



## **Supporting MSMEs by boosting indigenous research and technology transfer**

India should step up investment in scientific research and development (R&D) for indigenising manufacturing design, bringing out high productivity technology and reducing our dependence on foreign companies for patents and designs. Indian companies pay heavy royalty and technical fees to foreign patent holders, especially in sectors such as automobiles, pharmaceuticals, agro chemicals, consumer goods, including electronics and engineering products, besides some service sectors (based on an analysis by IIM Bangalore). Majority of these patent fees are paid by Indian subsidiary of foreign companies such as Hyundai Motors, Maruti, Schaeffler India and Wabco India to their foreign parent companies. Indian MSMEs also pay high royalty fees for using patents and designs developed by foreign entities.

In order to produce indigenous technologies, India needs to increase expenditure on local R&D. Currently, India contributes around 2.9% in the world gross expenditure on R&D (according to data from Department of Science & Technology, GoI). India's R&D expenditure is largely driven by central government, with a share of 45.4% and it is followed by private sector, with a contribution of 36.8%. The share of state governments, higher education institutes and public sector organisations in total R&D expenditure stands at 6.4%, 6.8% and 4.6% respectively.

### **Global Comparison**

Compared to most developed and some developing countries, the share of government in total R&D expenditure is higher in India. Government (include state governments) contributes 52% to R&D spending in India, compared to 7% in Canada, 15% in China, 16% in Mexico, 11% in South Korea, 30% in Russia, 10% in USA, 13% each in France, Australia and Germany. The contribution of business enterprises to R&D expenditure in India is around 40%, which is less than the comparable figure in most developed and developing countries (more than 50%). In countries such as Japan, South Korea, China and USA, the contribution of business enterprises to the country's R&D spending is more than 70%.

Under the central government, 93% of the R&D expenditure is incurred by 12 prominent scientific agencies, some of which are DRDO (defence), Department of Space, ICAR (agriculture), Council of Scientific and Industrial Research, Indian Council for Medical Research etc.

### **Technology transfer opportunities for MSMEs**

Micro, small and medium enterprises (MSMEs), on account of their weak balance sheet, cannot invest on R&D as it involves huge expenditure on hiring skilled manpower and equipments. In this circumstance, they can benefit from the R&D initiatives of these government agencies by purchasing the technologies offered by them on commercial terms.

State and central governments, in collaboration with industry bodies, should create awareness among MSMEs about the technology transfer opportunities available with India's premier research institutions such as IITs, Indian Institute of Science, DRDO, BARC etc. Researchers from Banaras Hindu University (BHU) invented a new Nanomedicine for treatment of breast cancer. Ministry of Electronics & IT, GoI



has identified 17 nano electronic projects for technology transfer to local industry under the Atma Nirbhar Bharat. SCTIMST, which is a medical science and technology institute under Department of Science & Technology, transfers technology for production of medical equipments such as blood flowmeters, cardiovascular devices, neuro-prosthetic devices and in vitro diagnostics, to name a few. Since the outbreak of the pandemic, this institute has supported industry by transferring technologies for diagnostic kits, disinfection bins, super absorbent gel and other medical products. ARCI-Hyderabad, which is another autonomous research body of the Department of Science and Technology, has transferred technology for cost effective Lithium Titanate (LTO) manufacturing in Li-ion battery. Similarly, the CSIR-National Chemical Laboratory, Pune has developed flexible electronics technology to handhold the Indian chemical industry foray into the niche area of electronic chemicals.

We should also create awareness about the i-STED (Innovation, Science and Technology led Entrepreneurship Development) program of Government of India that supports micro enterprises through transfer of technology for various products.

## Notifications

### PIB

Launch of online filing of applications for AEO T2 and AEO T3

<https://pib.gov.in/PressReleaseDetail.aspx?PRID=1733432>

Webinar on women in renewable energy and sustainability

<https://pib.gov.in/PressReleaseDetail.aspx?PRID=1733498>

Minister invites firms from Indo-Pacific region to utilize PLI Schemes worth USD 26 billion in 13 sectors

<https://pib.gov.in/PressReleaseDetail.aspx?PRID=1733383>

India begins export of Geographical Indications certified Bhalia wheat from Gujarat

<https://pib.gov.in/PressReleaseDetail.aspx?PRID=1733412>

First aircraft purchase order by a GIFT city (Gujarat International Finance Tec) based leasing company

<https://pib.gov.in/PressReleaseDetail.aspx?PRID=1733463>

Minister discusses bilateral ties in agriculture with Member of the European Commission

<https://pib.gov.in/PressReleaseDetail.aspx?PRID=1733482>

### RBI

New Definition of Micro, Small and Medium Enterprises (MSMEs)

<https://rbi.org.in/Scripts/NotificationUser.aspx?Id=12126&Mode=0>