

# R&D tax relief and grants for SMEs

By Richard Little, Director,  
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Visitors to any UK or European business exhibition recently (and Interpack is a great example), will have noted the use of the word 'Innovation' in every corner.

Many western suppliers are aware of equipment being copied, often down to detailed dimensions. Not only does this represent direct competition, but cheaper equipment in local markets also presents a threat to EU machinery end users and has underwritten a substantial manufacturing migration to the East over the last 25 years. Innovation is seen in many quarters as a key way to protect and grow western industrial markets in the 21<sup>st</sup> century and thus it should be a central part of PPMA members' strategic planning. Copycats can only copy and that takes time, whereas

This relief can be claimed at 150% of expenditure – a valuable subsidy. Claims may be considered for R&D carried out over the previous 2-3 years and members are advised to investigate this relief if they have not already done so.

## Are you eligible?

Claimants must comply with the HMRC definitions of innovation and development, as a guide SSAP13 states "creative work undertaken on a systematic basis in order to increase the stock of knowledge...and the use of this stock of knowledge to devise new applications" and includes "pure (or basic) experimental research for its own sake" and, probably of more use to members, "applied research – original investigation to gain new scientific or special knowledge and directed towards a specific practical aim or objective".

## R&D Scheme

'R & D Grants' schemes, accessed through Regional Development Agencies (RDAs) or via Business Links (recommended) or in conjunction with research orientated organisations such as PERA. There are four grant categories in the R&D scheme and government funding is offered as a % of total project cost:-

**Micro projects:** simple, low cost development projects lasting up to 12 months. A grant of £20,000 maximum which can represent up to 45% of project cost is available to businesses with less than 10 employees.

**Research projects:** aim to investigate the commercial feasibility of innovative technology and last 6 to 10 months. A grant of maximum 60% / £100,000 is available to SMEs with less than 50 employees.

**Development projects:** subsidise the development of a pre-production prototype of a new product or process that involves a significant technical advance. Projects last up to 36 months and 35% funding is available up to a maximum £250,000. Companies must have fewer than 250 employees.

**Exceptional projects:** are similar to Development projects but are available up to a maximum of £500,000 if the project can be shown to be strategically important for a particular business sector.

In all cases there must be an element of technical risk and it must be demonstrated that the project would be unlikely to happen without the grant. The government wants to encourage 'cutting edge' development – if it's a sure fire winner the banks will fund it! There must also be some intellectual property (IPR) being developed within the project. This is an important point as it represents the protection against copying at home or abroad by companies who don't have to write off development costs.

See issue 9 for an article on IPR

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## Ten-Year Performance 1995-2004



**Innovation pays! An index of 61 design-led businesses has outperformed the FTSE 100 by more than 200% over the past decade.**

invention and innovation can keep manufacturers one jump ahead and can create intellectual property to protect a supplier with monopoly rights and help maintain a reasonable margin for a manufacturer in a higher overhead economy. Certainly the UK and EU governments agree and they will subsidise and fund innovation and development in firms as they see it as part of the 'big picture' defence of their manufacturing base. In the UK the HM Revenue and Customs (HMRC) offer two main types of relief: Capital Expenditure Relief and Revenue Expenditure Relief. There is also a substantial tax relief available on innovative R&D which members would be advised to take specific advice on.

### 1. Capital Expenditure on R&D

Companies can claim 100% in the first year and this is not changed by later change of use.

### 2. Revenue Expenditure Relief

Companies can gain immediate relief on:

- salaries,
- perquisites
- overheads including pension payments and NI for personnel employed more than 20% of the time on R&D on a sliding scale rising to full relief on those working 80% of their time or more.

## Contact Point

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# Safety first for Weighing Systems

By Emlyn Roberts, Sales Director,  
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Process weighing systems and equipment play a vital role in many process plants and often need to operate in designated hazardous areas.

Hazardous areas are essentially designated places where, under well defined conditions, the presence of certain materials (such as gases, dusts or fibres) makes an explosion probable. Equipment and systems installed in such areas are strictly governed by international legislation to prevent them causing explosions, which in Europe is known as the ATEX (ATmosphere EXplosive) Directives. The ATEX Directives cover hazards relating to both gas and dust environments. Products certified only for use in gaseous hazardous areas cannot be used in dust environments and vice versa.

The ATEX Directive 94/9/EC (also known as Article 100a and Article 95) outlines the requirements **suppliers** must meet to achieve compliance for their equipment and protective systems for use in hazardous areas. The directive applies to both electrical and mechanical equipment, and protective systems intended for use in potentially explosive atmospheres. These include:

- equipment and protective systems for use within potentially explosive atmospheres
- devices for use outside potentially explosive atmospheres, but which are required for, or contribute to the safe functioning of equipment and protective systems located inside such atmospheres

The ATEX Workplace Directive 1999/92/EC (also known as Article 137) covers the health and safety aspects of workers potentially at risk from exposure to explosive atmospheres. The Directive places the onus on the **end user** to ensure measures are taken to ensure the safety of employees. This directive is implemented in the UK by the *Dangerous Substances and Explosive Atmospheres Regulations (DSEAR)*.

## Intrinsic Safety

**Intrinsic safety (IS)** is one of several techniques for preventing equipment initiating explosions in hazardous areas and is the most popular, efficient and cost effective, especially for weighing systems. Intrinsic safety operates by limiting the electrical and thermal energy in circuits and equipment to levels that are too low to ignite the type of gas or dust that is ever likely to be present, and is usually accomplished by inserting an energy limiting interface such as a 'shunt diode' safety barrier in the wiring between the safe area and the hazardous area. This barrier is typically a passive network device that uses zener diodes, resistors and fuses to safely divert excess electrical energy to ground.

All other methods of protection such as **oil immersion, encapsulation, flameproof or explosion proof protection, and pressurisation**



The design of the weight indicator means it can be operated directly in the hazardous area of this paint factory

(**purged**) rely on the continual maintenance of a physical barrier between the explosive atmosphere and the equipment. Any breach of such barriers renders the protection inoperative. By contrast, intrinsic safety provides inherent protection by restricting the energy at its source and therefore has both commercial and technical advantages.

Typical weighing systems and scales consist of load cells, junction boxes, cabling and weight controllers, together with ancillary displays and controls which make up the measurement chain. Depending on the application and Zone classification, all or some parts of this chain may be situated in the hazardous area. For the purposes of legislative compliance, each piece of equipment and inter-connecting cable or lead is considered as a potential source of ignition which needs 'protection'. Latest generation ATEX certified weight indicators are designed so that they can operate directly in Zone 1(21) and 2(22) hazardous areas, offering optimum safety and user flexibility, whilst minimising installation costs. Bi-directional optical fibre serial interfaces further facilitate connection to the safe area.

Historically, strain gauge load cells were usually treated as non-energy storing devices or 'simple apparatus' and as a result some manufacturers did not gain certification for their products. However today, with new legislation and a growing focus on liability and accountability, users of weighing systems in hazardous areas insist on ATEX certified load cells. These products not only undergo stringent type testing by an independent 'Notified Body' but are also individually tested during manufacture to ensure compliance. Furthermore, calculations are required to ensure all components are 'technically compatible' when used together in the measuring chain, as it does not automatically mean that a system based on the combination of the components meets ATEX requirements. Expert advice should always be sought.

**i Atex/DSEAR**  
[www.hse.gov.uk/fireandexplosion/](http://www.hse.gov.uk/fireandexplosion/)  
 For hazardous area classification:  
[www.weightron.com/ATEX-weighing-info.htm](http://www.weightron.com/ATEX-weighing-info.htm)

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