

MINISTRY OF SCIENCE AND TECHNOLOGY

DEMAND NO. 86

Department of Scientific and Industrial Research

A. The Budget allocations, net of recoveries, are given below:

<i>(In crores of Rupees)</i>													
Major Head	Actual 2009-2010			Budget 2010-2011			Revised 2010-2011			Budget 2011-2012			
	Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total	
Revenue	1274.18	1418.43	2692.61	1594.20	1388.00	2982.20	1596.20	1388.00	2984.20	1923.50	1455.00	3378.50	
Capital	4.70	...	4.70	5.80	...	5.80	3.80	...	3.80	6.50	...	6.50	
Total	1278.88	1418.43	2697.31	1600.00	1388.00	2988.00	1600.00	1388.00	2988.00	1930.00	1455.00	3385.00	
1. Secretariat - Economic Services	3451	...	7.99	7.99	...	8.00	8.00	...	8.66	8.66	...	9.82	9.82
Other Scientific Research													
Assistance to Council of Scientific and Industrial Research (CSIR)													
2. Administration	3425	25.00	495.00	520.00	30.00	480.00	510.00	30.00	485.00	515.00	35.00	516.00	551.00
3. National Laboratories	3425	1087.00	792.30	1879.30	1335.00	785.00	2120.00	1304.50	779.34	2083.84	1500.00	812.68	2312.68
4. Scientist's Pool	3425	...	4.54	4.54	...	5.00	5.00	...	5.00	5.00	...	6.50	6.50
5. Research Schemes, Scholarships and Fellowships	3425	54.40	118.60	173.00	75.00	110.00	185.00	130.00	110.00	240.00	197.00	110.00	307.00
6. Intellectual Property & Technology Management	3425	38.00	...	38.00	30.00	...	30.00	35.00	...	35.00	40.00	...	40.00
7. New Millenium Indian Technology Leadership Initiative	3425	50.00	...	50.00	75.00	...	75.00	50.00	...	50.00	70.00	...	70.00
8. Institute of Translational Research (Innovation Complexes)	3425	1.60	...	1.60	5.00	...	5.00	0.50	...	0.50	10.00	...	10.00
Total-Assistance to Council of Scientific and Industrial Research (CSIR)		1256.00	1410.44	2666.44	1550.00	1380.00	2930.00	1550.00	1379.34	2929.34	1852.00	1445.18	3297.18
9. Assistance to Other Scientific Bodies													
9.01 Support for R&D Schemes to Central Electronics Limited	3425	...	...	...	3.00	...	3.00	3.00	...	3.00	4.00	...	4.00
9.02 National Research Development Corporation	3425	6.50	...	6.50	10.00	...	10.00	10.00	...	10.00	9.00	...	9.00
Total- Assistance to Other Scientific Bodies		6.50	...	6.50	13.00	...	13.00	13.00	...	13.00	13.00	...	13.00
10. Technology Promotion, Development and Utilisation Programme (including Consultancy Development Centre)	3425	11.68	...	11.68	31.20	...	31.20	33.20	...	33.20	58.50	...	58.50
	5425	0.70	...	0.70	0.80	...	0.80	0.80	...	0.80	1.00	...	1.00
Total		12.38	...	12.38	32.00	...	32.00	34.00	...	34.00	59.50	...	59.50
11. Investment in Public Enterprises - Central Electronics Limited	4859	2.00	...	2.00	1.50	...	1.50	1.50	...	1.50	2.50	...	2.50
	6859	2.00	...	2.00	1.50	...	1.50	1.50	...	1.50	2.50	...	2.50
Total		4.00	...	4.00	3.00	...	3.00	3.00	...	3.00	5.00	...	5.00

(In crores of Rupees)

	Major Head	Actual 2009-2010			Budget 2010-2011			Revised 2010-2011			Budget 2011-2012		
		Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total
12. DSIR Building and Infrastructure	4059	...	...	...	2.00	...	2.00	...	...	...	0.50	...	0.50
Total-Other Scientific Research		1278.88	1410.44	2689.32	1600.00	1380.00	2980.00	1600.00	1379.34	2979.34	1930.00	1445.18	3375.18
Grand Total		1278.88	1418.43	2697.31	1600.00	1388.00	2988.00	1600.00	1388.00	2988.00	1930.00	1455.00	3385.00
	Head of Dev	Budget Support	IEBR	Total	Budget Support	IEBR	Total	Budget Support	IEBR	Total	Budget Support	IEBR	Total
B. Investment in Public Enterprises													
11.01 Central Electronics Limited	12859	4.00	...	4.00	3.00	...	3.00	3.00	...	3.00	5.00	...	5.00
Total		4.00	...	4.00	3.00	...	3.00	3.00	...	3.00	5.00	...	5.00
C. Plan Outlay													
1. Other Scientific Research	13425	1274.88	...	1274.88	1597.00	...	1597.00	1597.00	...	1597.00	1925.00	...	1925.00
2. Telecommunication and Electronic Industries	12859	4.00	...	4.00	3.00	...	3.00	3.00	...	3.00	5.00	...	5.00
Total		1278.88	...	1278.88	1600.00	...	1600.00	1600.00	...	1600.00	1930.00	...	1930.00

1. **Secretariat-Economic Services:** Provides for expenditure of the Secretariat of the Department of Scientific & Industrial Research.

2. **CSIR - Central Administration (R&D Management Support):** CSIR Headquarters is the nerve centre of the organization and catalyses and facilitates the laboratories by establishing, equipping and realizing excellence in R&D, promoting brand equity, financial self-sufficiency, global competitiveness and disseminating organizational learning. The various functional units/divisions located in CSIR Headquarters provide the R&D Management support to the national laboratories through the Scheme. It is the link between the laboratories, the Government and international agencies. It provides supports to the laboratories for human resources development, international scientific collaboration, publicity and public relations, performance appraisal, scientific audit, etc.

3. **CSIR - National laboratories:** The National Laboratory scheme is operated through 37 National Laboratories and 38 field Centres. During the Eleventh Five Year Plan the research programmes/projects/activities of the National Laboratories have been categorized into following major socio-economic sectors viz Aerospace Science & Engineering; Agro, Food Processing & Nutrition Technology; Biology & Biotechnology; Chemical Science & Technology; Earth System Science; Ecology & Environment; Sustainable Energy; Electronics, Photonics & Instrumentation; Engineering Materials, Mining/Minerals & Manufacturing Technology; Affordable Healthcare; Housing, Road & Construction; Information Technology, Resources & Products; Leather; Meteorology; Rural development; and Water Resources & Technology.

The approach of CSIR to the Eleventh Plan focuses on technology led rapid inclusive growth. The proposed projects, programmes are more specifically addressed as (i) Supra-Institutional Projects; (ii) Network Projects; (iii) Inter-agency project and (iv) National Facility. The key features of the programmes and projects of CSIR during the Eleventh Five Year Plan, aim at achieving

excellence in science; global competitive positioning in science & technology; achieving set objectives in important S&T domains such as affordable healthcare, sustainable energy, technology for industrial competitiveness, S&T base for strategic sector, finding holistic solution for societal welfare through local relevance and innovation. Besides, core competencies of its establishments in basic and applied research would be enhanced. CSIR of the 2011-12 and of the future shall continually reinvent itself and work for the unmet needs of millions of Indians.

4. **CSIR - Scientist's Pool:** The objective is to promote and create a pool of qualified, highly specialized scientists/engineers and technologists in R&D in all disciplines of S&T in the country.

5. **CSIR-Research Schemes, Scholarships and Fellowships (National S&T Human Resource Development):** Support of CSIR to National S&T Human Resource Development extends from the age of 16 to 65 years and transcends diverse sectors and disciplines. This scheme focuses on promotion and fostering the upgradation of the stock of qualified, highly specialized scientists/engineers and technologists in R&D in all disciplines of S&T in the country, and evolving an integrated approach for the national human resource development for S&T by encouraging and promoting research in the universities and institutions of higher learning. The scheme also supports organizations to hold symposia/seminars and conferences for promotion of science. To promote science amongst youngsters, various programmes and activities would continue to be supported through a Team India partnership, which involves participation from eminent scientists and experts from academia, in-house industrial R&D units, etc.

CSIR has established various fellowships in trans-disciplinary and niche areas to support researchers to face up to the challenges of the future rather than be confined to areas where there are limited opportunities and challenges. CSIR also inculcates a spirit of entrepreneurship in the

research scholars to establish their own R&D enterprise through appropriate motivation, skills development and venture financing.

Taking note of the serious concern expressed over decreasing interest of young talented people to take up careers in basic sciences, CSIR is continually formulating schemes to attract students to science. The recent increase in the number of Junior Research Fellowship through CSIR-UGC National Eligibility Test (NET) and the scheme on-CSIR Nehru Science Postdoctoral Fellowships-are such effort to attract talented youth to take-up research career. All these efforts would progressively increase the rate of generation of high quality skilled human resource at all levels, and instill scientific temper in the population at large.

6. **CSIR-Intellectual Property & Technology Management:** The objective of the scheme is to enhance the volume and value of Intellectual Property (IP) generated by CSIR and to share the best innovation and technology management practices organizationally and with the Indian S&T community at large. The volume of IP rights secured by CSIR has greatly increased over the time. The major task, however, is to realize adequate and appreciable value from the IPR. Necessary skills and knowledge base in the area of IPR in CSIR are being refurbished, particularly in some still unresolved issues such as -Traditional Knowledge, Genomic Sequences, Copyright on the Net, etc. It is proposed to advise the policymakers appropriately on the new development and changes proposed in international IPR arena.

7. **CSIR-New Millennium Indian Technology Leadership Initiative (NMITLI):** NMITLI scheme envisages to catalyze innovation centred scientific and technological developments as a vehicle to attain for Indian economy a global leadership position in selected niche areas in a Team India partnership. During the Tenth Plan, NMITLI has created a brand image and is viewed today as a benchmark of Public Private Partnership (PPP) schemes which is being emulated by various other Government Departments. In the Eleventh Plan, NMITLI programme will be expanded both horizontally and vertically to experiment newer ways of conducting R&D for innovation. The new initiatives during the XI Plan are:

- i. Funding with industry (50:50 Initiative)
- ii. Joint development and support of projects with other departments
- iii. Co-financing with Venture Capital Funds
- iv. Support to Pre and Post NMITLI projects
- v. Setting up of NMITLI Innovation Centres for long term efforts in selected areas
- vi. Acquisition of early stage relevant knowledge / IP for portfolio building.

8. **CSIR-Institute of Translational Research (Innovation Complexes):** In the Eleventh Plan, CSIR had proposed setting up of an Institute of Translational Research. At the beginning of the Eleventh Plan the idea was to have, one single translational research centre focused in the area of health. In last two and half years the scenario in the country has however changed, major initiatives for establishing translational research institutes focused at health has been initiated by other organizations. Also, in the presently prevailing environment having a few translational research centres spread across various areas like affordable healthcare and sustainable energy are justifiable. With this new thinking CSIR proposes to create few translational research centres named as -Innovation Complexes across the

country, at strategic locations. With this approach, the aforesaid scheme proposed in the Eleventh Five Year Plan would undergo a change.

9.01. **Support to R&D Schemes (Central Electronics Limited):** Central Electronics Ltd. (CEL) is one the PSUs of DSIR which has developed a number of novel products and processes either through its own R&D efforts or in close association with premier National and International laboratories, R&D institutions and Defence Laboratories.

CEL is engaged in the areas of solar photo-voltaics, railway electronic signaling & safety equipment and strategic electronics for critical defence applications. The company has a modern infrastructure and quality systems conforming to ISO 9001:2000 certification for manufacture of quality products conforming to international standards in the above areas. CEL is backed by a strong core group of dedicated, highly motivated and well qualified R&D engineers and scientists in each business group, committed to the mission of the company of achieving market leadership through excellence in technology and manufacturing.

9.02. **National Research Development Corporation (NRDC):** NRDC was established as a company, under Section 25 of the Companies Act to commercialize the Research and Development results of publicly funded R&D institutions as well as to promote the growth of indigenous technology. Its main objectives are:

- i. Developing pro-active eco-system of innovation and knowledge transfer;
- ii. Developing knowledge base on a variety of technologies;
- iii. Honing physical network of linkages and alliances;
- iv. Developing early stage linkages between the Research Institute & Industry through the Knowledge Management System; and
- v. Supporting new ventures with market intelligence, research and development and, if necessary, external funding.

10. **Technology Promotion, Development and Utilization (TPDU) Programmes-(including Consultancy Development Centre):** TPDU Programmes would endeavour to encourage industry to increase their share in R&D expenditure of the country, support a larger cross section of small and medium industrial units to develop state-of-the-art globally competitive technologies of high commercial potential, catalyze faster commercialization of lab-scale R&D and facilitate utilization of technologies. The specific programmes that shall be pursued under the scheme are:

- i. Industrial R&D Promotion Programme
- ii. Technology Development and Demonstration Programme
- iii. Technopreneur Promotion Programme
- iv. Technology Development & Utilization Programme for Women
- v. Asian and Pacific Centre for Transfer of Technology.

The Consultancy Development Centre (CDC) was set up as a registered society in January 1986, and is functioning from its office at India Habitat Centre Complex since May 1994. The CDC was approved as Autonomous institution of Department of Scientific & Industrial Research (DSIR) in December 2004. Over the years CDC has concentrated mainly on development of human resources, providing computerized data/information services, and strengthening of technological and managerial consultancy capabilities including promoting consultancy exports. The main objective of the Scheme is to strengthen and promote industrial consultancy services and capabilities for domestic use and export requirements.

11. **Investment in Public Enterprises-Central Electronics Limited (CEL):** CEL is also supported for projects relating to enhancement of the Capacities of its manufacturing facilities in the three business groups viz., Solar Photo-voltaics, railway electronic signalling and safety equipment and strategic electronics.