

## I. AN OVERVIEW

### 1. INTRODUCTION

The Department of Scientific and Industrial Research (DSIR), one of the departments of the Ministry of Science and Technology was set up through a Presidential Notification, dated January 4, 1985 (74/2/1/8 Cab.). The mandate of DSIR includes promotion of industrial research for indigenous technology promotion, development, utilization and transfer. Shri Kapil Sibal is the Hon'ble Union Minister for Ministry of Science & Technology and Earth Sciences.

The Allocation of Business for the Department is as follows:

- All matters concerning the Council of Scientific & Industrial Research
- Registration & recognition of R&D units
- All matters relating to National Research Development Corporation (NRDC)
- All matters relating to Central Electronics Limited (CEL)
- Technical matters relating to UNCTAD & WIPO
- National Register for Foreign Collaborations
- Matters relating to creation of a pool for temporary placement of Indian scientists & technologists.

The primary endeavour of DSIR is to promote R&D by the industries, support small & 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 and industrial research in the country. The DSIR has two public sector undertakings viz National Research Development Corporation (NRDC) and Central Electronics Ltd (CEL) and two autonomous organization viz Council for Scientific and Industrial Research (CSIR) and Consultancy Development Centre (CDC). The Department also provides host facilities and specific assistance to "APCTT".

### 2. TECHNOLOGY PROMOTION, DEVELOPMENT & UTILIZATION PROGRAMME

The scheme "Technology Promotion, Development and Utilization (TPDU) Programme" is aimed at promoting technology development and industrial research in the country and encouraging its utilization by various section of economy, be it be industry, academic, scientific institution and the society at large. The specific components of the TPDU programme are:

- Industrial R&D Promotion Programme (RDI)
- Technology Development and Demonstration Programme (TDDP)
- Technopreneur Promotion Programme (TePP)
- Technology Management Programme (TMP)
- International Technology Transfer Programme (ITTP)
- Consultancy Promotion Programme (CPP)
- Technology Information Facilitation Programme (TIFP)

- Technology Development Utilization Programme for Women (TDUPW)
- Information Technology & e-Governance (IT&eG)

## 2.1 Major Achievements

### *Industrial R&D Promotion Programme*

DSIR is the nodal Department for granting recognition to in-house Research and Development centres of industry. As on 31<sup>st</sup> December 2007, there were 1253 in-house R&D centres with DSIR recognition. Of these 147 in-house R&D centres incurred an annual expenditure of over Rs.5 crores each and 303 centres incurred an annual expenditure in the range of Rs.1 crore to Rs.5 crores.

During the year 2007, 92 in-house R&D centres were accorded fresh recognition and recognition of 420 in-house R&D units were renewed. As a part of the promotional efforts, the 21<sup>st</sup> National Conference on in-house R&D in industry was organised; and National Awards were presented to 9 industrial units. A publication on “Outstanding in-house R&D Achievements (2007)” and 3 issues of “In-house R&D in Industry Update” were brought out.

Scientific research foundations in the areas of medical, agriculture, natural & applied sciences and social sciences seek DSIR approval as Scientific and Industrial Research Organisations (SIROs) under the DSIR scheme of granting recognition to SIROs. The approved SIROs are eligible for availing customs duty exemption on imports and central excise duty exemption on indigenous purchase of essential scientific & technical instruments, apparatus, equipment (including computers), accessories, spare parts thereof and consumables, required for research and development activities. During the year 2007, 27 new SIROs have been accorded recognition.

The Department also issued 5 certificates for accelerated depreciation allowance on indigenous technology based plant & machinery involving an investment of Rs.67.98 crores.

DSIR is the nodal Department for registration of public funded research institutions, universities, IITs, IISc., RECs/NITs, for availing customs duty and central excise duty exemptions under notifications 51/96-Customs and 10/97-Central Excise. During the year 2007, 28 such institutions were registered with DSIR; and 60 institutions were granted renewal of registration.

Secretary, DSIR is designated as the Prescribed Authority for the approval of recognition of In-house R&D centres under section 35(2AB) of Income-tax Act, 1961. Fresh / renewal of approval were accorded to 82 companies by the prescribed authority after signing agreements of co-operation for research & development. R&D expenditures of the approved companies have also been examined by the DSIR and 61 reports have been forwarded to DGIT (E) in Form 3CL as required under the IT Act.

### *Technology Development and Innovation Programme*

The programme has two sub-components:

- Technology Development and Demonstration Programme (TDDP) to support technology development efforts of industry R&D system and
- Technopreneur Promotion Programme (TePP) to nurture the innovative spirit of individuals.

The component programme, Technology Development and Demonstration aims at catalyzing and supporting activities relating to

technology absorption, adaptation and demonstration including capital goods development, involving industry and R&D organizations. Under the programme, research, development, design & engineering projects for absorption and up-gradation of imported technology as well as development & demonstration of new and improved technologies are supported. While DSIR support is catalytic and partial, bulk of the financial contribution in any project is from the industry. TDDP has now been expanded by adding two more components, namely “TDDP Start Up” and “TDDP Small Business” under which support would be provided, as the name indicates, to Start Up companies to start their commercial operations and to small business to carry out both lab/pilot scale R&D as well as commercialization.

The Department, under this programme has so far supported about 193 R&D projects of industrial units. These projects cover products and processes in various important industries such as metallurgy, electrical, electronics, instrumentation, mechanical engineering, earth moving, industrial machinery and chemicals & explosives. So far 111 projects have been completed and over 35 technologies developed under the programme have been commercialized or under commercialization. During the year, 52 Technology Development Demonstration projects supported under the component scheme have been reviewed. There are 35 companies paying royalty/lump-sum as per the terms of agreement under the programme.

Technology Development projects have strengthened the linkages with more than 25 national research laboratories/ institutions such as NAL, Bangalore; RRL, Trivandrum; IICT, Hyderabad; CMRI, Dhanbad; IIP, Dehradun; C-DAC, Pune; Institute of Plasma

Research, Ahmedabad; ER&DC, Trivandrum; Dalmia Centre for Biotechnology, Coimbatore; CMTI, Bangalore; which have been collaborating with industry in the specific research, design, development & engineering (RDDE) projects of high techno-socio-commercial impact. The Scheme has been found successful in synergizing the R&D efforts of industry and national research organizations.

The Technopreneur Promotion Programme (TePP) is a novel programme to extend financial support to individual innovators for converting their innovative ideas into working prototypes/models. Jointly operated by DSIR and Technology Information, Forecasting and Assessment Council (TIFAC) of the Department of Science and Technology (DST), TePP endeavours to tap the vast innovative potential of the citizens of India. So far, 209 projects of individual innovators were supported by DSIR (127) and TIFAC (82). Some of the successfully completed TePP projects during the year were Design of CPAP device for the treatment of sleep apnea, camera mouse for visually handicapped, tractor mounted pulveriser, periscope to reduce radiation effect from computers, instrument for spectral analysis of communication channels at high frequency, split type wood forming cutter, table top manual operated metal cutter/sheer machine, six-jaws universal wrench, water emulsification in fuel oil etc.

### ***Technology Management Programme***

The major objective of the Technology Management Programme is to provide technical inputs and support mechanisms for efficient transfer and management of technology. A number of technology and management related studies were taken up/carried out under the programme during the year. These include (i) Status of Technology and Scope of Technology

Improvement in Handloom, Powerloom and Readymade Garment Sector in West Bengal, (ii) Study on “Status & Prospects of Industries-Institute collaborations in emerging technologies”; (iii) Study on “Management of Automotive Sector”; (iv) Study on “Social Capital and Technology”; (v) Study on “An Empirical Analysis of the Status of Collaborative R&D in India”; (vi) Study on “Building Technological Capabilities through Strategic Development of Industrial Sector” and (vii) Study on “Competitiveness Evaluation for Emerging Technologies”.

The case studies covering Technology Management aspects supported under the programme include Study on Industrial Clusters in the State of Uttar Pradesh covering Leather Processing Cluster of Kanpur, Silk Producing Cluster of Varanasi and Brass work cluster of Muradabad. DSIR under the programme has initiated the setting up of Centres for Technology and Innovation Management in PSG Institute of Management, Coimbatore, Madhya Pradesh Council of Science & Technology (MPCOST), Bhopal, IIT, Bombay, IHBT, Palampur and IED, Patna.

Newsletters are being brought out on specific technology management aspects in association with IIT Bombay, PSGIM Coimbatore, KCTU Bangalore and MPCOST Bhopal. Seminars/ workshops and training programmes on specific issues related to technology management are also organized. As an initiative under the programme towards curriculum development in technology management, four modules have been completed.

### ***International Technology Transfer Programme***

Under the International Technology Transfer Programme (ITTP), major activities completed

or in progress during the year include: participation in India Fair, Melbourne; organisation of INDIA TECH 2007 (11<sup>th</sup> Technology Trade Pavilion) at India International Trade Fair (IITF) 2007, Pragati Maidan, New Delhi; initiation of a project on Capability Building to Enhance Export Competitiveness & Facilitating Market Access for Indian Technologies and Technology Intensive Products; continuation of support to the Centre for International Trade in Technology at IIFT; completion of the project on Promoting high Technology Co-operation and Trade between India and CIS Countries in association with Department of Commerce; preparation of a comprehensive web enabled searchable database of 578 profiles of exportable technologies/projects from SMEs and its dissemination to embassies and missions; organization of fourth International Awareness – cum - training programme on packaging technologies and machinery including quality assessment systems for packaging materials and equipment (for food processing sector); and undertaking studies on trans-nationalization of SMEs in the pharmaceuticals sector, machine tool sector and auto-components sector. All these efforts have catalyzed the technology intensive and high value added exports. The percentage of such exports, in the overall exports, has steadily increased over the years. A large segment of exporting community has been trained and sensitized towards high value added exports.

### ***International Cooperation***

DSIR continues to play the role of being the focal point for the APCTT, an agency under UNESCAP facilitating the establishment of networks of technology transfer inter-mediaries in the region to promote cross-border business cooperation among SMEs.

During 2007, 463 technology offers and 944 technology requests were registered in the databank. About 492 technology queries were serviced and 73 technology match-making were facilitated among technology seekers and technology providers for technology transfer discussions. APCTT is presently implementing a twin portal to promote SMEs in the region – the [www.technology4sme.net](http://www.technology4sme.net) portal and [www.business-asia.net](http://www.business-asia.net) portal.

DSIR has extended support to APCTT to implement the project, *Promotion of National Innovation Systems (NIS) in Countries of the Asia Pacific Region*. As part of the effort, the Centre has established an *NIS Online Resource Centre*. APCTT is also implementing the Grass Roots Innovations (GRI) Project, under which, two regional workshops in China and India and three national workshops in Indonesia, Philippines and Sri Lanka have been organized. Efforts were made to set up the Asia-Pacific Traditional Medicine Network (APTMNET) a viable and productive network linking the 14 member countries in the region. The 4<sup>th</sup> Meeting of APTMNET was hosted by the Ministry of Health, Malaysia in Kuala Lumpur during 23-24 July 2007.

### ***Consultancy Promotion Programme***

The programme relating to consultancy promotion, essentially, aims to strengthen our consultancy capabilities for domestic and export markets. During the period under report, IT Consultancy Clinic for SMEs in NOIDA, three Consultancy Clinics on Hosiery Industry at Kanpur, Jute & Jute Diversified Products at Kolkata and Design & Engineering centre for mould design used in Automotive & Durable Consumer Goods with high surface finish at Coimbatore were progressing satisfactorily. During the year the document on “Procedure for Selection of

Consultants, Fee Structure for Consultancy Services and Standard Contract Agreement” has been finalized and submitted for Government approval for circulation to various government departments, PSU’s and other organization as guidelines. The Consultancy Export potential studies in four African countries and four European countries were supported. In addition, eight projects of Consultancy Development Centre (CDC) under the grant allocated to CDC were supported. Also, technical inputs/supports were provided to Consultancy Engineers Association of India (CEAI) and other consultancy promotion organizations.

### ***Technology Information Facilitation Programme***

Technology Information and Facilitation Programme (TIFP) has the broader objectives of generating endogenous capacities for the development and utilization of digital information resources and facilitate accelerated S&T research. The strategy concentrates on facilitation of Indian content on S&T, avoid duplication of efforts, allow minimum overlap and maximum utilization of existing facilities. The specific achievements of the programme during the period of report include:

(i) Promotion of content development – such as database on Pest Management Technologies for major Oilseeds and Pulse Crops of Central India, Database on wild ornamental plants of Himalayas (Solan), Digital database of Bishnupur terracotta art and sculpture and traditional design of Potchitra, Baluchori and Madhubani, Database on Metallopharmaceuticals, Floral potential of J&K State, Indian Wood Insect Database, and Design and development of online database on Mycorrhiza, Decision support software system for Cereals, Millets, Pulses and Tuber crops and establishment of an Agricultural digital information centre;

(ii) Development of national websites / portals such as Science & Technology, Coastal Hazards Portal, Indigenously developed Textile Technology Research, Industrial R&D in India, Indian Academic & Research Establishments, Energy Information Support Services for the Indian Industry, Integrated Management Systems;

(iii) Documentation of community knowledge, traditional knowledge and oral traditions in various districts of the states of Maharashtra, Karnataka, Tamil Nadu, Kerala, Rajasthan and West Bengal;

(iv) Establishment of a Virtual Information Centre (VIC) <http://www.vic-ikp.info> at the ICICI Knowledge Park (ICCIKP), Hyderabad and

(v) Support to three Surveys and R&D studies viz., Feasibility Study on the Self-Sustainability of Information Support Facilities in and around Industrial Clusters of SMEs, Impact of Technology on Quality of Service Deliveries in Technical and Management Libraries in Karnataka, Manipal and GIS based Digital Atlas of the Sacred Groves of the North East India.

The programme also supported several education and training programmes on digital content development. Six sensitization-cum awareness programmes have been organized in different part of the country to create awareness and solicit good project proposals.

### ***Information Technology & e-Governance***

Information Technology for e-Governance has been initiated in the Department during the middle of the Tenth Plan by allocating a fixed percentage of the plan funds of the TPDU Scheme to create an IT environment in the Department in conformity with the National e-Governance Action Plan. While various client server applications like INTRADSIR, EXTRADSIR, DMIS, CINFOSYS, CPGRAMS, PIMS, FCAIMS were kept operational during the year, some

additional facilities were also created during 2007. These include a modernized pay bill processing system and an instant messaging and pop up facility. Secured on-line sharing of information between DSIR and its autonomous bodies and public enterprises has been made possible through EXTRADSIR. Further NET security has been strengthened by introducing a three level security system.

### ***Technology Development and Utilization Programme for Women***

In pursuance of the recommendations of the Inter-Departmental Committee set up to consider issues regarding Gender Budgeting, the Department established a “Gender Budgeting Cell”, initiated steps to enhance the share of women in respect of beneficiary oriented schemes, and designed a scheme namely, Technology Development and Utilization Programme for Women (TDUPW) in 2005-06. The programme is aimed to meet specific needs of women and to enhance their contribution towards technology capability building. Department has supported about 20 projects so far and seven projects have been completed.

During the year 2007-08, Department adopted a pro-active approach by giving wide publicity to the programme and encouraging institutions and voluntary organizations working in the field of empowerment of women to take up more projects of significant nature and beneficial to women. In this regard, five sensitization-cum-awareness programmes in various parts of the country were organized.

## **3. AUTONOMOUS INSTITUTIONS**

### **3.1 Council of Scientific & Industrial Research (CSIR)**

The Council, the largest publically funded industrial R&D organization of the world, ever since its establishment in the year 1942

has contributed immensely not only in terms of many new products and facile technological processes but has also contributed significantly towards deeper scientific understanding by way of basic research. The range of its S&T contributions is unique, wide and significant.

As multi-disciplinary, multi-locational network of 38 national laboratories and 39 outreach centers, CSIR over the years, has matured into a performance driven and knowledge centric organization. Its laboratories are rich in talent, technology, and infrastructure which are the basic building blocks for creating and nurturing scientific & technological innovations, both incremental and breakthroughs. Predominantly, it strives to achieve excellence in science; global competitiveness in technology based on high science; and innovation in various key areas of S&T. It has been a proactive generator of technologies for industrial growth, S&T anchor for strategic sector, technology hub for societal welfare and science base for progression of knowledge capital. Its achievements subsume a wide science continuum from aerospace to biology to energy to materials & minerals.

The Report covers S&T contributions of CSIR in creating Societal, Strategic, Private and Public goods and services. Most of CSIR institutions have worked or provided services in one or more of these sectors and the outputs had direct socio-economic and in many cases techno-commercial relevance.

Recognizing that S&T inputs could significantly contribute to improve the quality of life and public services, institutions have provided S&T based solutions to mitigate the vulnerability and improve the quality of life especially for rural society. Sustainable development of rural areas needs to be linked

to the development of people. It can be achieved by significant technological interventions in many areas including drinking water, shelter, energy, environment, health, food, farm and non-farm sectors. The institutions having a direct bearing in the sector of **societal goods and services** reported several achievements namely: development of a novel hybrid Reverse Osmosis unit for desalination of highly saline seawater; a solar power operated community reverse osmosis desalination unit, is of much benefit to those areas where electricity is not reliable and stable, an easy to assemble, light weight instant house for disaster victims; a new cultivar of haldi – himhaldi - as a substitute of turmeric for bruises, corns and sprains; bio-village approach for widespread cultivation of aromatic and herbal plants; and new variety of coffee species having low caffeine. Yet another contribution is development of a simple and cost effective raft cultivation system for the sea weed *gracilaria edulis* from which agar is extracted, which is used as the chewing agent in food, confectionary, softdrinks etc.

**Strategic sector** has always been of importance for a few of the CSIR institutions wherein the output reported has been of technological importance, such as: development and fabrication of MEMS Acoustic sensors used in satellite launch vehicles; Vacuum Enhanced Resin Infusion Technology for weight and cost reduction of the aircraft parts, especially of wings; development of Drishti - a transmission meter for runway visibility indication; development of a production standard Aircraft SARAS. Strategic presence also extends to the domain of materials, minerals and energy as well wherein optical fibre based temperature sensors having applications in power transmission and a novel process for making low cost, non toxic, highly effective shielding

material for attenuating x-ray and gamma radiations utilizing industrial waste of red mud and fly ash for the first time in the world, have been reported.

Ever since its establishment, CSIR has been catalyzing the growth of many of the industries, i.e. creation of **public and private goods and services**. This covers the distinct, yet cognate, areas of biology and biotechnology, chemicals and drugs and pharmaceuticals sectors all of which fuel industrial growth, CSIR has a traditional strength. Some of the new drugs and pharma related developments include processes for high level production of clot specific streptokinase and recombinant staphylokinase-two potent thrombolytics. The technologies have since been licensed. Another achievement in this area relates to development of herbal formulation from *Murraya Koengii* and *tribulus terrestris* useful for the treatment of prostate cancer. Yet another development is an all purpose skincare cream formulation with *aloe vera* as base and useful in wound healing and as antifungal formulation. In this sector some other notable achievements have been the development of a high yielding variety of *foeniculum vulgare*, whose essential oil is much coveted in culinary articles, cordials and toilet articles. Likewise, a process for extraction of virgin coconut oil which is colourless, having an intense coconut aroma, has been much appreciated as a functional food and which also acts as antibacterial, antiviral and antifungal. In the area of environment, a three step tanning methodology which is a near zero waste water discharge leather processing technology has been well appreciated by industrial stakeholders. Another environment friendly technology is a process for heptafluoropropane which is a substitute for halon, a chemical used in fire fighting. Based

on yet another CSIR technology, a plant using a catalytic process for the manufacture of epichlorohydrin from allyl chloride has been commissioned in Thailand, which is a first plant of its kind.

CSIR's contributions to the growth of core knowledge has also been stupendous. Development of hardware and software for monsoon forecasting, in-silico drug target identification, predicting the crystal structure of *lysine epsilon-aminotransferase*, which is a target for latent TB; creation of Indian genome variation consortium database having immense implication in predictive and preventive medicine, are a few of such achievements. Besides, CSIR's basic research contributions have maintained a rising trend by publishing 3488 research papers in SCI journals of national and international repute during the year. The Average Impact Factor per paper stands at 1.983. Many research papers were published in topmost journals, viz. 'Science', 'Cell', 'Nature' in Biological Sciences; 'Chemical Review', 'Angew Chemicals International' in Chemical Sciences; and 'Physics Review Letters', 'Journal of Applied Crystallography', 'Applied Physics Letters' in Physical Sciences. Upholding its commitment to the challenges of IP related matters, CSIR filed 655 patents abroad and 169 patents in India whereas it has been granted 316 patents abroad and 262 in India. It has secured 21 copyrights as well.

### 3.2 Consultancy Development Centre

The Consultancy Development Centre (CDC) came into being as a registered society in January 1986. The CDC was approved as an autonomous institution of DSIR in December 2004. The Centre is managed and guided by a Governing Council headed by Secretary, DSIR. The Governing Council consists of representatives of consultancy organisations,

R&D institutions, Government Departments, academic institutions, public sector units, etc. CDC has membership representing various types of consultancy organisations and individual experts associated with consultancy. The activities of CDC pertain to educational programmes in consultancy management, competency enhancement through training and skill building programmes, development of young professionals and women to opt for consulting as a career option and studies/projects relating to development of the consultancy profession.

During the year 2007-08, CDC has developed linkages with the Indira Gandhi National Open University for development of collaborative educational programmes comprising Certificate, Advanced Diploma and Degree Programmes in consultancy Management. Modalities are being finalised to commence these programmes from the year 2008-09. Modalities for extending the collaborative MS degree Programme in consultancy management with BITS Pilani to Chennai, Hyderabad and Bangalore have been finalised. CDC has also initiated efforts towards development of course material for these two programmes. Facilitation in selection of consultants is a new initiative taken by the Centre during the year. Training and Skill building programmes on consulting were carried out. Three interactive seminars on development of women consultants were conducted. Tenth Consultancy Congress on Outsourcing: Role of Consultants was held from 15-16 January 2008. Studies on Consultancy capabilities and Opportunities in India, Benchmarking best consulting practice and status of women consultants in India have been initiated. In addition, sectoral state-of-the-art reports in transportation sector,

services sector and agro and food processing sectors have been initiated.

## **4. PUBLIC SECTOR ENTERPRISES**

### **4.1 National Research Development Corporation (NRDC)**

The Corporation provides comprehensive technology transfer services and acts as a catalyst for transforming innovative research into marketable industrial products. During the year, the Corporation's income from its principal source of revenue i.e. Lumpsum Premia and Royalty on the licensing of technologies to industry was Rs. 412.37 lakhs, as compared to 380.40 lakhs in the previous year. During the year 2006-07, the Corporation entered into Memorandum of Understanding/Agreement with the organisations like Indian Association for Cultivation of Sciences, Kolkata; Vasant Dada Sugar Institute, Pune; Synthetic Silica Products, Kanpur; G.B. Pant University, Pantnagar; **RRL, Thiruvananthapuram**; Raman Centre for Applied and Interdisciplinary Sciences, Kolkata. As a result, 39 new processes were assigned to the Corporation for commercialization as compared to 30 processes during the previous year. The Corporation signed 44 licence agreements during the year. Some of the major technologies licensed by the Corporation during the year: Seri Gold- A Powerful General Disinfectant for Sericulture used for the Disinfection of Rearing Houses and Rearing Equipments, Mulberry Leaf Health Drink, Pithplus Magnesium Silver Chloride Seawater Activated Battery, Bio-Larvicide, Porus Conducting Carbon Paper, Night Time Highway Systems for Automobiles (Auto Dipper). During the year, the corporation has collaborated with various Patent Offices in the country and organized 23 seminars and awareness programs on "Patenting in Biotechnology", "Emerging

Scenario of Intellectual Rights Protection”, Intellectual Property & Innovation Management in Knowledge Era”, “European Patent Laws and Exploitation Strategies”.

The Corporation has awarded various innovations in the key areas in the field of Agriculture, Biotechnology, Chemical and Allied, Electrical, Electronics, Mechanical etc. It also announced cash awards amounting to Rs.5.00 Lakhs for the new inventions on 2006. The Corporation also announced one WIPO Gold Medal for the best invention “Development & Commercialization of Novel Process Technology for Removal of H<sub>2</sub>S and Mercaptans from LPG through Continuous Film Contractor (CFC)” to Dr. R.P. Verma and Associates.

#### **4.2 Central Electronics Limited (CEL)**

Central Electronics Limited (CEL) has been pioneer in India in Solar Photovoltaics,

Railway Signaling & Safety Equipment, Strategic Electronics (PCM and Piezo ceramics). CEL has up-graded and up-scaled its Solar Photovoltaic (SPV) operations from 2 MW to 10 MW during 2006-07 and has got most modern state-of-the-art solar cell process technology to meet domestic and international competition. CEL has successfully developed Digital Axle Counters & 40 Detection Points Multisection Digital Axle Counters conforming to European Standard CENELEC SIL-4 for Indian Railways.

CEL achieved the ever highest production turnover of Rs.139.26 crores in 2006-07 with an operating profit of Rs.11.24 crores against Rs.102.74 crores in 2005-06 with operating profit of Rs.5.90 crores.

CEL is diversifying in other areas to achieve a projected turnover of Rs.250 crores by year 2011-12.