

# II-A. Industrial R&D Promotion Programme

## 1. OBJECTIVES

The broad objectives of the Industrial Research & Development Promotion Programme are to:

- Bring in-house R&D into sharper focus;
- Strengthen R&D infrastructure in industry and Scientific and Industrial Research Organisations (SIROs);
- Promote R&D initiatives of the industry and SIROs;
- Ensure that the contributions made by the in-house R&D centres and SIROs dovetail adequately in the overall context of technological and industrial development.

## 2. AREAS OF COVERAGE

The specific areas covered under the component scheme are:

- In-house R&D in Industry
- Scientific and Industrial Research Organisations (SIROs)
- Fiscal Incentives for Scientific Research

Activities and achievements in each of above areas are presented below:

## 3. IN-HOUSE R&D IN INDUSTRY

### 3.1 Recognition of In-house R&D Units

A strong S&T infrastructure has been created in the country. This covers a chain of national laboratories, specialised R&D centres, various academic institutions and training centres, which continuously provide expertise, technically trained manpower and technological support to

the industry. Various policy measures have been introduced from time to time, to meet the changing industrial and technological requirements of the industry. The Government has been giving special attention to promotion and support to industrial research in industry. Several tax incentives have also been provided which encourage and make it financially attractive for industrial units to establish their own in-house R&D units.

A scheme for granting recognition to in-house R&D units in industry is operated by the DSIR. A number of incentives and support measures are made available to in-house R&D units.

The in-house R&D units qualifying for recognition are expected to be engaged in research and development activities related to the line of business of the firm, such as, development of new technologies, design and engineering, process / product / design improvements, developing new methods of analysis and testing; research for increased efficiency in use of resources, such as, capital equipment, materials and energy; pollution control, effluent treatment and recycling of waste products.

The R&D activities are expected to be separate from routine activities of the firm, such as, production and quality control. The in-house R&D units should have staff exclusively engaged in R&D and headed by a full-time R&D manager who would have direct access to the chief executive or to the board of directors depending upon the size of the unit. The in-house R&D units are also expected to maintain separate identifiable infrastructure and R&D accounts.

## DSIR Annual Report 2008-2009

Number of in-house R&D units recognised by DSIR increased steadily from about 100 in 1973 to about 275 by 1975, to over 700 by 1980, around 925 by 1985, over 1100 in 1990 over 1200 in 1995 and thereafter is hovering between 1200 to 1250; and was 1361 in March 2009. Of these, nearly 1290 are in the private sector and the remaining units are in public/joint sector. A revised and updated 'Directory of Recognised in-house R&D Units' was brought out during December 2008. This Directory lists 1325 recognised in-house R&D units as on December 2008, giving registration number, name and mailing address of the company, location of the in-house R&D unit(s) and validity of DSIR recognition. The data on these R&D units has been computerised and updated.

For the purpose of recognition, the R&D units have to apply to DSIR as per a prescribed proforma. The proforma and other details about the scheme are provided to the interested companies on request. The proforma and details of the scheme are also available at DSIR website (<http://www.dsir.gov.in>). The applications received are scrutinised for their completeness in the DSIR and are then circulated for comments to various other departments/agencies such as concerned administrative ministries, MSME, CSIR, ICAR, ICMR, ICAS, DBT, DCPC, DoT, DRDO, DIT and NRDC. The units seeking recognition are visited, if need be, by expert teams comprising of representatives of DSIR, as well as outside agencies, like, administrative ministries, CSIR, NRDC, DBT, ICAR, ICMR, DRDO, DIT, DoT, IITs and local educational and Research Institutions before they are taken up for consideration. In order to obtain first hand information on R&D activities of the applicant firms, discussions with the chiefs of the R&D unit and executives of the firm are also held in DSIR in many cases. During the discussions outside experts are invited and their comments are sought. The applications along with comments from outside agencies, visit reports, and the Department's own evaluation are considered by an Inter-Departmental Screening Committee constituted by the Secretary, DSIR. The Committee meets every month to consider the applications and makes recommendations to

the Secretary, DSIR based on its evaluation of R&D infrastructure and R&D activities of the applicant firms.

During the period from January 2008 to March 2009, the Screening Committee met 15 times and considered 266 applications for recognition; 170 R&D units were granted fresh recognition and 60 applications were rejected. Recognition of balance R&D units is under process.

The pendency at the end of March 2009 was 80. A statement giving month-wise receipt, disposal and pendency of applications for recognition of in-house R&D units is given at **Annexure 1**.

During the period 1<sup>st</sup> Jan, 2008 to 31<sup>st</sup> March 2009, over 250 discussions/meetings were held with heads of in-house R&D units. Also, expert teams visited a number of in-house R&D units.

### 3.2 Renewal of Recognition

Recognition to R&D units is granted for a period ranging from 1 to 3 years. The R&D units are advised to apply for renewal of recognition well in advance (3 months prior to the date of expiry of the recognition). Applications received for renewal of recognition are circulated to NRDC and/or the concerned administrative department of Government of India for comments. The applications are examined in DSIR taking into account the inputs received from other agencies for taking suitable decision on their renewal. During the year 2008, 299 in-house R&D units were due for renewal of recognition beyond 31 March 2008; of which 263 applications were received. Based on the evaluation of the performance of the R&D units, renewal of recognition was granted to 259 R&D units. Recognition granted to 4 companies could not be renewed because their R&D performance was not up to the mark. A statement showing month-wise receipt, disposal and pendency of the cases of renewal of recognition of the R&D units is given at **Annexure 2**.

### 3.3 Zonal Distribution of In-house R&D Units

The in-house R&D units are distributed throughout the country. There are around 190

units in the Northern Zone (Delhi, Haryana, Punjab, Uttar Pradesh, Jammu & Kashmir), around 140 units in Western Zone (Rajasthan and Gujarat), around 500 units in the Central Zone (Maharashtra, Madhya Pradesh and Orissa), around 417 units in the Southern Zone (Andhra Pradesh, Karnataka, Kerala and Tamil Nadu) and around 93 units in the Eastern Zone covering Bihar, West Bengal, Assam and other North-Eastern states and remaining in other places.

### 3.4 R&D Expenditure

The expenditure incurred by in-house R&D units in industry has steadily increased. During 1980-81 it was of the order of Rs.300 crores. In 1985-86, it was of the order of Rs.500 crores. It is estimated that the present R&D expenditure of the 1361 recognised R&D units is of the order of Rs.7600 crores. The share of public and joint sector is about 20% and that of private sector about 80%. 157 In-house R&D units spend over Rs.5 crore each on R&D, 306 in-house R&D units spent between Rs.1 crore to Rs.5 crore each per annum on R&D. The lists of these R&D units are given in **Annexure 3 and 4** respectively.

### 3.5 R&D Infrastructure

The in-house R&D centres have created impressive infrastructural facilities for R&D including sophisticated testing facilities, laboratory equipment and pilot plant facilities. Analytical facilities such as HPLCs, IR spectrophotometers, UV-Vis spectrophotometers, NMR spectrometers, electron microscopes, particle size analyzers, portable particle counting systems; vibration test equipment, calorimeter and wind tunnel for complete evaluation of automobile air-conditioning system, ultra filtration equipment, sonicator, spectro fluorimeter, protein purification set up, digital viscometer, high temperature test and evaluation facilities, CAD-CAM facilities, rapid prototype building machines, greenhouse and tissue culture laboratory facilities are available with many in-house R&D units.

### 3.6 R&D Manpower

There has been a steady increase in R&D manpower employed by the in-house R&D units. By 1975-76, about 12,000 R&D personnel were employed by recognised in-house units, and by 1981-82, the figure was over 30,000. The present estimated manpower for the 1361 in-house R&D units is around 68,000, out of which around 21,000 R&D personnel are employed in public sector in-house R&D units and around 47,000 R&D personnel are employed in the private sector in-house R&D units. Of the total 68,000 R&D personnel, around 3500 are Ph.D's, 22,000 Post Graduates, 22,000 graduates and the rest are technicians and support staff.

### 3.7 Sectorwise Break-up of In-house R&D Units

A broad sector-wise break-up of the recognised in-house R&D units is as below:

|   |     |
|---|-----|
| Chemical and Allied industries  | 557 |
| Electrical and Electronics industries   | 288 |
| Mechanical Engineering industries   | 204 |
| Processing industries(Metallurgical, Refractories, Paper, Cement, Ceramics, Leather and others) | 160 |
| Agro & food processing industriesand others   | 152 |

### 3.8 Achievements of In-house R&D Units

Some of the R&D achievements reported by the recognised in-house R&D units are listed below:

#### Physical & Biological Sciences

- Development of Advanced External Donor Catalyst Technology (RELD™ \* 1000) for Polypropylene production using gas phase process.
- Utilization of the plant *Coleus forskohlii* for drug development.
- Identification, cloning and full length sequencing of genes involved in oil biosynthesis, abiotic stress tolerance (catalase).
- Functional genetic screen for identifying genetic determinants associated with salinity

## DSIR Annual Report 2008-2009

- and drought tolerance from *Jatropha curcas* L.
- Development of *Jatropha* Tissue Culture.
- Direct morphogenesis from immature embryo cultures of *Jatropha curcas* L. for large scale production of plants: a technique to generate transgenic plants.
- High frequency plant regeneration from leaf disc culture of *Jatropha curcas* L.
- Development of Neural Stem Cell Therapy for Spinal Cord Injury.
- NeuroRel, human bone marrow derived, expanded and characterized mesenchymal stem cells (BMMSCs) – 2003-2008.
- Human Embryonic Stem (hES) cells derived oligodendrocyte progenitor cells (OPCs) – 2003 – 2008.
- Development of three-dimensional living dermal tissue equivalent, ReliDerm™ DT, for the treatment of diabetic non-healing skin ulcers.
- Method for prevention of fouling in basic solution by inhibiting polymerization in basic solution by inhibiting polymerization and solubilizing deposits using amino acids.
- Research for corrosion inhibitor to be used in manufacturing of environment friendly, anti-corrosive, non toxic, hard water stable engine coolant – All Terrain All season coolant.
- Development of a unique herbal poultry feed supplement to provide natural, stable and highly bioavailable Vitamin - C to replace synthetic Vitamin-C.
- Development of a herbal poultry feed supplement with higher and sustained methionine activity to replace the synthetic dl-methionine.
- Development of a herbal anti-microbial feed supplement to provide strong anti-microbial activity against common gram positive and gram negative pathogenic bacteria to replace the synthetic antibiotics.
- Development of a herbal animal feed supplement to provide natural & stable vitamin-E to replace the synthetic vitamin-E.
- Quality Improvement of aniline-color stabilization.
- Development of low pressure process to manufacture cyclohexylamine.
- Development of mustard brassica *juincea* L, hybrids with high oil content and disease resistance.
- Development of poly packed bitumen (PPB).
- Cost Effective production of high octane branded gasoline.
- Improvement of FCC productivity through optimal catalyst addition.
- Discovery of novel validated therapeutic extracts and molecules from medicinal plants aimed at the alleviation of degenerative conditions such as diabetes mellitus, cardiovascular health and bone health.
- Medicament for the prevention of multi system/organ failure in advanced cancer.

### Electronics & ICT based Industries

- Development of TJ2000 Series of Carrier Ethernet.
- 8/10 Pair Module (IDC) for MDF & DDF for telecom network connections upto 30 MHz.
- Surge Protection Modules for Data and Telecom (Central Office Access and CPF).
- Development and integration of CAE software for design and analysis of hypersonic technology demonstrator vehicle (HSTDV), stage separation of launch and cruise vehicle, RAMJET engine software, radar cross section of unmanned vehicle, Simulation of whole fuel subassembly of nuclear reactor.
- Development of environmentally stable re-writable compact disc; development of mini RW Disc (Cam-recorder application) and development of DVDR W 4x/8x digital versatile disc.
- Development of computerized Braille system: Electronic tactile reader & Read Braille software; Audio supported Braille keyboard & Braille writer software and WIMATS – Mathematics Braille software.

- mKRISHI- (A mobile based agro advisory system).
- i-School-Data mining based comprehensive ERP for Schools & Colleges.
- Development of low energy consuming application specific instruction set processors (ASIP) for realization of energy efficient sensor control networks

### Engineering Industries

- Development of Zoom Stereoscope Imagery Workstation.
- Indigeous development of flame retardant 200 degree C Fluorelastomeric insulated main lead and brush gear cables used in traction motors of diesel electric locomotives.
- Development of CG iron block & head for automotive castings.
- Design, development and commercialization of Tiny Quartz analog watch movement – a Titan Nano.
- Development of improved quality of rubber for rubber clad rolls for metal cleaning section of cold rolling mill in steel industry.
- Design and Development of 65 HP & 75HP 4 cylinder turbocharged-intercooled diesel engine for agricultural tractors compliant to EPA Tier-4 interim/Euro stage 3 A off highway emission norms for U.S.A. and Europe.
- Design and Development of 75 Hp epicyclic reduction transmission for heavy duty agricultural tractor.
- Design and development of BL15-Load Haul dumper.
- Design and development of multi barrel, rocket launcher, the “TATA LAUNCHER”.
- Design, development and commercialization of Tata Nano.
- WagonR LPG-Layout of spare tire in luggage area of hatch back passenger vehicle for dual fuel vehicles using toroidal gas tank.
- Development of bend insensitive optical fiber for telecom-application.

- Nitrogen generator with digital automatic tyre inflator.

### Clean Energy & Climate Change

- Waste heat recovery from process gas compressors (PGCs) of offshore oil & gas production cum processing complex located at Mumbai High South.
- Up-gradation of gas turbine – 1 (GT 1) and gas turbine 2 (GT 2) at co-generation plant of Hazira Gas Processing Complex (HGPC).
- Development of Eco Friendly Technology for PTA Residue Disposal at PTA plant.
- Manufacture of black polyester staple fiber (PSF) coupled with recycling of PET flakes by unique in-house developed on-line injection process accompanied by Energy Efficient Infra Red Drying process.
- Development of clean Technology for recycling of hazardous waste i.e. Industrial Paint Sludge
- Development of eco-friendly, hexavalent chromium-free insulation coating for heavy and light electrical industries. (Product development of ‘FILTRAN 280’ and UNIVERSA 256)

### New Inventions

- Development of biological inspired CPG based active prosthesis – AMAL.
- Induction of colour to fibroin in silkworm *Bombyx mori*.
- “Synergistic Pharmaceutical Co-crystals”- Solubility, stability and biological activity enhancement of selected drugs by molecular complex with small molecules having synergistic interaction
- Transmit-Receive Multi-Module for the active electronically scanned antenna radar.
- Electronic LPG optimum burning system (Sensored & Auto)
- Indigenous technology for the treatment of Bio refractory wastewater without sludge production, without odor emission and with low input energy.

## DSIR Annual Report 2008-2009

- Grid based plasma ion source for deposition of insulating nano-structured diamond-like carbon film
- Development of an eco and user-friendly silkworm body and rearing seat disinfectant, "Ankush" for the management of silkworm diseases.
- Wind Turbine system with steady electric power output using air battery.
- Moving source dipole electromagnetic exploration device for deeper and poorer conductors and a method of detecting such conductors.
- New process for the synthesis of (E)-2(1-4-Methyl phenyl)-3-(1-pyrrolidinyl)-1 propenyl pyridine (Triprolidine) – an antihistamine drug.
- Development of a rapid diagnostic test viz., 'TV screen test' for pulmonary & extrapulmonary tuberculosis. (An unique liposome based immuno diagnostic kit)
- Underwater sampler for collecting water sample for limnological work.
- Indigenously made simulation head for portable X-ray machine.
- Biological Neutralization of highly alkaline waste water.
- Land Based low temperature thermal desalination.
- Power converter method and apparatus having high input power factor and low harmonic distortion.
- Microwave assisted sulfonation and acetylation: a step towards green chemistry.
- Development of integrated electronic nose & vision (ENV) system for physically measuring quality of black tea.

### 3.9 Imports Made by In-house R&D Units

The recognised in-house R&D units have imported a variety of equipment, raw materials and samples for their R&D activities. These include: casting tools, GC system, sieve drum, SMMS equipment, Varian BIO-DIS dissolution apparatus, HPLC system, Spares for RM200

smoking machine, Particle Size analysers, Incubator shaker, Microplate reader, Medical photography equipment, Nitrogen generator, ODO 11 olfactory detector, Reference standards for chemical raw material testing purpose, Load cell, API 3200 LC/MS/ system package, Electronic analytical balance, LC system, Cyclotec sample mill, Automatic cigarette slitter, Universal testing machine, Vertical machining centre apparatus, Spares for Rota vapor chiller and extraction system, Samba hair system hardware with accessories, Adjustable restraining plate for leak tester, High vacuum pump.

### 3.10 Other Benefits Availed by the Recognised R&D Units

The Department provides assistance to recognised in-house R&D units in a number of ways, such as cases of industrial R&D units requiring allotment of special controlled materials for R&D, permission to export of specialised products reserved for small scale industries by medium scale industries for test marketing in other countries and disposal of imported R&D equipment/instruments and pilot plant produce are examined for making suitable recommendations to concerned agencies.

Few cases regarding locational clearance with respect to expansion of R&D have been dealt with. A number of applications regarding disposal of R&D equipment and also, pilot plant produce; and permission for allotment for controlled materials required for R&D were examined and the decisions of the Department conveyed.

### 3.11 Conference and Awards

#### *22<sup>nd</sup> National Conference on in-house R&D in Industry*

During the year, DSIR proposed to organise the 22<sup>nd</sup> National Conference on in-house R&D in Industry, in association with the Federation of Indian Chambers of Commerce and Industry (FICCI), which could not materialise.

### **National Awards for Outstanding In-house R&D Achievements**

In order to provide recognition to the efforts of industry towards innovative research and technological development, the National Awards for R&D Efforts in Industry were instituted in 1987 by the DSIR. These awards are in the form of shields and are presented along with citations at the inaugural session of the annual National Conference on in-house R&D in Industry. So far, 180 companies have won the DSIR National R&D Awards for Outstanding in-house R&D achievements. The list of the award winners in the year 2008 is as follows:

**1. Group-I: Physical & Biological sciences comprising of** – Chemical & allied Industries; Drugs & Pharmaceutical Industries; Biotech Industries, Agro & Food Processing Industries; New Materials.

- Troikaa Pharmaceuticals Ltd., Ahmedabad.
- Dorf Ketal Chemicals India Pvt. Ltd., Malad, West Mumbai.

**2. Group-II: Electronics & ICT based industries comprising of** – Computer Software; Hardware; Telecommunications.

- Webel Mediatronics Ltd., Kolkata

**3. Group-III: Engineering Industries comprising of** – Mechanical Engineering Industries; Processing Industries; Electronics & Electrical Industries; Infrastructure Development.

- Sahajanand Laser Technology Ltd., Gandhinagar.
- System Controls, Bangalore.

**4. Group-IV: Clean Energy & Climate change comprising of** – Sustainable

Development; Reducing Greenhouse Gasses; Carbon Credits; Pollution Control & Environment Protection; Energy Conservation; Renewable Energy Systems.

- Transparent Energy Systems Pvt. Ltd., Pune

### **3.12 Publications**

DSIR brought out two directories during 2008 i.e 'Directory of recognized In-house R&D

Units -2008' and 'Directory of recognized Scientific & Industrial Research Organisations – 2008'.

## **4. SCIENTIFIC AND INDUSTRIAL RESEARCH ORGANISATIONS**

### **4.1 Recognition of Scientific and Industrial Research Organisations (SIROs)**

The DSIR had launched a scheme of granting recognition to SIROs in 1988. SIROs recognised by DSIR are eligible for Customs Duty Exemption and Excise Duty Waiver in terms of notification Nos. 51/96-Customs dated 23.7.1996 and 10/97-Central Excise dated 1.3.1997 respectively.

The DSIR has brought out Guidelines for Recognition of SIROs, which give procedural details and application proforma for seeking recognition under the SIRO Scheme. Functional SIROs having broad based governing council, research advisory committee, research personnel, infrastructural facilities for research, well defined, time bound research programmes and clearly stated objectives of undertaking scientific research, are considered eligible for recognition by DSIR. The investments of surplus funds not needed for immediate research should be in accordance with the Income-tax Act, 1961.

Applications for seeking recognition under the SIRO scheme are considered in DSIR by an Inter- departmental Screening Committee with members from Council of Scientific and Industrial Research (CSIR), Indian Council of Medical Research (ICMR), Indian Council of Agricultural Research (ICAR), Indian Council of Social Sciences Research (ICSSR) and University Grants Commission. The recommendations of the Screening Committee are put up for approval of Secretary, DSIR. The recognition is effective from the date of approval of Secretary. Retrospective approval is not granted.

During the period, the Screening Committee met 12 times and recommended 32 cases for

## DSIR Annual Report 2008-2009

recognition as SIROs under 1988 Scheme of DSIR. These include cases in the natural and applied sciences, agricultural, medical sciences and social sciences. List of these SIROs is furnished at **Annexure 5**.

Recognition granted to SIROs is for duration ranging from 1 to 3 years. The SIROs are advised to apply for renewal of recognition well in advance (3 months prior to the date of expiry of recognition). Such applications received for renewal of recognition are examined by Research Review Groups by involving representatives from ICAR, ICMR, CSIR and ICSSR depending on the area. Based on the evaluation made by the Research Review Groups, renewal of recognition is granted to SIROs.

At present there are 585 SIROs duly recognised by DSIR; of these, 192 are in the area of natural and applied sciences, 215 are in the area of medical sciences, 43 are in the area of agricultural sciences, 108 are in the area of social sciences and 27 are universities/colleges. Of these, the renewal of recognition beyond 31.3.2008 of 18 SIROs is under consideration for want of further information/ clarifications. DSIR has brought out a directory of recognised SIROs in December 2008. The same is available at DSIR website.

The SIROs have employed qualified scientists and researchers and have also established good infrastructural facilities for research. They have developed new processes, procedures, techniques and technologies and also filed several patents. They have also organised seminars/ symposiums/ workshops and published research papers / reports / books.

### 5. FISCAL INCENTIVES FOR SCIENTIFIC RESEARCH

Government has evolved, from time to time, fiscal incentives and support measures to encourage R&D in industry and increased utilisation of locally available R&D options for industrial development. New incentives to encourage investments in R&D by industry are announced in the Union Budget.

Fiscal incentives and support measures presently available include:

- Income-tax relief on R&D expenditure;
- Weighted tax deduction U/s 35 (2AA) of IT Act 1961 for sponsored research programs in approved national laboratories, universities and IITs;
- Weighted tax deduction u/s 35(2AB) of IT Act, 1961 on in-house R&D expenditure in chemicals, drugs, pharmaceutical (including clinical drug trials, obtaining approvals from any regulatory authority under any Central, State or Provincial Act and filling an application for a patent under Patent Act, 1970), bio-technology, electronic equipment, automobiles and its components; computers, computer software, telecommunication equipment and manufacture of aircrafts and helicopters, agriculture implements and seeds as approved by the Prescribed Authority (Secretary, DSIR)
- Customs duty exemption on capital equipment, spares, accessories and consumables imported for R&D by approved institutions/SIROs;
- Customs duty exemption on specified goods (comprising of analytical and specialty equipment) for use in pharmaceutical and biotechnology sector;
- Excise duty waiver on indigenous items purchased by approved institutions/ SIROs for R&D;
- Ten year tax holiday for commercial R&D companies approved upto 31.03.2007
- Excise duty waiver for 3 years on goods produced based on indigenously developed technologies and duly patented in any two of the countries out of India, European Union (one country), USA and Japan;
- Accelerated depreciation allowance on plant and machinery set-up based on indigenous technology;
- Customs duty exemption on imports for R&D projects supported by Government.

Information on some of these fiscal incentives is given in the following paragraph.



### 5.1 Depreciation Allowance on Plant and Machinery Setup Based on Indigenous Technology

Secretary, DSIR, Ministry of Science and Technology, is the Prescribed Authority to certify expenditures where higher rate of depreciation is to be allowed for the plant and machinery using indigenous know-how as per provisions of rule 5(2) of IT Rules. Guidelines have been issued for making applications for obtaining the aforesaid certificate. All such applications received are examined in the department, and discussions and visits by experts to verify the claim are made to the plants by expert teams. Based on a detailed examination, certificates in deserving cases are issued for eligible expenditure.

During the year 2008, one certificate involving Rs.1804.98 lakhs on cost of plant and machinery was issued by DSIR. Details are given at **Annexure 6**.

### 5.2 Reference Under Section 35(3) of Income-Tax Act, 1961 Regarding Scientific Research

In the implementation of various incentive schemes for the promotion of research and development, the Income-tax Act, inter-alia, provides that expenditure made on capital equipment and related to research activities are allowed to be written off 100% in the year in which the expenditure are incurred. The Government has provided that if a question arises under section 35 of Income-tax Act, 1961 as to whether and, if so, to what extent any activity constitutes or constituted or any asset is or was being used for scientific research, the Central Board of Direct Taxes would refer the question to the Prescribed Authority. Director General Income-tax (Exemptions) in concurrence with Secretary, DSIR is the Prescribed Authority for deciding such cases. On receipt of the reference in DSIR, the department collects information/ background regarding the description of the activity claimed as scientific research, date of commencement of the relevant projects, date of completion of research work as also the results obtained from

the specific project. After obtaining all these details, the matter is examined in DSIR. In case where it is considered necessary, a team of technical experts is constituted for on the spot appreciation of the research work done at the premises of the company. After receiving the technical assessment report from the visiting team, a discussion is also normally held so that the point of view of the Company is taken into account before arriving at a decision. After completing the processing of the case in the above fashion, the case file is placed before the Secretary, DSIR for giving a decision. The Secretary, DSIR gives his decision by setting out a reasoned order duly signed by him, which is communicated, to Director General (Income-tax Exemptions).

During the year 2008, request of one company has been under consideration.

### 5.3 Approval of Commercial R&D Companies

In order to promote research and development activities in the commercial research and development companies, the Finance Act, 2000 provided for a ten-year tax exemption from income-tax under section 80-IB(8A) of the Income-tax Act, 1961, to approved companies, whose main objective is scientific and industrial research. Secretary, DSIR is the Prescribed Authority vide Gazette notification no. S.O.85 (E) dated 31 January, 2001, issued by Department of Revenue, Ministry of Finance for granting approval under section 80IB(8A) of the IT Act. The notification was valid upto 31<sup>st</sup> March, 2007 and this scheme was not extended further by the Government.

The approval to commercial R&D companies is given initially for a period of 3 years, which can be extended up to 10 years based on evaluation of its performance.

The tax exemption is available to a company, which is accorded approval by the Prescribed Authority at any time after the 31<sup>st</sup> day of March 2000 but before the 1<sup>st</sup> day of April 2007.

So far, 45 R&D companies have been approved. Details are given at **Annexure 7**.

## DSIR Annual Report 2008-2009

### 5.4 Customs Duty Exemption to Recognised SIROs

All SIROs recognised by DSIR are eligible for Customs Duty Exemption on the import of scientific equipment, instruments, spares, accessories as well as consumables for research and development activities and programmes.

As per the new notification No. 24 /2007 dated 1<sup>st</sup> March, 2007 the director or head of the institute / organization is empowered to sign the essentiality certificate.

### 5.5 Central Excise Duty Exemption to Recognised SIROs

All SIROs recognised by DSIR are eligible for Excise Duty Exemption on purchase of scientific and technical instruments, apparatus, equipment (including computers); accessories and spare parts thereof and consumables; computer software, Compact Disc - Read Only Memory (CD-ROM), recorded magnetic tapes, micro films, microfiches; and prototypes for research and development activities and programmes.

As per the new notification No.10/ 2007 dated 1<sup>st</sup> March, 2007 the director or head of the institute / organization is empowered to sign the essentiality certificate.

### 5.6 Registration of Public Funded Research Institutions, Universities, etc.

Public funded research institutions, universities, IITs, IISc., Bangalore; Regional Engineering Colleges (other than a hospital) are eligible for availing customs duty exemption on import of equipment, spares and accessories and consumables for research purposes through a simple registration with the DSIR. The head of the public funded research institutions / organisations duly registered with DSIR can certify the R&D goods for duty free import as per the notification No. 51/96-Customs dated 23 July 1996. As per the Government notification No. 10/97-Central Excise dated 1.3.1997, the above Public Funded Research Institutions registered with DSIR are also eligible for Central

Excise Duty Waiver on purchase of indigenously manufactured items for scientific research purposes.

Coinciding with the presentation of Union Budget for the year 2004, Ministry of Finance amended the notification No. 51/96-customs vide notification No. 28/2003-Customs dt. 1.3.2003. As per the amendment, departments & laboratories of central government and state governments (other than a hospital) are not required to register with DSIR for availing the customs duty exemption. They can clear the consignments by producing a certificate from the Head of the institution certifying that the said goods are required for research purposes only. Another significant change in the notification is that regional cancer centres (cancer institutes) have been included in the list of institutions eligible for DSIR registration for importing goods for research purposes at a concessional rate of customs duty of 5%.

The registration of above institutions is recommended by an inter-departmental Screening Committee constituted by the department for considering the requests from various institutions. The Screening Committee met 4 times during the period 1<sup>st</sup> Jan, 2008 to 31<sup>st</sup> March, 2009 and considered 45 applications from various public funded research institutions.

During the period 1<sup>st</sup> Jan, 2008 to 31<sup>st</sup> March, 2009, 34 registration certificates were issued to such public funded research institutions for availing customs duty exemption on import of scientific equipment, spares and accessories, consumable items and Central Excise Duty exemption on indigenous purchases for Scientific Research Purposes.

The registration to public funded research and other institutions mentioned in the notification is granted for maximum period of five years. The registered institutions are advised to apply for renewal of registration well in advance of the date of expiry of the registration.

During the period 1<sup>st</sup> Jan, 2008 to 31<sup>st</sup> March, 2009, 43 institutions were due for renewal of registration. The department received 35

renewal applications. These were processed on individual files and approval of Competent Authority was obtained and 34 renewal certificates were issued. The remaining one application is under process.

### 5.7 Approval of In-house R&D Centres u/s 35(2AB) of I.T. Act 1961

In the year 1997, Ministry of Finance, Government of India introduced sub-section (2AB) in Section 35 of the IT Act 1961 in order to encourage research & development in drugs, pharmaceuticals, electronic equipment, computers, telecommunication equipment, chemicals or any other article or thing notified by the Central Board of Direct Taxes (CBDT). The sub-section provided for weighted tax deduction of a sum equal to one and one-fourth times of any expenditure incurred on scientific research (excluding expenditure incurred on land & buildings). The weighted tax deduction was further raised to 150% by in the year 2000. The in-house Research and Development facilities of companies engaged in the business of manufacture or production of the above mentioned items/ areas should be approved by the 'Prescribed Authority' i.e. Secretary, DSIR. Also, the company should enter into an agreement with the Prescribed Authority for co-operation in such research and development facility and for audit of the accounts maintained for that facility. Through a separate notification, manufacture of aircrafts and helicopters was included in the list eligible under this section.

The provision was introduced for expenditure on R&D incurred up to 31<sup>st</sup> March 2000. The Ministry of Finance, Department of Revenue,

Central Board of Direct Taxes, notified the provision vide Notification No. S.O.259(E) dated 27 March 1998. The provision was extended till 31 March 2005 initially and was further extended upto 31.03.2007 by in 2005 and again upto 31.03.2012 in the year 2007.

The sub-section was amended by the Finance Bill 2001, to include expenditure on in-house R&D by units engaged in the business of biotechnology, as well as cover expenditure on clinical trials, filing of patents under Indian Patent Act (1970) and obtaining regulatory approvals, for weighted tax deduction @150% under the section 35(2AB) of Income-tax Act. Through separate notifications the Board added manufacture or production of helicopter or aircraft, computer software, automobiles including automobile components, seeds and agricultural implements in the list of eligible sectors under this section.

During the year 2008, 68 new applications for approval in Form 3CM received by the Prescribed Authority. Secretary, DSIR is designated as the Prescribed Authority under section 35(2AB) of Income-tax Act, 1961. Fresh approvals were accorded to 31 companies by the prescribed authority. These approvals were communicated in Form 3CM, after Agreements of cooperation for research & development were signed with these companies on behalf of the Secretary, DSIR. Further, the detailed R&D expenditures of the approved companies have also been examined by DSIR and 85 reports have been forwarded to DGIT(E) in Form 3CL as required under the IT Act. A list of companies approved under Section 35 (2AB) of IT Act, is furnished in **Annexure 8**.