

**MINISTRY OF SCIENCE AND TECHNOLOGY****DEMAND NO. 84****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, 2003-2004			Revised, 2003-2004			Budget, 2004-2005		
		Plan	Non-Plan	Total	Plan	Non-Plan	Total	Plan	Non-Plan	Total
Revenue		511.90	616.41	1128.31	444.90	650.00	1094.90	645.90	650.00	1295.90
Capital		8.10	...	8.10	5.10	...	5.10	4.10	...	4.10
<b>Total</b>		<b>520.00</b>	<b>616.41</b>	<b>1136.41</b>	<b>450.00</b>	<b>650.00</b>	<b>1100.00</b>	<b>650.00</b>	<b>650.00</b>	<b>1300.00</b>
1. Secretariat - Economic Services	3451	...	4.00	4.00	...	4.50	4.50	...	4.81	4.81
<b>Other Scientific Research</b>										
<i>Assistance to Council of Scientific &amp; Industrial Research</i>										
2. Administration	3425	11.00	155.00	166.00	10.00	175.00	185.00	12.00	180.00	192.00
3. National Laboratories	3425	392.00	402.61	794.61	365.00	402.54	767.54	509.00	403.04	912.04
4. Scientists' Pool	3425	...	4.00	4.00	...	4.00	4.00	...	4.00	4.00
5. Research Schemes, Scholarships and Fellowships	3425	7.00	50.00	57.00	5.00	63.00	68.00	8.00	58.00	66.00
6. Intellectual Property & Tech. Management	3425	17.00	...	17.00	15.00	...	15.00	20.00	...	20.00
7. New Millenium Indian Technology Leadership Initiative	3425	35.00	...	35.00	34.00	...	34.00	45.00	...	45.00
8. Infrastruture Renovation and Refurbishing	3425	30.00	...	30.00	1.00	...	1.00	25.00	...	25.00
<b>Total Assistance to CSIR</b>		<b>492.00</b>	<b>611.61</b>	<b>1103.61</b>	<b>430.00</b>	<b>644.54</b>	<b>1074.54</b>	<b>619.00</b>	<b>645.04</b>	<b>1264.04</b>
<i>9. Non-Plan Subsidies</i>										
9.1 Interest Subsidy to NRDC	3425	...	0.30	0.30	...	0.46	0.46	...	0.15	0.15
<i>10. Assistance to Other Scientific Bodies</i>										
10.1 Support for R&D Schemes to Central Electronics Limited	3425	2.00	...	2.00	2.00	...	2.00	3.00	...	3.00
10.2 Other Schemes/Programmes	3425	3.00	...	3.00	3.00	...	3.00	4.00	...	4.00
<i>Total</i>		<i>5.00</i>	<i>...</i>	<i>5.00</i>	<i>5.00</i>	<i>...</i>	<i>5.00</i>	<i>7.00</i>	<i>...</i>	<i>7.00</i>
11. Technology Promotion, Development and Utilisation Programme	3425	14.90	...	14.90	9.90	...	9.90	19.90	...	19.90
	5425	...	...	...	...	...	...	0.10	...	0.10
<i>Total</i>		<i>14.90</i>	<i>...</i>	<i>14.90</i>	<i>9.90</i>	<i>...</i>	<i>9.90</i>	<i>20.00</i>	<i>...</i>	<i>20.00</i>
<i>12. Investment in Public Enterprises</i>										
12.1 Central Electronics Ltd.	4859	4.00	...	4.00	2.50	...	2.50	2.00	...	2.00
	6859	4.00	...	4.00	2.50	...	2.50	2.00	...	2.00
<i>Total</i>		<i>8.00</i>	<i>...</i>	<i>8.00</i>	<i>5.00</i>	<i>...</i>	<i>5.00</i>	<i>4.00</i>	<i>...</i>	<i>4.00</i>
13. APCTT Building	5425	0.10	...	0.10	0.10	...	0.10	...	...	...
<i>14. Implementation of Voluntary Retirement Scheme</i>										
14.1 Central Electronics Ltd.	2852	...	0.50	0.50	...	0.50	0.50	...	...	...
<b>Grand Total</b>		<b>520.00</b>	<b>616.41</b>	<b>1136.41</b>	<b>450.00</b>	<b>650.00</b>	<b>1100.00</b>	<b>650.00</b>	<b>650.00</b>	<b>1300.00</b>
<b>B. Investment in Public Enterprises</b>										
	Head of Dev	Budget Support	IEBR	Total	Budget Support	IEBR	Total	Budget Support	IEBR	Total
12.1 Central Electronics Ltd.	12859	...	...	...	5.00	...	5.00	4.00	...	4.00
<b>C. Plan Outlay</b>										
1. Other Scientific Research	13425	512.00	...	512.00	445.00	...	445.00	646.00	...	646.00
2. Telecommunication and Electronics Industries	12859	8.00	...	8.00	5.00	...	5.00	4.00	...	4.00
<b>Total</b>		<b>520.00</b>	<b>...</b>	<b>520.00</b>	<b>450.00</b>	<b>...</b>	<b>450.00</b>	<b>650.00</b>	<b>...</b>	<b>650.00</b>

1. **Secretariat-Economic Services:** Provides for expenditure of the Secretariat of the Department.

2. **R&D Management Support (Administration):** CSIR Headquarters, through various functional Units/Divisions provides the R&D management support and common and unified infrastructure to and for the National Laboratories. The Headquarters functions as the nerve centre for 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. It provides support to the laboratories for human resources development, international scientific collaboration, publicity and public relations, performance appraisal, scientific audit etc. It is the link between the laboratories, the Government and the International agencies.

A major initiative to be mounted during the Tenth Five Year Plan period is on operationalisation of Human Resources Development Centre. Besides, due to the globalization of economies opportunities for international scientific collaboration have vastly increased. Initiatives will be taken to scout and pinpoint partnerships that could synergise and add value to R&D activities in the National Laboratories. Endeavours would be made to establish CSIR brand equity among the public as a scientific organization of relevance and value through multimedia and print world.

CSIR HQs also operates under it two units for (a) R&D in information products and (b) a customer satisfaction evaluation. The first seeks to catalyse and mobilize packaging of information products based on CSIR databases and developments and the second a pioneering unit by publicly funded R&D to assess the customer response to CSIR rendering R&D and technical services.

3. **National Laboratories:** CSIR has a network of 38 Laboratories and 47 field stations/extension centres/regional centres located all over the country that undertake R&D in various S&T areas and disciplines. The extension and regional centres have been established to reach the diverse users and disseminate knowledge and information on R&D capabilities, techniques and technologies developed by the National laboratories of CSIR.

Under the National Laboratories, three types of activities are carried out, namely:

- \* Continually building and refurbishing competence at globally competitive level, skills and competency in all scientific areas;
- \* Taking up in-house projects with well defined objectives, deliverables, time frame; and
- \* Performing contract R&D for industry and other users to deal with problems through expertise gained over the years.

A key feature of CSIR's programmes during the Tenth Plan is the creation of major and innovative knowledge networks across and beyond CSIR laboratories.

The focus of the programmes thus evolved have been to synergise the vast competence developed in CSIR Laboratories and to implement the programmes/projects in network mode. The emphasis is also on deriving maximum output from less input. Accordingly, categorisation of programmes under National Laboratories have been carried out keeping in view the requirement at the national level, at CSIR level and at the

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laboratory level. Some of the projects would be implemented in a mission mode while others would be to further develop core competence.

In Tenth Five Year Plan period, CSIR will undertake programmes that promote:

- excellence in science – science that will lead and not follow;
- global competitiveness - technology based on high science rooted wherever feasible in India's rich heritage of knowledge;
- local relevance - finding holistic and optimal solutions to the pressing problems of the people and
- Innovation – in all spheres of activities ranging from science to technology management to financing.

4&5 **S&T Human Resource Development:** Over the years CSIR has evolved a broad based portfolio of highly versatile and well targeted schemes aimed at developing and retaining S&T manpower; nurturing young talent and promoting and facilitating basic research, and put in place mechanism for their smooth operation and implementation. CSIR provides financial assistance in the form of junior/senior research fellowships and research associateships for pursuing doctoral and postdoctoral research. Research grants are given to universities/institutes for overall promotion of scientific research in the country.

Various programmes and activities of the Group are undertaken through a true Team India partnership i.e. with the involvement and participation of eminent scientists and experts from academia, in-house industrial R&D units, S&T departments, etc.

Keeping in view the declining trend in the brightest of youth taking to science education and R&D as a career, CSIR has already operationalised CSIR Programme on Youth for Leadership in Science (CPYLS) and Shyama Prasad Mukherjee (SPM) fellowship. In the Tenth Five Year Plan period, the ongoing programmes would aim to rectify this situation further and take up training and motivation programme for selected science teachers and adopt at least one school and college; inoculate a spirit of entrepreneurship in research scholars; and establish fellowships in trans-disciplinary areas.

6. **Intellectual Property & Technology Management:** The scheme basically seeks to capture, secure, enhance and realize the value from the Intellectual Property of CSIR. This would be done by developing mastery over management of Intellectual Property by forming homogenous patent portfolios, valuing and valorizing these through leveraging and forging strategic alliances, bartering and licensing and even outright sale. In the Tenth Five Year Plan period the emphasis will be in exploiting this portfolio internationally and expanding it rather selectively based on commercial potential, strategic reasons or for pioneering and positioning CSIR in new direction.

7. **New Millennium Indian Technology Leadership Initiative (NMITLI):** The 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. NMITLI therefore looks beyond present day technologies and seeks to build, capture and retain for India a leadership position in the global arena based on technology by synergising the best competence of publicly funded R&D institutions, academia and private industry.

**8. Infrastructure Renovation and Refurbishing:** The infrastructure for most of the CSIR laboratories was built or acquired over four decades ago some are even of older vintage. Thus, the infrastructure is not suited for modern day globally competitive R&D especially in term of GLP, ISO, NABL requirements for accreditation and certification. These are proposed to be refurbished through a new scheme of infrastructure renovation.

#### 9. Non-Plan Subsidies

**9.1 Interest subsidy to NRDC:** NRDC is to be reimbursed, the interest paid by them (in the form of interest subsidy) on the loan granted to them by DSIR.

#### 10. Assistance to Other Scientific Bodies

**10.1 Support for Research and Development Schemes to Central Electronics Limited:** Following projects are proposed to be undertaken / completed:

- Phase-I of the project on 'Capacity Enhancement & Process Development for Crystalline Silicon Solar Cells & Modules';
- Development of Higher Rating i.e. 110/120 Wp PV modules;
- Development of Multi Entry Digital Axle Counter; and
- Development of New Piezo Devices.

**10.2 Other Schemes/Programmes:** Support is provided to National Research Development Corporation towards its following programmes:

- (a) Invention Promotion Programme
- (b) Technology Promotion Programme
  - Promotion of Rural & Household Technologies
  - Promotion of Export of Technology
  - Informatics for Technology Transfer
  - Technology Development Programme for Priority Projects

**11. Technology Promotion, Development and Utilisation Programme:** This scheme is the result of merger of some of the ninth plan schemes. Programmes and activities under the scheme are centered around promoting industrial R&D, development and commercialization of technologies, acquisition, management and export of technologies, promotion of consultancy capabilities, etc

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
- Industrial R&D and Technology Information Facilitation Programme

#### 12. Investment in Public Enterprises

**12.1 Central Electronics Limited :** Central Electronics Limited (CEL) holds a unique position among the family of public sector enterprises in electronics, with its emphasis on indigenous technology inducted both from its in-house developments and from the country's national laboratories for its production programmes in diverse hi- technology areas of national relevance.

The company's operations are structured in terms of three product categories, which are also its corresponding business groups, as under:

- i) **Solar Photovoltaics (SPV): Crystalline** Silicon Solar Cells, Modules and SPV Energy Systems for rural, remote areas and industrial applications.
- ii) **Electronic Systems:** Railway Electronics Equipment, Cathodic Protection System for Oil/Gas Pipelines, Projection Television (PTV) Systems and Rural Automatic Telephones Exchanges (RAX) & Very Small Aperture (Satellite) Terminals (VSAT).
- iii) **Electronic Components:** Electronic Ceramics, Professional Ferrites for TV, Telecommunication and Defence, Microwave Ferrite Phase Shifters for Missile Radars, Microwave Components.