



PERFORMANCE OF THE RESEARCH AND DEVELOPMENT TAX INCENTIVE PROGRAMME

Report to Parliament 2013/14



**science
& technology**

Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA

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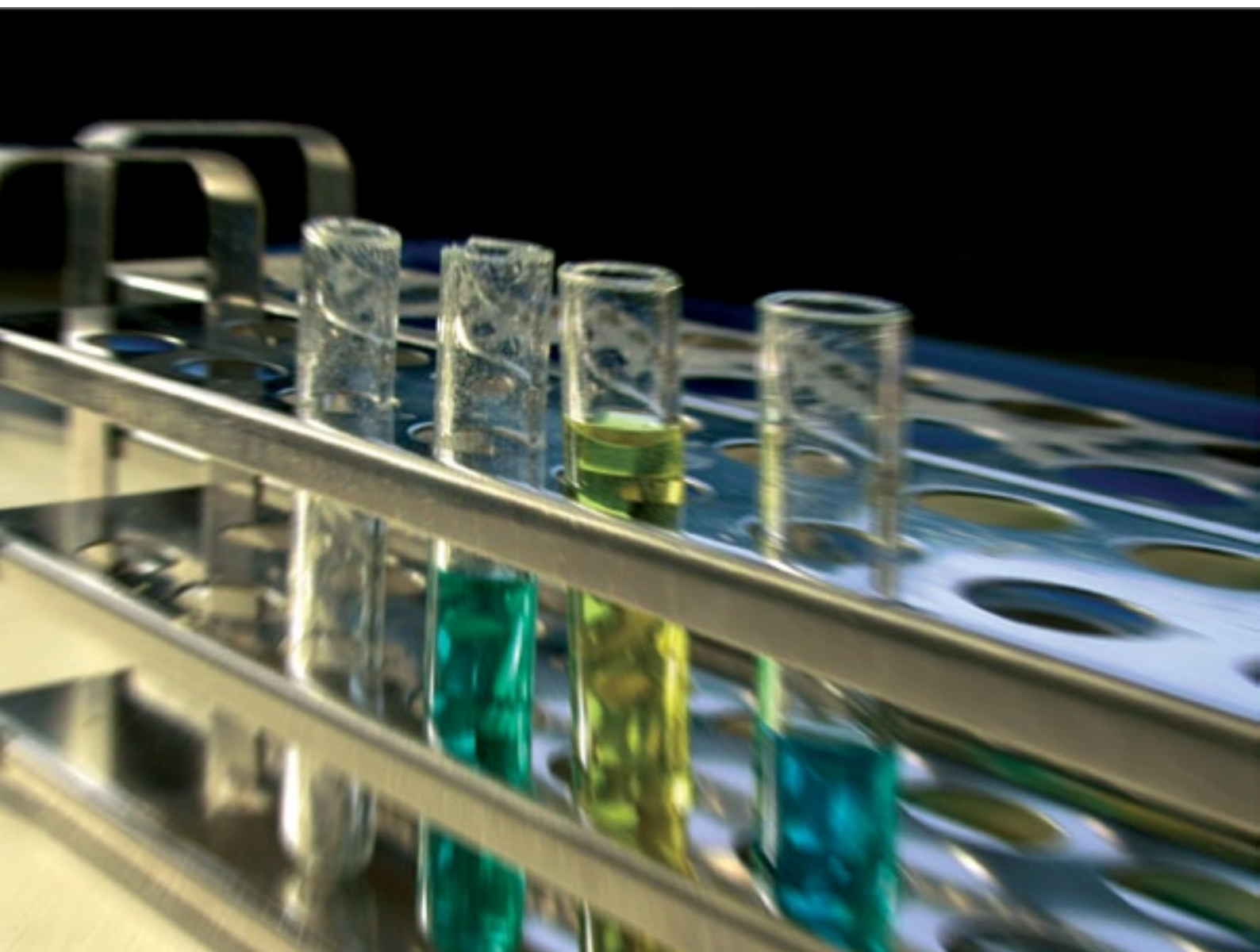


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PREFACE

The R&D Tax Incentive Programme is one of the instruments being implemented to help increase the level of research and development (R&D), by encouraging the private sector to undertake R&D in South Africa. This is vital for economic growth and employment.

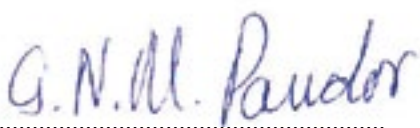
The R&D Tax Incentive is offered in terms of section 11D of the Income Tax Act, and allows companies to deduct 150% of their operational expenditure on qualifying scientific and technological R&D. This is among the most generous R&D incentive offerings in the world.

This report tracks the activities of the Incentive in the 2013/14 reporting period using identified performance indicators, i.e. uptake; the profile of participating companies; the tax revenue foregone by government; amounts of R&D expenditure incurred and budgeted; and estimated results achieved by companies from the supported R&D. This information is crucial for understanding whether the Incentive is helping to increase private sector investment in R&D and technological innovation.

The 2013/14 reporting period was largely devoted to implementing the preapproval procedure, which came into effect on 1 October 2012. With the high number of applications received towards the end of the 2012/13 reporting period, most of the time was spent evaluating the previous year's applications, while also overseeing the phasing out of the retrospective submission system. Important lessons were learnt in this process, leading to minor refinements of section 11D that came into effect on 1 January 2014 to address specific administrative limitations.

The 109 companies that submitted applications for the first time in the reporting period have increased the total number of companies participating in the Incentive to 810 between November 2006 and February 2014. Since 2008, the Incentive has been drawing new participants, as well as retaining existing ones.

Proper evaluation still has to be undertaken to quantify the impact of the Incentive, for instance, in terms of attracting new R&D-performing companies in the country, increasing investment in R&D, and the nature of results attained from the R&D supported through the Incentive. Such an exercise could provide a useful overview of the impact of the Incentive.



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MRS GNM PANDOR, MP
MINISTER: SCIENCE AND TECHNOLOGY

EXECUTIVE SUMMARY

This report presents information on the performance on the R&D Tax Incentive Programme from 1 March 2013 to 28 February 2014 (referred to in this document as the reporting period). The information contained in this report reflects the transition from one procedure (the retrospective submission of forms for R&D undertaken prior to 1 October 2012) to another (the preapproval of R&D activities undertaken on or after 1 October 2012).

In the reporting period, the Department of Science and Technology (DST) received 345 applications for the R&D Tax Incentive from 267 companies. Of the 345 forms, 295 were applications for preapproval on new R&D activities involving 240 companies, while 50 were retrospective submissions (reporting R&D undertaken prior to 1 October 2012) involving 41 companies. Note that some of the companies applied under both processes.

The reporting period was largely devoted to the evaluation and adjudication of applications that were received in the 2012/13 reporting period. By end of the 2013/14 reporting period, 215 applications (comprising 1 382 projects) had been finalised out of the 601 of the cumulative stock of preapproval applications. The DST therefore put specific measures in place to clear the backlog in the adjudication process. As per standard practice, the information drawn from all 50 retrospective submissions in the 2013/14 reporting period has been processed and used to update the previously published information on the uptake of the R&D Tax Incentive.

Analysis of the 240 companies that applied for preapproval in the reporting period indicates the following:

- About 44,2% (106) of the applicants were companies with an annual turnover of R40 million and below. These companies are classified as small and medium enterprises (SMEs) on the basis of the broad description contained in the National Small Business Act, 1996 (Act No. 102 of 1996). Large companies constituted 49,6% (119) of the total and the remaining 6,3% (15) did not disclose their turnover size.
- Manufacturing; financial intermediation, real estate and business services; and mining and quarrying are the most dominant sectors, altogether constituting 85,1% of the applicant companies in 2013/14. The three sectors also show the highest proportion of planned R&D expenditure.
- An estimated R9, 7 billion annual budget for planned R&D activities was reported by the applicants in the reporting period. This amount is indicated on applications for the preapproval of new R&D activities.
- About 3 521 R&D personnel are reported to be involved in the R&D activities that were planned for the reporting period. The Incentive has been in place since November 2006. The uptake in the reporting period has increased the total number of companies that have participated in the Incentive between November 2006 and February 2014 to 810. Aggregated information on the selected performance indicators shows the following:
- The Incentive has been attracting new participants each year since 2006. The ratio of new participants, and particularly of SMEs, increased in the 2012/13 and 2013/14 reporting periods, which could be linked to the October 2012 amendments to the Incentive legislation.
- The distribution of uptake per industry sector has remained the same over the years, with more than 80% of the applicant companies coming from two sectors, namely, the manufacturing sector and the financial intermediation, real estate and business services sector (the latter dominated by software development).
- There is also an established pattern of repeat applicants, indicating that certain beneficiary companies are undertaking R&D on an ongoing basis. Such companies tend to be larger, and in the manufacturing or software development industries. This is not surprising, because these sectors contribute the bulk of South Africa's business expenditure on research and development (BERD) as reported in the annual National Survey of Research and Experimental Development.
- About R44,1 billion in estimated R&D expenditure was reported by companies between November 2006 and February 2014. This amount includes R25,4 billion of the actually incurred R&D expenditure reported by companies to the DST as claims made to the South African Revenue Service (SARS) for the incentive deductions since 2006; and R9,0 billion and R9,7 billion indicated on applications for the preapproval of new R&D activities in 2012/13 and 2013/14, respectively.

- The following are some of the results/outcomes that companies report deriving from the R&D supported through this Incentive:
 - 765 scientific publications, reported by 55 companies.
 - 649 conference proceedings, reported by 53 companies.
 - In terms of intellectual property, 81 companies reported local patents and 33 companies reported international patents. 50 companies reported a total of 111 units of other forms of intellectual product (i.e. trade secrets, trademarks, designs and copyright).
 - 1 062 new products, reported by 416 companies.

The above results are a simple aggregation of the data available in the administrative records of the DST and are reported at firm level. They do not give a complete picture of the effect of the R&D Tax Incentive Programme. Further work is necessary to quantify the impact of the Incentive appropriately. Such work may need to be preceded by an exercise of reconciling information available at the DST with that which is available at SARS, to address differences in the timing and stage of the data points; the actual number of beneficiary companies; the actual amounts of R&D expenditure accepted and used by SARS in allowing the deductions; and other relevant factors.

The perceptions of beneficiary companies provide an indication of how the companies experience the Incentive. There are both positive and negative points that need to be examined further when the DST interacts with the companies. Regular consultative sessions with the business community have proved useful and need to be maintained in order to increase awareness about the Incentive further; to facilitate information sharing; and to help identify opportunities for improvements to enhance the effectiveness of the Incentive. A target for the Department is to provide decisions on preapprovals within 90 days of receiving an application.



INTRODUCTION

The Department of Science and Technology (DST) administers the Research and Development (R&D) Tax Incentive Programme under section 11D of the Income Tax Act, 1962 (Act No. 58 of 1962), in order to promote private sector investment in scientific or technological R&D in South Africa. The Incentive offers 150% in deduction for approved R&D expenditure and can be accessed by companies of all sizes in all sectors of the economy. To qualify for the Incentive, a company must apply to the DST for approval of its R&D activities.

Section 11D requires the Minister of Science and Technology to report to Parliament on the direct benefits of the R&D activities encouraged by the incentive programme in contributing to economic growth, employment and other broader government objectives. This report is compiled in consultation with the National Treasury and the South African Revenue Service (SARS). This report is the second one produced since the introduction of the preapproval process, which came into effect on 1 October 2012. The reporting period, 1 March 2013 to 28 February 2014, was marked by the transition from one administrative procedure to another. This report, therefore, presents information derived from both application procedures (see Box 1).

The information drawn from all the retrospective submissions has been processed and used to update the previously published information on the yearly uptake of the R&D Tax Incentive. A complete set of cumulative summary data since November 2006 is included in a later section of this report.

For clarity, an effort has been made in this report to distinguish between the 240 companies that applied for preapproval for R&D activities planned for the 2013/14 reporting period, and the 41 companies that made retrospective submissions. Such information may include a small number of R&D activities falling in subsequent years, which will be corrected and validated a year later, when the respective companies submit actual expenditure data through the annual progress reports.

BOX 1: TRANSITION FROM RETROSPECTIVE SUBMISSIONS TO PREAPPROVAL PROCEDURE

The Taxation Laws Amendment Act that came into effect on 1 October 2012 introduced changes to the administrative procedure for accessing the R&D tax incentive.

- For R&D undertaken prior to 1 October 2012, companies would incur expenditure and then claim the R&D tax deductions from SARS at the end of their financial year, on a retrospective basis. Eligible activities qualified for a deduction of 150% on R&D operational expenditure and an accelerated depreciation of R&D capital assets at a rate of 50:30:20 over three years. This procedure is being phased out and is expected to end in 2015-2016, i.e. three years after 1 October 2012.
- Under the preapproval procedure, companies are required to submit applications for approval of R&D activities undertaken from 1 October 2012. Upon approval by the Minister of Science and Technology, a company qualifies for a deduction of 150% on the R&D operational expenditure. After October 2012, R&D assets depreciate in the same way as other capital expenditure in terms of section 12C of the Income Tax Act.

POLICY CONTEXT OF R&D INCENTIVES

R&D, or knowledge capital, is one of the core inputs to the innovative process. It is an important means through which companies can strengthen internal capabilities to develop new technologies and/or absorb external knowledge that is essential for their success. This is important in realising the objectives of the National Research and Development Strategy (NRDS) for South Africa.

South Africa is one of the many countries that use the tax-based incentive to stimulate private sector R&D. Higher levels of private sector R&D are needed in order to boost productivity through increased pace of innovations, i.e. creation of new and improved products, processes and other important outcomes.

At the level of a firm, the tax deduction helps to reduce the after tax price of R&D (“user cost of R&D”), thereby creating an incentive for any company to undertake R&D. By accessing the incentive support, a company could be encouraged to expand its existing R&D activities; engage in a more ambitious R&D project; be encouraged to do its R&D project(s) sooner rather than later; be encouraged to plan long term for its R&D requirements or to collaborate with other players in line with the criteria for support. Generally, firms would take several factors into account when making decisions about R&D, including whether to undertake R&D internally or outsource it; whether to do R&D locally or abroad; and other pertinent arrangements. Government incentives and their criteria are important factors considered in this regard. The ways government incentives affect such decisions differ by types of firms, industries or other aspects.

At a macro level, the behaviour of firms can be sub-optimal and often requires appropriate policy response from government. In the context of the R&D incentive, the government wants to encourage an environment wherein as many outcomes of R&D as possible could spill over and benefit other industries and the wider economy (“spillovers” and “positive externalities”), thus encouraging learning, innovation and improved competitiveness.

The use of R&D tax incentives has gained popularity globally. About 26 of the 34 OECD member countries currently have some form of R&D tax incentives. This is an increase from 12 in 1995 to 18 in 2004. All the BRICS countries, Brazil, the Russian Federation, India, China and South Africa and other developing countries such as Singapore, Malaysia and Lithuania also offer tax-based R&D incentives. Countries such as the United States of America (USA), Japan, South Korea and Canada, have large outlays in these incentives as part of their overall support for private sector R&D. Sum totals of tax-based and direct support for private sector R&D in the USA, Canada, South Korea, France and Belgium were all above 2% of their Gross Domestic Product by 2009 (OECD, 2010). Several advanced economies have also used their R&D incentives creatively as part of their response to the recent global economic crisis, evidenced by specific adjustments introduced between 2009 and 2011 to counter the weakening private sector R&D and competing for R&D that was migrating to emerging economies.

The tax expenditure (“tax revenue foregone”) incurred by the South African government in discharging the Incentive has to be well justified by the returns derived from the Incentive. In the eight years of implementation of the R&D Incentive since November 2006, useful longitudinal data has been collected to make the necessary estimation of the nature of the impact that the Incentive is making. The DST, as a custodian of this Programme together with its implementation partners, have to also guard against the negative or unintended consequences of the Incentive, and act appropriately to ensure that the Incentive has the desired strategic impact.

Besides being accessible by an increased number of companies and retaining the usual pattern of R&D activity, the Incentive also has to demonstrate additionality in terms of several impact indicators, for instance regarding induced additional private R&D investment, direct employment of R&D personnel (scientists, engineers, technicians and R&D support staff), nature of innovation outputs generated (patents, new products, etc.), as well as the growth and improved competitiveness of beneficiary companies. Estimations also need to be made of the wider social return of the incentive (or positive externalities), and on whether the incentive is helping to improve the general atmosphere of R&D and technology diffusion in the country. New information that will be collected through progress reports provided by beneficiary companies will facilitate estimations of some of these impact indicators.

BOX 2: POLICY MIX FOR PRIVATE SECTOR R&D AND TECHNOLOGICAL INNOVATION

South Africa has a number of policy instruments or incentives to promote private sector R&D and technological innovation. The R&D tax incentive, therefore, is implemented alongside such instruments, to complement the whole policy package to address a number of objectives, ranging from new enterprise formation, R&D and technology innovation, industrial development, export promotion as well as attraction of foreign direct investment. All these aspects contribute to the National Development Plan.

The following are examples of some of the existing funding support and incentives:

- Support Programme for Industrial Innovation (SPII) – offers direct financial grant to private sector companies to support the development of market ready technologies including software development.
- Technology for Human Resourced in Industry Programme (THRIP) – offers direct financial grant, on a cost sharing basis, to promote collaborative R&D and human resource development between private sector companies and public institutions (i.e. universities and science councils).
- Technology Innovation Agency (TIA)– offers direct financial assistance (through loans/ grants/ equity holding) to stimulate various forms of technology innovation investment and their commercialisation. The support is available to private sector companies, science councils and universities as well as other organisations.
- Manufacturing Competitiveness Enhancement Programme – offers direct financial support (which may be loan or cost-sharing grant) to private sector companies to enhance competitiveness of existing manufacturing companies and related activities, to help them acquire new assets to upgrade or expand manufacturing capacity, to implement cleaner (green) production and energy efficiency technologies, to fund working capital and/or undertake feasibility studies on qualifying activities.
- Other complementary tax-based incentives that encourage companies to modernise and implement innovative smart approaches, for instance under section 12K of the Income Tax Act for emissions reduction; section 12I; section 12L for cleaner production and energy efficient approaches; section 12B for production of renewable energy and fuels; and section 37B for recycling and waste disposal.

Besides the financial support and incentives, other measures include partnerships with and technical support through government research institutions and universities (laboratory experimentation, testing facilities, standards, etc.), contracts for public R&D work, collaborations and partnerships with local and multinational companies and organisations, administration of intellectual property (IP) laws and regulation in the spheres of innovation and industrial policy and sector-based skills training initiatives.

A collection of the abovementioned programmes and related others can be referred to as a 'policy mix' for business R&D and innovation. Most of these instruments fall under the responsibility of the DST and the Department of Trade and Industry (the dti). Achieving coherence and efficiency across the various aspects of the policy mix is crucial. Time and again the government reviews these individual programmes and make adjustments and changes where necessary, to address redundancies and introducing new ones to pursue new opportunities.

UPTAKE OF THE R&D TAX INCENTIVE PROGRAMME IN 2013/14

Number of forms and applications received at the DST

Table 1 summarises the uptake in terms of number of forms received at the DST and the number of companies that have participated in the Incentive. In the reporting period, the DST received a total of 345 forms, 50 of which were retrospective submissions for expenditure incurred prior to 1 October 2012, and 295 of which were applications for the preapproval of planned R&D activities after 1 October 2012. All the 345 forms were received from 267 companies.

TABLE 1: NUMBER OF FORMS AND APPLICATIONS RECEIVED AT THE DST IN 2013/14

	Number of forms	Number of companies*	Number of projects
Retrospective submissions	50	41	Not a requirement
Applications for preapproval	295	240	1 390
TOTAL	345	*267	1 390

* Represents a count of companies, noting that some have submitted under both processes and therefore those are counted once to avoid double counting.

Participation by industry sector and size of companies

Table 2 shows the distribution of the 240 companies that applied for preapproval in 2013/14 in terms of industry sector. Most (43,8%) of the applicant companies are from the manufacturing sector. The financial intermediation, real estate and business services follow with 35%; the mining and quarrying sector with 6,3%; and the agriculture, hunting, forestry and fishing with 5,4%.

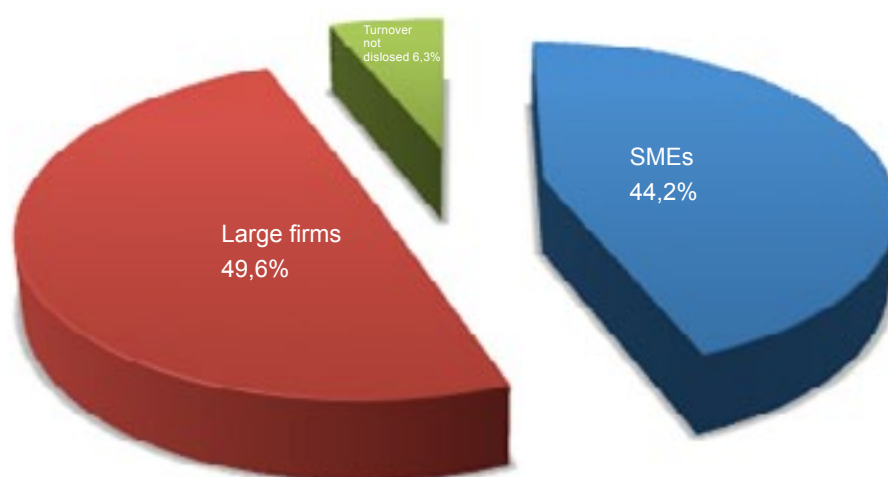
TABLE 2: NUMBER OF PARTICIPATING COMPANIES IN TERMS OF INDUSTRY SECTOR (2013/14)

Sector	Number of companies	% of total
Agriculture, hunting, forestry and fishing	13	5,4
Mining and quarrying	15	6,3
Manufacturing	105	43,8
Electricity, gas and water supply	7	2,9
Construction	2	0,8
Wholesale and retail trade	3	1,3
Transport, storage and communication	9	3,8
Financial intermediation, real estate and business services	84	35,0
Community, social and personal services	2	0,8
TOTAL	240	100

The spread of beneficiary companies per industry sector has remained generally the same over the previous years, with 79% of the total companies coming from the two sectors, namely the manufacturing and financial intermediation sectors. The distribution mirrors the overall structure of business R&D performance in South Africa as reported in the annual National Survey of Research and Experimental Development.

Figure 1 shows distribution in terms of company size (using the latest year turnover as proxy) shows that 44,2% (106) of the applicants were companies with an annual turnover of R40 million and below. These companies are classified as SMEs on the basis of the broad description contained in the National Small Business Act, 1996 (Act No. 102 of 1996). There are 119 large companies (49,6%). These are companies with annual turnover of above R40 million. The remaining 15 companies (6,3%) did not disclose their annual turnover.

FIGURE 1: PARTICIPATION IN TERMS OF COMPANY SIZE (2013/14)



Of the SMEs that applied, 45,3% are in the financial intermediation, real estate and business services sector. In large enterprises, the financial intermediation, real estate and business services sector makes up 26,9% of the total. Almost all the applications in this sector comprise activities for software engineering and software development. On the other hand, of the large companies that applied, 57 (or 48%) are in the manufacturing sector. Leading in this category are metals, followed by the chemical, cosmetics, pharmaceuticals and plastics sector, and the food sector.

Status on preapproval of applications

The 295 applications received in the 2013/14 period involved 1 390 projects, increasing the total number of applications since the introduction of the preapproval process in October 2012 to 601, and the total of projects over the same period to 3 519.

By the end of the reporting period (28 February 2014), 215 of the 601 applications (involving 1 382 projects) had been adjudicated and finalised. Of the 1 382 finalised projects, 31% were approved and 69% were not. The approved projects had R2,9 billion estimated R&D expenditure towards R&D activities.

The initial slow momentum in the adjudication process in the previous year, which was due to internal DST capacity constraints and dealing with the new process, resulted in the build-up of backlog which was carried over to the 2013/14 period. The DST therefore introduced specific measures to clear the backlog, including weekly adjudication meetings and contracting technical experts to evaluate the applications.

Important lessons were learnt in this process, leading to amendments of section 11D of the Income Tax Act that came into effect on 1 January 2014. The quality of the application forms received varied considerably, from well-completed ones to some in which almost no information was provided. This meant that the DST had to request the required information from the companies in order to evaluate the applications. The companies applying and the Adjudication and Monitoring Committee appeared to understand certain eligibility requirements differently, and this created the impression that the administrative processes for the Incentive were cumbersome. It was therefore necessary to amend the Act to clarify the requirements for accessing the Incentive. The amendments to the Act facilitated the finalisation of draft guidelines and the review of the application forms.

These interventions will help to enhance the efficiency of the process and make it easier to adhere to deadlines in the preapproval process. The consultative sessions that have been held with the business community have been constructive and need to be maintained going forward to facilitate the exchange of information that can help to enhance the effectiveness of the Incentive.

R&D EXPENDITURE

R&D expenditure reported based on preapproval applications

Table 3 shows the amounts of R&D expenditure contained in the preapproval applications that were received during 2013/14 period. Estimates of budgeted annual R&D expenditure are reported in this instance, as the applications were intended for R&D that was still to be undertaken at the time the DST received them.¹ Under the preapproval process, two categories of R&D expenditure are distinguished: (a) estimates of annual R&D budget (which is the R&D expenditure budgeted for the 2013/14 period) and (b) the planned R&D budget (which is the overall R&D expenditure earmarked to complete specific R&D projects regardless of years). The latter takes into account that some applications involve R&D that can take several years to complete.²

The 295 applications that were received in the reporting period indicate that about R9,7 billion was budgeted for the R&D to be undertaken in 2013/14 period.

About 89,8% of the 2013/14 budgeted R&D expenditure is concentrated within the three sectors, namely 33,1% in the manufacturing sector, 31,6% in the financial intermediation, real estate and business services sector and 25,1% in the mining and quarrying sector. All the other sectors share the remaining 10,2%.

TABLE 3: R&D EXPENDITURE REPORTED IN PREAPPROVAL APPLICATIONS IN 2013/14

Sector	Budgeted Annual R&D expenditure ³	
	R'000	% of total
Agriculture, hunting, forestry and fishing	82 415	0,8
Mining and quarrying	2 452 171	25,1
Manufacturing	3 232 964	33,1
Electricity, gas and water supply	27 801	0,3
Construction	18 028	0,2
Wholesale and retail trade	56 633	0,6
Transport, storage and communication	771 274	7,9
Financial intermediation, real estate and business services	3 090 956	31,6
Community, social and personal services	42 054	0,4
TOTAL	9 774 294	100

SMEs reported 38,4% (R3,7 billion) planned R&D investment in the year 2013/14. Large enterprises have 57,2% (R5,6 billion). The remaining 4,4% (R432 million) is from companies whose turnover size is unknown. The bulk of the reported R&D expenditure from SMEs is in the mining and quarrying sector, the manufacturing sector, and the software development sector.

R&D expenditure reported on preapproval applications in terms of national industrial policy priority areas

Of the R9.7 billion budgeted for the R&D to be undertaken in 2013/14 period, over R6 billion is budgeted by the sectors prioritized in terms of IPAP. Analysis shows a strong orientation of the Incentive in leveraging R&D that supports the priority focus areas of the current Industrial Policy Action Plan (IPAP).

¹ Estimates for planned R&D are reported here. Actual amounts can only be reported on the basis of approved applications once progress reports have been submitted to the DST.

² Detailed figures on planned R&D expenditure and actual spending on approved R&D will be included in subsequent reports. The reporting on actual spending on approved R&D can only be known once the companies have submitted progress reports. By the end of the reporting period (28 February 2014), 11 progress reports had been received by the DST, reporting R84 million in actual R&D expenditure in the 2012/13 and 2013/14 reporting periods. For the purposes of this report, the number is still too small to provide any further details without breaching anonymity.

³ Annual R&D expenditure budgeted for all projects to be undertaken by companies; including those activities not eligible under section 11D of the Income Tax Act.

⁴ Amount of R&D expenditure planned to be spent on the projects seeking approval under section 11D of the Income Tax Act.

About 74,5% of the 295 applications in 2013/14 will address the priority focus areas of IPAP. These applications account for R5,7 billion (or 58,7%) of the planned R&D expenditure for that period.

Among the top three IPAP sectors in terms of budgeted annual R&D spending are the electrotechnical and ICT sectors (R3,7billion), upstream oil and gas (R1.2 billion) and forestry, paper, pulp and furniture (R817 million).

BOX 3: NATIONAL INDUSTRIAL POLICY FOCUS AREAS

The Industrial Policy Action Plan (IPAP) 2012/13 – 2014/15 represents the fourth iteration of IPAP, which was first launched in 2007/08. IPAP prioritises interventions in three clusters of industry sectors, which are meant to support the National Development Plan. The clusters are as follows:

- Sectors constituting “qualitatively new focus areas” for IPAP, including metal fabrication, capital and transport equipment, green and energy-saving industries and agroprocessing.
- Sectors identified in the first IPAP that can be scaled up, namely automotive and components; medium and heavy vehicles; chemical, cosmetics, pharmaceuticals and plastics; clothing, textiles, footwear and leather; biofuels; forestry, paper, pulp and furniture; creative and cultural industries; and business process services.
- Sectors that demonstrate potential to develop long-term advanced capabilities for the country, namely nuclear, advanced materials, aerospace and defence, and electrotechnical and ICT sectors.

TABLE4: PARTICIPATION PER IPAP CLUSTER IN 2013/14

		Preapproval applications
Clusters according to IPAP		Budgeted annual R&D expenditure (R'000)
Cluster 1 - Qualitatively new areas of focus		
1.	Realising the potential of the metal fabrication, capital and transport equipment sectors, particularly arising from large public investment	444 135
2.	Upstream oil and gas	1 257 000
3.	Green and energy-saving industries	0
4.	Agroprocessing, linked to food security and food pricing imperatives	270 899
5.	Boat building	0
Total for Cluster 1		1 972 034
Cluster 2: Scale-up and broaden interventions in existing IPAP sectors		
1.	Automotives, components, medium and heavy commercial vehicles	0
2.	Chemicals, cosmetics, pharmaceuticals and plastics	205 817
3.	Clothing, textiles, footwear and leather	0
4.	Biofuels	0
5.	Forestry, paper, pulp and furniture	817 978
6.	Creative and cultural industries	0
7.	Business process services	125 374
Total for Cluster 2		1 149 170
Cluster 3: Sectors with potential for the development of long-term advanced capabilities		
1.	Nuclear	0
2.	Advanced materials	20 807
3.	Aerospace, defence	39 657
4.	Electrotechnical and ICT	3 742 859
Total for Cluster 3		3 803 324
TOTAL		6 924 527

R&D PERSONNEL

R&D personnel are basic inputs to the performance of R&D. It is expected that with the increased R&D activities encouraged by the Incentive, companies will not only retain scientists, engineers, technologists and R&D support staff, but also employ additional ones.

The number of R&D personnel involved in the R&D activities planned for 2013/14 is 3 521.⁵ This number represents the headcount of human resources that are indicated in the application forms by companies as the numbers to be directly involved with the planned R&D activities.

TABLE 5: CATEGORIES OF R&D PERSONNEL IN 2013/14 PREAPPROVAL APPLICATIONS

Categories of R&D personnel	Number
Scientists	352
Engineers	631
Technologists	479
Technicians	812
Managers	341
Other technical staff	906
Total	3 521

About 64,6% of the reported R&D personnel are core research personnel (i.e. scientists, engineers, technologists and technicians), while 35,4% are support personnel (i.e. R&D managers and other technical staff). While the categories provide an indication of the composition of human resources, it is well known that in practice some of the people may perform these different roles interchangeably.

More than 80% of reported R&D personnel are indicated in the two sectors, namely manufacturing and software development (which falls under the financial intermediation, real estate and business services sector). SMEs contribute about 43,2% of R&D personnel reported by companies in the software development industry.



5. Categories of R&D personnel are explained in Annexure C.

CONTRIBUTION OF THE INCENTIVE FROM NOVEMBER 2006 TO FEBRUARY 2014

This section provides an aggregated view of how the Incentive has contributed/performed between November 2006 and February 2014, based on selected performance indicators, e.g. number of beneficiary companies, yearly R&D expenditure across sectors, tax expenditure associated with the R&D incentive and the results of R&D that beneficiary companies have reported to date.

The trend shows a gradual increase in terms of retrospective submissions from 2007 to 2011. Since November 2006, a total of 2 171 R&D Tax Incentive forms were received at the DST. Of this number, 1 571 were retrospective submissions for the R&D undertaken prior 1 October 2012 and 601 were the cumulative number of applications for the preapproval of new R&D activities from 1 October 2012 onwards.

In 2012/13, the DST received the highest number of forms, combining both retrospective submissions and applications for the preapproval of R&D activities after 1 October 2012. It was noted in the 2012/13 report that about 52,5% of the 495 forms that were received in 2012/13 were for claims for previous tax years.

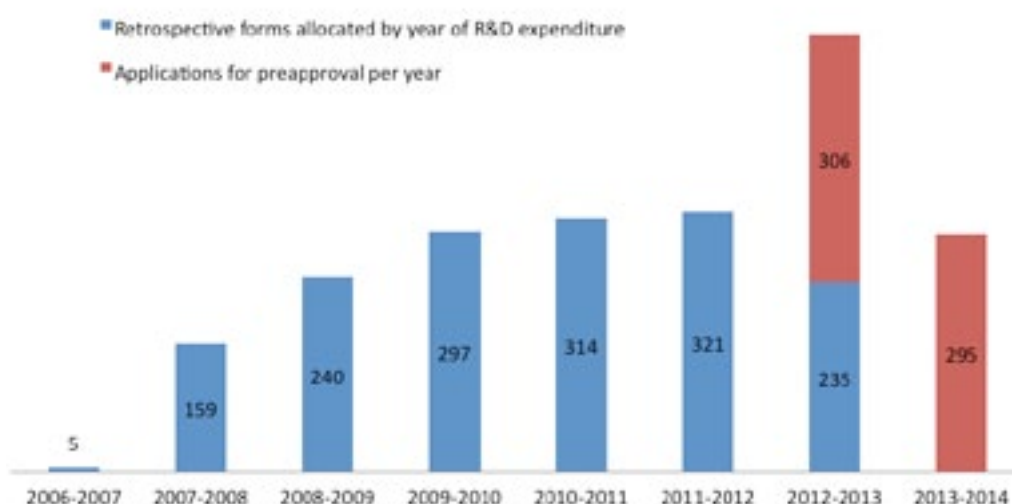


FIGURE 2: NUMBER OF FORMS AND PREAPPROVAL APPLICATIONS RECEIVED BY THE DST PER YEAR

The number of retrospective submissions has decreased from 495 in 2012/13 to 50 in 2013/14. Overall, these shifts indicate that companies have migrated from the old system to the preapproval system. The information from the 50 retrospective forms received in 2013/14 has been incorporated into the previously published information on the applicable years of R&D expenditure (see Figure 2), updating this information on the yearly uptake of the R&D Incentive.⁶ This means it is possible to see the number of forms for any particular year and the uptake trend from November 2006 to February 2014, as well as accounting for yearly R&D expenditure trends.

6. Updated tables are presented with each new series of this report. The updates including the 2013/14 information are presented in a later section of this report.

Number of companies participating in the Incentive

Figure 3 shows the number of participating companies in accordance with the year of R&D expenditure.

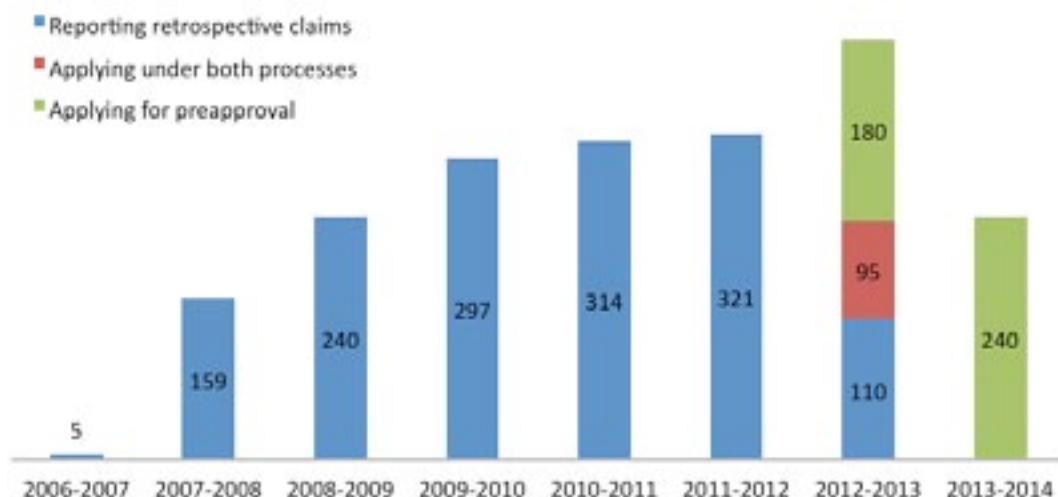


FIGURE 3: NUMBER OF COMPANIES PARTICIPATING IN THE R&D TAX INCENTIVE BY TAX YEAR OF EXPENDITURE

Between November 2006 and February 2014, a total of 810 companies participated in the Incentive. Participation increased gradually from 2007/08 to 2011/12. The 2012/13 reporting period shows the highest number, with 385 companies participating. This figure combines both the retrospective submissions and the preapproval applications. The peak recorded in 2012/13 appears to be linked to the changes in legislation.

Figure 4 below shows first-time applicants and applicants retained over the years since the inception of the Programme. Analysis indicates that, in each year, the Incentive has been attracting new participants, at an average of 95 companies per year (36% of the total participants) for the 2008 to 2014. The trend also shows an increase in the ratio of new participants in 2013. Part of this can be directly linked to a new amendment to section 11D(1)(c) of the Income Tax Act, which provided for R&D that is meant for making a "significant and innovative improvement" to existing invention, functional design, computer programme or knowledge essential to the use of these aspects, which may have generated interest from local companies and attracted new participants.

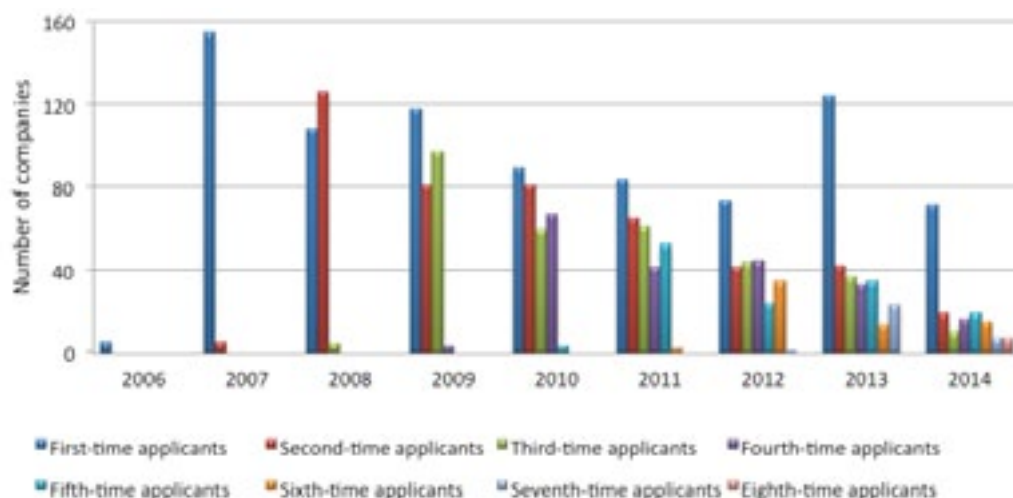


FIGURE 4: CATEGORIES OF REPEAT APPLICANTS PER YEAR

Repeat applicants make up an average of 64% for the periods 2008/09 to 2013/14. Analysis indicates that certain companies are undertaking R&D on an ongoing basis, hence the repeat claims. Such companies tend to be larger and in the industries that dominate participation in the Incentive (manufacturing, and financial intermediation and business services). This is not surprising because these sectors contribute the bulk of the BERD reported in the annual National Survey of Research and Experimental Development. The phenomenon of repeat applications highlighted here is common with this type of Incentive.⁷ Companies that did not come back as repeat applicants may not undertake R&D every year, or may have applied in a previous year for multi-year R&D.

R&D expenditure reported based on retrospective submissions

In terms of the previous legislative provisions, companies could only claim the R&D expenditure incurred prior to 1 October 2012 on a retrospective basis. Under the retrospective claims process, companies can claim the tax deduction on the R&D expenditure incurred from SARS following a normal tax return procedure and then submit certain information on R&D activities to the DST for reporting purposes. It is possible that the amounts reported to the DST may not be the same as the amount that is ultimately accepted by SARS for the deduction.⁸

In table 6 below, the trend since 2006 indicates an irregular pattern in the yearly aggregated amounts of R&D expenditure indicated by companies to have been used in claiming the deduction from SARS. Note the decline in overall R&D expenditure from R4 billion in 2009/10 to R2,9 billion in 2010/11 and a peak of R6,9 billion in 2011/12. Figures for the latter years, i.e. 2011/12 and 2012/13 could still be revised by a bigger margin as companies continue to submit information for those years. The aggregated yearly amounts show that companies have indicated about 67%, on average, of their overall R&D spending to be eligible R&D expenditure.

TABLE 6: R&D EXPENDITURE REPORTED BASED ON RETROSPECTIVE SUBMISSIONS

Reporting period	Total R&D expenditure		Portion indicated by companies to be eligible R&D	
	2013/14 submissions by year of R&D expenditure (R'000)	Aggregated from November 2006 to February 2014 (R'000)	2013/14 submissions by year of R&D expenditure (R'000)	Aggregated from November 2006 to February 2014 (R'000)
2006/07	n/a	27 627	n/a	8 728
2007/08	n/a	2 640 548	n/a	1 717 965
2008/09	n/a	3 445 910	n/a	2 652 010
2009/10	18 634	4 008 815	18 634	3 446 778
2010/11	14 671	2 912 130	14 671	2 514 564
2011/12	2 088 610	6 918 751	1 588 155	5 343 360
2012/13	295 269	5 423 908	233 739	2 231 284
2013/14	n/a	n/a	n/a	n/a
TOTAL	2 417 184	25 377 690	1 855 199	17 914 690

Table 6 also classifies the information from the 50 retrospective submissions received in 2013/14 by year of R&D expenditure. The amounts comprise R2,4 billion in overall R&D expenditure, of which R1,8 billion was reported as eligible R&D expenditure by companies.

7. A trend noted in other countries that have similar incentives, according to Arqu -Castells, P and P Mohnen, "Sunk costs, extensive R&D subsidies and permanent inducement effects", UNU-MERIT working paper 2012-029, is that R&D incentives should not only attract new R&D performers, but also support companies already performing R&D. This must be taken into account in incentive design to accommodate the different modes that companies follow in carrying out R&D.

8. Only the amounts reported to the DST by companies are indicated in this report. For a correct estimation, it is necessary to reconcile the amounts indicated by companies when claiming the deduction and the amounts that are accepted and used by SARS when calculating the deduction. However, this exercise had not yet been carried out when this report was compiled.

Estimates of tax revenue forgone due to the Incentive

The tax revenue foregone due to the R&D Tax Incentive Programme is estimated at R3,2 billion from 2005/06 to 2011/12. These latest available estimates of tax revenue forgone were published in the National Treasury Budget Review of February 2014. The amounts represent the deductions allowed by SARS on claims by companies for each particular tax year.

TABLE 7: ESTIMATES OF TAX REVENUE FORGONE FROM 2005/06 (INCEPTION) TO 2011/12

Reporting period	Tax revenue forgone (R'000)
2005/06	183 000
2006/07	449 000
2007/08	358 000
2008/09	594 000
2009/10	727 000
2010/11	685 000
2011/12	241 000
Total	3 237 000

Note that the figures include claims that were made in terms of Section 11B of the Income Tax Act, under which the R&D deduction applied prior to November 2006. The figures are revised annually as companies submit their claims. The amounts in table 7 may not correlate completely with the reported yearly R&D expenditure figures indicated below because of timing differences between the two. A different exercise is necessary to make the reconciliations.

Overall uptake of the Incentive between November 2006 and February 2014

TABLE 8: NUMBER OF PARTICIPATING COMPANIES PER INDUSTRIAL SECTOR (NOVEMBER 2006 - FEBRUARY 2014)

Industry sector (SIC code and description)	Number of companies	% of total
10000 - Agriculture, hunting, forestry and Fishing	41	5,1
20000 - Mining and quarrying	40	4,9
30000 to 39000 - Manufacturing	362	44,7
40000 - Electricity, gas and water supply	15	1,9
50000 - Construction	7	0,9
60000 - Wholesale and retail trade	6	0,7
70000 - Transport, storage and communication	35	4,3
80000 - Financial intermediation, real estate and business services	294	36,3
90000 - Community, social and personal services	10	1,2
TOTAL	810	100

The distribution of uptake per industry sector shows that more than 80% of the applicant companies come from two sectors, namely, the manufacturing sector and the financial intermediation, real estate and business services sector.

TABLE 9: NUMBER OF PARTICIPATING COMPANIES BY TURNOVER SIZE (NOVEMBER 2006 - FEBRUARY 2014)

Annual turnover range (in R million)	Number of companies	% of total
Turnover not indicated	66	8.1
10 and below	218	26,9
10 to 15	54	6,7
15-20	35	4.3
20-30	47	5.8
30-40	26	3,2
40-50	25	3.1
50 – 100	75	9.3
100 and above	264	32.6
TOTAL	810	100

SMEs (latest year turnover of R40 million and below) make up 46,9% (380) of the total number of participating companies and 45% (364) is made up of large companies. The remaining 8.1% (66) of companies are undisclosed in terms of turnover size. The percentage of SMEs applying for the Incentive has increased in the past two years, following the October 2012 amendments.

Amount of R&D expenditure supported

TABLE 10: R&D EXPENDITURE SUPPORTED BY THE R&D TAX INCENTIVE (NOVEMBER 2006 TO FEBRUARY 2014)

Reporting period	R&D expenditure based on retrospective submissions		R&D budget based on preapproval process
	Total R&D expenditure incurred (R'000)	Amount indicated by companies as eligible R&D expenditure (R'000)	Estimates of R&D budgets on preapproval applications (R'000)
2006/07	27 627	8 728	n/a
2007/08	2 640 548	1 717 965	n/a
2008/09	3 445 910	2 652 010	n/a
2009/10	4 008 815	3 446 778	n/a
2010/11	2 912 130	2 514 564	n/a
2011/12	6 918 751	5 343 360	n/a
2012/13	5 417 334	2 224 770	9 021 159
2013/14	6 574	6 514	9 774 294
TOTAL	25 377 690	17 914 690	18 795 453



TABLE 11: OVERALL R&D EXPENDITURE PER UNDISTRIL SECTOR (NOVEMBER 2006 TO FEBRUARY 2014)

SIC code and definition	Retrospective submissions Preapproval applications		Preapproval applications in	
	Total R&D expenditure (R'000)	% of total	Annual R&D Budget (R'000)	% of total
10000 - Agriculture, hunting, forestry and fishing	1 052 402	4,1	335 915	1,8
20000 – Mining and quarrying	1 371 830	5,4	4 817 034	25,6
30000 to 39000 – Manufacturing	17 385 71	68,6	5 655 976	30,1
40000 – Electricity, gas and water supply	924 829	3,6	92 051	0,5
50000 – Construction	76 264	0,3	18 528	0,1
60000 – Wholesale and retail trade	84 062	0,3	59 088	0,3
70000 – Transport, storage and communication	1 140 872	4,5	1 363 806	7,3
80000 – Financial intermediation, real estate and business services	3 240 932	12,8	6 401 587	34,1
90000 - Community, social and personal services	71 785	0,3	51 467	0,3
TOTAL	25 377 690	100	18 795 453	100

TABLE 12: CONTRIBUTION TO IPAP PRIORITY AREAS (NOVEMBER 2006 TO FEBRUARY 2014)

Clusters according to IPAP	Retrospective submissions (R&D expenditure) in R'000		Annual R&D expenditure budgeted
	Eligible R&D expenditure incurred	Total R&D expenditure incurred	
Cluster 1: Qualitatively new areas of focus			
1. Realising the potential of the metal fabrication, capital and transport equipment sectors, particularly arising from large public investment	1 214 664	1 217 985	1 182 597
2. Upstream oil and gas	3 670 017	4 669 185	1 258 300
3. Green and energy-saving industries	23 173	35 057	0
4. Agroprocessing, linked to food security and food pricing imperatives	185 518	384 937	393 691
5. Boat building	0	0	32 400
Total for Cluster 1	5 093 373	6 307 165	2 866 988
Cluster 2: Scale up and broaden interventions in existing IPAP sectors			
1. Automotives, components, medium and heavy commercial vehicles	303 589	3 321 901	95 300
2. Chemicals, cosmetics, pharmaceuticals and plastics	2 264 482	3 905 899	523 457
3. Clothing, textiles, footwear and leather	355	355	2 300
4. Biofuels	0	0	0
5. Forestry, paper, pulp and furniture	238 639	256 300	965 385
6. Creative and cultural industries	0	0	0
7. Business process services	1 166 134	1 172 476	150 574
Total for Cluster 2	3 973 198	8 656 930	1 737 045
Cluster 3: Sectors with potential for the development of long-term advanced capabilities			
1. Nuclear	62 516	62 516	0
2. Advanced materials	240 730	240 761	0
3. Aerospace, defence	374 905	497 888	140 544
4. Electrotechnical and ICT	3 141 875	3 873 476	7 056 951
Total for Cluster 3	3 823 026	4 677 641	7 197 496
TOTAL	12 889 598	19 641 736	11 801 528

TABLE 13: R&D EXPENDITURE SUPPORTED PER FIELD OF SCIENCE (NOVEMBER 2006 TO FEBRUARY 2014)

Field of science	Retrospective submissions				Preapproval applications			
	Total R&D expenditure (R'000)	% of total	Eligible R&D expenditure (R'000)	% of total	Planned R&D expenditure (R'000)	% of total	Annual R&D Budget (R'000)	% of total
Industrial	7 645 656	30,1	4 156 419	23,2	2 537 165	8,8	2 926 533	15,6
Agricultural	1 014 877	4,0	833 980	4,7	259 860	0,9	335 915	1,8
GIS	270 888	1,1	269 974	1,5	101 239	0,4	14 239	0,1
Biological	240 587	1,0	215 278	1,2	6 455	0,02	37 721	0,2
Mathematical	2 038 581	8,0	1 940 875	10,8	6 464 569	22,5	6 958 894	37,0
Physical	1 670 562	6,6	1 515 045	8,5	1 846 640	6,4	1 245 246	6,6
Animal	27 999	0,1	27 990	0,2	0	0,0	0	0,0
Chemical	8 683 096	34,2	5 992 387	33,5	2 158 692	7,5	1 780 420	9,5
Geological	226 309	0,9	182 179	1,0	273 646	1,0	1 324 206	7,0
Metallurgical	1 801 152	7,1	1 522 581	8,5	14 284 071	49,7	3 552 894	18,9
Food	762 261	3,0	333 081	1,9	551 521	1,9	438 134	2,3
Materials	448 362	1,8	382 156	2,1	175 355	0,6	88 302	0,5
Environmental	518 183	2,0	516 919	2,9	550	0,002	550	0,003
Forestry	1 578	0,0	1 228	0,0	0	0,0	0	0,0
Soil	420	0,0	420	0,0	0	0,0	0	0,0
Earth	18 851	0,1	18 851	0,1	0	0,0	0	0,0
Water Care	4 395	0,0	4 395	0,0	60 000	0,2	60 000	0,3
Hydrological	933	0,0	933	0,0	0	0,0	0	0,0
Marine	0	0,0	0	0,0	32 400	0,0	32 400	0,2
TOTAL	25 377 690	100	17 914 690	100	28 752 162	100	18 795 453	100

R&D personnel

TABLE 14: R&D PERSONNEL INVOLVED IN SUPPORTED R&D (NOVEMBER 2006 TO FEBRUARY 2014)

Categories of R&D personnel	Number of R&D personnel
Scientists	2 163
Engineers	5 040
Technologists	3 173
Technicians	4 913
Managers	2 358
Other technical staff	7 621
TOTAL	25 268

Results of R&D supported by the Incentive

By encouraging increased R&D activities, the incentive helps companies to produce new knowledge and achieve innovative outcomes, e.g. scientific publications, patents, or new or improved products and processes. These intermediate results can help a company to grow and/or become more competitive, for instance, through higher sales generated from innovative products or improved productivity.

The information contained in this section, therefore, summarises only the aspects that companies have reported to date, using the retrospective submissions of R&D undertaken prior to 1 October 2012.⁹ It is also accepted that some of the results take time to materialise, and may require a different process to estimate and report on. The information is updated every year as new information is received at the DST.

Figure 5 shows the different types of results derived from the R&D supported through the R&D Tax Incentive. The information is based on 1 062 (67,6%) of the 1 571 retrospective submission forms received between November 2006 and February 2014. The remaining 509 (32,4%) forms did not indicate any output resulting from the R&D.

Outputs of the Incentive

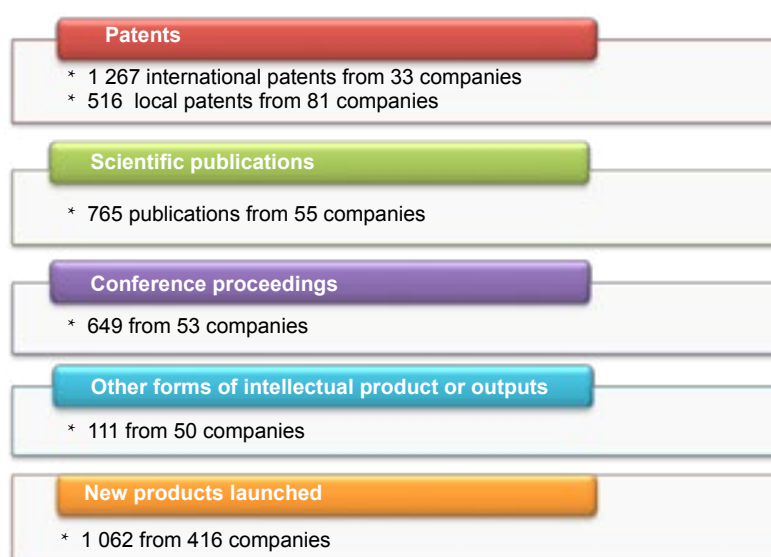


FIGURE 5: NUMBER OF BENEFICIARY COMPANIES REPORTING RESULTS OF R&D (NOVEMBER 2006 - FEBRUARY 2013)

In summary, Figure 5 shows the following:

- 55 beneficiary companies have produced some form of scientific publication(s) based on the R&D supported through the Incentive. A total of 765 scientific publications have been reported.
- 53 beneficiary companies have played a part in the 649 conference proceedings reported.
- 81 companies have reported the 516 local patents, and 33 reported 1 267 international patents. Note that the patents were at different stages (i.e. in force, recently granted or application pending) and that one particular patent output could be counted in both local and international patent categories, depending on the approach of the company.
- 416 companies have indicated to have launched new products arising from the R&D supported through the Incentive. The instances of new products launched are 1 062 in total, the bulk of which are in the manufacturing and the business services sectors.
- 50 companies indicated that they have achieved other forms of intellectual property or output. This category includes trade secrets, trademarks, designs, copyright, etc.

9. Results of the R&D planned for 2013/14 will be known only at a later stage, i.e. once the companies concerned have reported it through their annual progress reports.

The results indicated above are a simplified aggregation of the aspects reported at firm level. They do not indicate a complete picture of the effect of the R&D Tax Incentive. To understand the impact at other levels, i.e. industry or macro level, a different methodology will be required. Literature argues that there are “spillovers” or “positive externalities” associated with any one firm achieving a technological breakthrough. This means that the knowledge generated by any one firm can diffuse and be absorbed by peer firms or the industry and then encourage more R&D and innovations in the system, thus improving competitiveness. This is an important aspect of why the government offers the R&D Tax Incentive.

Perception of beneficiary companies about the impact of the R&D Tax Incentive

By offering the Incentive, the government intends to improve the general environment for undertaking R&D in the country. In part, this can be seen in how the incentive influences decision processes and the behaviour of companies when planning or carrying out R&D, as well as the results of R&D undertaken.

As in the previous section, the information in this section is based on the retrospective submissions regarding R&D undertaken prior to 1 October 2012. This section therefore updates the information published in previous reports by including the new information drawn from the retrospective forms received during 2013/14.

The information was collected using the questionnaire in Part 5 of the retrospective submission form. Responses are summarised as “In agreement”, “Neutral” and “In disagreement” based on respondents’ choice between the five options provided: (1) Strongly disagree, (2) Disagree, (3) Neutral, (4) Agree and (5) Strongly agree.



FIGURE 6: PERCEPTIONS ABOUT THE EFFECT OF THE R&D TAX INCENTIVE

The most noticeable positive responses were received from 450 (75%) companies, which indicated that the Incentive has led to introduction of new products and also improved market position of companies; and 300 (50%) believe that benefiting from the Incentive has led to improvements in manufacturing process. About 250 (41.7%) believe that Incentive helped them expand the scale of initially planned R&D projects and accelerate the pace of the R&D projects.

However, the same graph shows a different perception by companies with regard to collaboration with either the universities or science councils. Only 100 (16.7%) out of 600 companies believe that the Incentive encourages them to enter into collaboration with higher education institutions and public science councils compared to 120 (20%) out of 600 companies. This is of concern as the purpose of the R&D Tax Incentive is, among other things, to stimulate collaboration between companies, research institutes and higher education institutions.

CONCLUSION

Any company that undertakes eligible R&D in South Africa can apply for the R&D Tax Incentive. The Incentive is part of a package of policy instruments to encourage private sector R&D investment in the country and advance the aims of national policies such as the National Research and Development Strategy, the Ten-Year Innovation Plan for South Africa (2008-2018) and the Industrial Policy Action Plan (IPAP).

Through this Incentive, the government wants to encourage increased private sector R&D investment, by firms of any size or in any sector. This is important in order to –

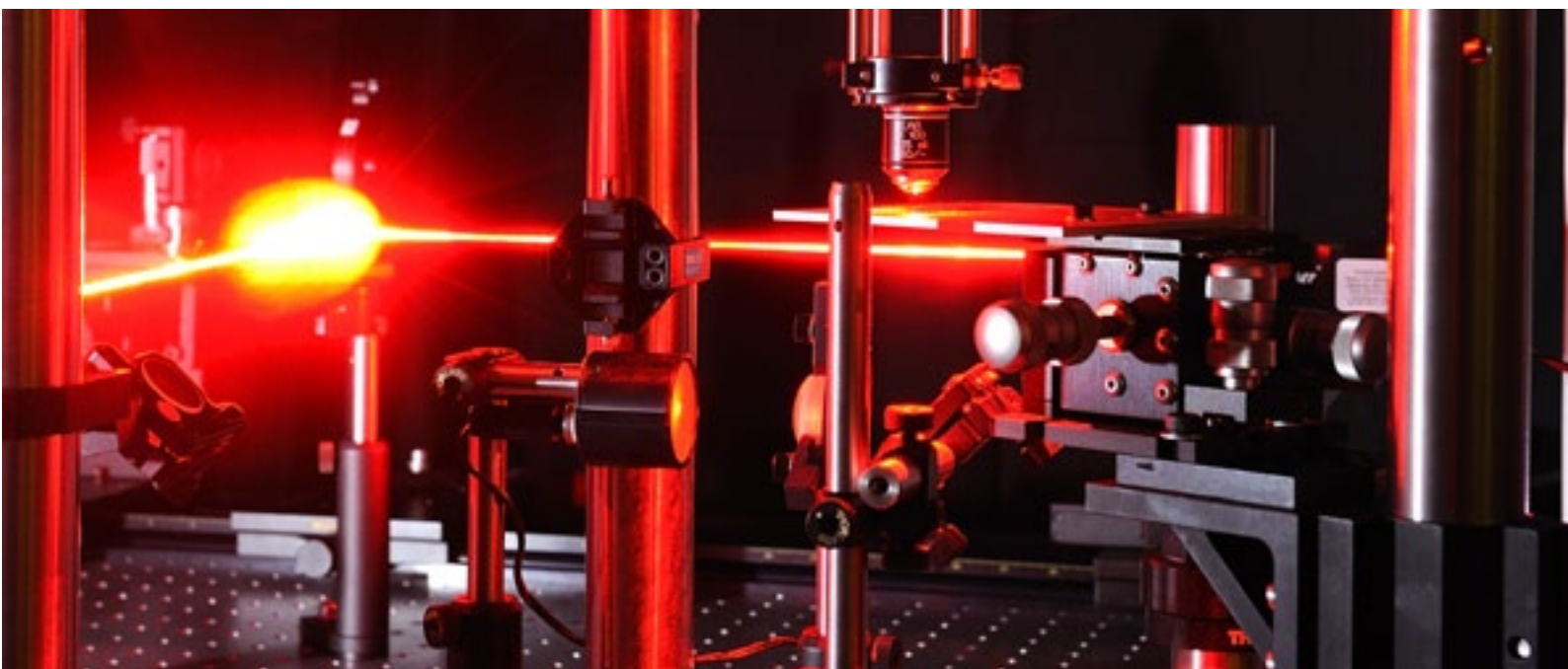
- increase overall investment in R&D.
- promote innovation, i.e. the development of new products, processes and services;
- promote technological advancement and competitiveness; and
- secure innovation spillovers and retain South Africa's R&D workforce.

All the above elements are crucial for driving the transformation of an economy to a knowledge-based one, improving competitiveness and creating employment.

The 2013/14 reporting period was largely devoted to implementing the preapproval procedure, which came into effect on 1 October 2012. A high number of applications were received in the previous year, 2012/13, and some were therefore carried over to this reporting year. This required the DST to make a considerable effort to clear the backlog.

The experience gained thus far in the initial years of implementing the R&D Tax Incentive Programme provides the Department with important information on how the Incentive can be appropriately positioned as a key policy instrument for stimulating increased private sector R&D investment. The capacity for implementing the Incentive is currently being strengthened by providing appropriate human resources and information technology infrastructure, and by fine-tuning legislative (including regulatory) provisions, guidelines and forms to help increase efficiency. This is crucial for achieving and maintaining the performance requirements to ensure that the Incentive remains an effective policy instrument throughout its period of implementation.

A target for the Department is to provide decisions on preapprovals within 90 days of receiving an application. Regular information sessions with the industry will be continued to further increase awareness, facilitate sharing of information and help identifying opportunities for improvements.



ANNEXURE A: DEFINITIONS OF SCIENTIFIC FIELDS

Agricultural science is a broad multidisciplinary field that encompasses parts of exact, natural, economic and social sciences that are used in the practice and understanding of agriculture.

Animal science can be described as a study of the biology of animals that are under the control of humankind.

Biological science is a branch of science that is defined as the study of life. It provides the fundamental study for the biotechnology industry. Biological science has a great impact on our lives and stands to have an even bigger impact in the future.

Chemical science consists of a diversity of disciplines in pharmaceuticals, polymers, paints and coatings, household and personal care products, etc.

Environmental science is an interdisciplinary academic field that integrates physical and biological sciences (including but not limited to ecology, physics, chemistry, biology, soil science, geology, atmospheric science and geography) into the study of the environment and the solution of environmental problems. Environmental science provides an integrated, quantitative and interdisciplinary approach to the study of environmental systems.

Food science is a study concerned with all the technical aspects of food, beginning with harvesting or slaughtering and ending with cooking and consumption; it is a science that is commonly referred to as “from field to fork”.

Forestry science is the scientific management of forests for the production of lumber and other resources. It is the science of cultivating, maintaining and developing forests.

Geographical information system (GIS) science includes the design of systems to capture, store, manipulate, analyse, manage and present all types of geographically referenced data.

Geological science is the science comprising the study of the earth, the rocks of which it is composed and the processes by which it evolves. It is commercially important for mineral and hydrocarbon exploration and for evaluating water resources.

Industrial science is made up of multidisciplinary fields, e.g. combining information technology, physical science and the science of machinery to advance industries.

Materials science is an interdisciplinary field that applies the properties of matter to various areas of science and engineering. It investigates the relationship between the structure of materials at atomic or molecular scale and their macroscopic properties. It incorporates elements of applied physics and chemistry.

Mathematical science refers to disciplines which are mathematical in nature. It includes fields like computer science, computational science, statistics, theoretical physics and actuarial science.

Metallurgical science includes disciplines concerned with the science and technology of metals and alloys. It includes fields such as process metallurgy, physical metallurgy and mechanical metallurgy.

Physical science is any of the sciences, such as physics, chemistry, astronomy and geology, which analyse the nature and properties of energy and non-living matter.

ANNEXURE B: DESCRIPTION OF SIC CODES

SIC of Economic Activities		Description
Major Division	Division	
10000	10000	Agriculture, hunting, forestry and fishing
	11000	Agriculture, hunting and related services
	12000	Forestry, logging and related services
	13000	Fishing, operation of fish hatcheries and fish farms
20000	20000	Mining and quarrying
	21000	Mining of coal(hard) and lignite (brown coal)
	22000	Extraction of crude petroleum oils and natural gas; service activities incidental to oil and gas extraction, excluding surveying
	23000	Mining of gold and uranium ore
	24000	Mining of metal ores, except gold and uranium ore
	25000	Other mining and quarrying
	29000	Service activities incidental to mining of minerals
30000	30000	Manufacturing
	30000	Manufacture of food products, beverages and tobacco products
	31000	Manufacture of Textiles, Clothing and leather goods
	32000	Manufacture of wood and of products of wood and cork, (except furniture); manufacture of articles of straw and plaiting materials; manufacture of paper and paper products; manufacture of publishing, printing and reproduction of recorded material
	33000	Manufacture of coke, refined petroleum products and nuclear fuel; manufacture of chemicals and chemical products; manufacture of rubber and plastic products
	34000	Manufacture of non metallic mineral products
	35000	Manufacture of basic metals, fabricated metal products, machinery and equipment and of office, accounting and computing machinery.
	36000	Manufacture of electrical machinery and apparatus (not elsewhere classified)
	37000	Manufacture of radio, television and communication equipment and apparatus of medical, precision and optical instruments, watches and clocks
	38000	Manufacture of transport equipment
	39000	Manufacture of furniture; manufacturing (not elsewhere classified); recycling
40000	40000	Electricity, gas and water supply
	41000	Electricity, gas, steam and hot water supply
	42000	Collection, purification and distribution of water
50000	50000	Construction
	50000	Construction
60000	60000	Wholesale and retail trade; repair of motor vehicles, motor cycles and personal and household goods; hotels and restaurants
	61000	Wholesale and commission trade, except of motor vehicles and motor cycles
	62000	Retail trade, except of motor vehicles and motor cycles; repair of personal household goods
	63000	Sale, maintenance and repair of motor vehicles and motor cycles; retail trade in automotive fuel
	64000	Hotels and restaurants
70000	70000	Transport, storage and communication
	71000	Land transport; transport via pipelines
	72000	Water transport
	73000	Air transport
	74000	Supporting and auxiliary transport activities; activities of travel agencies
	75000	Post and telecommunication

80000	80000	Financial intermediation, insurance, real estate and business services
	81000	Financial intermediation, except insurance and pension funding
	81000	Insurance and pension funding, except compulsory social security
	83000	Activities auxiliary to financial intermediation
	84000	Real estate activities
	85000	Renting of machinery and equipment, without operator, and of personal and household goods
	86000	Computer and related activities
	87000	Research and experimental development
	88000	Other business activities
90000	90000	Community, social and personal services
	91000	Public administration, compulsory social security and defence activities
	92000	Education
	93000	Health and social work
	94000	Sewage and refuse disposal, sanitation and similar activities
	95000	Activities of membership organisations (not elsewhere classified)
	96000	Recreational, cultural and sporting activities
	99000	Other service activities



ANNEXURE C: CATEGORIES OF R&D PERSONNEL

Scientists or researchers are professionals engaged in the conception or creation of new knowledge, products, processes, methods and systems, as well as the management of the projects concerned. They typically hold a basic university degree, a postgraduate degree or even a PhD.

Technicians and technologists are people whose main tasks require technical knowledge and experience in one or more fields of engineering, physical and life sciences. They participate in R&D by performing scientific and technical tasks involving the application of concepts and operational methods, usually under the supervision of researchers.

Managers are involved in the planning and management of scientific and technical aspects of the researchers' work. Their rank is usually equal or superior to those of the researchers and they are often former or part-time researchers.

Directly supporting technical staff includes associate professionals in physical and engineering sciences whose tasks include –

- carrying out bibliographic searches and selecting relevant material from archives and libraries;
- preparing computer programs;
- carrying out experiments, tests and analyses;
- preparing materials and equipment for experiments, tests and analyses;
- recording measurements, doing calculations and preparing charts and graphs;and
- carrying out statistical surveys and interviews.

ANNEXURE D: METHODOLOGY FOLLOWED IN COMPILING THE REPORT

The report presents information on the performance of the R&D Tax Incentive Programme for the period March 2013 to February 2014. It is based on the information submitted to the DST by companies that participated in the Programme. The information reflects the transition from one procedure, dealing with retrospective submission of forms for R&D undertaken prior to 1 October 2012, to a system of preapproval of R&D activities undertaken on or after 1 October 2012.

Data is collected in accordance with the requirements of section 11D(11) of the Income Tax Act using forms prescribed by the DST, as follows:

- Under the retrospective procedure, a company completes the form and submits it to the DST within six months after their financial year-end, reporting the details about the section 11D R&D deduction claims that they would have lodged with SARS. This involves R&D undertaken prior 1 October 2012. The information under this process is therefore reported on a retrospective basis. In this way the companies are able to indicate the portion of the R&D expenditure they are intending to claim for the deduction.
- Under the preapproval procedure, a company applies for preapproval of its planned R&D activities. This procedure applies for R&D undertaken from 1 October 2012 onwards. Note that the information, under this procedure, may include expenditure planned for future years as some R&D projects may take more than a year to complete.

The information received from companies is captured in the R&D Tax Incentive Programme database at the DST. The information is checked and, where inconsistencies are noted, the necessary corrections are made. Where necessary, the company concerned is contacted to make corrections or validate the information.

Annual data stated in the report represents the information available at the time of compiling the report. The aggregate data gets revised on a year-to-year basis as new information is received. This is particularly the case with the retrospective claims because companies submit their forms years later than the year of R&D expenditure. The data is captured to reflect the years in which the R&D expenditure was incurred. This enables the DST to arrange the information by date/year of receipt or by applicable year of R&D expenditure, depending on the intended use.

New information received after finalising the report gets included in the next cycle of reporting, and the necessary updates are effected. Estimates published with previous reports may change for this reason.

The information available on the DST database represents records at a different stage to the information that appears on SARS administrative records (which is made when the deduction is claimed). It is therefore possible that the estimates of similar indicators may differ. The two sets of information had not been reconciled at the time of compiling this report.

The Income Tax Act requires that company information be presented in an aggregated and anonymous form. Care is therefore taken to ensure that the tables and graphs in the report do not unintentionally reveal the details of individual companies and their R&D activities.

The report tracks the activities of the Programme in the reporting period, using identified performance indicators. The report also provides aggregates of these indicators covering the period from November 2006 to February 2014, in order to show the cumulative effects of the Incentive over this period. The indicators include the following:

- Uptake in terms of the number of companies participating and the number of forms received.
- The profile of participating companies in terms of industry sector and turnover size.
- R&D expenditure reported in terms of years, industry sectors, fields of science and types of research.
- R&D personnel involved with the R&D supported by the Incentive.
- Tax revenue foregone, as published by the National Treasury in the budget review publication.
- Results achieved by companies on the basis of the R&D supported.
- Perceptions of impact by beneficiary companies.

NOTES

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