

**MINISTRY OF SCIENCE AND TECHNOLOGY****DEMAND NO. 82****Department of Scientific and Industrial Research**

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

		<i>(In crores of Rupees)</i>								
Major Head	Budget 2006-2007			Revised 2006-2007			Budget 2007-2008			
	Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total	
Revenue	974.90	775.00	1749.90	774.90	775.00	1549.90	1069.90	832.00	1901.90	
Capital	0.10	...	0.10	0.10	...	0.10	0.10	...	0.10	
<b>Total</b>	<b>975.00</b>	<b>775.00</b>	<b>1750.00</b>	<b>775.00</b>	<b>775.00</b>	<b>1550.00</b>	<b>1070.00</b>	<b>832.00</b>	<b>1902.00</b>	
1. Secretariat - Economic Services	3451	...	5.25	5.25	...	4.88	4.88	...	5.79	5.79
<b>Other Scientific Research</b>										
<i>Assistance to Council of Scientific &amp; Industrial Research</i>										
2. Administration	3425	15.00	233.00	248.00	15.00	233.00	248.00	25.00	250.00	275.00
3. National Laboratories	3425	735.00	432.25	1167.25	620.20	432.62	1052.82	864.00	445.81	1309.81
4. Scientists' Pool	3425	...	4.50	4.50	...	4.50	4.50	...	5.40	5.40
5. Research Schemes, Scholarships and Fellowships	3425	10.00	100.00	110.00	25.00	100.00	125.00	60.00	125.00	185.00
6. Intellectual Property & Technology Management	3425	40.00	...	40.00	30.50	...	30.50	30.00	...	30.00
7. New Millenium Indian Technology Leadership Initiative	3425	90.00	...	90.00	40.00	...	40.00	55.00	...	55.00
8. Infrastruture Renovation and Refurbishment	3425	50.00	...	50.00	22.00	...	22.00	...	...	...
9. Institute of Translational Research	3425	...	...	...	...	...	...	1.00	...	1.00
<b>Total Assistance to CSIR</b>		<b>940.00</b>	<b>769.75</b>	<b>1709.75</b>	<b>752.70</b>	<b>770.12</b>	<b>1522.82</b>	<b>1035.00</b>	<b>826.21</b>	<b>1861.21</b>
<i>10. Assistance to Other Scientific Bodies</i>										
10.01 Support for R&D Schemes to Central Electronics Limited	3425	5.00	...	5.00	5.00	...	5.00	3.00	...	3.00
10.02 Other Schemes/ Programmes	3425	5.00	...	5.00	5.00	...	5.00	8.00	...	8.00
<i>Total</i>		<i>10.00</i>	<i>...</i>	<i>10.00</i>	<i>10.00</i>	<i>...</i>	<i>10.00</i>	<i>11.00</i>	<i>...</i>	<i>11.00</i>
11. Technology Promotion, Development and Utilisation Programme	3425	24.90	...	24.90	12.20	...	12.20	23.90	...	23.90
	5425	0.10	...	0.10	0.10	...	0.10	0.10	...	0.10
<i>Total</i>		<i>25.00</i>	<i>...</i>	<i>25.00</i>	<i>12.30</i>	<i>...</i>	<i>12.30</i>	<i>24.00</i>	<i>...</i>	<i>24.00</i>
<b>Grand Total</b>		<b>975.00</b>	<b>775.00</b>	<b>1750.00</b>	<b>775.00</b>	<b>775.00</b>	<b>1550.00</b>	<b>1070.00</b>	<b>832.00</b>	<b>1902.00</b>
<b>C. Plan Outlay</b>	Head of Dev	Budget Support	IEBR	Total	Budget Support	IEBR	Total	Budget Support	IEBR	Total
1. Other Scientific Research	13425	975.00	...	975.00	775.00	...	775.00	1070.00	...	1070.00
<b>Total</b>		<b>975.00</b>	<b>...</b>	<b>975.00</b>	<b>775.00</b>	<b>...</b>	<b>775.00</b>	<b>1070.00</b>	<b>...</b>	<b>1070.00</b>

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

**Other Scientific Research :**

Assistance to Council of Scientific and Industrial Research (CSIR)

**2. Administration**

The 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, the parliament and international agencies. It provides support to laboratories for human resources development, international scientific collaboration, publicity and public relations, performance appraisal, scientific audit etc.

**3. National Laboratories**

The National Laboratory scheme is operated through 38 National Laboratories and 39 field Centres. During the Eleventh Five Year Plan the research programmes/projects/activities of the National Laboratories have been categorized into sixteen major socio-economic sectors viz Aerospace Science & Engineering; Agro, Food Processing & Nutrition Technology; Biology & Biotechnology; Chemical Science & Technology; Earth system science; Ecology & Environment; Energy : Resources & Technology; Electronics, Photonics & Instrumentation; Engineering Materials, Mining/Minerals & Manufacturing

Technology; Pharmaceutical, Healthcare & Drugs; Housing, Road & Construction; Information: Technology, Resources & Products; Leather; Metrology; Rural development; weaker section SC/ST and North East; and Water: Resources & Technology.

CSIR's Eleventh Plan approach would focus 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 projects interalia encompass establishment of capabilities in the newer S&T areas, generation of technological know-how and strategic options over a wide spectrum of science & technology, human resource development etc. Besides, core competencies of its establishments in basic and applied research would be enhanced.

#### 4. Scientists' Pool

The objective is to promote and foster upgradation of the stock of qualified, highly specialized scientists/engineers and technologists in R&D in all disciplines of S&T in the country.

#### 5. Research Schemes, Scholarships and Fellowships (National S&T Human Resource Development)

This scheme focuses on promotion and fostering an integrated approach for national human resource development for S&T by encouraging and promoting research in the universities and institutions of higher learning and supporting organisations to hold symposia/seminars and conferences for promotion of scientific temper. 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. In order to promote interest, excitement and excellence in science education at school and undergraduate levels, each CSIR laboratory would adopt one school and one college in its sphere of influence. The laboratory would provide its facilities for project work and experimentation as well as carrying out student guidance and motivational programmes.

CSIR has established fellowships in trans-disciplinary 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.

#### 6. 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 knowledgebase 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. New Millenium Indian Technology Leadership Initiative (NMITLI)

NMITLI scheme envisages to catalyze innovation centered 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. Newer approaches of innovation development need would be evolved and experimented. Following are a few of the proposed concepts to enlarge under NMITLI during the Eleventh Plan.

- \* Pre and post NMITLI
- \* Funding with industry (50:50 Initiative)
- \* Co-financing with Venture Capital funds
- \* Long term sustained efforts in selected areas (NMITLI innovation centres)
- \* Acquisition of early stage relevant knowledge / IP for portfolio building.

#### 8. Infrastructure Renovation and Refurbishment

The CSIR has translated the S&T goals into viable, low-risk and profitable choices. These are multi-location/multi-institution programs with well-defined tasks. The task identified in each program and their linkages form a matrix of inter-related milestones and activities with identified inter-disciplinary teams at different locations/institutions. Managing information and computational requirements at various levels in the execution of these milestones/activities is the key to success. Therefore, effective and timely access to computing resources across laboratories / disciplines becomes imperative in the management of these milestones / activities. These requirements necessitate that CSIR set up an efficient Scientific Knowledge Management System by creating a CSIR-wide grid consisting of functional virtual grids related to areas of concern. This virtual sub-grids may consist of labs/institutes, where specialists and data together form a complete resource in an area of research. These may be managed and used systematically to conduct globally competitive R&D. (the scheme has been merged with National Laboratories from the year 2007-2008)

#### 9. Institute of Translational Research

CSIR will be initiating a new scheme on setting up of new Institute of Translational Research. Biological/clinical research is increasingly becoming interdisciplinary. At the same time, translational research/stem cell research etc need focused attention of scientists from different fields. A new institute is proposed to be created during the Eleventh Plan which is dedicated to carry out such work in mission mode. The proposed institute would aim at:

- \* Application of knowledge of modern biology into clinical care.
- \* Systematic collection and analysis of large amounts of clinical data.
- \* Development of ways and means of Personalized medicine.
- \* Development of specific stem cell populations to treat a variety of illnesses such as Parkinson's disease, Type I diabetes, retinal degeneration, myocardial infarction, spinal cord damage, multiple sclerosis and many others.
- \* Molecular diagnosis: Development of new diagnostic markers/tools/methods and providing the services of the same and genetic counseling.
- \* Training would be a major component to generate adequate manpower for the country to set up more such institutes and to excel in this field.

## 10. Assistance to Other Scientific Bodies

### 10.01 *Support for R&D Schemes to Central Electronics Limited:*

Central Electronics Ltd. (CEL) is one the PSUs of DSIR which can claim to have mostly depended on home-grown technologies all these years of its existence and continues to be committed towards carrying this approach. It has to its credit of having developed a number of products/processes for the first time in the country 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 frontier areas of Solar Photovoltaic, Railway Electronic Signaling & Safety equipment & strategic electronics for critical defence applications. The company has modern infrastructure and a well implemented quality system to manufacture quality products to international standards in the above areas with ISO 9001:2000 certification, backed-up by a strong core group of dedicated, highly motivated and well qualified R&D engineers and scientists with each business group, committed to the company's mission of achieving market leadership through excellence in technology & manufacture in Solar Energy, Systems and Strategic Electronics.

### 10.02 *Other Schemes / Programmes:*

#### ***National Research Development Corporation:***

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:

- \* Developing pro-active eco-system of innovation and knowledge transfer
- \* Developing digital knowledge base
- \* Honing physical network of linkages and alliances
- \* Developing early stage linkages between the Research Institutes & Industry through Knowledge Management System.

Supporting each alliance with market intelligence, direction for research and development and, if necessary, external funding are same of the activities.

## 11. Technology Promotion, Development and Utilization Programmes

TPDU Programmes would endeavour to encourage industry to increase their share in country's R&D expenditure, 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, enhance the share of technology intensive exports in overall exports, strengthen industrial consultancy & technology management capabilities and establish user friendly information network to facilitate scientific & industrial research in the country. The specific components of the scheme are:

- \* Industrial R&D Promotion Programme
- \* Technology Development and Innovation Programme
- \* Technology Management Programme
- \* International Technology Transfer Programme
- \* Consultancy Promotion Programme
- \* Technology Information Facilitation Programme
- \* Technology Development & Utilization Programme for Women

In addition to the above, TPDU Scheme will have following additional components during 11th Plan :

- \* Small Business Innovation Research Initiatives (SBIRI) to support small business innovations in sectors other than bio-technology.
- \* Fund for Accelerating Start-up in ICT sectors to become eligible for venture Capital Funding

#### **Consultancy Development Centre (CDC)**

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.