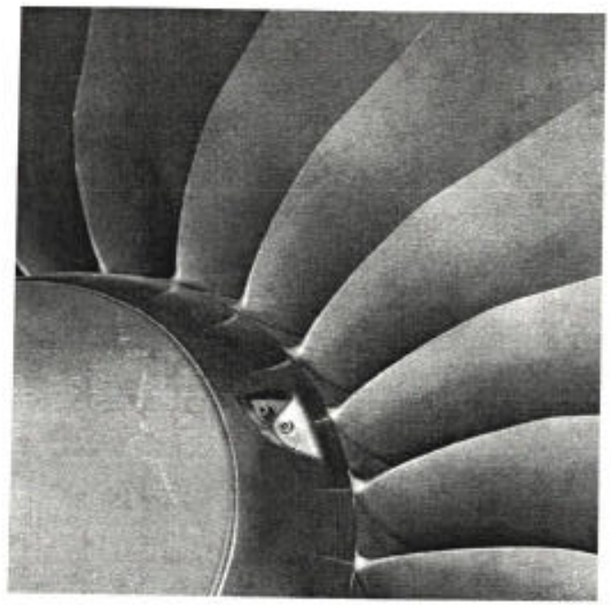
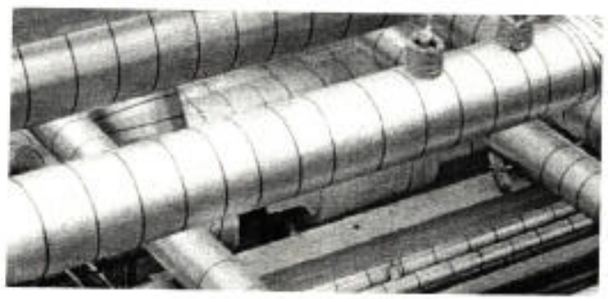
HM Revenue
& Customs

Research and development tax relief

Making R&D easier for small companies









Contents

Making R&D easier for small companies

This guidance outlines how tax relief for Research and Development (R&D) works for small and medium-sized enterprises (SMEs).

It provides:

- straightforward definitions and explanations of the schemes
- details of qualifying costs
- guidance on how to make a claim under the SME and RDEC schemes
- advice on where to find help and further detailed information.

This publication provides general guidance on the law, but how the law applies in a particular case is fact-dependent and where there is doubt you should contact HMRC.

Background

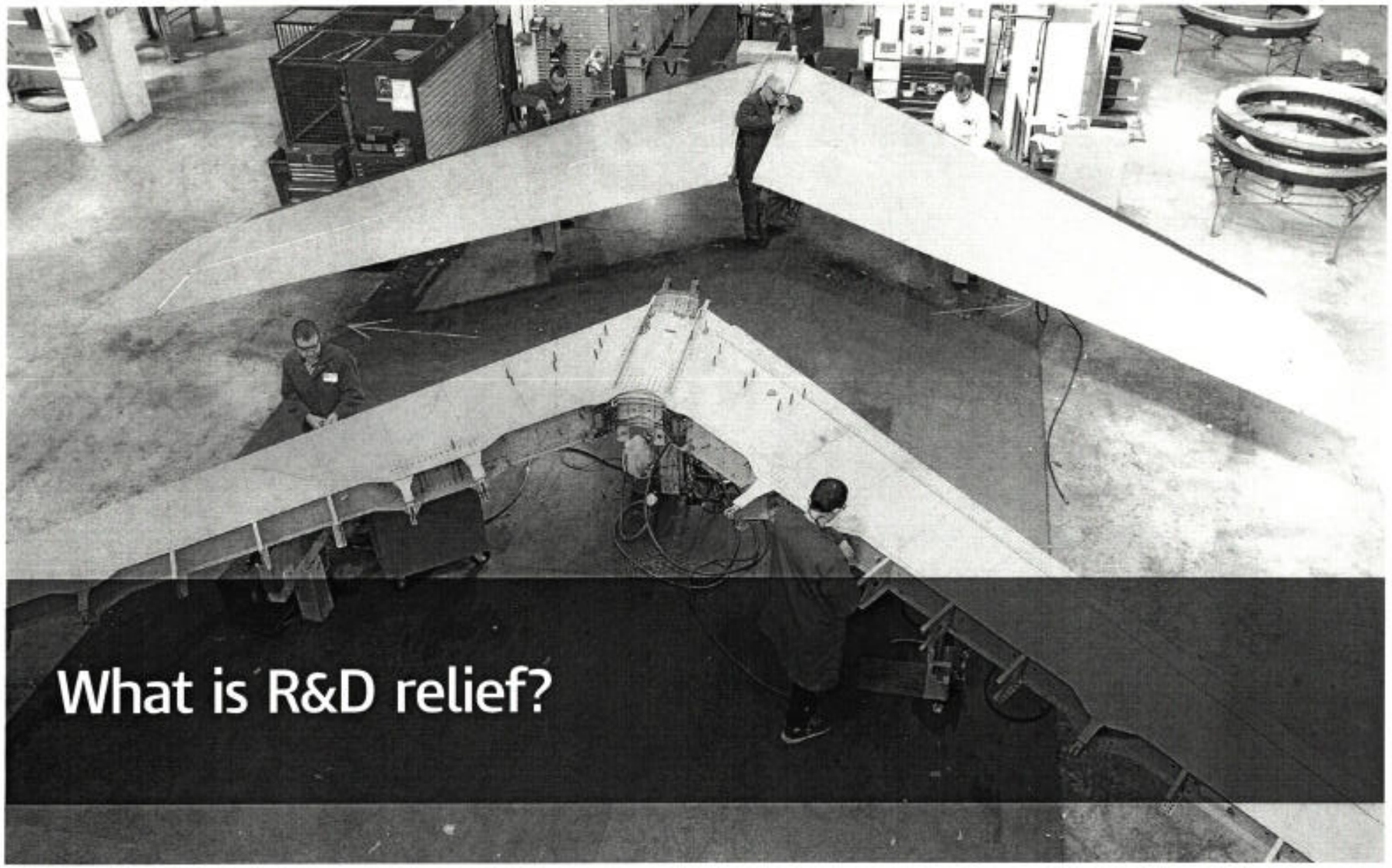
In 2000 the government introduced a scheme to encourage scientific and technological innovation within the United Kingdom.

R&D is a Corporation Tax (CT) tax relief that may reduce your company's tax bill if your company is liable for CT or, in some circumstances, you may receive a payable tax credit. This guidance is designed to help you make a claim for tax relief if you are an SME.

The Research and Development Expenditure Credit (RDEC) scheme was introduced in the Finance Act 2013 – it enables companies with no CT liability to benefit through a cash payment or a reduction of tax or other duties due.

Specific definitions of R&D can be found at:
gov.uk/hmrc-internal-manuals/corporate-intangibles-research-and-development-manual/cird81900

Further guidance on RDEC can be found at:
gov.uk/hmrc-internal-manuals/corporate-intangibles-research-and-development-manual/cird89705



What is R&D relief?

What is R&D relief?

For tax purposes, R&D takes place when a project seeks to achieve an advance in overall knowledge or capability in a field of science or technology.

R&D relief allows companies that carry out qualifying R&D related to their trade to claim an extra CT deduction for certain qualifying expenditure. The level of relief available depends upon which scheme the company uses.

The SME scheme

From 1 April 2015, the relief a company can get has increased to 230% on their qualifying R&D costs. Loss-making companies can in certain circumstances surrender their losses in return for a payable tax credit.

Research and Development Expenditure Credit (RDEC) scheme

From 1 April 2015 a taxable credit is available at 11% of qualifying R&D expenditure. For loss making companies the tax credit is fully payable (subject to certain restrictions).

Features of the RDEC scheme

Companies with no CT liability will benefit from RDEC either through a cash payment or a reduction of tax or other duties due. The payable credit is limited to the company's PAYE/NIC liabilities of the staff engaged in qualifying activities in the accounting period.

SMEs will be able to claim RDEC if they do subcontracted or subsidised research. Companies in groups can surrender the RDEC against another group company's CT liability.

Further information on SMEs can be found on **page 23.**

Is my company small or large?

To find out if a company is an SME for R&D tax relief purposes we look at:

- staff headcount (less than 500)
- either turnover (€100m) or balance sheet total (less than €86m).

When accounts are prepared in sterling, convert the turnover and balance sheet totals to euros, using the exchange rate for the balance sheet date.

Sometimes, a company will have to take into account its own data, a proportion of a partner enterprise's data or the data of a linked enterprise. There's more about partner and linked enterprises on the next page. If your company has no external investors and isn't in a group, you only need to count your own company data.

Does my company have linked or partner companies?

If your company has external investors or is in a group, it's worth looking at the detailed guidance. The following is a summary of the main rules.

Linked companies

If the company is controlled by or controls other companies it is a linked company, for example if it has more than 50% of the shareholders' or members' voting rights in another company.

The data of the linked companies should be added to the data from the company that does the R&D.

Partner companies

If 25% or more of a company is owned by another, or if the company owns 25% or more of another, it is a partner company.

Certain companies and types of investor are excluded from consideration as a partner. There is more about this in the detailed guidance.

Detailed guidance on linked and partner companies can be found at: **gov.uk/hmrc-internal-manuals/corporate-intangibles-research-and-development-manual/cird91000**

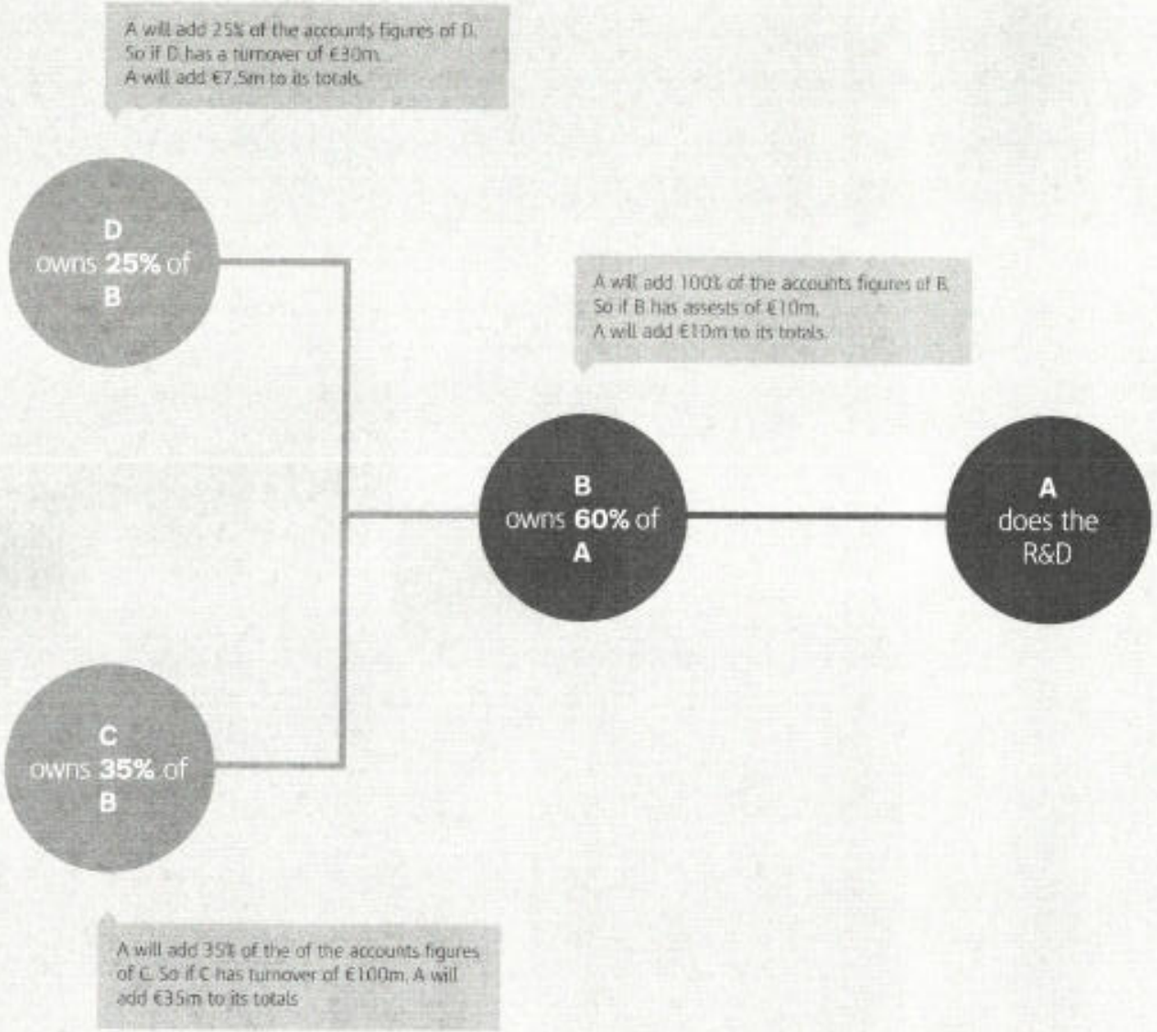
A proportion of the data of the partner companies should be added to the data from the company that does the R&D. So if the other company controls 30% of the R&D company, add 30% of its data.

Example of a company being a linked or partner company

Company A is linked to Company B because B has a 60% holding in A.

B also has two partner companies: C and D, which own 32% and 25% of B.

A must add 100% of the data of B plus 35% of the data of C and 25% of the data of D to its own data.



Which projects qualify?

Which projects qualify?

Work that advances overall knowledge or capability in a field of science or technology, and projects and activities that help resolve scientific or technological uncertainties, may qualify for R&D relief.

R&D has a specific statutory definition for the purposes of R&D tax relief which is not the same as the commercial, engineering or accounting definitions.

To qualify the company must be carrying out research and development work in the field of science or technology. The relief is not just for 'white coat' scientific research but also for 'brown coat' development work in design and engineering that involves overcoming difficult technological problems.

This can include creating new processes, products or services, making appreciable improvements to existing ones and even using science and technology to duplicate existing processes, products and services in a new way. But pure product development in itself does not qualify.

Some examples of qualifying activities include software development, engineering design, new construction techniques, bio-energy, cleantech, agri-food and life and health sciences. There are case studies at the end of this guide for these industries.

Things to consider

- Does my company have a project?
- Am I seeking an advance in a field of science or technology?
- Does the advance extend the overall knowledge or capability in the field of science or technology and not just the company's own state of knowledge or capability?
- Does the project involve an uncertainty that competent professionals can't readily resolve and where solutions aren't common knowledge?

Judging which projects and activities will qualify for R&D tax relief is usually the area where most people seek help. Experience has shown that companies can benefit from HMRC's early involvement. There is information about our Advance Assurance scheme, which helps with these issues, later in this guide.

How to show that your project is R&D within the tax definition

When you submit a claim it helps if you give details of your project. The questions below will help you decide if your project is within our definition for R&D. If your claim clearly sets out how you approach these questions, it helps HMRC see that your company really is doing R&D.

1. What is the scientific or technological advance?

Concentrate on the science and technology

Rather than stating the product, process or functionality being developed, consider what scientific or technological advance is being sought. This focuses attention on the project's aim for an advance. This is important in judging whether or not R&D for tax relief purposes is being undertaken.

Some activities aren't science

Science doesn't include work in the arts, humanities and social sciences (including economics).

'Commercially innovative' isn't enough

It's not enough that a product is commercially innovative. You can't claim in respect of projects to develop innovative business products or services that don't incorporate any advance in science or technology.

2. What scientific or technological uncertainties were encountered?

Did you really encounter 'uncertainty'?

Scientific or technological uncertainty exists when knowledge of whether something is scientifically possible or technologically feasible, or how to achieve it in practice, isn't readily available or deducible by a competent professional working in the field.

Not every problem is an uncertainty

But uncertainties that can be resolved through relatively brief discussions with peers are routine uncertainties rather than technological uncertainties. Technical problems that have been overcome in previous projects on similar systems aren't likely to be technological uncertainties.

Set out what happened

In your claim, you should set out at a high level, in a way that can be understood by someone who's not an expert, what the uncertainties were and when they started and ended.

3. How and when were the uncertainties overcome?

Describe the methods used to overcome the uncertainties and the investigations and analysis undertaken. This shouldn't be in great detail, but enough to show it wasn't straightforward.

Describe the successes and failures and the impact of these on the overall project. If the uncertainties weren't overcome, explain what happened.

Remember that the commercial failure of the product or project does not mean that R&D was not present. And if the scientific uncertainties weren't overcome, that can still mean that the work to address the uncertainties can be R&D.

4. Why wasn't the knowledge being sought readily deducible by competent professionals?

Explain the uncertainty in the context of the known state of the field of research

It might be publicly known that others have tried to resolve the uncertainties and failed. Or maybe others have resolved the uncertainties, but precisely how it was done isn't in the public domain. In either case a valid technological uncertainty can still exist.

What if there's limited available information about the state of the field of research?

If there's little public information available about the project, you'll need to show that the people leading it are competent professionals working in the relevant field. This might be done by outlining their relevant background, professional qualifications and recent experience and then have them explain why they consider the uncertainties are scientific or technological uncertainties rather than routine uncertainties.

Whichever is appropriate, set out the details and have evidence available if needed.

The start and end of a project for R&D tax purposes

It's important to know when an R&D project starts and ends, because that makes sure your company claims the right amount of relief.

When a project starts

The project starts when work to resolve the uncertainty starts. This is when you have identified the technical issues that need to be resolved, and the current state of knowledge within that field of science or technology has not provided a solution to those uncertainties.

When a project ends

A project ends when that uncertainty is resolved or the work to resolve it ceases. This is when you have a working prototype or material device/product or process ready to be tested or go into production, or if you decide not to take the project forward.

R&D can take place even after production starts

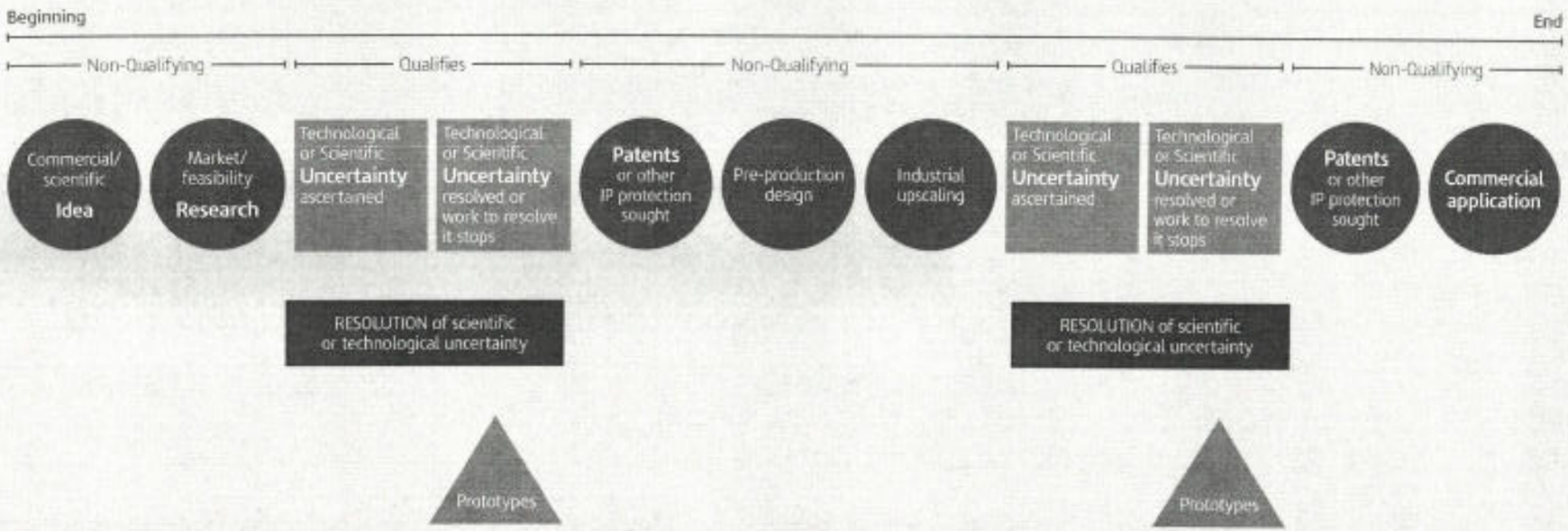
If any new problems arise involving scientific or technological uncertainty after the product has been put into production or into use then the R&D process may start again. There is a distinction between such problems involving science and technological uncertainties and routine fault fixing or design tweaks.

It is particularly important that the people doing the work are involved when considering whether the project is R&D for tax purposes as they are the ones who understand best the scientific or technological problems involved. They should focus on what advances the project is seeking to achieve and the uncertainties to be faced rather than on the eventual product aspiration, specification or design.

Possible commercial project timeline – defining R&D for tax purposes

This illustrates the qualifying and non-qualifying activities within a 'whole life' project plan.

Examples of how this may apply to some of the industry sectors can be found on **page 35 onwards.**



The parts of a project that require R&D activity to resolve scientific or technological uncertainties qualify for tax relief. The qualifying work starts when work to resolve the uncertainty starts, and ends when the new knowledge is codified in a usable form, or when work to resolve the uncertainty ceases.

What costs qualify?

What costs qualify?

Direct and externally provided staff, subcontracted R&D, consumables, software, trials, prototyping and independent research costs may all qualify for R&D relief. Capital expenditure does not qualify under this scheme, nor does expenditure on the production and distribution of goods and services.

Direct R&D staff costs

Your company can claim for salaries, wages, class 1 NIC and pension fund contributions for staff directly and actively engaged in the R&D project.

This covers employees who undertake 'hands on' R&D work and the proportion of supervisory and managerial time spent specifically directing such employees in those activities.

Support staff costs, for example administrative or clerical staff, do not qualify, except when they relate to qualifying indirect activities. These can be activities like maintenance, clerical, administrative and security work.

A more detailed definition of support staff costs at: **hmrc.gov.uk/manuals/cirdmanual/CIRD81900.htm**

Your company cannot claim for employment-related benefits.

Externally provided R&D staff

These are the staff costs paid to an external agency for staff who are directly and actively engaged in the R&D project – these are not employees and subcontractors. Relief is usually given on 65% of the payments made to the staff provider. Special rules apply if the company and staff provider are connected or elect to be connected.

Further information on externally provided R&D staff can be found at: **hmrc.gov.uk/manuals/cirdmanual/cird84000.htm**

Subcontracted R&D

SME Scheme

Your company can generally claim for 65% of the payments made to unconnected parties. The subcontracted work may be further subcontracted to any third party. Special rules apply where the parties are connected or elect to be connected.

RDEC Scheme

R&D expenditure subcontracted to other persons is generally not allowable unless it is directly undertaken by a charity, higher education institute, scientific research organisation or health service body – or by an individual or a partnership of individuals.

Further information on SME/RDEC schemes can be found at: hmrc.gov.uk/manuals/cirdmanual/cird84250.htm

Consumable items

Your company can claim for the cost of items that are directly employed and consumed in qualifying R&D projects. These include materials and the proportion of water, fuel and power consumed in the R&D process.

From 1 April 2015, the costs of materials incorporated in products that are sold are not eligible for relief.

Further information on consumable items can be found at: hmrc.gov.uk/manuals/cird82300.htm

Software directly used in the R&D

Your company may claim for the cost of software that is directly employed in the R&D activity. Where software is only partly employed in direct R&D, an appropriate apportionment should be made.

Further information on software directly used in the R&D can be found at: hmrc.gov.uk/manuals/cirdmanual/cird82500.htm

Clinical trial volunteers

Pharmaceutical companies and research organisations often make payments to volunteers taking part in clinical trials. These are allowable for relief, but read the guidance first.

Further information on payments to volunteers taking part in clinical trials can be found at: hmrc.gov.uk/manuals/cirdmanual/cird84400.htm

Contributions to independent research

Only large companies may claim R&D relief on contributions they make towards funding relevant independent R&D. This R&D must be carried out by the recipient and be related to the company's trade. Contributions must be made to a qualifying body – a charity, higher education institute, scientific research organisation or health service body – or to an individual or a partnership of individuals.

Further information on contributions to independent research can be found at: hmrc.gov.uk/manuals/cirdmanual/cird82200.htm

hmrc.gov.uk/manuals/cirdmanual/cird82250.htm

Prototypes

Where a prototype is created to test the R&D being undertaken, the design, construction and testing costs will normally be qualifying expenses.

However, if the prototype is also built with a view to selling the prototype itself (such as the construction of a bespoke machine), HMRC considers that to be production and outside the R&D scheme, even if R&D was undertaken to create the prototype.

In that case you need to work out the split between R&D expenditure and production costs. For example, the construction costs and materials consumed would not be qualifying expenses, but design, modelling and testing costs could still qualify.

Collaborative working

In general, where two companies collaborate on a R&D project, each can claim relief on the qualifying costs they have incurred.

Where a company and a university or other research institute collaborate, only the company can claim relief on the qualifying costs it has incurred.

Collaborative arrangements are governed by their contracts and you should seek advice from HMRC where it's unclear which company gets the relief.

What costs do not qualify

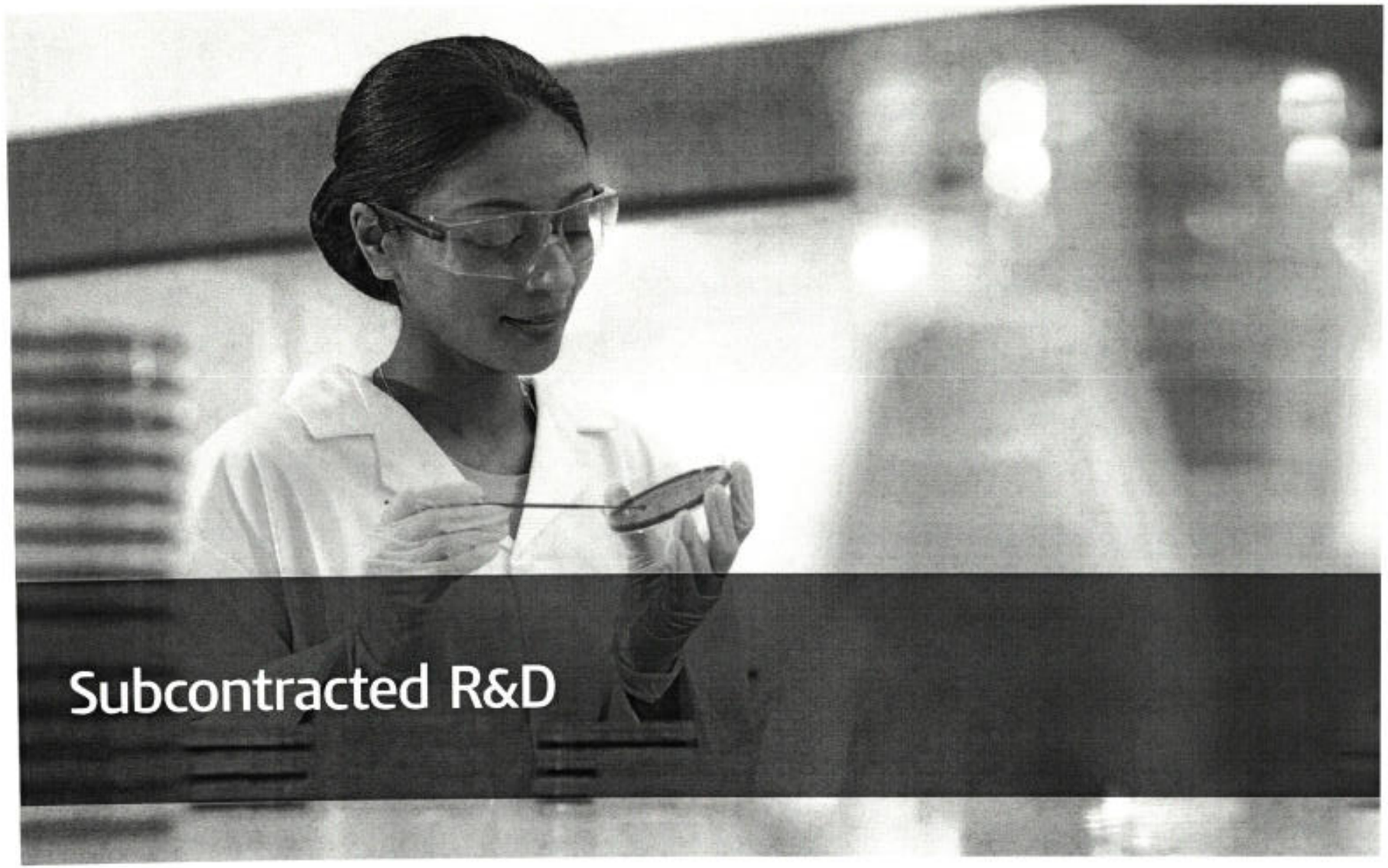
Not all costs qualify, and you cannot receive R&D relief for:

- The production and distribution of goods and services
- Capital expenditure under either of the R&D relief schemes. However, a generous 100% Research and Development Allowance may be due on capital assets, such as plant, machinery and buildings used for R&D activity.

Further information on capital assets used for R&D activity can be found at: **gov.uk/hmrc-internal-manuals/capital-allowances-manual/ca60000**

- The cost of land
- Payments for the use and creation of patents and trademarks, as these are the cost of protecting the completed R&D. This also includes the staff costs in relation to the time spent by all staff on the preparation and submission of such applications. However, the Patent Box enables companies to apply a 10 per cent rate of Corporation tax to profits earned from their patented inventions after 1 April 2013.

Further information on Patent Box be found at: **gov.uk/guidance/corporation-tax-the-patent-box**



Subcontracted R&D

Subcontracted R&D

SMEs that subcontract qualifying R&D activities can claim tax relief on 65% of the payment to the subcontractor. SMEs undertaking qualifying R&D for large companies may claim under the RDEC Scheme.

Your company as the contractor

Under the SME Scheme the subcontractor does not need to be a UK resident and there is no requirement for the subcontracted R&D to be performed in the UK. There are special rules where the parties are connected or elect to be connected. The diagrams below help explain what you may claim.

Further information and guidance on connected and unconnected companies can be found at: **gov.uk/hmrc-internal-manuals/corporate-intangibles-research-and-development-manual/cird91000**

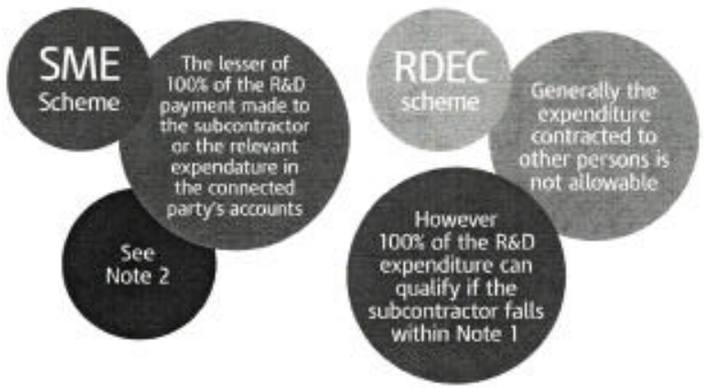
Your company as the subcontractor

Generally, if an SME or large company carries out an R&D project under contract to a large company or person not chargeable to tax in the UK as a trade, profession or vocation, they are likely to be able to make a claim under the RDEC scheme.

Further information and guidance on your company as the subcontractor can be found at: **hmrc.gov.uk/manuals/cirdmanual/cird81470.htm**

Unconnected Subcontractors

Connected Subcontractors



Note 1:
An individual, a partnership made up wholly of individuals or a qualifying body. Further information can be found at: **hmrc.gov.uk/manuals/cirdmanual/cird82250.htm**

Note 2:
Definitive rules can be found at: **hmrc.gov.uk/manuals/cirdmanual/cird84200.htm**

Subcontracting – who can make a claim?

Contracting company	Relief	Subcontractor	Relief
SME	Yes	SME	No
SME	Yes	Large company	No
SME	Yes	Qualifying body, individual or partnership	No
Large company	No	SME (even if the SME further subcontracts to qualifying body individual or partnership)	Yes (under RDEC scheme)
Large company	No	Large company	Yes
Large company	Yes	Qualifying body, individual or partnership	No
Large company	No	Another group company	Yes

Grants and subsidies

Grants or subsidies that your company receives for your R&D project may make a difference to your R&D claim.

The SME scheme is a notifiable State Aid, and a company can't get the SME relief if is receiving any other notifiable State Aids for the same R&D project.

So if you are thinking of claiming for a project that has already received a grant, it is essential that you establish whether that grant was a notifiable State Aid. The grant provider will be able to tell you that.

If you have received a grant which is notifiable State Aid, for an R&D project, you can't get relief under the SME scheme, but eligible expenditure will qualify under the RDEC scheme.

You don't need to reduce the RDEC eligible expenditure by the value of the grant received.

If the company has a number of projects it may make RDEC claims for projects that have had State Aid, and SME claims for non-grant funded project(s).

More on grants and subsidies

You may have received a grant which is not a notifiable State Aid – examples include de minimis State Aid, Horizon 2020 or Framework Programme funding.

If you have received a grant which is not a notifiable State Aid, or have received any other type of subsidy for one of your R&D projects, you may be eligible to claim under both the RDEC and the SME scheme.

You can claim under the RDEC scheme for eligible expenditure which has been subsidised by the grant or subsidy. In addition, if there is eligible expenditure on the project which has not been covered by the subsidy, you can make a claim for the balance of the expenditure under the SME scheme.

Example

Expenditure on project:
£125,000 – staff and consumables

Amount of grant received:
£80,000 – potentially eligible for RDEC claim

Balance of expenditure:
£45,000 – potentially eligible for SME Claim

Why is RDEC important to SMEs?

SMEs may also claim relief under the RDEC scheme if they cannot claim under the SME scheme because of a grant or subsidy, or because they are carrying out subcontract R&D for a large company.

SME worked example

	Profit and Loss Account (£)
Sales	1,000
Cost of sales	(500)
Gross profit	500
R&D qualifying expenditure	(100)
Other expenses	(150)
Total operating costs	(250)
Net profit before tax	250
Tax due (see below)	24
Total tax	**24**
Profit after tax	226

	Corporation Tax Computation (£)
Net profit before tax	250
Less R&D relief	(130%) (130)
Adjusted profit before tax	120
Corporation Tax due at 20%	24

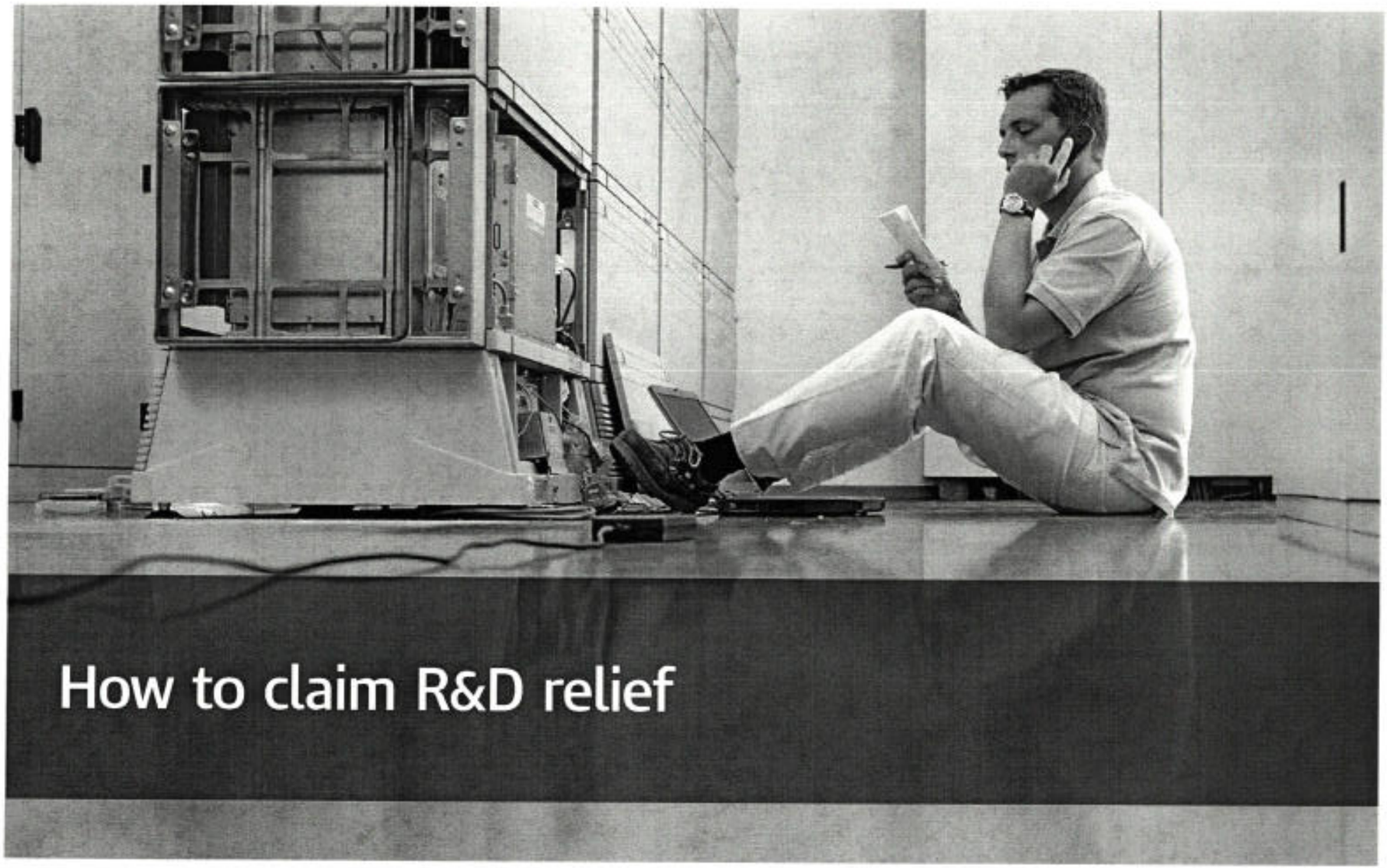
	Corporation Tax payable (£)
Corporation Tax	24

RDEC worked example

	Profit and Loss Account (£)
Sales	1,000
Cost of sales	(500)
Gross profit	500
R&D qualifying expenditure	(100)
11% RDEC on expenditure	11
Other expenses	(150)
Total operating costs	(239)
Net profit before tax	261
Tax due at 20%	52.2
Total tax	**52.2**
Profit after tax	208.8

	Corporation Tax Computation (£)
Net profit before tax	261
Corporation Tax due at 20%	52.2

	Tax payable (£)
Corporation Tax due	52.2
Less tax credit	(11)
Corporation Tax payable	41.20



How to claim R&D relief

How to claim R&D tax relief

Making a claim

CT600

You can claim R&D relief by entering the total qualifying expenditure on the full Company Tax Return form, CT600.

Payable Tax Credit

Under the SME scheme, SMEs that prepare their accounts on a going concern basis may be able to claim a payable tax credit - up to 14.5% of the R&D loss surrendered from 1 April 2014.

Backdated claims

If your company has been undertaking qualifying R&D and has not yet claimed R&D relief, you may make a backdated claim within the anniversary of your filing date – generally two years after the end of the accounting period.

How to calculate your claim

There are three stages to making your claim. Using an example, we explain how to take your figures and turn them into a claim.

1. Work out your allowable expenditure

Your total costs	What is allowable	Total
R&D staff (x3) with total costs £150,000 and 80% time directly on R&D.	£150,000 x 80% allowable as staff costs	£120,000
R&D manager's costs £100,000 with 20% of time directly managing the R&D activity.	£100,000 x 20% allowable as staff costs	£20,000
Heat and light £5,000 with 25% consumed in R&D project	£5,000 x 25% allowable as consumable items	£1,250
Disposable laboratory equipment consumed £200	£200 allowable as consumable items	£200
£80,000 payments to an unconnected subcontractor for R&D work	£80,000 x 65% of payments allowable as subcontracted R&D	£52,000
£70,000 payments to an unconnected staff provider for staff directly engaged on R&D.	£70,000 x 65% allowable as an externally provided worker (EPW).	£45,500
		£238,950

In this example, we've worked out that the total qualifying expenditure is £238,950.

The next thing to do is to turn this into a figure for the amount of R&D tax relief that the company wants to claim.

2. Turn the allowable expenditure into an R&D tax relief figure

Total allowable costs	£238,950
Multiply by 130%	£310,635
Add these together to get the total R&D tax relief: 'enhanced expenditure'	£549,585

3. Put the R&D tax relief into the right box on the company tax return

Now that we have worked out the R&D tax relief, this can be entered onto the company tax return

For accounting periods that start on or after 1 April 2015, use version 3 of the company tax return. Version 2 is for periods before this. The two versions have different box numbers, so we provide guidance on both. Check the front page of the tax return to see which version you are using.

Using version 3 of the company tax return

Put an X in the box at box 650.

Enter the enhanced expenditure figure in box 660 – in this example you would enter £549,585.


Information about enhanced expenditure
Research and Development (R&D) or creative enhanced expenditure
650 Put an 'X' in box 650 if the claim is made by a small or medium-sized enterprise (SME), including a SME subcontractor to a large company X
655 Put an 'X' in box 655 if the claim is made by a large company
660 R&D enhanced expenditure £ 5 4 9 5 8 5 .

Using version 2 of the company tax return

Put an X in the box at box 99.

Enter the enhanced expenditure figure in box 101 – in this example you would enter £549,585.

Claiming the payable tax credit?

If your company wants to claim a payable tax credit, there are a couple more steps to carry out before you fill in the tax return.

First you need to know how much tax you are due to pay in this period.

Second, you need to calculate the amount of the payable tax credit. In the simplest cases, this figure will be ('enhanced expenditure' x payable tax credit rate). Using 2016 rates and the example above, the payable tax credit will be:

£549,585 x 14.5% = £79,690.

Guidance on how to calculate the amount of the payable tax credit can be found at: gov.uk/hmrc-internal-manuals/corporate-intangibles-research-and-development-manual/cird90500

Now you are ready to enter the figures.

Using version 3 of the company tax return

Enter the company's Self Assessment figure in box 525.

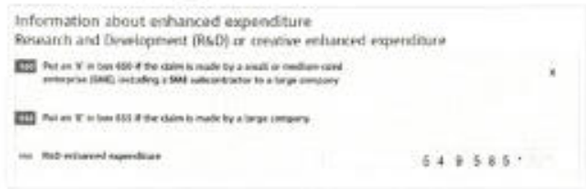
Enter the tax credit figure in box 530 – in this example you would enter £79,690.

Complete box 545 – in this example, you would enter £79,690.

Complete box 570 – that's box 545 minus box 525.

Put an X in the box at box 650.

Enter the enhanced expenditure figure in box 660 – in this example you would enter £549,585.



Enter the payable tax credit figure at box 875 – in this example, you would enter £79,690.

Using version 2 of the company tax return

You need to complete boxes 86, 87, 89, 99, 101 and 143.

Claiming the RDEC?

Using version 3 of the company tax return.

You need to calculate the expenditure credit due to the company. Using 2016 rate, and for this example, it would be £238,950 x 11% = £26,285.

Enter the expenditure credit figure at box 530 – in this case, it is £26,285.

Complete box 570.

Check box 650, and for box 660 enter £549,585.

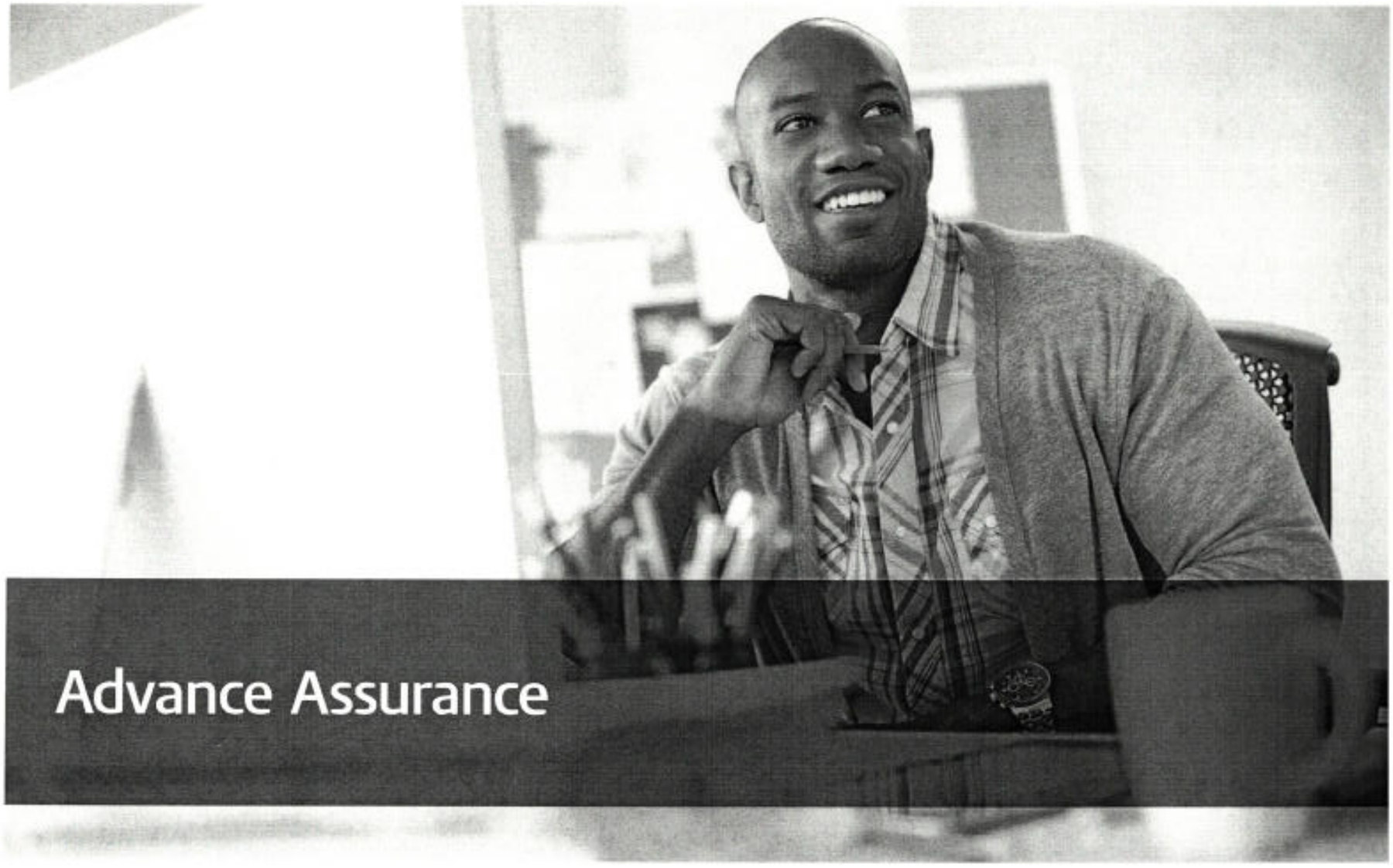
Complete box 880 – in this case it will be £26,285.

Keeping records

There is no additional record keeping requirement specifically for the purposes of claiming R&D relief.

You should be able to give a summary of the R&D project undertaken and explain how the project is R&D within the tax relief definition. It would be helpful if you provide this information in a short report at the time of making your claim.

Focus on the advances being sought and the uncertainties faced rather than just a description of the finished product. Include a breakdown of the expenses that qualify for relief.



Advance Assurance

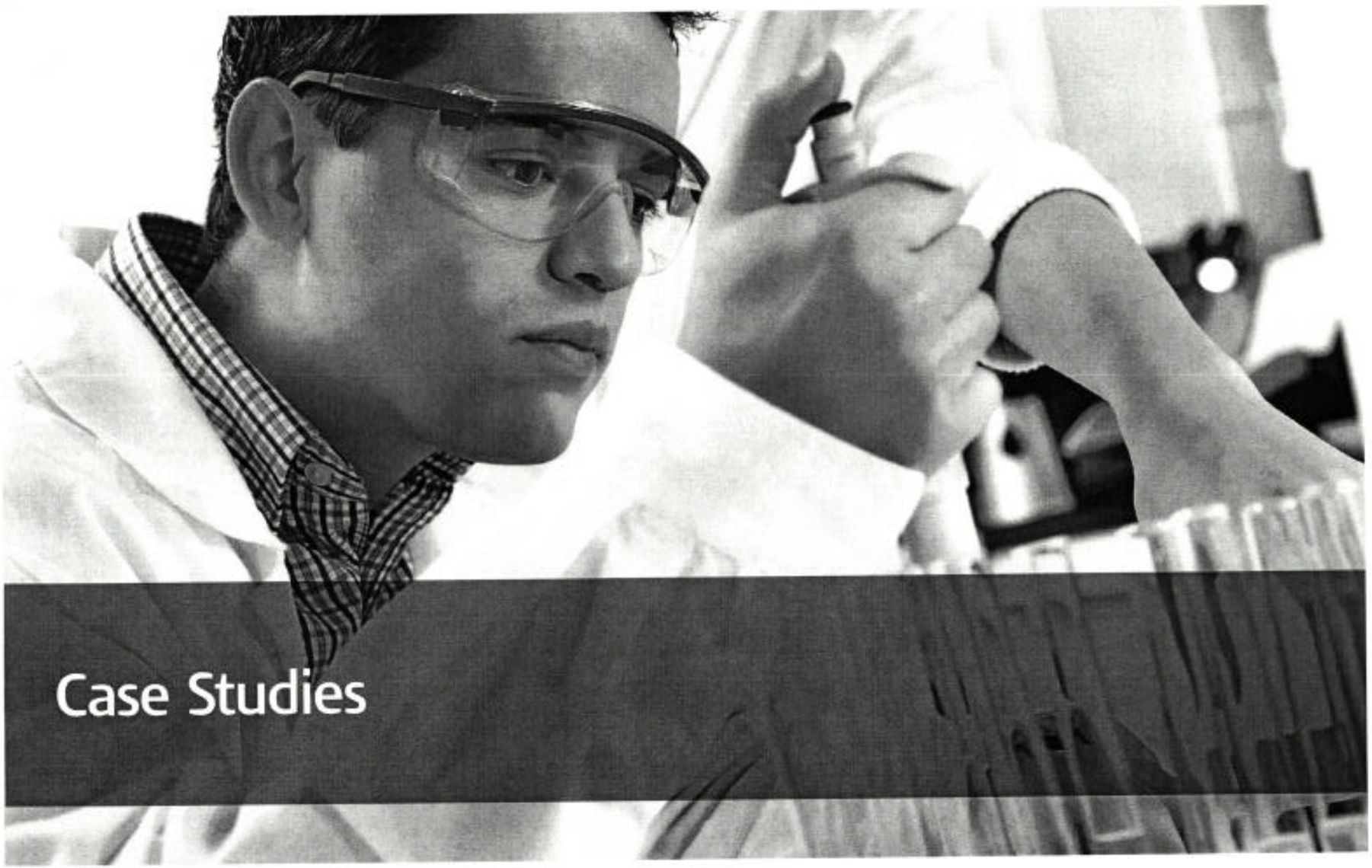
Advance Assurance

In November 2015, HMRC introduced Advance Assurance for companies that claim R&D tax relief in November 2015.

If your company carries out R&D for itself or other companies, it could qualify for Advance Assurance. This means that for the first three accounting periods of claiming for R&D tax relief, HMRC will allow the claim without further enquiries.

Applying for Advance Assurance is voluntary and you can do this at any time before the first claim for R&D tax relief. Your company can still apply for R&D tax relief without Advance Assurance.

Further information, help and advice can be found at:
gov.uk/guidance/research-and-development-tax-relief-advance-assurance



Case Studies

The Agri-food Sector

The Agri-food sector is increasingly exploiting new science and technology.

A project to develop a new feed or to grow crops that have substantially increased vitamin content, produce better or more reliable yields, or are more tolerant to weather conditions and resistant to blight, would be qualifying R&D.

The scientific and technological advance is in resolving the uncertainty in the creation of a new improved strain. However, work to protect this new strain with plant breeding rights does not qualify as it is regulatory, not scientific or technological activity.

Not every change advances overall knowledge and capability. Creating new Vitamin C rich confectionery simply by adding Vitamin C to the ingredients does not qualify. A competent professional could carry out the process without uncertainty in either combining the ingredients or their reaction in the body when consumed.

Creating an innovative chilled food container that provides a substantially longer shelf life than currently available, would also qualify. The scientific or technological uncertainties to be addressed are in the interactions between the food, gas content and container to keep the food fresh for longer. By contrast, the work in dealing with authorities to comply with extended use-by date regulation would not qualify.

Not all innovation qualifies. A project to create a food container where the innovation lies in the artistic design or presentation of the packaging to encourage prospective customer purchases would not qualify. The uncertainty here is in design or marketing, not in science or technology.

ICT

The computer games industry provides particularly good examples of innovative projects that do meet the requirements of the R&D schemes and also examples of projects which do not.

No matter how original and inventive the game storylines are, these are not scientific or technological advances. The important criterion is not 'what' is produced but 'how'.

A company realised that each object on a game's screen had to be programmed in respect of its interaction with all the other objects. As the game became more complex, more objects were introduced and the amount of code required rose exponentially. The solution was to programme the properties of each object. When the objects interacted, a separate code was no longer required as the inherent properties produced the outcomes. The qualifying expenditure on developing this innovative code qualified for R&D relief.

The ICT sector is so fast-moving that further advances overtake new and ground breaking developments very quickly. What is important is that a project represents an advance at the time of development.
New encryption and security techniques are being developed regularly and in many cases give rise to further advances. Even if the technique is quickly rendered redundant it will probably qualify for relief. The same applies to new search engines using new search methods.

Many advances are in the software field but advances in hardware are not unusual and will qualify for R&D relief if they are designed to overcome a scientific or technological uncertainty. Equally, very small companies dealing in subcontracted work may qualify if the work undertaken is sufficiently innovative, even if the larger contractor's project does not qualify.

Advanced materials

Whilst some companies specialise in the design and production of new materials, other companies find they become involved in this area as an adjunct to their main activities.

A company, specialising in agricultural engineering, used a probe to provide information on the quality of cereals which were transported in sacking. Measurements could only be taken at the top, as anywhere else would damage the sacking. This however did not produce representative samples.

The company designed a material which allowed a probe to enter the sacking and which reverted to a sealed surface once the probe was removed. Although the market for this material was limited, it proved extremely successful in overseas markets. For R&D purposes the company incurred qualifying expenditure in overcoming the uncertainty in developing the material.

A further development arose when the company received orders from Eastern European countries, where the material did not react in the required way in sub-zero temperatures. The company undertook further research to amend the material to meet the requirements of the extreme conditions. The additional expenditure on manufacturing the material was not qualifying but the research costs of amending the material to meet 'cold weather' issues again qualified.

In many projects involving advanced materials, the scientific and/or technological uncertainty can be readily identified. However, the use of 'new' materials in existing processes may also qualify if it can be shown that the outcome has or was intended to significantly improve efficiency, for example, significantly reduce waste.

Advanced engineering

R&D is increasingly providing an important competitive edge in this sector.

A project is commissioned to produce a prototype (not to be sold) that will test a design for a new eco-petrol engine and exhaust. The goal is to achieve a substantial reduction in eco-unfriendly emissions with a performance at least as good as a comparable engine.

This appears to competent professional engineers to offer hope of achieving a real advance by way of an improvement in vehicle technology. The uncertainty in science and technology is whether this substantial reduction with the comparable performance sought is possible. Even if unsuccessful, this and the construction of the prototype is still a qualifying R&D project.

On the other hand, an innovative in-bus eco-waste bin, where the innovation is in the attractive and appealing presentation of different compartments designed specifically to encourage the usage and promotion of recycling, does not qualify. The uncertainty of persuading people to put their litter in the bin is in the field of social science, not in the field of technology. The technology required would be obvious to a competent engineer.

A project for a new standard bus engine which is substantially lighter, cheaper, or faster to produce than any currently available or known to be possible (for example patented), whilst maintaining performance levels (for example in power, robustness and life) can all qualify as R&D. However, a minor and routine adjustment such as one to incorporate slightly better spark plugs, already designed and used in another vehicle, would not qualify.

Life and health sciences

The creation of new drugs is an obvious example of qualifying R&D in this sector.

Creating a new drug, up to and including Phase III trials, to more effectively and safely reduce the risk of a stroke, is a qualifying project. The salaries of both the scientists and their laboratory assistants doing this hands-on R&D can qualify. However, their work to achieve important regulatory FDA approvals does not qualify, because any uncertainty in achieving these is in regulation, not science or technology.

A project to create a new artificial bladder system for patients with urinary difficulties, substantially more comfortable, safe and leak-proof than any other designed, qualifies as R&D. The advance sought and uncertainty addressed is how to bio-engineer the materials to achieve these qualities, enabling safe insertion and avoiding rejection.

However, where a competitor reverse-engineers this product, for markets not covered by any intellectual property protection, this does not qualify. The advance in science or technology worldwide has already been overcome and the competitor's uncertainty is not an uncertainty at industry sector level, rather an uncertainty in their own state of knowledge.

A project for newly-diagnosed diabetes patients to provide details of their blood sugar to the hospital via a simple internet web form is innovative. It allows the hospital to monitor their condition in real time and advise the patient immediately on how best to manage their condition.

Although this achieves an advance in patient care, any uncertainty associated with the patient's use of the software is not an uncertainty in the technology itself. As such, this is not a qualifying R&D project. The design of the web-based system would be obvious to a competent professional.

Construction

In general, this is a traditional and well-proven industry. However an increasing number of companies undertake R&D to exceed the traditional methods in terms of life expectancy of buildings, durability or robustness.

A company created a cladding system which had the appearance of 'normal' brickwork but incorporated the capacity for off-site fabrication, improved fire protection and suitability to fast-track production. Mechanical fixing rather than wet mortar provided strength and durability, which together with the capacity to construct in all weather conditions provided significant cost savings. The uncertainty of the materials in the cladding system and the technological uncertainties surrounding fixing were qualifying R&D projects.

Another company specialised in constructing laboratories. To combat contamination the company designed some new buildings with removable sections. Exterior walls could be slid away and a unit could be removed in total and replaced by a new unit before the exterior walls were slid back into place.

The technological uncertainties surrounding the mechanisms to achieve this had to be overcome before the concept proved viable, making this a qualifying project.

A further example of innovation is a company which used wood in part of a project. Traditionally the wood needed to be of a certain age but the company was able to modify a coating so that younger and cheaper wood could be used whilst still having the required qualities.

Significantly this development was a small element of an overall conventional project. Only after discussion with the site foreman did the company directors realise that the modification and application of the coating qualified for R&D relief.

Further help

Further information on about Research and Development relief can be found at: **gov.uk/guidance/corporation-tax-research-and-development-rd-relief**

Further information on Advance Assurance can be found at: **gov.uk/government/publications/research-and-development-tax-relief-application-for-advance-assurance-for-research-and-development-tax-relief-ct-rd-aa**

Department for Business, Energy and Industrial Strategy (BEIS) guidelines can be found at: **gov.uk/hmrc-internal-manuals/corporate-intangibles-research-and-development-manual**

Frequently asked questions

Can I claim R&D relief and a grant?

Yes, however the EU notification status of the grant will affect under which R&D scheme you can claim. Most grants are 'notifiable' therefore both SMEs and large companies can claim under the Large Company Scheme or the RDEC scheme on the gross qualifying expenditure.

How do I know if a grant is notified?

Your grant provider will be able to tell you whether or not the grant/subsidy is notified.

Can I claim patent costs?

The costs of preparing and registering a patent are not R&D – they are the costs of protecting the completed R&D. However, the Patent Box enables companies to apply a 10% rate of Corporation Tax to profits from its patented inventions after 1 April 2013.

Further information on claiming patent costs can be found at: **gov.uk/corporation-tax-the-patent-box**

What is the difference between a subcontractor and an externally provided worker?

A subcontractor is a person paid by the R&D company to carry out a specific R&D activity. An externally provided worker is an individual who provides or is under an obligation to provide their services personally to the R&D company under the terms of a contract between them and the staff provider. The individual will be paid by the staff provider but work under the R&D company's direction. The company pays the staff provider.

How do I treat R&D losses?

Under the SME scheme, for expenditure incurred on or after 1 April 2014, the company may surrender the R&D loss for a payable tax credit of 14.5% (previously 11% from 1 April 2012). Any unsurrendered or unutilised losses under either the SME or RDEC schemes may be carried forward to be set against future years trading profits under the normal corporation tax rules.

How long will it take to receive an R&D tax credit repayment?

HMRC aims to deal with 95% of payable tax credit claims within 28 days of receiving the claim.

Glossary

Appreciable improvement – to change or adapt the scientific or technological characteristics of something to the point where it is 'better' than the original. The improvement should be more than minor or routine upgrading and should represent something that would generally be acknowledged by a competent professional in that field as a genuine and non-trivial improvement.

Appropriate proportion – the expenditure claimed by the company for R&D must be representative of the amount of time spent carrying out qualifying R&D activity. The company must be able to demonstrate that costs have been calculated to remove any elements that were not incurred during the R&D process.

Competent professional – an expert working within the field of science or technology in which the advance is being sought.

Consumable items – Where R&D activity results in items being wholly used up or transformed within the process these are consumable items and may be eligible for relief. However, from expenditure incurred on or after 1 April 2015 where those items are incorporated into the final product and sold then the costs of those items will not be eligible for relief.

Corporation Tax – A limited company must pay Corporation Tax on profits from doing business, however the amount of Corporation Tax you pay may be reduced if you are undertaking relevant R&D activity.

Externally provided workers (EPW) – Workers are provided through a staff provider. The staff provider is required to operate PAYE in relation to individual workers supplied to a client.

The conditions to be satisfied can be found at: gov.uk/hmrc-internal-manuals/corporate-intangibles-research-and-development-manual/cird84100

Filing date – The date by which a company has to submit its tax return to HMRC. The date will be shown on the notice issued to the company. Any amendment to a tax return must be submitted no later than 12 months after the filing date.

Notifiable State Aid – State Aid is granted by public authorities through state resources to provide assistance to an organisation. Many companies receive State Aid as a contribution towards their research and development activity. If your company receives State Aid then HMRC needs to know as it can affect the amount you can claim in R&D tax relief. Your grant notification documents will say it the grant is notifiable State Aid or not.

Prototype – An original model constructed to include all the technical or scientific characteristics of the new product or process determined by the R&D undertaken within a project.

R&D – Research and Development for tax purposes takes place when a project seeks to achieve an advance in science or technology. The work is undertaken on a systematic basis in order to resolve technical or scientific uncertainty and aims to advance the level of knowledge in a particular field of science beyond the level known before the research and development took place.

R&D project – The R&D project is not the project to develop the product. See paragraph 19 of the Department for Business, Energy and Industrial Strategy (BEIS) guidelines (formerly Business Innovation and Skills (BIS)) which defines the "project" for R&D purposes. We very often see claims stating that the advance is the creation of a project which does x, y, or z (and where the claim is based on the costs of creating that product).

That is not the correct test. The specific advances in science and technology with that (commercial) project must be identified. Each such specific advance will be a separate R&D project. Only the costs of resolving the scientific or technological uncertainties linked to each of those advances will qualify.

RDEC – Research and Development Expenditure Credit. A stand-alone credit to be brought into account as a receipt in calculating the profits of large companies for research and development expenditure incurred on or after 1 April 2013. Companies with no corporation tax liability will benefit from RDEC either through a cash payment or a reduction of tax or other duties due.

Readily deducible – Where the knowledge or capability is publicly available or known by competent professionals working in the field.

Science – Science is the systematic study of the nature and behaviour of the physical and material universe. Work in the arts, humanities and social sciences, including economics, is not science for the purpose of these guidelines. Mathematical techniques are frequently used in science but mathematical advances in and of themselves are not science unless they are advances in representing the nature and behaviour of the physical and material universe.

SME – A small or medium sized enterprise.

SME scheme – You can only claim under the scheme for SMEs if your company meets the definition of a SME for R&D tax relief purposes. You can only claim R&D tax relief as a SME if your company is a going concern and not in administration or liquidation when you make your claim. If you've made a claim and the company then ceases to be a going concern you can't get a tax credit.

Technology – Technology is the practical application of scientific principles and knowledge, where 'scientific' is based on the definition of science above.

Webinar – HMRC have a number of seminars and presentations which take place on the internet. You can register your interest to view these on the HMRC website.

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