II D. INTERNATIONAL TECHNOLOGY TRANSFER PROGRAMME

1. OBJECTIVES & NATURE OF ACTIVITIES

The objective of International Technology Transfer Programme (ITTP) is to promote international technology transfer and trade, with India as focus. Activities under the programme are focused in the following three areas.

Documentation of Technology Export Performance and Capabilities

Readily available and updated documentation on technology related export performance and capabilities of our industrial units, R&D organizations and other export promotion agencies helps in policy formulation, technology related business promotion, keeping track of past performances, course correction and setting targets for the future. Documents and publications serve as the basic form of visible output of any activity. Availability of documentation, additionally on CD ROMs, websites, etc. makes it more user friendly and widely accessible.

The programme supports activities towards preparation of such documentation.

Showcasing and Demonstration of Technology Export Capabilities

It is essential to widely publicize our technological capabilities for promotion of business ventures abroad and formulation of technology transfer projects involving foreign agencies. Sensitization of trade promotion bodies & industry associations towards enhanced thrust on technology and value added technology intensive products is important in view of the rapidly growing global competition. Physical participation of R&D organisations, technology based industrial units, in the public as well as private sector and other relevant agencies in trade fairs/exhibitions, in India and abroad, helps in identification of technology related business opportunities, initiation of dialogue with the potential customers and awareness creation about India's capabilities to supply technologies, turnkey projects and services. This also helps in upgradation of our exportable capabilities and technologies.

The programme supports organization of technology based trade fairs, participation of technology intensive organizations in such fairs, setting up of Technology Trade Facilitation Centres, organization of Training-cum-Awareness Programmes for Overseas Participants, etc.

Facilitation of Technology Transfer and Trade at the Firm Level

Besides broad-based support provided under the above two categories, it is essential to provide hand-holding and support at the firm level in order to facilitate technology transfer negotiations, draft/ finalize MOUs/ Agreements and materialize business deals and contracts.

The programme supports organization of area-specific buyer-seller meets in India and abroad which provide a platform for one-to-one interactions between interested business partners.

2. PROJECTS/ ACTIVITIES

Details of important projects/ activities completed or in progress during the year under report are given below:

2.1 Compendium on Technology Exports– An Illustrative Compilation of Exported and Exportable Technologies from India

The publication brought out in collaboration with Indian Institute of Foreign Trade (IIFT), New Delhi, contains information on

technologies actually exported as well as technologies having potential for exports. The publication analyzes the data on technology exports and exportable technologies and highlights export trends in terms of sectors, destinations etc. Besides containing details such as brief company profile, details of exportable technologies available with the company, preferred mode of technology transfer, preferred export destinations etc, there is a separate section giving details of technologies actually exported. The publication serves as a ready source of reference to foreign customers who are looking for technology business partners from India. The target audience for the publication includes foreign embassies/ missions in India, Indian embassies/ missions abroad, foreign business delegations visiting India, Indian delegations going abroad, exporting organisations and consultancy companies. The above publication, pertaining to the period 2000-2002 and being the sixth volume in the series was printed during the year. Out of the 377 organisations covered in the recent publication, 248 organizations have reported technology intensive exports of Rs. 156,849 million during 2001-02 and the remaining organizations have claimed to be in possession of exportable technologies/ projects. According to the findings of the publication, growth rate of high technology exports is higher, compared to medium & low technology exports and average exports of high technology exporting organizations are also higher than medium & low technology exporting organizations. The organizations engaged in high technology exports also have a high R&D intensity. Among the 248 exporting organisations covered in the publication, 94 organisations entered into foreign collaborations.

2.2 Newsletter on Technology Exports

Publication of a quarterly Newsletter on Technology Exports, initiated by IIFT during the year 1998-99 with the support of DSIR was continued during the year. The newsletter is being compiled by Indian Institute of Foreign Trade, New Delhi under the guidance of an Editorial Board, comprising of representatives from DSIR, IIFT, Exim Bank, Ministry of External Affairs and ITPO. The contents of newsletter include a lead article, details on technology export related policies, technology developments – globally as well as within the country, joint-ventures abroad, India's achievements in technology related exports, technology offers & requests etc. The newsletter has been greatly appreciated by industry, embassies/ missions, export promotion councils and other international bodies.

2.3 Technology Trade Pavilion 2004 at India International Trade Fair, New Delhi, November 14-27, 2004

The objective of setting up a Technology Trade Pavilion is to promote display and dissemination of information related to technological capabilities, high value added products and technologies of companies and organisations including R&D laboratories, academic institutions, product design institutions, consultants etc. The Technology Trade Pavilion 2004 was setup jointly by DSIR and India Trade Promotion Organisation (ITPO) for the eighth time in succession since 1997. The space in the Technology Trade Pavilion was offered free (cost shared equally by DSIR & ITPO) to R&D laboratories/ institutions and other small & medium scale enterprises engaged in technology intensive business. A space of 1000 sqr. mtrs. was reserved in Pragati Maidan, New Delhi for the Technology Trade Pavilion.

Around 50 organisations, both from public and private sectors including national R&D laboratories participated in the Technology Trade Pavilion. These included IIT Delhi (Technology Business Incubation Centre), IIT

Bombay (Industrial Design Centre), Council of Scientific and Industrial Research, Central Electronics Ltd., National Research Development Corporation, Nuclear Power Corporation, Department of Biotechnology, HEG Ltd., Mecpro Heavy Engineering Ltd., Technology Export Development Organisation, Coral Industries, Exide Industries Ltd., Semiconductor Complex Ltd., SSP Ltd., National Council for Cement & Building Materials, Dip Craft Industries, National Productivity Council, etc. The participating organisations in the Pavilion displayed their technological capabilities through models, prototypes, interactive computer based displays, charts, machinery/ product samples, etc.

Awards for Technology Innovation and Best Display were also announced. In order of merit, technology innovation awards were bagged by CSIR, IIT-Bombay and Dip Craft Industries and best display awards were bagged by Coral Industries, National Productivity Council and National Research Development Corporation.

The Technology Trade Pavilion helped in promoting one-to-one interactions and business negotiations between the participating organisations displaying their technology intensive products, technologies, machinery, services, etc. and potential customers of Indian technology and services. These interactions, including interaction between R&D organisations and industry, generated many business enquires, besides creating awareness about India's technological capabilities. It has been reported in the press that 82 trade delegations from around 50 countries visited the India International Trade Fair, many of which also visited the Technology Trade Pavilion. Orders booked at the Pavilion were valued at US$ 4.0 million for exports (including export orders worth US$ 1.5 million under negotiation) and US$ 6.5 million for domestic sales.

2.4 Technology Export Development Organisation

The main objective of the Technology Export Development Organisation (TEDO) - a Cell jointly setup by DSIR and CII in April 2000, is to promote & support technology and technology intensive exports through collaborative efforts of government, industry, research & academic institutions, financial institutions and other export promotion agencies. TEDO focuses on four areas, namely Agro/Food Processing, Light Engineering, Indian Systems of Medicine & Homeopathy and Chemicals & Pharmaceuticals. Nature of TEDO activities range from studies, training and awareness programmes to missions, fairs, seminars and technology demonstrations. Programmes undertaken by TEDO during the year include: Organisation of a TEDO Colloquium on Light Engineering in June 2004 at Mumbai; Compilation of Reports on Light Engineering & Chemical Industry and Technology Profiles; Signing of TEDO – Ukraine Agreement for Technology Promotion in June 2004 at New Delhi; Putting up of a TEDO Pavilion in Slice of India at Mongolia during Aug 30 – Sep 03, 2004; Organisation of an International Training Programme on IT Applications in Manufacturing during Sept 13-22, 2004 at Bangalore; Putting up of a TEDO Pavilion in Technology Summit &Technology Platform during 19-20 October, 2004 at New Delhi; Putting up of a TEDO Pavilion at IITF 2004 during Nov 14-27, 2004 at New Delhi; and Putting up of a DSIR – TEDO Stall in CII SME Global Summit during Nov 23-24, 2004 at New Delhi. TEDO Phase I was concluded during the year.

2.5 A Strategic Approach to Strengthening the International Competitiveness of Knowledge Based Industries

The objectives of the research study carried out by Research and Information Systems for the Non Aligned and Other Developing Countries were to examine: India's export structure in terms of its knowledge intensity compared to some of the South East Asian countries; emerging patterns of FDI inflows and the participation of MNCs in knowledge based industries; outward investments by Indian enterprises in knowledge based industries; and export oriented manufacture by MNCs and draw up strategies for strengthening the international competitiveness of knowledge based industries in the country. Subsequent to bringing out three Discussion Papers on quantitative and analytical analysis of research data/ information, reports on field survey of five industry sectors viz. (i) Automobiles, (ii) IT Hardware, (iii) Non-Electrical Machinery, (iv) Pharmaceuticals and (v) Chemicals including Specialty Chemicals were brought out during the year. A workshop was held on August 13, 2004 to discuss the findings of the research study and field survey and a final report was brought out.

2.6 Centre for International Trade in Technology (CITT)

The main objective of the Centre is to conduct research on the emerging issues relating to technology trade agreements of WTO and other international arrangements such as, TRIPs, TBT, GATS, etc. and to identify specific technology related export opportunities for India and to develop training expertise in the area of technology export management. An agreement on the Centre between DSIR and IIFT was signed on June 4, 2001. Under the Agreement, DSIR agreed to provide grant-in-aid to the Centre towards salary of faculty/staff and programmes/activities for a maximum period of three years. The Centre conducted two studies during the year, viz. "Impact of TBT on Exports - Sector-wise" and "Exportable R&D Services in CSIR System". Workshops on "Technology Financing of SMEs for Global Competitiveness" and "Impact of FDI on SMEs" were also organized during the year. CITT Phase I was concluded during the year.

2.7 International Programme on 'Design as Strategy for Development & Quality of Living'

The above programme was organized by National Institute of Design (NID), Ahmedabad during January 17-21, 2005 with the support of DSIR. The objective was to project India as the outsourcing destination for industrial and product design services. The faculty for the programme was drawn from National Institute of Design (NID) and practicing design entrepreneurs, experts and consultants. The programme was attended by around 25 participants, who were drawn from South Africa, Iran, Tanzania, Sri Lanka, Nepal, Bangladesh, Germany and Slovak Republic. The participants were given a glimpse of industrial design capabilities and achievements of our design institutions, companies & consultants. The programme unfolded opportunities for design collaborations between Indian agencies and foreign participants.

2.8 National Awareness-cum-Training Programme on Competitive Advantage through Design

The above programme was organized by National Institute of Design (NID), Ahmedabad with the support of DSIR. The objective was to

demonstrate the potential of industrial design in achieving competitive advantage. The programme was aimed at encouraging R&D organisations & companies to induct design inputs right from planning, conceptualization and R&D stage of their operations. The programme included lecture sessions by expert faculty drawn from NID & professional design organisations and field visits to industrial units which have successfully demonstrated the potential of industrial and product design in fetching rich dividends. The programme was attended by around 25 participants drawn from R&D laboratories and technology intensive companies. The programme was well received. A series of such programmes are planned for the future.

2.9 Technology Trade Facilitation Centre at National Research Development Corporation (NRDC)

A Technology Trade Facilitation Centre was setup at NRDC in July 2003 with the support of DSIR. Technology Trade Facilitation Centre is a proactive approach to catalyze technology intensive and high value added exports from Indian industry/R&D establishments and is expected to provide an exposure to small & medium enterprises (willing to export their high tech products and processes) to look at international customers and foreign markets requirements. The following criteria is used for selection of companies in Technology Trade Facilitation Centre.

- Any company that is manufacturing a hi-tech product/ equipment/ machinery which is being exported or has export potential.
- Any company that has commercialized a technology and is willing to license/ transfer it, within the country or abroad.
- Any organisation which can offer a complete technology package or a technology project on a turnkey basis.

During the year, 10 new companies were selected for participation in the Technology Trade Facilitation Centre. These companies were: Sahajanand Laser Technology, Ahmedabad; International Tractors Ltd. Hoshiarpur; Coral Telecom Ltd., Noida; Jayem Manufacturing Company, Noida; Atomic Vacuum Company, Mumbai; Kamcon Biotechnology Systems Pvt. Ltd., Pune; Yamuna Fabricators, Yamunanagar; National Supertech Composites, Bangalore; Embedded Tech System Promotion Organization (ETPO), New Delhi, and Bittoo Enterprises, Delhi.

The Centre was helpful to the participating organisations in exploring avenues for marketing tie-ups, joint ventures and technology and R&D related collaborative projects.

2.10 Profiles of Exportable Technologies from SMEs in the Delhi Region

National Foundation of Indian Engineers (NAFEN), New Delhi carried out a project on Compilation of Profiles of Exportable Technologies from SMEs in and around Delhi including Faridabad, Gurgaon, Noida and Ghaziabad with the support of DSIR. A report containing 22 profiles of exportable technologies/projects from SMEs in the targeted region was brought out. The Profiles contain information such as brief technology description, profile of the company including details such as installed capacity, production, turnover, exports, manpower, usage of raw material, etc. and a profile of project based on exportable technology, including details such as estimated project cost, land, machinery, manpower and raw material requirements, etc. The report has been hosted on the websites of DSIR and NAFEN.

2.11 Awareness Programme on Technology Trends and Developments in Packaging Machinery & Systems to Promote Technology Trade

The above programme was organized by Institute of Packaging Machinery Manufacturers of India (IPMMI) at Mumbai during October 27-November 2, 2004 with the support of DSIR. The main objectives of this programme were to discuss status of packaging industry, in particular packaging machinery sector and needs of packaging machinery & systems in India & other participating countries; ways & means of sourcing packaging machinery & systems by India and other participating countries; whether the packaging machinery and other packaging material requirements in India and other participating countries can be fulfilled through trade amongst each other and whether it would be cost effective to do so; and possibilities of undertaking co-operative projects for development of modern packaging machinery and systems.

The programme was attended by eleven foreign participants, seven from Ghana, three from Thailand and one from Bhutan. The participants represented packaging institutions, technology transfer agencies and packaging industry in their respective countries. Five participants from Indian packaging industry also attended the programme. The programme comprised of: (i) technical sessions conducted by senior industry experts representing packaging machinery manufacturers, converters of packaging material into packaging forms and users of packaging output, (ii) country papers and, (iii) field visits to select packaging industries. Faculty was drawn from leading companies such as Hindustan Lever, Glenmark Pharmaceuticals, Parle Tools, Nichrome India, Heidelberg India, Reliance Industries.

2.12 Study on Exploring Commercialization of Patents taken abroad by Indians - WITT

The study was conducted by Waterfalls Institute of Technology Transfer (WITT), New Delhi with the support of DSIR. It aimed at collecting and analyzing data relating to patents filed abroad by Indians, with a view to examine their potential for early commercialization and suggest measures for more effective patent commercialization. The target population for the study was around 200 R&D organisations, institutions, in-house R&D units of export oriented industries and individuals. A report was prepared on the study which provides information on foreign patents assigned to Indian companies and R&D laboratories/ institutions during the last 20 years.