

DEPARTMENT OF ATOMIC ENERGY
DEMAND NO. 3
Atomic Energy

"VETTED"
Rishabh
7/1/2025

Sandeep T. L.
मुख्य लेखा नियंत्रक / Chief Controller of Accounts
भारत सरकार / Government of India
परमाणु ऊर्जा विभाग, Department of Atomic Energy
संयोजक, भवन / Anushakti Bhavan
ए.ए.सी. रोड, मुंबई 400 001, Mumbai - 400 001

		(In ₹ crores)			
Major Head	2022-2023 Actuals	2023-2024 Budget Estimates	2023-2024 Revised Estimates	2024-2025 Budget Estimates	
Gross	34487.31	35262.49	36905.45	36159.93	
Recoveries	-1997.74	-1954.88	-2494.76	-2169.15	
Receipts	-7847.96	-8229.12	-7610.91	-9021.80	
Net	24641.61	25078.49	26799.78	24968.98	
Revenue	10809.23	9096.99	11796.03	11108.19	
Capital	13832.38	15981.50	15003.75	13860.79	
A. The Budget allocations, net of recoveries and receipts, are given below:					
CENTRE'S EXPENDITURE					
Establishment Expenditure of the Centre					
1. Secretariat	3451	64.89	72.97	75.68	
	5475	...	0.91	0.90	
	Total	64.89	73.88	76.58	
2. Atomic Energy Regulatory Board	3401	82.92	119.98	114.76	
3. Atomic Research Centres					
3.01 Bhabha Atomic Research Centre	2801	7.90	8.90	8.63	
	2852	673.42	687.73	694.20	
	3401	2237.22	2285.10	2355.43	
	2852	-0.59	-0.50	-0.50	
	3401	-49.11	-60.00	-70.00	
	Total	2868.84	2931.23	2987.76	
3.02 India Gandhi Centre for Atomic Research, Kalpakkam	3401	528.49	529.65	541.97	
3.03 Raja Ramana Centre for Advanced Technology, Indore	3401	362.80	405.56	416.10	
3.04 Variable Energy Cyclotrons Centre, Kolkata	3401	148.97	171.70	174.43	
3.05 Atomic Minerals Directorate for Exploration and Research, Hyderabad	3401	321.74	392.79	340.48	
Total Atomic Research Centres		4250.84	4430.93	4382.78	
4. Fuel Cycle Facility (Nuclear Regulatory Board)	2852	724.61	757.14	756.44	
5. Service Units	3401	484.81	506.02	516.96	
	5401	...	4.50	4.45	
	3401	-14.33	-35.50	-35.50	
	Net	470.48	475.02	465.60	
6. Board of Radiation and Isotope Technology (BRIT)	2852	111.71	117.06	136.90	
7. Management Services Group	2852	0.65	1.06	1.15	
8. Nuclear Fuel Complex					
8.01 Gross Budgetary Support	2852	4477.27	2919.34	4075.51	
8.02 Less Receipts	0852	-2666.88	-3339.59	-2987.62	
8.03 Less Recoveries	2852	-46.06	-40.00	...	
	Net	1764.33	-460.25	-1087.89	
9. Heavy Water Production Facility					
9.01 Gross Budgetary Support	2852	130.38	132.01	105.62	
	4861	1418.07	1341.42	1720.57	
	Total	1548.45	1473.43	1826.19	

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* Corrections have been made in UBIS.

Expenditure Budget, 2024-2025

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		Major Head	2022-2023 Actuals	2023-2024 Budget Estimates	2023-2024 Revised Estimates	(In ₹ crores) 2024-2025 Budget Estimates
9.02	Less - Recovery	2852	-36.30	-17.35	-17.76	-15.15
		4861	-1560.57	-1701.00	-1701.00	-1701.00
	Total		-1596.87	-1718.35	-1718.76	-1716.15
	Net		-48.42	-244.92	107.43	-239.94
Total-Establishment Expenditure of the Centre			7422.01	5309.90	7145.44	5632.67
Central Sector Schemes/Projects						
Research and Development						
10.	R&D projects of Bhabha Atomic Research Centre (BARC)	2852	...	...	...	48.32
		3401	...	...	...	156.05
		4801	5.83	0.30	0.43	0.14
		4861	179.74	305.00	204.20	209.90
		5401	946.70	707.60	602.64	685.59
	Total		1132.27	1012.90	1007.27	1100.00
11.	R&D projects of Indira Gandhi Centre of Atomic Research (IGCAR)	3401	...	...	...	26.27
		5401	197.41	214.41	214.41	196.73
	Total		197.41	214.41	214.41	225.00
12.	R&D projects of Raja Ramanna Centre for Advanced Technology (RRCAT)	5401	119.38	140.69	135.89	130.00
13.	R&D projects of Atomic Minerals Directorate for Exploration and Research (AMDER)	3401	...	...	...	110.53
		4861	118.30	59.47	73.43	13.32
		5401	87.00	162.28	147.57	13.32
	Total		205.30	221.75	221.00	221.76
14.	Grants to other Institutions	3401	84.58	100.00	85.00	90.00
Total-Research and Development			1738.94	1689.75	1663.57	1766.76
15.	Fuel Recycle Projects (NRB)	2852	...	...	...	0.30
		4861	716.27	805.21	861.74	804.90
	Total		716.27	805.21	861.74	805.20
Housing and Neighbourhood Development Projects						
16.	Housing Projects	5401	165.71	206.90	170.00	161.20
Heavy Water Facilities						
17.	Improvement/Modifications of Heavy water projects	4851	32.02	50.23	35.00	40.00
18.	Feedstock					
	18.01 Gross Budgetary Support	4861	1560.00	1700.00	1700.00	1600.00
	18.02 Less Recoveries	4861	-290.75	-100.53	-670.00	-347.00
	Net		1269.25	1599.47	1030.00	1253.00
19.	Heavy Water Pool Management					
	19.01 Gross Budgetary Support	2801	1500.00	1550.00	1550.00	2000.00
	19.02 Less Receipts	0049	-1500.00	-1550.00	-1550.00	-2000.00
	Net		...	...	...	...
Total-Heavy Water Facilities			1301.27	1649.70	1065.00	1293.00
20.	Radiation and Isotopes Project (BRIT)	4861	59.30	44.14	34.14	40.00
21.	Nuclear Power Projects	2801	1341.89	288.35	1665.07	1881.98
		4801	88.41	153.93	125.61	345.85
	Total		1430.30	442.28	1790.68	2227.83
22.	Nuclear Fuel Fabrication Projects	4851	801.26	763.61	850.00	763.61
23.	Atomic Energy Regulatory Board Expansion Project	5401	31.97	15.81	12.75	15.81
24.	R&D projects of Variable Energy Cyclotron Centre (VECC)	3401	...	...	...	22.84
		5401	47.58	73.62	50.00	32.15

		(In ₹ crores)			
Major Head		2022-2023 Actuals	2023-2024 Budget Estimates	2023-2024 Revised Estimates	2024-2025 Budget Estimates
	<i>Total</i>	47.58	73.62	50.00	54.99
25.	Research and Development Projects				
	3401	5.95	7.43	7.29	1063.69
	5401	1830.26	832.25	1170.58	136.31
	<i>Total</i>	1836.21	839.68	1177.87	1200.00
26.	Industries and Minerals Projects				
	2852	9.00	10.00	10.00	5.00
	4861	143.30	75.25	56.95	26.74
	<i>Total</i>	152.30	85.25	66.95	31.74
27.	Fast Reactor Fuel Cycle Projects (FRFCF) Kalpakkam				
	2852	---	---	---	28.03
	4861	384.19	515.50	450.00	446.97
	<i>Total</i>	384.19	515.50	450.00	475.00
28.	Nuclear Fuel Inventory				
	2801	2621.66	3171.27	2800.00	2800.00
	2801	Gross Budgetary Support			
	2802	Less Receipts			
	0801	-3661.08	-3339.53	-3073.29	-4105.73
	<i>Net</i>	-939.42	-168.26	-273.29	-1305.73
Total-Central Sector Schemes/Projects		7675.88	6963.19	7919.41	7529.41
Other Central Sector Expenditure					
Autonomous Bodies					
29.	Other Autonomous Bodies	3401	2746.90	3140.40	3131.11
Public Sector Undertakings					
30.	Nuclear Power Corporation of India Limited (NPCIL)				
	4801	1952.00	3046.00	1989.82	2562.92
	6801	4599.00	6364.00	6364.00	5035.00
	<i>Total</i>	6551.00	9410.00	8353.82	7597.92
31.	Bharatiya Nabhikiya Vidyut Nigam Limited (BHAVINI)	6801	200.00	200.00	200.00
Total-Public Sector Undertakings		6751.00	9610.00	8553.82	8781.92
Others					
32.	Contribution to International Atomic Energy Agency	3401	45.82	55.00	50.00
Total-Other Central Sector Expenditure		9543.72	12805.40	11734.93	11806.90
Grand Total		24641.61	25078.49	26799.78	24968.98
B. Developmental Heads					
Economic Services					
1.	Power	2801	360.37	128.99	1402.75
2.	Industries	2852	3377.21	1276.90	2789.44
3.	Atomic Energy Research	3401	7006.76	7618.13	7532.14
4.	Secretariat-Economic Services	3451	64.89	72.97	71.70
5.	Capital Outlay on Power Projects	4801	2046.24	3200.23	2115.86
6.	Capital Outlay on Atomic Energy Industries	4861	3551.13	3858.30	3615.03
7.	Capital Outlay on Atomic Energy Research	5401	3426.01	2358.06	2708.04
8.	Capital Outlay on Other General Economic Services	5475	---	0.91	0.82
9.	Loans for Power Projects	6801	4799.00	6564.00	6564.00
Total-Economic Services		24641.61	25078.49	26799.78	24968.98
Grand Total		24641.61	25078.49	26799.78	24968.98
		Budgetary Support+IEBR	Budgetary Support+IEBR	Budgetary Support+IEBR	Budgetary Support+IEBR

C. Investment in Public Enterprises					
1.	Electronics Corporation of India Limited	42.43	15.00	25.00	15.00
2.	Indian Rare Earths Limited	97.09	120.30	120.40	150.00
3.	Uranium Corporation of India Limited	9.06	59.82	21.80	44.53
4.	Bharatiya Nabhikiya Vidyut Nigam Limited	201.72	201.00	207.00	1191.00
5.	Nuclear Power Corporation of India Limited	16464.00	22273.00	17340.82	18159.92
Total		16814.30	22669.12	17715.02	19560.45

1. **Secretariat:** Secretariat of Deptt. of Atomic Energy has the responsibility of administering the constituent units, PSUs and aided institutions spread all over the country carrying out the various activities of the Department. There are six R&D Units, including Global Centre for Nuclear Energy Partnership (GCNEP) Haryana, three industrial units, three service organizations and five PSUs apart from nine aided institutions in the Department. DAE also has a Branch Secretariat in New Delhi.

2. **Atomic Energy Regulatory Board:** Atomic Energy Regulatory Board (AERB) enforces radiological safety stipulations. It is assisted by Safety Review Committee for Operating Plants (SARCOP), Safety Review Committee (SRC) for applications for radiation and other committees in carrying out its mandate in prescribing radiological, nuclear and industrial safety regulations.

3.01. **Bhabha Atomic Research Centre:** Bhabha Atomic Research Centre (BARC), a multidisciplinary organisation, pursues comprehensive Research and Development (R&D) programmes for harnessing nuclear energy and also its utility for the benefit of the society. BARC gives R&D support to all other units of DAE and provides necessary support for national security.

3.02. **Indira Gandhi Centre for Atomic Research, Kalpakkam:** The Centre has R&D activities, encompassing hydraulic studies and reactor engineering studies of reactor components, sodium instrumentation, material development and characterization. The centre has undertaken various strategically important projects to develop mature fast breeder fuel cycle technologies with international standards.

3.03. **Raja Ramana Centre for Advanced Technology, Indore:** Raja Ramanna Centre for Advanced Technology (RRCAT), Indore, is engaged in development of technology and applications of particle accelerators and lasers.

3.04. **Variable Energy Cyclotron Centre, Kolkata:** The Variable Energy Cyclotron Centre (VECC) at Kolkata is operating the nation's largest and the first indigenously built Cyclotron and has delivered energetic Neon 20 and Argon 40 beams first time in India. A series of experimental run were accomplished for a national facility Indian Gamma Ray Array (INGA) by a large nuclear of physics community.

3.05. **Atomic Minerals Directorate for Exploration and Research, Hyderabad:** Atomic Minerals Directorate for Exploration & Research (AMD) carries out survey, prospecting and exploration of atomic minerals required for the nuclear power programme of the country.

4. **Fuel Cycle Facility (Nuclear Regulatory Board):** NRB has been created to carry out activities relating to Nuclear Fuel Reprocessing.

5. **Service Units:** Comprises of three Service Organisations: (i) Directorate of Purchase & Stores (DPS), Mumbai, with the objective to ensure availability of quality material at right time, at right place and at right price, (ii) Directorate of Construction, Services and Estate Management (DCSEM), Mumbai is also responsible for operation, maintenance and up-gradation of residential flats, shops, public buildings and estate management including allotment and the security for the DAE Estate in Mumbai, (iii) General Services Organisation (GSO), Kalpakkam is one of the service organisations providing services such as residential accommodation, health services at Kalpakkam.

6. **Board of Radiation and Isotope Technology (BRIT):** Board of Radiation and Isotope Technology (BRIT) is responsible for production and supply of a variety of radioisotope products including radiopharmaceutical and associated products, radio immunoassay kits, radiochemicals, radiolabeled compounds and nucleotides and also sealed radiation sources such as Cobalt-60, Iridium-192, Caesium-137 etc. Radiation technology equipment such as gamma radiography carriers, blood irradiators and laboratory gamma irradiators, promoting radiation processing technology for use in healthcare, food processing and agriculture and rendering radiation processing services for medical products, spices, condiments and other products, propagating radiation technology and providing facilitation services to private entrepreneurs to set up commercial gamma radiation processing plants.

7. **Management Services Group:** Responsible for coordination in implementation of various activities.

8. **Nuclear Fuel Complex:** Nuclear Fuel Complex (NFC) is responsible for manufacturing zirconium alloy clad, natural and enriched uranium oxide fuel assemblies for all the Pressurised Heavy Water Reactors (PHWRs) and the Boiling Water Reactors (BWRs) zirconium alloy structural components for these reactors including Calandria and Pressure Tubes for PHWRs and Square Channels for BWRs. In addition, NFC produces Seamless Stainless Steel and Special Alloy Tubes of international standards for Nuclear and Non-Nuclear applications and Special and High Purity Materials for strategic use.

9. **Heavy Water Production Facility:** HWB operates two Heavy Water Plants (HWP) located at Kola and Manuguru based on Hydrogen Sulphide-Water Exchange Process and two plants at Thal and Hazira based on Ammonia-Hydrogen Exchange Process.

10. **R&D projects of Bhabha Atomic Research Centre (BARC):** R&D efforts are concentrated in the fields of nuclear sciences, engineering & technology, basic sciences and allied fields and geared up for exploitation of atomic energy for power generation and application of radiation technology in the areas of agriculture, health care and industry.

11. **R&D projects of Indira Gandhi Centre of Atomic Research (IGCAR):** Indira Gandhi Centre for Atomic Research is engaged in design and development of liquid sodium cooled fast breeder reactors in the country, as a part of the Nuclear Power Programme Stage two, backed by fuel fabrication and reprocessing. Fast Breeder Test Reactor, a prelude to the FBR programme, has been in operation with indigenously developed Uranium-Plutonium carbide fuel.
12. **R&D projects of Raja Ramanna Centre for Advanced Technology (RRCAT):** The design and installation of electron ten MeV Linac system, isolation shielding and the ozone containment in the accelerator wall is being developed for the agricultural radiation processing facilities.
13. **R&D projects of Atomic Minerals Directorate for Exploration and Research (AMDER):** The activities include assessment, analysis, evaluation, characterisation and categorisation of atomic minerals, design and fabrication of radiometric instruments and development of ore extraction flow sheets.
14. **Grants to other Institutions:** DAE through Board of Research in Nuclear Sciences (BRNS), National Board for Higher Mathematics (NBHM) and Homi Bhabha National Institute (HBNI) promotes research in nuclear and allied fields and mathematics, respectively.
15. **Fuel Recycle Projects (NRB):** Construction of Integrated Nuclear Recycle Project to improve supply of fuel to second stage of Nuclear Power Programme.
16. **Housing Projects:** Housing projects look after the construction activities of the Department including housing for its employees. The Directorate is also responsible for operation, maintenance and up-gradation of residential flats, shops, public buildings and estate management including allotment. In addition, Directorate executes construction works for constituent units.
17. **Improvement/Modifications of Heavy water projects:** Works in the area of non nuclear applications of Deuterium D and HW in the field of medicines, life sciences, communication and micro electronics, HWS has undertaken synthesis of various D labeled compounds.
18. **Feedstock:** Value of Heavy Water acquisition/production during the financial year.
19. **Heavy Water Pool Management:** Interest of Government Capital deployed for Heavy Water held in Pool Management.
20. **Radiation and Isotopes Project (BRIT):** Construction of Fission only project for enhancement in capacity for storing irradiated Co-60
21. **Nuclear Power Projects:** Includes projects which are jointly executed by the constituent units in Power sectors or by Public Sector Units on behalf of the Department.
22. **Nuclear Fuel Fabrication Projects:** Setting up of Fuel Fabrication Facility along with Zircaloy Fabrication Facility for producing fuel bundles to meet the requirement of PHWR reactors.
23. **Atomic Energy Regulatory Board Expansion Project:** Construction of new building at Headquarter and Regional Regulatory Centers for capacity building of AERB for effective monitoring.
24. **R&D projects of Variable Energy Cyclotron Centre (VECC):** Installation of medical cyclotron, advance computing, design of ANURIB and development of superconducting accelerator components will lead to future research in nuclear physics.
25. **Research and Development Projects:** Includes projects like Mega Science , Public Outreach and Management Programme, Anurag Project in addition to provision for contribution to ITER which are jointly executed by the constituent units in R and D sectors on behalf of the Department.
26. **Industries and Minerals Projects:** Includes projects which are jointly executed by the constituent units in I&M sectors or by Public Sector Units on behalf of the Department.
27. **Fast Reactor Fuel Cycle Projects (FRFCF) Kalpakkam:** Fuel Cycle Projects FRFCF of IGCAR is an integrated facility to close the fuel cycle of the Prototype Fast Breeder Reactor .
28. **Nuclear Fuel Inventory:** It is inventory management of Heavy water Production from various Heavy Water Production Facilities.
29. **Other Autonomous Bodies:** Includes R and D Programmes executed by eleven Autonomous Bodies under the administrative control of the Department in addition to separate provision for Women & Child Welfare Programme, Cancer care, education and research programme executed by Tata Memorial Centre .
30. **Nuclear Power Corporation of India Limited (NPCIL):** NPCIL is the nodal agency to undertake the design, construction, operation and maintenance of the Atomic Power Stations for generation of electricity under the provisions of the Atomic Energy Act, 1962.
31. **Bharatiya Nabhikiya Vidyut Nigam Limited (BHAVINI):** The objective of BHAVINI is to plan, execute, and operate an integrated programme of Fast Breeder Technology based Nuclear Power Stations for generating electricity on a commercial basis, commencing with PFBR.
32. **Contribution to International Atomic Energy Agency:** India has been a member of the Board of Governors of the International Atomic Energy Agency (IAEA) since its inception, making available the services of the departmental scientists for expert assignments besides participation in international symposia and other fellowship exchange programmes. The provision under IAEA takes care of the contribution made by the Department to the international body.