

Building Industrial Research & Development and Common Research Facilities (BIRD-Crf)

- 1. Industrial R&D Promotion Programme**
- 2. Creation of Common Research and
Technology Development Hubs
(CRTDH)**
- 3. Information Technology and
e-Governance**





Building Industrial Research & Development And Common Research Facilities (BIRD-Crf)

1. INDUSTRIAL R&D PROMOTION PROGRAMME

1.1 Objectives

The broad objectives of the Industrial Research and 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.

1.2 Areas of Coverage

The specific areas covered under the component scheme are:

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

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

1.3 In-House R&D In Industry

1.3.1 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. Ministry of Finance has issued notification amending the basic notifications under Customs and central excise (prior to implementation of GST). As per the amendments, all DSIR recognized In-house R&D units other than hospitals can avail Customs and Central Excise (prior to implementation of GST) duty exemption on their procurements for research purposes.

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.

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 hovering between 1200 to 1250; 1361 in March 2010; 1618 in December 2011, 1767 in December 2012, 1797 in December 2013, 1762 in December 2014, 1800 in December 2015, 1900 in November 2016 and 1997 in November 2017. Of these nearly 1700 are in the private sector and the remaining units are in public/joint sector. The last updated 'Directory of Recognised In-house R&D Units' was brought out in December, 2016. This Directory lists 1900 recognised In-house R&D units, giving registration number, name and mailing address of the company, location of the In-house R&D unit(s) and validity of DSIR recognition.

Under the e-governance initiative of DSIR, the application system has been made completely online through the department website (<http://www.dsir.gov.in>) for recognition and registration of In-house R&D units (RDI), Scientific & Industrial Research Organisations (SIRO) and Public Funded Research Institutions (PFRI). With the objective of Minimum Government and Maximum Governance the new portal has reduced the time and increased the transparency of operation within the DSIR. Department upload the barcode generated certificates for recognition, registration and its renewal of In-house R&D units of industries, Scientific & Industrial Research Organizations and Public Funded Research Institutions.

To promote entrepreneurship in biotechnology sector, DSIR has implemented, relaxation in three years of existence of enterprise for granting short term fresh recognition to Biotech Start-ups established in incubation centre or technology park with effect from July 2015. DSIR refers applications received from biotech start up to Department of Biotechnology (DBT), being nodal department promoting biotechnology for their views and comments. Based on recommendation of DBT and keeping the DSIR guideline relaxation in view, the applications are re-considered for recognition.

Detailed guidelines about the schemes are available on department website. The applications received are scrutinised for their completeness in DSIR and are then circulated for comments to various other departments/agencies, concerned administrative ministries, MSME, CSIR, ICAR, ICMR, CCRAS, DBT, DC & PC, DoT, DRDO, DIT, DoP and NRDC. The applicant industries seeking recognition are invited for presentation and discussion in DSIR and may be visited by a team of experts and DSIR representatives. 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 meeting is scheduled every month to consider the applications and makes recommendations to the Secretary, DSIR.

R&D recognition by DSIR is considered as the basic requirement to avail fiscal incentives focused towards R&D and separation of R&D activities from commercial production/service activities of the company is considered important.

During the period under report, the Screening Committee met **11** times. Of the **276** applications received for recognition, the screening committee considered **267** applications. **163** R&D units were granted fresh recognition based on their satisfactory R&D Infrastructure, Qualified Manpower and Programmes; **67** applications were rejected and **15** applications are under process at the end of **31st December, 2017**. 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 under report, more than **240** discussions/meetings were held with heads/representatives of In-house R&D units. Also, expert teams visited a number of In-house R&D units.

1.3.2 Renewal of Recognition

Recognition to R&D units is granted for a period ranging from 2 to 5 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). The applications are examined in DSIR by the Research & Review Group (RRG) representing officers from CSIR, NRDC, DSIR and DST constituted by the Secretary DSIR. RRG takes into account recommendation for renewal of recognition based on R&D indicator such as R&D expenditure, R&D assests, R&D manpower, R&D achievements (new products & processes developed, technologies commercialized, patents filled, research papers published etc) and ongoing and future R& programmes, while recommending the cases for renewal of in-house R&D recognition. Sometimes the RRG also seeks clarifications/suggestions for strengthening their R&D activities. After getting necessary inputs from industries the cases for recognitions are considered for renewal. As of 1st **April 2017**, **617** In-house R&D units were due for renewal of recognition out of which **552** applications were received. Based on the evaluation of the performance of the R&D units, renewal of recognition was granted to **537** R&D units. Recognition granted to **67** companies could not be renewed because of the reason that either their application was not received or the 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 in **Annexure 2**.

1.3.3 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 **1997** recognised in house R&D units is of the order of about **Rs. 35,000 crores** per annum. The share of public and joint sector is about 20 per cent and that of private sector about 80 per cent. Of these **1997** recognized In-house R&D units, **121** units spent over Rs. 5000 lakhs each on R&D while **489** spent between Rs. 500 lakhs to Rs. 5000 lakhs each per annum on R&D and **420** spent between Rs. 200 lakhs to Rs. 500 lakhs each per annum on R&D. The list of these R&D units is given in **Annexure 3, 4 and 5** respectively.

1.3.4 R&D Infrastructure

The in-house R&D centres have created excellent infrastructural facilities for R&D including sophisticated testing facilities, laboratory equipment and pilot plant facilities, Analytical facilities such as UV Stabilized nylon net, Horn performance system, Anechoic Chamber, Texture analyser, Gas Chromatograph, NMR SFC Analyzer, Ozone Chamber, Multi-axis vibration test bench with counters, Pressure Impulse cum vibration test bench, Portable Mini burst Hydro chamber, Cryogenic test chamber (up to -196°C), Thermal Chamber (up to 540°C), Fluorescence Microscope, Digital Storage oscilloscope, Deep freezer (-20°C), UV Spectroscopy, Emission Analyzer, Differential Scanning Calorimeter-BDS, High Pressure Homogenizer - Nano DeBee 45-1, Photo-Stability Chamber, Accelerated Weathering Tester, FFT analyzer, Pfeuffer Friability meter, NMR spectrometers, CAD-CAM facilities, rapid prototype building machines, CNC machines, Horizontal and vertical machining centres, PLC controlled filling machines, Microcontroller based control systems, and tissue culture laboratory facilities are available with many in-house R&D units.

1.3.5 R&D Manpower

There has been a steady increase in R&D manpower employed by the In-house R&D units. By 1975-





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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 1997 In-house R&D units is over 1,63,000.

1.3.6 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:

Agricultural Sciences :

- Development of new Cytoplasmic male sterility / Genetic Male Sterility (CMS/GMS) & "R" lines adaptable and stable in different climatic zones in various crops.
- Development of bio fortified hybrid/varieties in various crops like Pearl millet, Wheat and Cotton.
- Development of Soybean Varieties like RHSPL 16001, RHSPL 16002, RHSPL 16003, RHSPL 16004, RHSPL 16005, RHSPL 16006 RHSPL 16007-10.

Biological/Biomedical Sciences/Pharmaceuticals:

- Development of Oncological Products: Pemetrexed for Injection 100 mg and 500 mg, Bortezomib for Injection 2 mg and 3.5 mg, Anastrozole Tablets 1 mg Lenalidomide Capsules 15 mg, Letrozole Tablets 2.5 mg, Imatinib tablets 100 mg and 400 mg, Temozolomide Capsules 20 mg, Everolimus Tablets 0.25 and 0.5 mg;
- Development of First Response[®] Malaria Antigen *P. falciparum* (HRP2) Card Test
- Development of Bioactive silicate glass bone substitute granules
- Development of a lab prototype for BiolMed BGS (Bone graft substitute)
- Development of FMD 3AB3 DIVA Kit (Indirect ELISA) to differentiate Foot-and-Mouth-Disease-Virus (FMDV) infected from vaccinated animals
- Development of Chitosan Oligosaccharide as Bio Stimulants in Plants

- Development of microarray based Endometrium Receptivity Assay
- Development of formulations like Calamine Lotion 8% w/v, Calcium Pantothenate Tablets USP 200 mg, Bicalutamide Tablets IP 50 mg, Azathioprine Tablets IP 50 mg, Cytotrex – 100 Injection 100 mg, Phenytoin Tablets BP 30 mg, Naloxone Hydrochloride Injection USP 0.4 mg/ml etc.
- Development of formulations like Paracetamol and Aceclofenac Tablets, Ofloxacin Tablets, Piracetam Tablets, Esomeprazole Enteric Coated Pellets 22.5% w/w for Export
- Development of process for High Cell Density Fermentation of Insulin Human.
- Development of Stem cells & Cells based products for targeted therapy
- Development of a Cost Effective Matrix based Sustained Release “Nifedipine” 20 mg tablet, Cost Effective “Valganciclovir Hydrochloride” 450 mg film Coated Tablet.

Chemical Sciences:

- Development of Acrylonitrile Butadiene Rubber for Rice dehusking roll and other application.
- Development of high enzyme malts ensuring brewing without the use of enzymes.
- Development of C5 Hydroxy Ester, 4-Hydroxy Benzyl alcohol, 4,6-dichloro pyrimidine, 2-methoxy benzoic acid, C6 Hydroxy Ester.
- Development of Bioplastic alloys for blow films and injection moulded products.
- Development of Self Polymerizable Polymeric mortar.
- Development of PVdC coated paper for Pharma Applications.
- Development of Inks like color+TJR series for Turbojet printers and color+PL series for Spectra Polaris printers for export.
- Development of Vintage Melange Yarn and Fabric, Sparkle Shiny Yarn and Fabric, Injection



Slub Yarn and Fabric, Zero Twist Yarn and Fabric.

- Development of Phenolic Reinforcing Resins and Homogenising Resins.
- Development of Insect Repellent Candles and Candles with LED lights.
- Development of YU series for Paints with better dispersion, Lead free Pigments.

Engineering / Information Technology:

- Development of R32 SA Inverter 3 Star (Ceiling Suspended) Air Conditioner.
- Development of Printing Flexible Electrochromic Display With High Molecular Weight Electrolyte.
- Development of Dual Code Based Multi-Layer Authentication System And Method Thereof (Dual Code).
- Development of Optical fiber system for ultra long haul transmission with low dispersion, low attenuation and better dispersion performance at 1550 nm.
- Development of Low pressure loss throttle and non-return valve for Water Mist Fire extinguishing systems.
- Development of Energy Meter with RF (Zigbee 2.4 GHz) comm. Capability.
- Development of Rapid room temperature storable kits from Bacteria, Blood, Fungi, Plant, Plasmid isolation & Purification, Gel elution and PCR product.
- Development of 2.5 k W gear reduction sealed starter motor for off-highway.
- Development of Roller Press Gear Box for Cement Mill 1.2 Mw. (Import substitute).
- Development of High Speed 5-Axis CNC Gear Hobbing Machine - H400CNC5A DIN 7 Class accuracy.
- Development of Toggr - A smart wearable platform that supports multiple wearable computing devices to provide safety for small children, elderly, healthcare/patient care.

- Development of Solar powered High energy efficient green Push cart freezers.

- Development of 10 Gbps Serdes for Passive Optical Network (PON).
- Development of 5 star Inverter AC and RO system with less waste water discharge.

1.3.7 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: Crimper C-83-NS, Cutting Machine. HPLC, FTIR, LCMS, Gas Chromatography Mass Spectrometry (GCMS), Long seam Welding, Electron beam welding, Vacuum Furnace, Vertical CNC Milling, 5- Axis milling, Horizontal CNC lathe, Robotic Mig welding facility, Deep freezer, Refrigerated centrifuge, FFT Analyser for vibration assessment of gears on planetary gearbox, Color Spectrophotometer, Ultra sonic welding, Test Equipment for VSAT, Homogenizer, Heating Bath Circulator, Rotovapor, Programmable melting/boiling point apparatus, Infra Red Dyeing Machine, Pepspirometer, Oil Free Screw Air Compressor etc.

1.4 Scientific and Industrial Research Organisations

1.4.1 Recognition of Scientific and Industrial Research Organisations (SIROs)

The DSIR had launched a scheme of granting recognition to SIROs in 1988. SIROs recognized & registered by DSIR are eligible for Customs Duty Exemption under Govt. notification No. 51/96-Customs dated 23.07.1996 amended by notification No. 24/2007-Customs dated 01.03.2007 & notification No.43/2017-Customs dated 30.06.2017 and Excise Duty Waiver in terms of Govt. Notifications No. 10/97-Central Excise dated 01.03.1997 amended by notification No. 16/2007-Central Excise dated 01.03.2007 & notification no. 09/2017- Central Excise dated 30.06.2017, as amended from time to time. However, after introduction of Central Good and Services Tax (CGST) Act, 2017 from 1st July 2017,





the Govt. Notifications No. 10/97-Central Excise dated 01.03.1997 is rescinded.

In order to simplify the processing of application and augment the transparency, DSIR has commissioned online filing of application for both fresh and renewal of recognition.

The DSIR has brought out Guidelines for Recognition of SIROs, which gives 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 Department of Science & Technology (DST), 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 (UGC). The recommendations of the Screening Committee are put up for approval of Secretary, DSIR. The recognition is effective from the date of the Screening Committee meeting. Retrospective approval is not granted.

During the period, January 2017 to November 2017 the Screening Committee met 10 times and recommended 33 cases for recognition as SIROs. These include cases in the Natural and Applied Sciences, Agricultural Sciences, Medical Sciences and Social Sciences. The sector-wise list of these SIROs is furnished at **Annexure -6**. Out of the 33 recognized SIROs, 17 SIROs were issued registration certificates for obtaining customs & excise duty exemptions

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 DST, ICAR, ICMR, CSIR and ICSSR depending on the areas of research. Based on the evaluation made by the Research Review Groups, renewal of recognition is granted to SIROs. During the period January 2017 to November 2017, RRG met 05 times and recommended 180 SIROs for renewal of recognition beyond 31.03.2017. Out of the 180 recognized SIROs, 70 SIROs were issued registration certificates for obtaining Customs & Excise duty exemptions (prior to implementation of GST).

At present, there are 648 SIROs duly recognised by DSIR; of these, 270 are in the area of natural and applied sciences, 256 are in the area of medical sciences, 40 are in the area of agricultural sciences and 82 are in the area of social sciences.

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.

1.5 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 (capital & revenue);
- 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 for any company engaged in the business of biotechnology or in any business of manufacture or production of any article or thing not being an article or thing specified in the list of the eleventh schedule of IT Act, having R&D facility approved by 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;
- 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 implemented by DSIR is given in the following paragraph.

1.5.1 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 installed for the manufacturing of products using indigenous know-how as per provisions of rule 5(2) of IT Rules. Guidelines have been issued for making application 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, three certificates involving Rs.3184.27 Crores during 2015-16 on cost of plant and machinery were issued by DSIR. Details are given at **Annexure 7**.

1.5.2 Reference on expenditure on scientific research under Section 35 (3) of Income-Tax Act, 1961.

Section 35(3) of Income-tax Act, 1961 provides that if a question arises 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. Chief Commissioner Income-tax (Exemptions) in concurrence with Secretary, DSIR is the Prescribed Authority for deciding such cases.

1.5.3 Customs Duty Exemption to Recognised SIROs

All SIROs recognised and registered by DSIR (other than hospitals) are eligible for customs duty exemption on import of equipment/instruments and their spares and consumables; under notification No. 51/96-Customs dated 23.07.1996, No. 24/2007-Customs dated 01.03.2007 & No. 43/2017-Customs dated 30.06.2017, as amended from time to time. The department was issuing essentiality certificates to SIROs for obtaining customs duty exemption. As per notification No. 24/2007-Customs dated 01.03.2007, the Director or Head of the Institute/organization is empowered to sign the essentiality certificate.

1.5.4 Central Excise Duty Exemption To Recognised SIROs

The SIROs recognized & registered by DSIR (other than hospitals) were eligible for excise duty waiver on import of equipment/instruments including computers, apparatus, accessories and their spares and consumables; computer software, CD-ROM, recorded tapes, microfilms, microfiches, under Govt. Notifications No. 10/97-Central Excise dated 01.03.1997 & its amendment in No. 16/2007-Central Excise dated 01.03.2007. As per notification No. 16/2007-Central Excise dated 01.03.2007, the Director or Head of the Institute/organization was empowered to sign the essentiality certificate. However, after implementation of Good and Services Tax (GST) Law as on 01st July 2017, the said notification is rescinded.





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1.5.5 Customs and central excise Duty exemption to Recognised In-house R&D units

Ministry of Finance has issued notification no.51/96-Customs dated 23rd July, 1996, notification No. 24/2007-Customs dated March 1st, 2007 and notification No.43/2017-Customs dated 30th June, 2017 as amended from time to time. As per the above amendments all DSIR recognized & registered In-house R&D units other than hospitals can avail Customs Duty exemption on their procurements for research purposes.

Under Govt. Notifications No. 10/97-Central Excise dated 01.03.1997 & its amendment in No. 16/2007-Central Excise dated 01.03.2007, DSIR recognized & registered In-house R&D units other than hospitals were availing Central Excise Duty exemption on their procurements for research purposes. However, after the implementation of Good and Services Tax (GST) on 1st July 2017, vide Notification No. 9/2017-Central Excise dt. 30.06.2017, Ministry of Finance has rescinds the main notification No. 10/97-Central Excise dt. 01.03.1997 of Government of India in Ministry of Finance (Department of Revenue).

1.5.6 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 concessional customs duty exemption on import of equipment, spares and accessories and consumables for research purposes through a simple registration with the DSIR. The heads of the public funded research institutions / organisations duly registered with DSIR can certify the R&D goods for custom duty exemption, vide Notification No. 43/2017-Customs dt. 30.06.2017 and corrigendum dated 22.07.2017-Custom Notification no. 43/2017 dt 30.06.2017, Ministry of Finance has amended the main notification No. 51/96-Customs dt. 23.07.1996 (as amended from time to time).

Vide Notification No. 9/2017-Central Excise dt. 30.06.2017, Ministry of Finance has amended the main notification No. 10/97-Central Excise dt. 01.03.1997. As per the amendment, Central Government has rescinds the notification No. 10/97-Central Excise dt. 01.03.1997 of Government of India in Ministry of Finance (Department of Revenue).

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 concessional 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 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.

The Union Govt of India enacted 'The Constitution (101st Amendment) Act, 2016 w.e.f.16th September 2016, as introduction of Goods and Services Tax required amendments in the constitution to concurrently empower the Centre and States to levy and collect Goods and Services Tax (GST). Central Government vide Notification No. 03/2017-Central Tax, dt. 19-06-2017 has notified Central Goods and Services Tax Rules, 2017 w.e.f. 22nd June 2017. The introduction of Central Goods and Services Tax Act, 2017(No. 12 of 2017) on 1st July, 2017 was a very significant step in the field of Indirect Tax Reforms in India. After introduction of CGST Act, 2017 (No.12 of 2017) from 1st July, 2017, import of goods would be treated as inter-state supplies and would be subject to integrated tax (IGST) in addition to the applicable customs duties. For latest update visit <http://www.cbec.gov.in/htdocs-cbec/gst/index>.



Under the e-governance initiative of DSIR, department has started online application submission facility for registration / renewal of registration of Public Funded Research Institutions (PFRIs) and others through the department website (www.dsir.gov.in). Details about the schemes are available on department website. The complete applications are considered by an Inter-departmental Screening Committee constituted by the department for considering the requests from various institutions. Presently the committee is chaired by a former Secretary of DSIR,

The Screening Committee met twice during the period under report and considered 34 applications received from various public funded research institutions. During the period under report, 22 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. There are about 550 PFRIs registered by DSIR. 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 under report, 153 institutions were due for renewal of registration. The department received 118 renewal applications. These were processed on individual files and approval of Competent Authority was obtained and 112 renewal certificates were issued.

1.5.7 Approval of In-house R&D Centres under Section 35(2AB) of I.T. Act 1961

In order to encourage R&D initiatives of industry, the finance bill 1997 introduced a sub section (2AB) in section 35 of the IT Act, 1961. The provision introduced initially was for select sectors of industry i.e. drugs, pharmaceuticals, electronic equipment, computers, telecommunication equipment, chemicals and provided weighted

deduction of 125 per cent on expenditure on in-house research and development facility as approved by the prescribed authority i.e. Secretary, DSIR. Subsequently, a number of other sectors were added to the list of eligible sectors. From the year 2009 the benefits have been extended to all sectors of industry with a select list of non-priority items. Rate of weighted tax deduction was raised from 125 per cent to 150 per cent subsequent to the year ending March, 2000. The rate of weighted tax deduction was further enhanced to 200% from 1st April 2010. Initially the provision was introduced up to 31st March, 2000. The provision was extended from time to time initially till 31st March, 2005 and then up to 31st March, 2007, further up to 31st March 2012. In the Union Budget 2012, the provision was extended up to 31st March 2017. In the Union Budget 2016, the provision has been further extended up to 31st March 2020. The rate of weighted tax deduction has been lowered from 200% to 150% from 1st April 2017.

During the period under report, 132 new applications were received for approval under the provision. New approvals were accorded to 106 companies in Income Tax prescribed Form 3CM. Further, the detailed R&D expenditure of the approved companies were also examined and 614 reports valued at Rs. 16015 crores forwarded to CCIT (E) in Form 3CL as prescribed in IT Act. A list of companies approved under Section 35(2AB) of IT Act, during the year 2017 is furnished in **Annexure-8**.

(i) Updated Fiscal Incentive (FI) guidelines for approval of in-house R&D centres and submission of report under section 35(2AB):

Central Board of Direct Taxes (CBDT), Ministry of Finance, Government of India issued a notification No. 29/2016 dated 28 April, 2016 amending the Income Tax rules, 1962 and Forms 3CK, 3CM & 3CL with respect to weighted tax deduction on expenditure incurred by a company engaged in the business of biotechnology, manufacture or production of any article/thing (other than those specified in the Eleventh Schedule), on





scientific research (not being expenditure in the nature of cost of any land or building) in the in house R&D centers as approved by the DSIR, prescribed authority. As a follow up, the Programme division updated the Fiscal Incentive (FI) guidelines for approval of in-house research and development (R&D) centers and submission of prescribed report under section 35(2AB) of the Income-tax Act, 1961 (the Act). The Guidelines were revised implementing amendments notified by CBDT.

The revised guidelines substitute the new Forms- Form 3CK, 3CM, 3CL and 3CLA and brings updation in the conditions for approvals in Form 3CM and eligibility of research expenditure for weighted tax deductions.

The guidelines have been updated with the concurrence of CBDT, Department of Revenue, Ministry of Finance and with the approval of Prescribed Authority. The revised guidelines are uploaded on DSIR website and can be accessed from the following link:

http://www.dsir.gov.in/#files/12plan/bird-crf/FI_G_2016_E.html

(ii) Introduction of electronic filing of FORM 3CLA:

In line with the amended rules notified by CBDT, a new Form 3CLA (report from an accountant relating to in-house scientific R&D facility) has been introduced in the Fiscal Incentive Guidelines, which is to be duly certified and furnished electronically to the Secretary, DSIR by the accountant of the Company. Department has registered itself as an external agency on Income Tax E-filing website (www.incometaxindiaefiling.gov.in) for receipt of electronically furnished Form 3CLA. Income Tax e-filing unit is working on the deployment of functionality on DSIR Income Tax website login.

The Fiscal Incentive division of DSIR is also supporting Income Tax e-filing unit in implementation of electronic furnishing of report in Form 3CL, quantifying the expenditure incurred on approved in-house R&D facility of the

company u/s 35(2AB) of the Act. Electronic filing of the form and report will bring transparency and save a lot of time and cost of taxpayer/applicant.

2. CREATION OF COMMON RESEARCH AND TECHNOLOGY DEVELOPMENT HUBS (CRTDHs)

2.1 Background

The Department of Scientific and Industrial Research (DSIR) has a program for providing support to Common Research and Technology Development Hubs (CRTDHs) that aims to enhance translational research and fostering industry institution interaction targeted towards innovative product development. CRTDHs provide facilities to research institutes and enterprises for translation of scientific knowledge, ideas and inventions into products and services. The facilities at CRTDHs will be used by the Micro and Small Enterprises (MSEs) / Innovators. The CRTDHs shall be operated on a cost plus non-commercial basis and are evolving a business model for self-sustainability. Three such hubs were approved under the program in the first phase as follows:

S. No.	Location	Sector
1.	CSIR - Centre for Cellular and Molecular Biology (CCMB), Hyderabad	Affordable Healthcare
2.	CSIR - Institute of Himalyan Bioresource Technology (IHBT), Palampur	Affordable Healthcare
3.	CSIR - National Institute for Interdisciplinary Science & Technology (NIIST), Thiruvananthapuram	Environmental Interventions



During 2016-17, in the second phase, the Department approved setting up of four new hubs as follows:

S. No.	Location	Sector
1.	CSIR - Central Mechanical Engineering Research Institute (CMERI), Durgapur	Low Cost Machining
2.	CSIR - Central Electronics Engineering Research Institute (CEERI), Pilani	Electronics/ Renewable Energy
3.	Indian Institute of Technology, Roorkee (IIT-R), Roorkee	New Materials

2.2 Aims and Objectives

The DSIR-CRTDH programme is aimed at creation of common research facilities equipped with analytical equipment and pilot plant facilities to facilitate and encourage enterprises, startups and micro and small enterprises for R&D and technology development.

2.3 Achievements

During 2017-18, the following three hubs set up in the first phase under the scheme have started engaging with the enterprises:-

i. Centre for Cellular and Molecular Biology (CCMB), Hyderabad

The focus of DSIR-CRTDH at CCMB is to support and nurture product development in the field of health care and modern biology covering inter alia Diagnostics, Bio-pharma and Medical devices. In particular, the products and technologies that are targeted relate to development of DNA based diagnostic kits for screening of eye infections, acute encephalitis, septicaemia, antibiotic resistance, and others.

ii. Institute of Himalayan Bioresources Technology (IHBT), Palampur

The DSIR-CRTDH at IHBT has been setup to take advantage of the institute's expertise in development of value added products such as thermo-stable enzymes, zero-calorie sugar substitutes etc. The hub aims to catalyse development of bio-pharmaceutical ingredients such as black carrot anthocyanin, beetroot betaine, mango peel carotenoids etc. by industries located in its vicinity.

iii. National Institute for Interdisciplinary Science and Technology (NIIST), Thiruvananthapuram

The objective of the DSIR-CRTDH at NIIST is towards development of products and technologies addressing environmental issues. The institute's experience in technologies related to odour control, anaerobic treatment, nitrification treatment, water quality analysis and others shall be used to provide R&D solutions to MSEs and is expected to be used by them to improve their environmental performance.

These hubs identified needs of the enterprises through seminars and workshops as well as through interaction with the MSME Development Institutes (MSME-DI), Directorate of Industries (DIC), S&T Councils and other state government bodies. Technological development has started in project mode in the above CRTDHs wherein several agreements have been made with enterprises as well as state government agencies for the benefit of the MSMEs and start-ups.

In the current year, CCMB-Hyderabad under CRTDH programme entered into six agreements with companies such as Bioartis Life Sciences Pvt. Ltd., Oncosmis Biotech Pvt. Ltd., Theragnosis Life Sciences Pvt. Ltd., Virupaksha Life Sciences Pvt. Ltd., Kommareddi Biopharma Pvt. Ltd., and Magellan Life Sciences Pvt. Ltd., as well as MoUs with IKP Knowledge Park and IBuild Innovation India Ltd. for mentoring the innovators. All the six companies are incubated at CRTDH facility and have physically occupied the space within the hub.

NIIST, Thiruvananthapuram under the CRTDH programme has also started working





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on demonstration of emission factors of dioxins from open burning of municipal wastes in Kerala in a project supported by Kerala State Pollution Control Board. Additionally, the team is working on a comprehensive scheme for municipal waste management in a project funded by Department of Environment and Climate, Government of Kerala.

IHBT, Palampur under the CRTDH programme has entered into agreements with two companies viz., Himalaya Natural and Herbal Products, Palampur and Roots and Flowers, Palampur for development of low calorie stevia tablets and fruit candies respectively. Additionally, CSIR-IHBT, Palampur has been identified as a Business Incubator in Himachal Pradesh by MSME DI, Solan. The institute has also signed agreement for utilization of funds under the Chief Minister's Start-up scheme of Directorate of Industries, HP and is now an 'Empanelled Incubator' to nurture new ideas/ industries as well as support entrepreneurial and managerial development of MSEs.

During 2016-17, in the second phase, the department approved setting up of following four new hubs under the scheme:-

i. Central Mechanical Engineering Research Institute (CMERI), Durgapur

The objective of the DSIR-CRTDH at CMERI is to meet the R&D requirements of MSEs regarding improvement in product design & manufacturing; sizing & shaping, forms, patterns & finishing; special purpose machines, CAM for ensuring product conformity; and automation and modernization. The centre proposes to adopt a cluster approach for improving the manufacturing competence of these enterprises.

ii. Central Electronics Engineering Research Institute (CEERI), Pilani

The MSMEs in electronics and renewable energy face several problems such as access to modern technologies, state of the art hardware and software tools to carry out innovative R&D, testing and technology up gradation, and advanced

design engineering centres. The objective of the DSIR-CRTDH at CEERI is to conduct high quality and relevant product oriented research to meet specific industry requirements; disseminate first hand research information to MSMEs/ Start-ups for product innovation; create state-of-the art facilities and support for engineering design and product evaluation; and ideate for innovative electronic products in collaboration with MSMEs.

iii. Indian Institute of Technology, Roorkee (IIT Roorkee), Roorkee Uttarakhand

The seamless integration of high speed digital communication systems and the ever increasing usage of the mobile phones demand the shielding of harmful electromagnetic radiation which has an adverse effect on the human body. The objective of the DSIR-CRTDH at IIT Roorkee is to work towards development of microwave absorbing materials and its characterization for social, stealth and electronics applications. With the creation of such facilities under CRTDH, the institute is expected to meet growing challenges of enterprises regarding testing of microwave absorbing materials that have potential for various applications in the commercial as well as defence space.

iv. Indian Institute of Technology Gandhinagar, Gandhinagar, Gujarat

Dyes and dye intermediates is one of the core chemical industries in India and mostly located in Gujarat. The waste generated from this sector is highly toxic/hazardous, difficult to treat and very large in quantum. The objective of the DSIR-CRTDH at IIT Gandhinagar is development and customization of R & D requirements of different dye industries for both waste minimization and waste treatment. With the creation of such facilities under CRTDH, the institute proposes to engage dye industries in nearby clusters and cater to their technical and R&D needs including testing requirements.



3. INFORMATION TECHNOLOGY AND e-GOVERNANCE (ITeG)

3.1 Introduction

Information Technology and e-Governance (IT-eG) group was formed during mid of the 10th Plan period in order to create an IT enabled work environment in the Department through accelerated usage of various Information Technology opportunities. Primarily aims to convert the existing procedures and processes into *citizen centered*, IT-eG division implements e-Governance in the Department progressively that needs be in conformance to the National eGovernance Action Plan. For the implementation of an IT Action Plan IT-eG Division operates on a separate IT Budget Head that came into effect in DSIR since FY 2004-05.

3.2 IT Action Plan

For IT and e-Governance activities a comprehensive IT-Action Plan in the department as formulated in line with the Government directions issued during Tenth Plan remains

- *Infrastructure Development:* Provide and maintain Personal Computers (PCs) and other essential IT- equipment and software to all the functionaries.
- *Networking:* Up gradation, extension and maintenance of the Local Area Network (LAN).
- *Office Automation:* Implement various applications software that not only maintain records of receipt, issue of letters and movement of files but also offer enhancement in accountability, responsiveness and transparency in governance.
- *IT Training:* Provide relevant training courses to the officers/ staff that enable them to work on computers by using application software developed.
- *e-Reports:* Convert the Acts, Rules, Circulars and other published materials of interest or relevance to the public, in the electronic form.
- *Website:* Enrich the contents of the DSIR website by including downloadable forms and

guidelines relevant to various citizen services that Department provides.

- *IntraDSIR:* Enrich the contents of the IntraDSIR by including downloadable forms and circulars relevant to employees of the Department.

3.3 Automation of DSIR Operations

DSIR essentially focuses on enabling Indian industry to reach state-of-the-art innovation excellence and competitiveness through research & technological interventions.

Information Technology and e-Governance (IT-eG) group within DSIR has got it developed and implemented an IT enabled work environment and Enterprise Resource Planning (ERP) application to automate all the operations of DSIR and link it to providing online services to the Industries and relevant stakeholders. Incidental benefits include reduction of costs / efforts in seeking and obtaining information and services and minimization of administrative overheads.

Training has been imparted to DSIR officers and staff to use ERP System from time to time and continuous engagement with all stakeholders.

3.4 Enterprise Integration, Program Implementation and e-Service Delivery

A user friendly online application form submission for recognition and renewal to In-House R&D Units, Scientific and Industrial Research Organizations (SIRO), Public Funded Research Institutions (PFRI) and Fiscal Incentives to Industry for Submission of Application in FORM 3CK, generation of 3CM certificate & submission of yearly returns in the Form 3CL has been developed. User friendly and time efficient backend application approval process has been developed. The workflow for each scheme has been configured as per the hierarchy in the department.

System for on-line submission of application in web-enabled form as per the prescribed application format under Patent Acquisition and Collaborative Research and Technology Development (PACE) Program has been developed for technology providers and seekers along





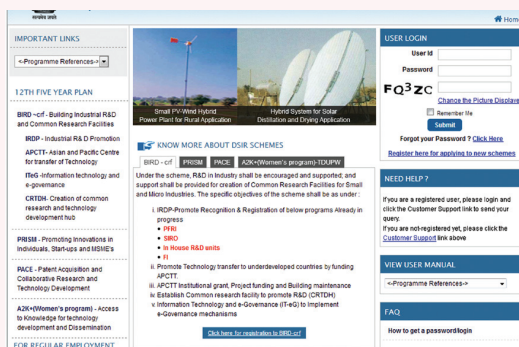
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with submission of proposals under Technology Development and Demonstration. Time efficient backend application approval process has also been developed.

System for on-line submission of application in web-enabled form as per the prescribed application format under Promoting Innovations in Individuals, Start-ups and MSMEs (PRISM) Program has been developed along with backend application approval and workflow for grant release.

System for on-line submission of application in web-enabled form as per the prescribed application format under Grant-in-Aid Support to Autonomous Bodies, Public Sector Enterprises, and Asian and Pacific Centre for Transfer of Technology (APCTT) has been developed along with backend application approval and workflow for grant release.

The application has provision of entering legacy data into the system. A platform is designed for continuous tracking of issues across users. The usage of the system can be monitored through logs, system reports and electronic traces across transactions.



3.5 Office Automation Solution, Workflow Management, Record Management, and Data Warehousing

Various modules such as Office Automation Solution, Workflow Management, Record Management, Data Warehousing and additional modules viz. HR Management and processes, Store and Purchase, Planning, Budget and Audit, e-Office, revamping of existing website in bilingual, m-governance compliance, RFID implementation in record room are developed and in use. For achieving these objectives, value added through Document Management and Business Process management solution designed, developed and tested to suit and adequately addresses the requirements within any Government environment.

3.6 DSIR Website

The DSIR Website has been made compliant to the Guidelines for Indian Government of Websites (GIGW). The website has been regularly updated.

The users when they log in to the ERP Portal, are presented with a customized adaptive landing page and electronic desktop with links related to tasks to be performed by them. The Graphical User Interface (GUI) of this re-designed website is user-friendly and rich in appearance since uses superior graphics, self-explanatory, promptly guiding the user to different sections, offer appropriate navigation assistance to user in the form of tooltips, messages, images etc. wherever required / applicable.



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him/her. An employee has the facility of switching the roles (if s/he has multiple roles) and performs the tasks which appear in the in-tray and all the completed tasks are shown in his the out-tray. The employee has online access to the Employee Self services such as LTC, Leave, Reimbursement of Medical Claims, Telephone, Newspaper, Children Education etc.

3.7 IntraDSIR (An electronic Workdesk)

IntraDSIR (An electronic Workdesk) has been created, wherein all the employees of DSIR can access through a username and password to communicate with each other as well as the electronic workdesk of all the employees of DSIR. An employee can perform activities assigned to

