Summary of the Report

1. Highlights

1.1 Chapter-1 - Introduction

- With a view to promote and support to industrial R&D, Ministry of Science and Technology is operating schemes for recognition of in-house R&D units, research, and academic institutions.
- To strengthen the Indian R&D establishments and develop innovative original products & technologies of global standard for accelerating the growth and sustainable development, the government has announced fiscal incentives for industrial R&D.
- In the past few years some of the R&D incentives are either diluted or withdrawn by the Finance Ministry
- The Ministry of Science and Technology felt there is a need to conduct a study to prepare and submit a report pertaining to the incentives and how industrial R&D benefited from the fiscal incentives.

1.2 Chapter-2 – Overview of R&D in India

- Government of India created a chain of National Laboratories under the aegis of several central organisations, such as, CSIR, ICMR, ICAR, DST, DBT, DRDO, DAE, DoS, MeitY, MoEF, etc. as well as, many specialised R&D centres of excellence, universities, IITs, IISERS and other institutions, to continuously provide expertise, technically trained manpower and technological support to the industry.
- India's GERD as percentage of GDP which was hovering between 0.7% and 0.8% in 1990s has gone up to 0.87% in 2009-10 but again fell and remained at 0.7% during the years 2017-18 and 2018-19 respectively

- The industrial R&D expenditure for India in the year 2002-03 was 25.3% while it steadily increased to 41.4% in the year 2019-20 of GERD indicating a growth in industrial R&D expenditure. The percentage share of private sector industries 36.8%; public sector industries 4.6%.

1.3 Chapter-3 – Promotion and Support to Industrial R&D

- Industrial Research and Development Programme of DSIR endeavours the goal of promoting industrial research & development in the country through recognition & registration of in-house R&D units and research institutions established by the corporate companies.
- Government of India has announced various support measures from time to time under fiscal incentives - income tax deductions under direct tax laws and customs & central excise duty exemptions under indirect tax laws and direct funding mechanism for R&D projects for encouraging industry to take up high risk R&D projects.
- After the 101st Constitutional Amendment introducing Goods and Services Tax (GST) in the country, the customs and central excise duties have been replaced by CGST, SGST and IGST.
- The companies and institutions having DSIR recognition to their R&D units only are eligible to avail the fiscal incentives.
- Major fiscal incentives are -weighted tax deduction on R&D expenditure in approved in-house R&D facilities, under section 35(2AB) of the Income Tax Act; customs duty and central excise duty exemptions to research institutions/ organisations, for capital equipment & spares and consumables needed for R&D purposes.

1.4 Chapter-4 – Incentives under Direct Tax Laws

- During the period 1998-2019 more than 1500 companies were approved by DSIR under section 35(2AB) of IT Act 1961.
- Accelerated Depreciation Allowance as per Rule 5(2) of IT Rules 1962, for additional investments in plant and equipment for manufacture of products and technologies developed indigenously.
- During the period 1990-2019 more than 200 certificates were issued by DSIR for certifying total capital investment of about Rs.410800 lakhs.
- Approval of Commercial R&D Companies under section 80-IB(8A) of IT Act 1961 for a Ten-year tax holiday from income tax to companies whose main objective is scientific and industrial research and development.
- During the period between 2000 and 2007, DSIR has approved 45 companies under section 80-IB(8A) of IT Act 1961.

1.5 Chapter-5 – Incentives based on Indirect Taxes

- Waiver of Customs and Central Excise duties (now replaced by GST) on imports and domestic purchases for use in research and development work to non-commercial R&D institutions from September 1996 and March 1997 respectively.
- All SIROs and PFRIs recognised/ registered by DSIR eligible for the above.
- Waiver of customs and central excise duties (now replaced by GST) for all R&D institutions including R&D units established by corporate companies and having registration/ recognition from DSIR, from 2007 onwards.
- Central excise duty waiver for 3 years on goods designed and developed by a wholly-owned Indian company and patented in any two countries out of: India, USA, Japan and any one country of the European Union from April 2000.

- So far 12 certificates of technology development have been issued by DSIR, as per DSIR website.

1.6 Chapter -6 – Non-Commercial Research Organisations

- DSIR started a scheme for recognition of research & academic institutions, universities and colleges as SIRO in 1988. They include private and publicly funded organisations.
- SIROs are eligible for duty exemptions on imports and domestic purchases for use in research and development work under indirect tax laws and also some tax deductions/ exemptions under direct tax laws.
- Public funded research institutions registered with DSIR are also eligible for duty exemptions on imports and domestic purchases for use in research and development work under indirect tax laws.
- There are around 660 SIROs and 580 PFRIs recognised/ registered by DSIR.
- SIROs and PFRIs have developed many new technologies and products, filed patents and have also transferred and licenced them to industries for commercialisation.

1.7 Chapter-7 – Global Scenarios

- Globally, governments prefer to provide support to industrial R&D ecosystem in the form of fiscal incentives and funding.
- Generally, follow two ways of funding the innovation activities, indirect and direct.
- Indirect or fiscal incentives are given through tax deductions, tax credits, accelerated depreciation and tax holidays related to R&D.

- Direct Funding, given through loans, grants and subsidies. Countries such as Sweden, Finland and Germany prefer direct funding.
- Tax deductions are of two types- normal and enhanced or weighted deduction (also referred as super deduction in some countries)
- Countries such as Austria, Canada, France, Italy, Japan, UK and USA follow tax credits of rates varying from 100 to 130%.
- In UK Tax deductions are allowed for SMEs and tax credits for large firms with provision to carry forward indefinitely.
- USA has a combination of direct funding, subsidies and incentives (tax credits).
- Countries having normal deduction –
- Countries having super or weighted deduction – Australia (125%), Brazil (160%-200% for all and 20% extra for IT related developments), China (50% proposed to be increased to 75%), South Africa (140% 1st year and 120% for following three years,
- Singapore has the highest super deduction (250%) and R&D grant up to 50% of qualifying R&D expenditure.
- South Korea follows an innovative model by fixing threshold limits.

1.8 Chapter-8 – Sectoral Data Presentation

- Top 100 high R&D spending companies having DSIR recognised R&D units comprises of all sectors of industry viz. ME, EEE, AU, CH, BT, Agro, Drugs & pharmaceutical, Healthcare and FMCG and processing sectors. Not all sectors share the same percentage representation in the list.
- The highest spending company in top 100, spent Rs.296500 lakhs and the 50th company spent Rs.13526 lakhs and 100th spent Rs.7164 lakhs. Indicates a vast difference between the highest and lowest.

- Two companies in automotive industries (AU) sector are in the top 10 spenders.
- Four companies in drugs & pharmaceutical (D&P) sector are in the top 10 spenders.
- Three companies in electrical & electronics engineering (EEE) sector are in the top 10 spenders.
- One company in chemical engineering (CH) sector is in the top 10 spenders.
- There are 74 companies spending Rs.10000 lakhs or more on research and development activities.
- The highest spending company in ME sector spent Rs.21670 lakhs (missing the top ten list) and the 50th company spent Rs.690 lakhs and 60th spent Rs.578 lakhs.
- The highest spending company in AU sector spent Rs.296500 lakhs and the 50th company spent Rs.1741 lakhs.
- The highest spending company in EEE sector spent Rs.166000 lakhs and the 50th company spent Rs.1375 lakhs.
- The highest spending company in CH sector spent Rs.237700 lakhs and the 50th company spent Rs.840 lakhs.
- The highest spending company in D&P sector spent Rs.198470 lakhs and the 50th company spent Rs.6655 lakhs.
- The highest spending company in biotechnology (BT) sector spent Rs.12500 lakhs and the 50th company spent Rs.50 lakhs.
- The highest spending company in AU sector spent Rs.75471 lakhs and the 40th company spent Rs.35 lakhs.
- The highest spending company in Agro sector spent Rs.12427 lakhs and the 50th company spent Rs.450 lakhs.

- The highest spending company in FMCG sector spent Rs.17271 lakhs and the 50th company spent Rs.50 lakhs.
- The highest spending company in processing sector spent Rs.32000 lakhs and the 50th company spent Rs.250 lakhs.
- A total of 7574 new products & technologies were developed during 2001-2018 by 180 companies in the primary data. If we extrapolate this ten times, it represents majority of companies with DSIR recognised R&D units.
- CH and D&P sectors takes the credit of having highest share of new products and technologies developed.

1.9 Chapter-9 – Study of Impact

- Number of companies having R&D units recognized by DSIR increased from 1121 in the year 2001 to over 2326 by the year 2020.
- Number of R&D units, taking into consideration the multiple R&D units established by many companies, increased from 1280 in 2001 to 2986 in 2020.
- While the new companies seeking DSIR recognition to their R&D units increased, companies already having DSIR recognition to R&D units established multiple R&D units with an eye on the fiscal incentives and also to develop more new products, technologies and processes. This has been a win-win situation for both industry and the government.
- Data shows increasing trends in average R&D expenditure by companies from Rs.925 lakhs in 2001 to Rs.4951 lakhs in 2018.
- Data shows year on year increase in the R&D expenditure reported by companies from 11.4% in 2002 to 43% in 2017 in percentage terms.
- Data shows year on year increase in average ATO of companies from 21% in 2002 to18% in 2018 in percentage terms.

- The year-on-year R&D expenditure as percentage of ATO grew from 0.5% in 2002 to 1.44% in 2018.
- R&D expenditure in CH sector grew by 6.8%, Processing grew by 5.8%, Agro increased by 3.9%, EEE by 3.6% and ME by 3.5%. Chemical sector showed highest percentage during the period.
- R&D expenditure as percentage of ATO was highest for Chemical sector which includes pharmaceutical industries also.
- Approvals u/s 35(2AB) is the highest among the incentives as more number companies preferred weighted deduction compared to other provisions of IT Act. Deduction u/s 35(2AB) also referred to as super deduction.
- The provisions availed by companies under 35(1)(i) & (1)(iv) were a distant second highest and other provision as per Rule 5(2) was used sparingly.
- In the R&D expenditure approved u/s 35(2AB), Chemicals sector constitutes about 38.7% followed by Mechanical 26.3, EEE 17.2%,
- Contribution from each sector to the total deductions approved, shows share of chemicals is highest, between 45-60% followed by ME, contribution from EEE and BT showed increase after 2010.
- In the chemicals sector, about 69% of the number of companies were engaged in drugs & pharmaceuticals industry, about 16% in chemical (non-pharma) industry; about 7% in agrochemicals, 4% in BT and 4% in lubes & greases for automotive industry.
- According to DSIR Annual Reports, the total personnel employed in the industrial R&D units recognized by DSIR have increased steadily.

- The R&D personnel employed by the recognized in-house units and the figure was over 30,000 in 1981-82, which was estimated as 60,000 in 2005-06; 75000 in 2010-11 while the same was over 1,80,000 in 2018-19.
- If we extrapolate the primary data ten times, it would theoretically represent the data pertaining to DSIR recognised units by numbers and the numbers more or less match with the DSIR projections or estimates in the annual reports.
- As per the Annual Report 2018-19 of the office of the Controller General of Patents, Designs, Trademarks and Geographical Indications, the number of applications filed by Indian applicants is 17005. This shows a healthy growth compared to the previous years.
- As per the above annual reports, the patents filed by Indians was 6161in 2008; 8313 in 2010-11; 13066 in 2015 while the same was 15550 in 2017.
- CH sector constitutes the highest percentage in the total number of products developed, followed by ME and Agro sectors. CH includes pharmaceutical industry also.
- In the year 2013, the Pharma companies (in the healthcare subsector) which fall under CH and Agro sectors have developed the highest number of products.
- AU falling under ME sector has the second highest share in number of products & technologies.
- Data for 22 Public sector companies studied with respect to increase in ATO, R&D expenditure and percentage of R&D expenditure in ATO, observed that the increase in all three parameters has been steady.
- The percentage of R&D expenditure in ATO for companies in Defence and manufacturing sectors increased after 2004-05 impressively.

2. Recommendations

- The R&D tax incentives may be reintroduced with suitable changes in the implementation mechanism.
- Government should continue to provide fiscal incentives to the in-house R&D units recognized by DSIR to help the industry spearhead on the growth trajectory of R&D investment, economic growth and building technological capabilities to make a significant impact on the development of Indian economy.
- Input based incentives like weighted tax deduction under section 35(2AB) should be continued for all sectors, as companies still need such handholding.
- To address the issue of revenue foregone vs. benefits derived due to the incentives, it is necessary to make some amendments suggested in the following paragraphs.

Suggestion-1

- It is suggested that in case of large scale (LS) companies, government may fix a threshold limit of Rs.500 crore, including capital and revenue expenditure excluding those on land and buildings, for the weighted tax deduction @200% on the research and development expenditure u/s 35(2AB). Any expenditure on R&D over and above the threshold limit may be allowed u/s 35(1)(i) and (1)(iv) at 100% deduction. The policy may be reviewed after a period of 10 years.
- For Medium scale (MS) companies, government may fix a threshold limit of Rs.300 crore for weighted tax deduction @200% on research and development expenditure u/s 35(2AB). This should include capital and revenue expenditure excluding those on land and building. Any expenditure over the threshold limit may be allowed u/s 35(1)(i) and (1)(iv) as 100% deduction. The policy may be reviewed after a period of 15 or 20 years.

- R&D expenditure incurred by Small scale companies (SSI) should be allowed 200% weighted deduction without any limit. The R&D expenditure should include capital and revenue expenditure excluding those on land and building.

  Rationale: (a) Larger companies have already taken the benefit of weighted deduction in the last 20 years and have built world-class R&D infrastructure. Their future acquisitions for R&D gets subsidised by introducing the threshold limits. (b) If we take the average spending of companies incurring more than Rs.100 crores on R&D, it works out to the order of Rs.474 crores per company (based on DSIR data). (c) The average spending of top 100 companies with highest R&D spending works out to the order of Rs.370 crores per company (based on DSIR data). (d) This proposal is analogical to the limit of Rs.1.50 lakhs in savings by individuals under section 80-C of the IT Act, 1961.

Suggestion-2

- It is suggested that government may revive (a) income tax rebate @150% on donations for scientific research made to non-commercial organisations approved under section 35(1)(ii) & 35(1)(iii) of I.T. Act 1961 and (b) Weighted Tax deduction @200% for Sponsored Research Programmes in approved national laboratories, universities and IITs under Section 35(2AA) of I.T. Act 1961.

  Rationale: The above two provisions help bring funds from private sector into R&D to be utilised by the non-commercial institutions. They are not major incentives and the loss of revenue due to these provisions is almost negligible. It is therefore suggested that they may be revived in the interest of R&D in the non-commercial research

institutions. As they help leveraging private sector funds into R&D, dependence on government would also reduce.

Suggestion-3

- It is suggested that Tax Holiday for ten consecutive assessment years to companies engaged in R&D only may be allowed by reviving the section 80-IB(8A) of I.T. Act, 1961 which got lapsed on 31.03.2007 due to sunset clause.
- It is also suggested that all start-up companies may be covered under this section as there will be no question of any extension for individual companies at the end of the ten-year period.

Rationale: The above provision which was in force from 2000 to 2007 gave birth to a new class of companies which have R&D as the main objective. These companies are typically known as commercial R&D companies as they carry out R&D and R&D services only. Their business model is typically use knowledge for development of any product(s) or technology platform for other manufacturing companies. As they have no intention to manufacture those products, they survive on low investments with knowledge and IPs as their mainstay. These companies are very often start-up companies promoted by young engineers & scientists, designers & developers who are 1st generation entrepreneurs.

Suggestion-4

- The Accelerated depreciation allowance on investments on new plant & machinery based on indigenous technology as per Rule 5(2) of I.T. Rules may be continued in future also.

Rationale: The above provision has been in force from 1980s and has helped the companies to commercialise the results of R&D carried out in-house and indigenous technology developed by R&D institutions. Though there have not been many instances of accelerated depreciation in the past, continuation of the provision sends the right signal to the industry for making the nation 'Atma Nirbhar'.

Suggestion-5

- Customs and central excise duty /GST waiver for R&D units, recognised & registered by DSIR as per notification No.24/2007-customs dated 1 March 2007 and notification No. 16/2007-central excise dated 1 March 2007.
- Customs and central excise duty /GST waiver for SIROs and PFRIs recognised & registered by DSIR as per notification No.51/96-customs dated 23 July 1996 and notification No. 10/97-central excise dated 1 March 1997.

Rationale: The above two provisions under the indirect tax laws have helped many DSIR recognised R&D units established by corporates and SIROs and PFRIs build up very impressive R&D infrastructure in the country. They are not major incentives and the loss of revenue due to these provisions is almost negligible. It is therefore suggested that they may be continued in the future also for R&D in the industry and research institutions.

Suggestion-6

- The provision for central excise duty waiver for 3 years under notification No.13/99-central excise dated 28th February 1999, on specified goods designed & developed and patented in any two countries from amongst India, USA, Japan and in any one country of the European Union has not been notified after the introduction of GST in the country.

Rationale: This output based incentive has been availed by very few Indian owned companies due to the tough conditions on obtaining foreign patents that too in 2-3 countries. Indian industry has not attached much importance to this incentive because of the uncertainty in obtaining patents abroad matching those mentioned in the notification and the net gain in central excise duty which are not commensurate.

Suggestion-7

- This point is about policy, procedure and mechanism of implementation. DSIR is a small department under the Ministry of Science and Technology with officers having domain knowledge in sciences and engineering. Therefore, dealing with the companies' finances and their tax matters is wastage of valuable government resources. Implementation of the incentives in the amended form should be operating in auto-mode with minimum interaction between DSIR and the companies. Role of DSIR may be limited to-
    - Giving recognition to industrial R&D units and issuance of approval under section 35(2AB) in Form-3CM. While R&D recognition is a promotional activity of DSIR, for approval in Form-3CM DSIR should ensure that the companies are eligible for the weighted deduction and comply with all the

requirements of the Guidelines issued by the Government for claiming the weighted deduction.

- The companies will follow the existing procedure of claiming weighted tax deduction in their IT Returns and file the Form-3CL and its supporting documents along with the returns. Issuing Form-3CL by DSIR can be done away with altogether. If at any stage the companies are found to be not complying with the Agreement or undertaking, the penalties under the law should be very stringent. For example (a) No weighted deduction will be allowed for next 3 years; (b) All the R&D claims of the company will be automatically considered under section 35(1(i) and 35(1)(iv). (c) If a company commits the same repeatedly, the approval given in Form-3CM will be withdrawn and cancelled and share the database of Hot-Listed companies with DSIR for information.

- During periodic review of the R&D activities at the time of renewal of recognition and approval u/s 35(2AB), DSIR will take note of the clams allowed and verify the outcomes and revalidate the Form-3CM keeping the Hot-list in view.

- Disputes not resolved in the normal course may be referred to the Prescribed Authority under section 35(3) for final disposal. Secretary, DSIR is the Prescribed Authority under the rules, at present. This should be done only in case of exceptional cases and not as a rule.

Rationale

- *Rationale-(1): As stated above, DSIR being a scientific department, has no statutory powers but the department can supplement the efforts of Finance*

Ministry by impressing upon the companies to follow the guidelines and also the penalties if not complied with, spread the awareness of the Guidelines and enter into the Agreement in Form-3CM as is being done at present.

- *Rationale-(2): As per the present policy, government has put in place an automated mechanism of faceless interaction between the income tax department and the tax payers. The same may be extended to section 35(2AB) and 80-IB(8A), ensuring that human interactions are minimum or none.*

- *Rationale-(3): At present non-commercial research organisations are granted recognition as SIRO by DSIR. But notification u/s 35(1)(ii)/(iii) is approved by the Finance Ministry. This system is working very well since the year 2000. Similarly, role of DSIR may be limited to recognition and approval in Form-3CM*

Suggestion-8

- Government may also introduce/ fine-tune the fiscal incentives taking clue from innovative policies followed by governments of other countries. Incentives like –
  - In Australia, 125% tax deduction for companies, 175% deduction on incremental spending after 3 years claim history is established. To be eligible for the premium rate on the additional investments, companies must increase their R&D expenditure during the year above a base level determined by their average claim history over the previous three years.
  - Singapore introduced the Research Incentive Scheme for Companies (RISC) and R&D tax deductions include super deductions capped at 250% of qualifying R&D expenses incurred for R&D work undertaken.

Rationale: R&D intensive sectors like pharmaceuticals, biotechnology and others may be allowed innovative incentives such as enhanced rates, carry forward for future years, assistance in foreign patenting, conducting accelerated clinical trials within and outside India, exemption from DPCO, would help these companies emerge as global hub for healthcare sector. The nation's experience in handling Covid-19 pandemic in the last 1 year indicates a definite need for special or preferential treatment to the healthcare sector.

Suggestion-9

- National R&D institutions like CSIR, ICAR, ICMR and others which have already taken up training as a mandate, should focus more on industrial R&D so as to become a feeder for the industry and they should take the place of finishing schools for producing designers and technologists with industry orientation. The training curriculum may also have a stint in Technology Management in national & international institutions similar to IIMs, IITs and B-schools. This should be different from universities and colleges which come under UGC system producing scientists and professors for the scientific R&D in the national R&D institutions. This completes the supply chain.

Suggestion-10

- It is desirable that government may introduce incentives like those under section 35(1)(ii)/(iii) and (2AA) which enable industry-institution partnerships between Industry and academia/institutions should be encouraged with liberal incentives to work together for India's technological development.

Suggestion-11

- DSIR should revive its online submission of applications for all recognitions and approvals with immediate effect. Many beneficiaries have expressed satisfaction in its implementation in the past and feel that revival of the system would bring transparency and efficiency.