements and enhancements. The Agency should expect continued productivity gains from its financial operations.

Subprogramme 5.0.7 Human Resources Management the Division of Human Resources, underwent a major restructuring in 2018 that strengthened the Agency's human resources function, enabling a strong client focus and solution orientation. In 2020–2021, the benefits of the transformation of the Division of Human Resources are expected to increase the efficiency and effectiveness of the human resources activities, in close collaboration with all Departments.

Subprogramme 5.0.8 General Services faces a trend of increased demand for the provision of services. The focus of Seibersdorf service delivery will be on comprehensive administration of the site, including security and site-wide engineering and infrastructure functions. Modernization of the Agency's procedures for document retention, retrieval and archiving practices and the AIPS travel function are expected to produce efficiencies.

Subprogramme 5.0.9 Conference, Languages and Publishing Services will continue to strengthen the application of IT to tasks related to conference, translation and publishing services. This will include a greater use of e-publishing and electronic dissemination of conference materials, as well as improved internal processes and electronic workflows. The focus will be on maintaining efforts to improve the timeliness, quality and consistency of documentation and correspondence submitted to Member States. Outsourcing of appropriate tasks in the publishing and translation areas will continue.

Subprogramme 5.0.10 Procurement Services will continue to explore innovative, efficient options to ensure its continued improvement and support to programmatic activities. This includes the areas of resource mobilization, emergency procurement, sustainable procurement and the optimization of procurement tools and systems (iProcurement).

Objectives, Outcomes and Performance Indicators by Subprogramme

Subprogramme 5.0.1 Executive Leadership and Policy	
Objectives:	
— *To provide leadership and coordination for Agency activities at the executive level, and to achieve an integrated, results based management approach.*	
Outcomes	**Performance Indicators**
• Improved effectiveness, efficiency and transparency in the execution of Agency programmes and activities relevant to Member States.	• Member States' satisfaction with the efficiency, effectiveness and transparency of the programme delivered.
Projects	
Title	**Main Planned Outputs**
5.0.1.001 Executive Leadership and Coordination	Direction and leadership; coordination of Secretariat activities and liaison with Member States and inter- and non-governmental organizations.
5.0.1.002 Policy-Making Organs	Servicing of meetings of PMOs and subsidiary bodies; assistance to presiding officers; documents for PMO meetings; assistance to Member States on PMO issues; coordination with in-house Departments; compilation of PMO decisions/resolutions.
5.0.1.003 General Coordination and Management	Overarching direction for support services and related internal communication; optimization of operational efficiency; Liaison with United Nations system organizations and Host Government; coordination of programme and budget; reviews of security and coordination with other VIC based organizations.
5.0.1.004 UN Common System Contribution	Coordination with other UN System organizations.

Subprogramme 5.0.2 Legal Services	
Objectives:	
— *To provide the highest standard of legal services to the Director General, Secretariat, Policy-Making Organs and Member States in the development and implementation of Agency activities.*	
Outcomes	**Performance Indicators**
• Enhanced timeliness and quality of legal services provided to the Director General, Secretariat, Policy-Making Organs and Member States in the development and implementation of Agency activities.	• Percentage of requests for legal services addressed out of total number of requests received. • Percentage of positive feedback from clients out of total amount of feedback received.
Projects	
Title	**Main Planned Outputs**
5.0.2.001 Legal Services	Legal services to the Director General, Secretariat, Policy-Making Organs and Member States in the development and implementation of Agency activities.

Subprogramme 5.0.3 Oversight Services	
Objectives:	
— *To provide the Director General, Senior Management and other stakeholders with independent, objective advice and assurance that Agency activities are carried out efficiently, effectively and in compliance with regulations and rules and with sound management practice.*	
Outcomes	**Performance Indicators**
• High quality assurance and advice from OIOS to help the Agency manage its risks, strengthen its activities, and demonstrate its accountability and transparency to stakeholders.	• Percentage of assignments finalized within the work plan cycle. • Percentage of satisfactory stakeholder feedback on the quality and utility of OIOS assignments.
Projects	
Title	**Main Planned Outputs**
5.0.3.001 Oversight Services	Reports and advice on the efficiency, effectiveness and compliance with rules and regulations and sound management practice of the work of the Agency.

Subprogramme 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**
• Enhanced efficiency and effectiveness of information support services and communications.	• Number of materials produced and events held for the media and the public on the activities of the Agency.
Projects	
Title	**Main Planned Outputs**
5.0.4.001 Public Information and Communications	Press conferences, media briefings, replies to media and public queries, presentations for visitors and events, videos, web articles, infographics, social media posts and printed publications on the Agency's activities.

Subprogramme 5.0.5 Information Communication Technology	
Objectives:	
— *To provide a secure information technology (IT) environment and solutions that enable the efficient and effective delivery of the Agency's programme.*	
Outcomes	**Performance Indicators**
• Increased operational efficiency in the delivery of IT services and infrastructure to meet Agency programmatic requirements.	• Availability of critical IT applications and infrastructure services.
Projects	
Title	**Main Planned Outputs**
5.0.5.001 Information Communication Technology	IT end-user services; IT infrastructure services; IT solutions; IT security; IT programme management; IT processes and procedures.

Subprogramme 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**
• Enhanced timeliness and reliability of financial planning and budgeting; relevant, accurate and reliable financial reporting.	• Percentage of official budget and financial documents issued within Board of Governors' and General Conference's deadlines.
• Increased efficiency and effectiveness of the financial administration of the Agency that supports all Agency programmes.	• Cost of financial services over total expenditure.
• External Auditor's positive certification of the Agency's Financial Statements.	• Unqualified opinion by the External Auditor of the Agency's annual Financial Statements.
Projects	
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 delivery of financial services.

Subprogramme 5.0.7 Human Resources Management	
Objectives:	
— *To provide a modern, strategic, client focused and solution oriented human resources management function.* — *To promote the occupational health and well-being of staff.*	
Outcomes	**Performance Indicators**
• Improved human resources function with a strong client orientation and efficient workflows.	• Number of streamlined/enhanced HR processes fully operationalised.
• Improved awareness of gender-related issues in the Agency.	• Number of hiring managers and panel members trained on mitigating unconscious bias in the recruitment process. • Number of gender awareness raising events conducted (including training).
• Improved occupational health and well-being of staff.	• Total number of work related accidents, incidents and illnesses in the working population.
Projects	
Title	**Main Planned Outputs**
5.0.7.001 HR advisory and Administration Services	Organizational development, workforce planning, contract administration, talent management; service level agreements; documents on human resources procedures; medical evaluations, surveillance assessments and statistics on health.

Subprogramme 5.0.8 General Services	
Objectives:	
— *To provide effective and efficient general services at Headquarters and the IAEA's laboratories in Seibersdorf in support of programmatic activities.*	
Outcomes	**Performance Indicators**
• Increased efficiency of general support services through application of improved workflow processes.	• Number of service requests completed.
Projects	
Title	**Main Planned Outputs**
5.0.8.001 General Services Management	Visa applications, customs forms, office moves, completed facility maintenance requests, insurance contracts, records archived, processed mail.

Subprogramme 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 and managing events, 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 Secretariat, Member States and major stakeholders.	• Productivity as measured by number of words translated per hour worked.
• Strengthened exchange of scientific and technical information on peaceful uses of atomic energy.	• Percentage of manuscripts processed.
Projects	
Title	**Main Planned Outputs**
5.0.9.001 Conference, Languages and Publishing Services	Organizational support, and administrative and logistical services for Agency events; translated documents and summary records in the six official languages of the Agency; production of scientific and technical publications and other materials.

Subprogramme 5.0.10 Procurement Services	
Objectives:	
— *To support achievement of the Agency's programmatic goals and objectives through procurement services.* — *To achieve best value for money through fair, transparent and effective competition.*	
Outcomes	**Performance Indicators**
• Enhanced Agency procurement system (iProcurement) to support the Agency's programmatic activities through the best value for money for the Agency in procuring goods and services, and through fair, transparent and effective international competition.	• Number of enhancements to the Agency's procurement system (iProcurement) to enable users to fulfil programmatic requirements more efficiently. • Savings to the Agency in the procurement of goods and services.
Projects	
Title	**Main Planned Outputs**
5.0.10.001 Procurement Services	Contracts, purchase orders, agreements, service orders, long term agreements, service level agreements.

Major Programme 5 — Policy, Management and Administration Services
Summary of Programme Structure and Resources
(excluding Major Capital Investments)

	2020 at 2020 prices		2021 at 2020 prices	
Programme / Subprogramme / Project	Regular Budget	Unfunded	Regular Budget	Unfunded
5.0.1.001 Executive Leadership and Coordination	4 994 178	-	4 994 178	-
5.0.1.002 Policy-making Organs	2 158 470	-	2 158 470	-
5.0.1.003 General coordination and management	812 027	103 229	812 027	103 229
5.0.1.004 UN Common System Contribution	575 622	-	575 622	-
5.0.1 Executive Leadership and Policy	**8 540 297**	**103 229**	**8 540 296**	**103 229**
5.0.2.001 Legal Services	2 904 176	166 678	2 904 176	166 678
5.0.2 Legal Services	**2 904 176**	**166 678**	**2 904 176**	**166 678**
5.0.3.001 Oversight Services	3 311 019	-	3 311 019	-
5.0.3 Oversight Services	**3 311 019**	**-**	**3 311 019**	**-**
5.0.4.001 Public Information and Communications	3 221 227	-	3 221 228	-
5.0.4 Public Information and Communications	**3 221 227**	**-**	**3 221 228**	**-**
5.0.5.001 Information Communication Technology	10 145 451	269 908	10 095 037	269 908
5.0.5 Information Communication Technology	**10 145 451**	**269 908**	**10 095 037**	**269 908**
5.0.6.001 Financial Management and Services	7 007 131	103 808	7 094 697	103 808
5.0.6 Financial Management and Services	**7 007 131**	**103 808**	**7 094 697**	**103 808**
5.0.7.001 HR advisory and Administration Services	6 574 839	103 229	6 574 825	103 229
5.0.7 Human Resources Management	**6 574 839**	**103 229**	**6 574 825**	**103 229**
5.0.8.001 General Services Management	27 994 335	-	27 957 198	-
5.0.8 General Services	**27 994 335**	**-**	**27 957 198**	**-**
5.0.9.001 Conference, Languages and Publishing Services	5 246 554	-	5 246 554	-
5.0.9 Conference, Languages and Publishing Services	**5 246 554**	**-**	**5 246 554**	**-**
5.0.10.001 Procurement Services	2 066 515	103 229	2 066 515	103 229
5.0.10 Procurement Services	**2 066 515**	**103 229**	**2 066 515**	**103 229**
5.S Corporate shared services	4 365 411	-	4 365 424	-
Major Programme 5 - Policy, Management and Administration Services	**81 376 955**	**850 082**	**81 376 968**	**850 082**

Major Programme 5 — Policy, Management and Administration Services
Activities unfunded in the Regular Budget
(excluding Major Capital Investments)

Project	Tasks	2020 Unfunded	2021 Unfunded
5.0.1.003 General coordination and management	General coordination and management	103 229	103 229
5.0.2.001 Legal Services	Legal Services	166 678	166 678
5.0.5.001 Information Communication Technology	Information Communication Technology	269 908	269 908
5.0.6.001 Financial Management and Services	Financial Management and Services	103 808	103 808
5.0.7.001 HR advisory and Administration Services	HR advisory and Administration Services	103 229	103 229
5.0.10.001 Procurement Services	Procurement Services	103 229	103 229
Grand Total		**850 082**	**850 082**

Major Programme 6
Management of Technical Cooperation for Development

Introduction

Major Programme 6 enables the development, implementation and management of technical cooperation projects within the framework of the biennial technical cooperation programme (TCP). The TCP will continue to serve as the major vehicle for the transfer of nuclear science and technology and to build capacity — with an emphasis on human resource development — in nuclear applications in Member States, contributing to Member State efforts to achieve the SDGs. The Major Programme also supports Member States in their activities related to addressing climate change. The Major Programme will continue to facilitate partnership building, support knowledge sharing, and build and reinforce scientific networks.

The TCP consists of national, regional and interregional projects funded from the Technical Cooperation Fund, extrabudgetary resources and in-kind contributions. Technical cooperation projects are developed through a consultative process that address national development priorities outlined in Country Programme Frameworks (CPFs) and national development plans, as well as issues of common interest and needs identified through various regional frameworks. Under the 2020–2021 TCP, a total of 142 Member States and Territories (including 35 least developed countries) will have a national TCP. For planning purposes, it is assumed that the overall rate of attainment of the Technical Cooperation Fund will reach 94%. The TCP for the 2020–2021 project cycle was formulated with an emphasis on the following:

- Ensuring adequate support to the growing number of Member States that participate in the TCP and to the increasing needs of Member States to use nuclear technology for sustainable development, including work toward achieving SDGs 2, 3, 6, 7, 9, 13, 14, 15 and 17;
- Providing support to those Member States that require assistance with building and expanding cancer care capacity by integrating radiotherapy, diagnostic imaging and nuclear medicine services into a comprehensive cancer control programme;
- Ensuring the Agency's continued capability to deliver the programme and to swiftly and adequately respond to Member State emerging and urgent requests for support through the TCP;
- Enhancing the effectiveness, efficiency and quality of the TCP by further strengthening the results-based approach and enhancing in-house coordination with technical departments;
- Strengthening partnerships, including public to private partnership and resource mobilization;
- Enhancing the visibility of the TCP through promotion and outreach efforts;
- Further advancing gender mainstreaming in the TCP.

Objectives:	
— *To develop and implement a need- based, responsive technical cooperation programme in an effective and efficient manner, and thus to strengthen technical capacities of Member States in the peaceful application and safe use of nuclear technologies for sustainable development.*	
Outcomes	**Performance Indicators**
• Increased effectiveness and efficiency in the management and coordination of the TCP.	• Percentage of completed technical cooperation projects during the previous year that achieved the established objectives at the output level. • Percentage of technical cooperation projects that are completed within the approved time frame.
• Improved quality of the TCP.	• Percentage of projects with an annual progress assessment report. • Percentage of projects with high quality design.

Outcomes	Performance Indicators
• Enhanced engagement of Member States in the TCP as well as strengthened partnerships.	• Number of Member States with national TCPs that have valid CPFs. • Number of valid partnership agreements.

Programmatic changes and trends

Subprogramme 6.0.1 Management of the Technical Cooperation Programme requests by Member States for the TCP are expected to increase in 2020–2021, driven, inter alia, by six additional Member States that will have national TCPs compared to 2018–2019 TC programme cycle, increased demand for the application of nuclear technology in support of sustainable development and Member State efforts to achieve the SDGs, including in the areas of human health especially for cancer control, food and agriculture and water resource management and the environment. Strengthening regulatory and safety infrastructures remains a priority for Member States, and increased requests for assistance by Member States exploring their nuclear energy options are also expected. Requests for assistance by Member States to cope with the increasing incidents of epidemic or natural emergencies are likely to continue.

Projects

Title	Main Planned Outputs
6.0.1.001 Overall management and strategic guidance	Technical cooperation related guidance, criteria and procedures; statements at major meetings and events; reports to the Agency's Policy-Making Organs; the Department of Technical Cooperation's report; Technical Assistance and Cooperation Committee (TACC) documentation; concept notes and papers; strategic analyses; mobilized extrabudgetary resources.
6.0.1.002 Coordination of and support to the TC programme	Revised CPFs guidelines and templates; revised technical cooperation quality criteria; TACC documentation; support documents to the Agency's Policy-Making Organs; briefing notes; partnership documents; mobilized extrabudgetary resources.
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; Country Programme Notes; expert missions, fellowships, training courses, procurement processed; briefing notes; programming and monitoring reports; partnership documents; mobilized extrabudgetary resources.
6.0.1.004 Management of the TC programme for Asia and the Pacific	Drafted/signed/updated CPFs; UNDAF and regional strategic cooperative framework; TACC documentation; Country Programme Notes; expert missions, fellowships, training courses, procurement processed; briefing notes; programming and monitoring reports; partnership documents; mobilized extrabudgetary resources.
6.0.1.005 Management of the TC programme for Europe	Drafted/signed/updated CPFs; UNDAF and regional strategic cooperative framework; TACC documentation; Country Programme Notes; expert missions, fellowships, training courses, procurement processed; briefing notes; programming and monitoring reports; partnership documents; mobilized extrabudgetary resources.
6.0.1.006 Management of the TC programme for Latin America and the Caribbean	Drafted/signed/updated CPFs; UNDAF and regional strategic cooperative framework; TACC documentation; Country Programme Notes; expert missions, fellowships, training courses, procurement processed, briefing notes; programming and monitoring reports; partnership documents; mobilized extrabudgetary resources.

Projects	
Title	**Main Planned Outputs**
6.0.1.007 Procurement services	Procurement requisitions processed, purchase orders issued, delivery of goods, equipment and services; on site installation and training if necessary.
6.0.1.008 Coordination of and support to the PACT	imPACT reviews; mobilized extrabudgetary resources; expert advisory missions; national cancer control plans; partnership established; bankable documents.

Major Programme 6 — Management of Technical Cooperation for Development
Summary of Programme Structure and Resources
(excluding Major Capital Investments)

	2020 at 2020 prices		2021 at 2020 prices	
Programme / Subprogramme / Project	Regular Budget	Unfunded	Regular Budget	Unfunded
6.0.1.001 Overall management and strategic guidance	1 108 030	-	1 108 030	-
6.0.1.002 Coordination of and support to the TC programme	4 333 980	-	4 333 975	-
6.0.1.003 Management of the TC programme for Africa	4 986 144	103 229	4 986 144	103 229
6.0.1.004 Management of the TC programme for Asia and the Pacific	4 045 345	103 229	4 045 345	103 229
6.0.1.005 Management of the TC programme for Europe	3 419 485	103 229	3 419 485	103 229
6.0.1.006 Management of the TC programme for Latin America and the Caribbean	3 342 300	103 229	3 342 300	103 229
6.0.1.007 Procurement services	1 700 901	-	1 700 901	-
6.0.1.008 Coordination of and support to the PACT	2 507 715	103 229	2 507 715	103 229
6.0.1 Management of Technical Cooperation Programme	25 443 899	516 147	25 443 895	516 147
6.S Corporate shared services	**1 287 514**	**-**	**1 287 519**	**-**
6.0 Management of Technical Cooperation Programme	**26 731 414**	**516 147**	**26 731 414**	**516 147**
Major Programme 6 - Management of Technical Cooperation for Development	**26 731 414**	**516 147**	**26 731 414**	**516 147**

Major Programme 6 — Management of Technical Cooperation for Development
Activities unfunded in the Regular Budget
(excluding Major Capital Investments)

Project	Tasks	2020 Unfunded	2021 Unfunded
6.0.1.003 Management of the TC programme for Africa	Management of the TC programme for Africa	103 229	103 229
6.0.1.004 Management of the TC programme for Asia and the Pacific	Management of the TC programme for Asia and the Pacific	103 229	103 229
6.0.1.005 Management of the TC programme for Europe	Management of the TC programme for Europe	103 229	103 229
6.0.1.006 Management of the TC programme for Latin America and the Caribbean	Management of the TC programme for Latin America and the Caribbean	103 229	103 229
6.0.1.008 Coordination of and support to the PACT	Coordination of and support to the PACT	103 229	103 229
Grand Total		**516 147**	**516 147**

ANNEXES

Annex 1. Cost Savings and Efficiencies

1. In June 2018, the Board of Governors requested the Secretariat to "strengthen efforts to further identify and implement cross-cutting savings and efficiencies to be outlined in an annex to *The Agency's Programme and Budget 2020–2021*" (GOV/2018/30 para 11). In this context, the Secretariat was "also requested to conduct a holistic review of the Agency's travel policy, taking into account recommendations from the Office of Internal Oversight Services and the best practices of other United Nations-system organizations, carefully evaluating their potential financial and programmatic impact and bearing in mind the importance of avoiding a negative impact on the participation of experts from Member States in the Agency's activities".

2. This Annex highlights cost savings and efficiencies of €6.7 million, including those of a cross-cutting nature, identified through these efforts, of which €1.5 million relate to travel and €5.2 million relate to other areas.

Travel policy and rationalization of travel

3. The travel related cost savings and efficiencies of €1.5 million are:

- €0.3 million from the holistic review of the travel policy and procedures; and
- €1.2 million from the rationalization of travel.

Travel policy

4. A holistic review of travel was conducted with the goal of identifying the potential for efficiencies and cost savings. Travel patterns were analysed, and alignment to UN system organizations' best practices were also considered.

5. Both policy and procedure are now being changed to reflect:

- Increasing the threshold for business class travel from flights longer than seven hours to flights longer than nine hours for staff members at or below the D-2 level;
- Eliminating the business class entitlement for short haul flights (less than four hours) for staff members at the DDG level;
- Eliminating higher daily subsistence allowance entitlements for staff member at or above the D-1 level;
- Strengthening accountability for managing travel and related expenditures, including implementing tools to facilitate periodic monitoring.

Travel rationalization

6. The Secretariat has also reduced the proposed travel budget in absolute terms for 2020 and 2021 compared with 2019, through rationalization of the number and length of trips as well as the number of staff travelling to attend events.

Specific examples include:

- Combining meetings and hosting counterparts at the Agency's Headquarters;
- Rationalizing the number of staff travelling to the same event or mission without negatively affecting the delivery of mandated activities;
- Increasing use of web and video conferencing for technical meetings, workshops and training activities;
- Optimizing the number of duty travel missions, team size or duration of expert missions and maximising use of video conferencing, home-based assignments, self-study packages and grouping of expert missions.

Other costs savings and efficiencies

7. The following cost savings and efficiencies of €5.2 million have been identified in areas other than travel:

HR costs and consultancy

8. Streamlining and automation of business processes, including through AIPS, allowing for redistribution of tasks and downgrading or reduction of a number of staff positions.

9. Optimization of consultancy costs through extensive use of web and video conferencing for consultancy meetings, as well as reducing reliance on consultants through greater use of internal expertise.

Specific examples include:

- Combining missions, for example for preparing of self-evaluation reports and review missions into one back-to-back mission to reduce costs related to staff and external experts;
- More effective use of consultants as senior instructors, for example in the Nuclear Energy Management and Nuclear Knowledge Management School programmes, resulting in reduction of the internal costs to support these schools;
- Development of Nuclear Knowledge Management Digital Hub resulting in reduced reliance on consultants;
- Mobilizing cost-free expert services from non-traditional partners;
- Increased utilization of in-house expertise, for example to accelerate the drafting process of safety standards documents;
- Improved management of consultancy work through enhanced interaction using web conference and home-based assignments, using regional experts and through partnerships with other organizations;
- Competitive procurement of IT consulting services at a rate lower than previously available.

Meetings, events and training

10. Optimized planning, where possible, of technical and consultancy meetings, resulting in reduced duration of events.

11. Combining of Agency meetings with non-Agency meetings to allow for participation of those experts attending the non-Agency meeting.

12. Enhanced intra- and inter-Departmental coordination, including organization of joint technical and consultancy meetings, workshops and training activities on activities relevant to both Nuclear Energy and Nuclear Safety and Security, such as development of a tool for planning and decision-making on remediation of post-accident sites.

13. Increased use of distance learning tools, based on web and video conferencing for education and training activities.

14. Increased use of online conferencing for meetings and workshops for example for training on the features of Unified System for Information Exchange in Incidents and Emergencies, the display of the monitoring data on International Radiation Monitoring Information System and the use by Member States of the Agency tools for assessment of the situation during a nuclear or radiological emergency.

15. Use of the video teleconferences for preparing international exercises as well as to take part in national exercises, and to conduct Inter-Agency Committee on Radiological and Nuclear Emergencies meetings.

Printing, distribution and subscriptions

16. Increased use of electronic reporting, including newsletters, instead of hardcopy and DVD distribution.

17. Improved inter-Departmental coordination on new publications.

18. Sharing of subscriptions.

Annex 2. List of Acronyms

AIPS	Agency-wide Information System for Programme Support
ACABQ	Advisory Committee on Administrative and Budgetary Questions
ALADDIN	A Labelled Atomic Data Interface
ALMERA	Analytical Laboratories for the Measurement of Environmental Radioactivity
AMBDAS	Atomic and Molecular Bibliographic Data System
AP	additional protocol
ARIS	Advanced Reactors Information System
ARTEMIS	Integrated Review Service for Radioactive Waste and Spent Fuel Management, Decommissioning and Remediation
ASHI	After-service health insurance
CA	complementary access
CeLP-RT	comprehensive eLearning platform for radiation therapy
CLP4Net	IAEA Cyber Learning Platform for Network Education and Training
CNS	Convention on Nuclear Safety
ConvEx	Convention Exercise
CPF	Country Programme Frameworks
CPPNM	Convention on the Physical Protection of Nuclear Material
CRP	Coordinated Research Project
CSA	comprehensive safeguards agreement
CT	Computed Tomography
D&IS	development and implementation support
DIV	design information verification
DOL	Dosimetry Laboratory
DPRK	Democratic People's Republic of Korea
DSA	daily subsistence allowance
DSRS	Disused Sealed Radioactive Sources
ECB	European Central Bank
EPGR	encapsulation plant and geological repository
EPR	emergency preparedness and response
EPRIMS	Emergency Preparedness and Response Information Management System
E&T	education and training
FAO	Food and Agriculture Organization
FINAS	Fuel Incident Notification and Analysis System
GNIP	Global Network of Isotopes in Precipitation
GNIR	Global Network of Isotopes in Rivers
GSR	General Safety Requirements
HABs	Harmful Algal Blooms
HEU	high enriched uranium
HICP	Harmonised Index of Consumer Prices
HR	human resources
HTR	high temperature reactor
IACRNE	Inter-Agency Committee on Radiological and Nuclear Emergencies
IACRS	Inter-Agency Committee on Radiation Safety
ICARO-3	International Conference on Advances in Radiation Oncology
ICARST	International Conference on Application of Radiation Science and Technology

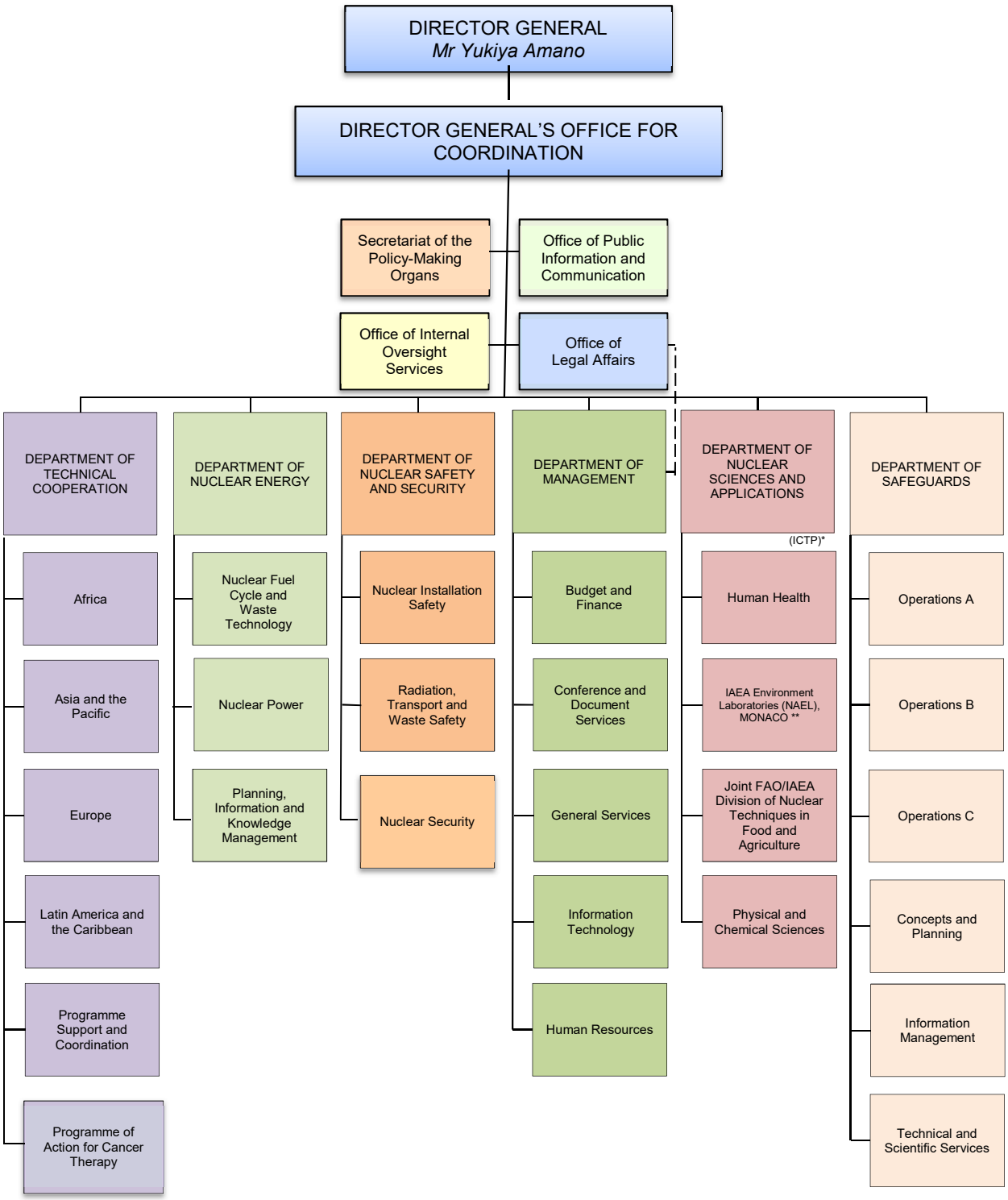
ICERR	IAEA designated International Centre based on Research Reactor
ICP-MS	inductively coupled plasma mass spectrometry
ICSRS	International Catalogue of Sealed Radioactive Sources and Devices
ICT	information and communication technology
ICTP	International Centre for Theoretical Physics
IES	Incident and Emergency System
IGALL	International Generic Ageing Lessons Learned
IGRT	image guided radiation therapy
INDEN	International Nuclear Data Evaluation Network
INES	International Nuclear and Radiological Event Scale
INFCIRC	Information Circular
INFCIS	Integrated Nuclear Fuel Cycle Information System
INIR	Integrated Nuclear Infrastructure Review
INIS	International Nuclear Information System
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
IO	international organization
IOC	Intergovernmental Oceanographic Commission
IPET-2020	International Conference on Molecular Imagining and Clinical PET-CT: Paving the Way Towards Personalized Medicine and Theranostics
IPSAS	International Public Sector Accounting Standards
IRL	Internet Reactor Laboratory
IRMIS	International Radiation Monitoring Information System
IRRS	Integrated Regulatory Review Service
IRS	International Reporting System for Operating Experience
IRSRR	Incident Reporting System for Research Reactors
ISCA	Independent Safety Culture Assessment
ISE	Integrated Safeguards Environment
ISEMIR	Information System on Occupational Exposure in Medicine, Industry and Research
ISEMIR-IR	ISEMIR tool for industrial radiography
ISOE	Information System on Occupational Exposure
IT	information technology
ITDB	Incident and Trafficking Database
IWAVE	IAEA Water Availability Enhancement Project
JCPOA	Joint Comprehensive Plan of Action
J-MOX	Japan Mixed Oxide Fuel Fabrication Plant
JPLAN	Joint Radiation Emergency Management Plan of the International Organizations
LEU	low enriched uranium
MARiS	IAEA Marine Information System
MCIF	Major Capital Investment Fund
MCIP	Major Capital Investment Plan
MSSP	Member State Support Programme
NAEL	IAEA Environmental Laboratories
NDA	non-destructive assay

NEA	Nuclear Energy Agency
NES	Nuclear Energy System
NESA	Nuclear Energy System Assessment
NEWMDB	Net Enabled Waste Management Database
NGSS	next generation surveillance system
NKM	nuclear knowledge management
NORM	naturally occurring radioactive material
NPP	nuclear power plant
NPT	Treaty on the Non-Proliferation of Nuclear Weapons
NSF	Nuclear Security Fund
NSGC	Nuclear Security Guidance Committee
NSIL	Nuclear Science and Instrumentation Laboratory
NSP	Nuclear Security Plan
NSS	IAEA Nuclear Security Series
NSSC	Nuclear Security Support Centre
NUSEC	Nuclear Security Information Portal
NWAL	Network of Analytical Laboratories
OA-ICC	IAEA Ocean Acidification International Coordination Centre
OECD	Organisation for Economic Co-operation and Development
ORPAS	Occupational Radiation Protection Appraisal Service
ORPNET	Occupational Radiation Protection Network
OSART	Operational Safety Review Team
PACT	Programme of Action for Cancer Therapy
PET	positron emission tomography
PET/CT	positron emission tomography-computed tomography
PMO	Policy-Making Organs
PRIS	Power Reactor Information System
PROSPER	Peer Review of Operational Safety Performance Experience
PUI	Peaceful Uses Initiative
QMS	quality management system
R&D	research and development
RADSED	Enhancing Radiation Safety through Efficient and Modern Dosimetry
RASIMS	Radiation Safety Information Management System
RC	Research Contract
RCF	Regulatory Cooperation Forum
RCM	Research Coordination Meeting
RegNet	International Regulatory Network
ReNuAL	Renovation of the Nuclear Applications Laboratories
REPLIE	Response Plan for Incidents and Emergencies
RIPL	Reference Input Parameter Library
RPOP	Radiation Protection of Patients [website]
RR	research reactor
RRDB	Research Reactor Database
RSAC	regional system of accounting for and control of nuclear material
RWM	radioactive waste management
RWMR	Radioactive Waste Management Registry

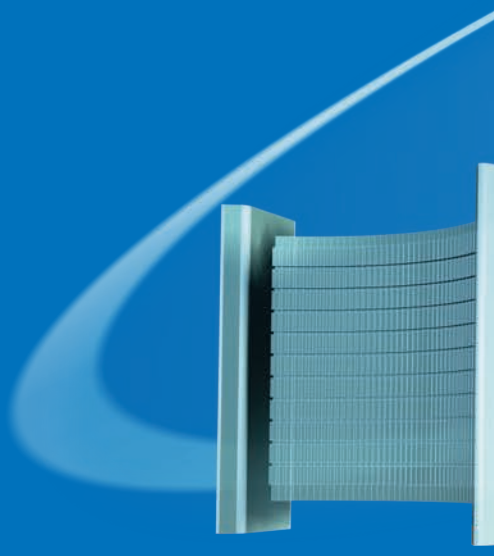
SAET	Safety Assessment Education and Training
SAGNA	Standing Advisory Group on Nuclear Applications
SAGSI	Standing Advisory Group on Safeguards Implementation
SALTO	Safety Aspects of Long Term Operation
SARCoN	Guidelines for Systematic Assessment of Regulatory Competence Needs
SDG	Sustainable Development Goals
SEED	Site and External Events Design
SGOA	Safeguards Division of Operations A
SGOB	Safeguards Division of Operations B
SGOC	Safeguards Division of Operations C
SIT	sterile insect technique
SLA	State-Level safeguards approach
SMR	small and medium sized or modular reactors
SPECT	Single-photon emission computed tomography
SPF	Survey of Professional Forecasters
SSAC	State system of accounting for and control of nuclear material
SSG	Specific Safety Guide
SSR	Specific Safety Requirements
STEP	Sandwich Training Educational Programme
TACC	Technical Assistance and Cooperation Committee
TC	Department of Technical Cooperation
TCF	Technical Cooperation Fund
TCP	technical cooperation programme
TCPs	Technical Cooperation Projects
TECDOC	IAEA Technical Document
TSR	Technical Safety Review
UDEPO	World Distribution of Uranium Deposits
UN	United Nations
UNDAF	United Nations Development Assistance Frameworks
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICC	International Computing Centre
US	United States of America
USIE	Unified System for Information Exchange in Incidents and Emergencies
VETLAB	Veterinary Diagnostic Laboratory Network
VIC	Vienna International Centre
VOA	voluntary offer agreement
WASSC	Waste Safety Standards Committee
WCF	Working Capital Fund
WCR	water cooled reactor
3E	Energy Economy Environment

Annex 3. Organizational Chart

(as of 1 January 2019)



* The Abdus Salam International Centre for Theoretical Physics (ICTP) operates under a tripartite agreement with the Italian Government, the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the Agency. Administration is carried out by UNESCO on behalf of all parties.
** With the participation of UNEP and IOC.



Printed by the
International Atomic Energy Agency
July 2019