Revenue Guidelines for Research and Development Tax Credit

1. Introduction

Section 33 of the Finance Act, 2004 introduced a 20% tax credit for companies for incremental qualifying expenditure, over the amount spent in a base year, on research and development activities. The principal features of the scheme are as follows:

- The tax credit will be available to all companies, within the charge to Irish tax, that undertake research and development activities within the European Economic Area (EEA). In the case of an Irish tax resident company the credit is available only if the expenditure on the research and development is not otherwise available for a tax benefit elsewhere.

- The tax credit is available on incremental R&D expenditure using a rolling base. Generally, the base year is the year three years prior to the year in which the claimed expenditure is undertaken. However, for relevant periods commencing between 1 January 2004 and 31 December 2006 the base will be the R&D expenditure incurred in a corresponding period in 2003.

- Buildings are treated separately in calculating the R&D tax credit. Relevant expenditure by a qualified company can be claimed over 4 years. The tax credit is clawed back if the building or structure is sold or ceases to be used for the purposes of research and development activities within 10 years of the accounting period for which a credit is claimed.

- Expenditure that is met by any direct or indirect grant assistance is not considered to be expenditure incurred by the company and will therefore not be eligible for the credit.

- Expenditure incurred under cost sharing or pooling arrangements will qualify for the tax credit only to the extent that the expenditure is incurred by the company in the carrying on by it of qualifying research and development activities. Reimbursements or sharing of costs incurred by another company in the carrying on of research and development activities would not qualify.

- Companies claiming the R&D tax credit are not required to hold the intellectual property rights resulting from the R&D work.

- In general, the cost of sub-contracting or outsourcing research and development will not qualify for the tax credit. However, an amount of up to 5% of total research and development expenditure, which is paid to a university or institute of higher education to carry on research and development activity, may qualify.

- Where a company has insufficient corporation tax against which to claim the R&D tax credit in a given year, the tax credit may be carried forward indefinitely.

- The tax credit will be available on a group basis in the case of group companies.

2. Research and Development Activities

2.1 General

The law has very specific requirements as to what constitutes research and development activities for the purposes of the credit. In this context research and development activities means systematic, investigative or experimental activities in a field of science or technology. A key provision is that activities will **not be research and development** activities for the purposes of the relief **unless they**:

I. Seek to achieve scientific or technological advancement

and

II. Involve the resolution of scientific or technological uncertainty

These requirements are explored in more detail in the following paragraphs.

A qualifying research and development project may be part of a larger project. For example, a project to improve a manufacturing process may involve the application of new organisational methods, the application of a computer process or the improvement to existing computer processes. These activities may not come within the definition of research and development in the law. If, however, as part of the process improvement it is necessary to undertake activities that seek to achieve the goals listed at (I) and (II) above, then the element of the overall project comprising such activities would qualify for the tax credit. It will be necessary to isolate the expenditure incurred in the carrying on of the qualifying research and development element of the overall project for the purposes of the tax credit.

2.2 Scientific or Technological Advancement

2.2.1 **Seeking to achieve a scientific or technological advancement** involves removal of scientific or technological uncertainty through systematic, investigative or experimental activity.

The advance in question is an advance in overall knowledge or capability in the field of science or technology concerned and not simply a company's own scientific or technological capability. The test relates to knowledge or capability reasonably available to the company or to a competent professional working in the field. Where knowledge of an advance in science or technology is not reasonably available, for example, where it has not been published, is not in the public domain or it is a trade secret of a competitor, companies would not be disqualified from claiming the credit where they undertake activities seeking to independently achieve the same scientific or technological advancement.

There will be situations, therefore, where scientific or technological uncertainty exists for one company although a competitor has resolved that uncertainty but retained the resulting knowledge as a trade secret or proprietary information. A number of companies

may be working to resolve the same scientific or technological uncertainty at the same time.

Reasonably available scientific or technological knowledge or experience includes that which is reasonably available to a company from both internal and external sources. Thus if the solution to a scientific or technological uncertainty is reasonably available to a competent professional working in the field, lack of knowledge by a company due to lack of diligence in seeking that solution or lack of appropriate expertise within the company does not constitute scientific or technological uncertainty.

2.2.2 The Act requires that the activity must seek to achieve as opposed to succeed in achieving scientific or technological advancement. For example, a particular research and development activity may cease or radically change if the advance originally sought becomes available from a scientific journal or newly published patent. This does not undermine the validity of the activity from the perspective of this test.

Furthermore, in scientific research, determining that a hypothesis is incorrect advances scientific knowledge. Similarly, in experimental development, discovering that a certain technological alternative does not work can advance the technological knowledge base. Such result would not of itself preclude a claim being made for the R & D credit.

Seeking to achieve scientific or technological advancement may involve the introduction of scientific principles or technological advancements in one field into another field of science or technology.

2.2.3 Where a research and development activity is shown to be systematic, investigative or experimental and is undertaken to resolve a clearly defined scientific or technological uncertainty, the requirements of attempting to achieve scientific or technological advancement will generally be met.

Work carried out in incremental stages, the aim of which is the achievement of scientific or technological advancement and involves resolution of scientific or technological uncertainty will qualify as R & D.

2.2.4 Systematic, experimental or investigative activities directed at producing new or improved materials, products, devices, process systems or services can qualify for the tax credit provided the activities seek to achieve the goals set out at paragraph 2.1. However, normal technology transfer or making improvements to materials, products, devices, processes, systems or services through the purchase of rights or licence, or through the adaptation of known principles or knowledge, would not represent scientific or technological advancement. Neither would solving technical problems or trouble shooting using generally available scientific or technological knowledge or experience meet this test.

As an example the development of an updated version of a computer software package using existing tools and knowledge would not involve a technological advance. The fact that the new package contained enhanced features and worked more efficiently than the previous version would not necessarily involve an advance in technology. If on the other hand an enhanced feature arose from new technology developed by the company, that element of the expenditure relating to the development of the new technology would qualify for the R & D tax credit provided all other conditions in Section 33 were satisfied. Similarly the development of a new software system using existing tools or knowledge would not come within the definition of research and development.

2.3.1 Scientific or Technological Uncertainty

Scientific or technological uncertainty arises in two situations viz.

a) uncertainty as to whether a particular goal can be achieved at all,

or

b) there is certainty that the goal can be achieved but there may be uncertainty (from a scientific or technological perspective) in relation to alternative methods that will meet desired cost or other specifications such as reliability or reproducibility

If, on the basis of reasonably available scientific or technological knowledge or experience such technological or scientific uncertainty exists, research and development activity would aim to remove that uncertainty through systematic, investigative or experimental activity.

2.3.2 Uncertainty as to whether new materials, products, devices, processes, systems or services will be commercially viable is not scientific or technological uncertainty. In commercial settings, however, a reasonable cost target is always an objective. As mentioned in 2.3.1 attempting to achieve a particular cost target can require the resolution of a scientific or technological uncertainty. Cost targets may require that scientifically or technologically uncertain alternatives, approaches or configurations etc. have to be attempted, although more costly alternatives exist.

3. Definitions in the Law

3.1 Definition of R&D

Research and development activities means "systematic, investigative or experimental activities in a field of science or technology, being basic research, applied research or experimental development".

3.2 Meaning of Basic Research

Basic research means "experimental or theoretical work undertaken primarily to acquire new scientific or technical knowledge without a specific practical application in view".

3.3 Meaning of Applied Research

Applied research means, "work undertaken in order to gain scientific or technical knowledge and directed towards a specific practical application". Applied research is

usually undertaken either to determine possible uses for the findings of basic research or to determine new methods or ways of creating practical applications.

3.4 Meaning of Experimental Development

Experimental development means, "work undertaken which draws on scientific or technical knowledge or practical experience for the purpose of achieving technological advancement and which is directed at producing new, or improving existing, materials, products, devices, processes, systems or services including incremental improvements thereto".

3.5 Systematic Investigative and Experimental Activities

The Act requires research and development activities to be systematic, investigative or experimental in nature. It is usual in research and development activities to expect that a planned approach to the project will be formulated; that is, a hypothesis will be advanced, and a systematic series of experiments or investigations will be planned to test the hypothesis.

Each project should be documented showing clearly why each major element is required, and how it fits into the research activity as a whole. To build on the results of testing in a systematic way requires the organised documentation of work undertaken by way of experimentation or investigation. It is important for a company to maintain dated documents of the original scientific or technological goals of the activity, the progress of the work and how it has been carried out, and the conclusions.

Indicators or measures to be used to determine if the scientific or technological objectives of the research and development activity are met should be identified when forming the concepts for the research and development activity. These measures should also be documented at the early stages of the program. Failure to have such documentation may indicate the absence of a systematic, investigative or experimental approach.

The following are indicative of the existence of a systematic process:

- the work is carried out or led by trained or experienced personnel;
- the work is conducted under a development protocol or under the direction of a project manager;
- the work is documented;
- the process by which the work is performed is documented.

4. Field of Science & Technology

Regulations made by the Minister for Enterprise, Trade and Employment in consultation with the Minister for Finance ("the Regulations") detailing the categories of activities to be regarded as an activity within the meaning of the term "field of science or technology" as follows:

A. NATURAL SCIENCES

1 Mathematics and computer sciences, including mathematics and other allied fields, computer sciences and other allied subjects, software development
2. Physical sciences including astronomy and space sciences, physics, and other allied subjects
3. Chemical sciences including chemistry and other allied subjects
4. Earth and related environmental sciences including geology, geophysics, mineralogy, physical geography and other geosciences, meteorology and other atmospheric sciences including climatic research, oceanography, vulcanology, palaeoecology, and other allied sciences
5. Biological sciences including biology, botany, bacteriology, microbiology, zoology, entomology, genetics, biochemistry, biophysics, other allied sciences, excluding clinical and veterinary sciences

B. ENGINEERING AND TECHNOLOGY

1. Civil engineering including architecture engineering, building science and engineering, construction engineering, municipal and structural engineering and other allied subjects

2. Electrical engineering, electronics including communication engineering and systems, computer engineering (hardware) and other allied subjects
3. Other engineering sciences such as chemical, aeronautical and space, mechanical, metallurgical and materials engineering, and their specialised subdivisions; forest products; applied sciences such as geodesy, industrial chemistry; the science and technology of food production; specialised technologies of interdisciplinary fields, *e.g.* systems analysis, metallurgy, mining, textile technology and other allied subjects

C. MEDICAL SCIENCES

1. Basic medicine including anatomy, cytology, physiology, genetics, pharmacy, pharmacology, toxicology, immunology and immunohaematology, clinical chemistry, clinical microbiology, pathology
2. Clinical medicine including anaesthesiology, paediatrics, obstetrics and gynaecology, internal medicine, surgery, dentistry, neurology, psychiatry, radiology, therapeutics, otorhinolaryngology and ophthalmology
3. Health sciences including public health services, social medicine, hygiene, nursing, epidemiology

D. AGRICULTURAL SCIENCES

1. Agriculture, forestry, fisheries and allied sciences including agronomy, animal husbandry, fisheries, forestry, horticulture, and other allied subjects
2. Veterinary medicine

5. When a Research and Development activity ends

The resolution of scientific or technological uncertainty is a determining factor when considering where a research and development activity ceases and activity associated with commercial exploitation begins. Generally this point is reached when the scientific or technological uncertainty, which the research and development activity sought to resolve, has been resolved. The basic criterion for determining when a scientific research and experimental development project has been completed is reaching the point at which the project's initial technological objectives have been achieved. Generally, this occurs when the application of standard operating practices will permit the achievement of the technological performance objectives, which were established for the project.

6. Categories of Activity that are not research and development activities

The Regulations specify a non-exclusive list of categories of activities, which are **not** research and development activities as follows: -

(a) research in the social sciences (including economics, business management, and behavioral sciences), arts, or humanities;
(b) routine testing and analysis for purposes of quality or quantity control;
(c) alterations of a cosmetic or stylistic nature to existing products, services or processes whether or not these alterations represent some improvement;
(d) operational research such as management studies or efficiency surveys which are not wholly and exclusively undertaken for the purposes of a research and development activity;
(e) corrective action in connection with breakdowns during commercial production of a product;
(f) legal and administrative work in connection with patent applications, records and litigation and the sale or licensing of patents;
(g) activity, including design and construction engineering, relating to the construction, relocation, rearrangement or start-up of facilities or equipment other than facilities or equipment which is to be used wholly and exclusively for the purposes of carrying on by the company of research and development activities;
(h) market research, market testing, market development, sales promotion or consumer surveys;
(i) prospecting, exploring or drilling for, or producing, minerals, petroleum or natural gas;
(j) the commercial and financial steps necessary for the marketing or the commercial production or distribution of a new or improved material, product, device, process, system or service.
(k) administration and general support services (such as transportation, storage, cleaning, repair, maintenance and security) which are not wholly and exclusively undertaken in connection with a research and development activity.

7. Research and Development Activities cannot be subcontracted out

To qualify for relief the company claiming the tax credit must carry out the research and development activities itself. The activities must, therefore, be carried on in-house by employees paid by and working under the direction of the company concerned. As an exception, the law permits a company to pay a sum not exceeding 5% of the total expenditure on the research and development activities to a university or institute to carry out such activities on its behalf.

Where a company undertakes qualifying R & D activities for a third party, the company undertaking the activities would of course be entitled to the credit.

8. Qualifying Expenditure

8.1 Activities undertaken in-house by the claimant company

The tax credit will be available in respect of expenditure incurred in the carrying on of research and development activities and which is allowable as a trading expense under the usual tax rules relating to such expenditure. Under these rules expenses such as staff and overhead costs can be apportioned and the credit will be available for the portion expended in the carrying on of the research and development activity.
Allowable expenditure would include the cost of the following activities:

(a) engineering, design, operational research, mathematical analysis, computer programming, data collection, testing, or psychological research;
(b) indirect supporting activities such as maintenance, security, administration and clerical activities, finance and personnel activities;
(c) ancillary activities essential to the undertaking of research and development activities such as taking on and paying staff, leasing laboratories and maintaining research and development equipment including computers used for research and development activities;

8.2 Incidental expenses to third parties

Payments to third parties of an incidental nature in respect of necessary services ancillary to the research and development activities would also be allowable. These would include the costs of obtaining published scientific and technical information on the current state of the technology or science, or the cost of training of staff directly involved in the research and development activities.

8.3 Royalty payments

Expenditure on research and developments shall not include a royalty or other sum paid by a company in respect of the user of an invention:

a) If it is paid to a person connected with the company and the royalty is exempt from tax in the hands of the recipient,

or

b) The payment is not an arm's length fee

Royalty payments not subject to the above exclusion would qualify provided they are incurred in the carrying on of research and development activities as defined in the law.

9. <u>Information to be retained by the Company in support of claims</u>

It should be possible to access full details of the project from dated documents drawn up both before the project commences and during the project. Such documentary evidence should include:

a) A description of the research and development activities, the methods to be used and what the company seeks to achieve by the undertaking the activities concerned

b) The field of science and technology concerned

c) The scientific or technological advancement that is the goal of the research and development activities, and

the scientific and technological uncertainty the company is seeking to resolve by those activities,

Evidence backed up by expert opinion, where available, that the above goals are authentic given the reasonably available information on the state of the technology or science should be available for examination

d) details of systematic investigation outlined at paragraph 3.4 including
   - the hypothesis advanced

- the series of experiments or investigations undertaken to test the hypothesis
- documentary evidence of the necessity for each major element and how it fits into the project as a whole
- dated documents of the original scientific or technological goals, the progress of the work, how it was carried out and the conclusions
- indicators or measures identified at the commencement of the project to determine if the scientific or technological objectives of the research and development activities are met

e) the qualifications, skill and experience of the project manager

f) the numbers, qualifications and skill levels of other personnel working on the project

g) the hours worked by the personnel concerned with the project

h) the expenses that can be identified as being wholly, exclusively and necessarily paid in connection with the project; the reasons for each item of expenditure and how it fits in with the project, and where expenses are apportioned between qualifying and non qualifying activities the rationale for the apportionment

i) evidence that, apart from incidental expenditure, and payments to universities and institutions (paragraph 7) the majority was spent on in-house activities

j) details of expenses to third parties

k) details of royalty payments other than excluded royalty payments (see paragraph 8.3)

10. <u>Advance Opinion</u>

The Revenue Commissioners would be prepared to give an advance opinion as to whether a proposed project would satisfy the requirements of the legislation

Applications containing the information at paragraph 9 should be made to:

Ms Susan Cummins,
Direct Taxes Interpretation and International Division,
Blocks 8-10,
Dublin Castle,
Dublin 2.