

**CARBON**  
**CHALLENGE**  
**FUND**

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# **LOW CARBON** **FUNDING GUIDE**

- An analysis of external funding opportunities for the demonstration of Low Carbon Technologies

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# Chapter 1: Introduction

The Low Carbon Demonstration Support Programme (LCDSP) is a Northwest Development Agency (NWDA) funded project which will help the region successfully adapt to and mitigate the impacts of climate change whilst increasing the regions energy security. The project delivers a key action of the Climate Change Action Plan for England's Northwest. The project will run until March 2011.

The LCDP supports and promotes projects which demonstrate carbon savings that signify the development of a low carbon economy and exemplify best practice in the move towards a low carbon economy in England's Northwest. The primary objectives are to

- Improve understanding of low carbon technologies and processes
- Capitalise on additional carbon savings through deployment of low carbon technologies
- Enable public sector leadership on climate change
- Improve the image of the Northwest region as a low carbon region

In order to achieve these objectives, it is crucial that a full analysis of the grant landscape is delivered to identify the most appropriate forms of external funding available to support the demonstration of Low Carbon Technologies.

The proposed funding guide has been designed with this objective in mind. The document which has been prepared by PNO Consultants Ltd under the auspices of Envirolink NW, aims to cover the following;

- 1) Provide a full analysis of principle regional, national and international sources of funding for the demonstration of low carbon technologies
- 2) Identify the key criteria, scope and timelines of these funds

The guide will include all forms of external funding support at a Regional, National and European level. For each opportunity identified and where available, the following information is provided;

1. A full description of the funding opportunity identified
2. Details of the programme
3. Key criteria
4. Timelines
5. Available budget
6. Key success criteria (insight given by PNO) and recommendations to improve chances of success
7. Estimation of the total effort/time required to secure the funding opportunity;

## Chapter 2: The Public Funding market

For the purposes of this funding guide, External Funding is defined as;

‘The identification and securing of additional resources above and beyond the budgets allocated internally within an applicant. The term encompasses a range of incentives awarded by Governmental Bodies or Foundations including Grants, Soft Loans, Tax Incentives and Awards which may be administered on a regional, national and European Level’.

In general there are four types of incentives available in the UK:

- a) **Grants** - where funding is secured ahead of the launch of a project.
- b) **Soft loans** – where loans are secured for projects that fall outside the parameter of normal business banking
- c) **Tax incentives** – recognising advanced financial incentives for those with leading edge R&D or capital programmes that are aligned with government strategy
- d) **Awards** – that retrospectively recognise industry excellence in many functional areas of business – usually a financial prize, which has the advantage of significant PR.

External funding is used by a Governmental Body or Policy Maker to address key policy issues and to stimulate first movers by reducing financial risk in that area. Such incentives are therefore always in line with Government policies. For successful applicants the receipt of external funding can be used to achieve the following;

- Increasing project leverage and to stimulate project development and realisation
- Increase awareness of activities through use as a promotional tool
- Improve a company’s image (being awarded a grant is the equivalent of being awarded a quality stamp from a grantor body)
- To give a competitive advantage over others in your sector
- To increase knowledge transfer and collaborative relationships with external parties

The main budgets within the EU Public Funding market have significantly changed since the start of 2007 due to the addition of new member states. Research has shown that the total level of funding has increased. See figure below for more details and the main funding providers.



## **2.1 Main funding bodies and budgets for Low Carbon Technologies**

### Regional Level

The Regional Development Agencies (RDAs) are non-departmental public bodies. Their primary role is as strategic drivers of regional economic development. The RDA approach to energy and innovation is developed around specific regional business needs and capabilities. As a result, the approach to innovation support is different in each region. The RDAs prioritise their support for energy technology on the basis of regional strengths, capacities and economic priorities. RDAs provide a significant amount of funding to support energy innovation. The Energy White Paper reported that over the period 2004-2007, RDAs committed £59m to support the development, demonstration and commercialisation of new energy technologies; UK companies also generated £52m in income, benefiting from RDAs' assistance in identifying and exploiting new supply chain opportunities or supporting energy sector companies.

### National Level

#### **The Department for Business, Enterprise and Regulatory Reform (BERR)**

The department has a central role to play in creating a more competitive Britain, and one that can respond to the challenges of the future, including globalisation and climate change. It is responsible for policy and innovation in the energy sector.

BERR provides support for the demonstration and deployment of low carbon energy generation technologies. It also has responsibility for policies associated with developing the market for these technologies, including policies to incentivise the market such as the renewables obligation, and to address other barriers to deployment, such as access to grid connections. BERR aims to ensure that support for market push and market pull are complimentary, and that the market pull provides long term confidence for investors, technology developers and users, and together with private investment will accelerate products and processes through to deployment.

#### **The Department for Environment, Food and Rural Affairs (DEFRA)**

The core challenge for DEFRA is to enable everyone to live within their environmental means. This is most clearly exemplified by the need to tackle climate change internationally and through domestic action to reduce greenhouse gas emissions, as well as secure a healthy, resilient, productive and diverse natural environment. Like BERR, DEFRA supports the development of energy efficient technologies via both market push and market pull measures. The Environmental Transformation Fund (ETF -See Section 4) is the means for funding innovation for the development of energy efficiency and low-carbon technologies through programmes managed by the Carbon Trust and Energy Saving Trust and in certain areas, such as energy from waste and renewable heat, DEFRA runs ETF-funded schemes itself.

### European Level

At the European level, the 'Framework Programme' is the main instrument through which research and demonstration is supported, as a means of accelerating the development of

energy technologies towards cost-effectiveness for a more sustainable energy economy for Europe (and world-wide) and ensuring that European industry can compete successfully on the global stage. Approximately €2.4 billion is available for Energy part of the Framework Programme between 2007 and 2013. It provides support for collaborative research projects, involving at least 3 countries, and participants range from a combination of universities, industry and research institutes from both the private and public sectors. It is governed by a committee of Member States, which takes decisions on the work programme/call for proposals and on the individual projects to be supported, with advice from independent experts from Member States.

## **2.2 UK Delivery Agents**

### 1. Research Councils

The Research Councils, funded by The Department for Innovation, Universities and Skills (DIUS), are executive Non-Departmental Public Bodies, established to fund basic, strategic and applied research and related postgraduate training, mainly in the academic base, across the UK. The Research Councils co-ordinate their work on energy through the “Research Councils’ Energy Programme”, which is made up of a broad spectrum of energy-related research and postgraduate training, funded both through joint activities and by individual Research Councils. The Engineering and Physical Sciences Research Council, which funds the bulk of UK energy research, leads the programme. The vision for the Energy Programme is to bring together engineers and physical, natural, social, biological and economic scientists from many areas to tackle the research challenges involved in creating new energy technologies and understanding the social and economic implications. The aim is to position the UK to successfully develop, embrace and exploit sustainable, low carbon and/or energy efficient technologies and systems to enable it to meet national energy and environmental targets for 2020 and beyond. Future priorities for the programme include continuing support for power generation and supply, and growing work on demand and consumption, security of supply, heat and other energy vectors, transport, underpinning science and engineering, and research capacity.

The Research Councils are responsible for detailed decisions on funding of research and training. They operate at arms length from Government, in accordance with the Haldane principle, whereby decisions about the detailed allocation of research funding are made by the scientific community, rather than being political decisions.

<p><b>Expenditure:</b> Research Council expenditure on energy related basic, strategic and applied research and related postgraduate training in the current spending review to 2010/11 is in excess of £90m per annum</p>
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### 2. The Technology Strategy Board (TSB)

This is a fully public funded executive body at arms length from Government, established in July 2007. It is a business-led organisation dedicated to driving innovation for wealth creation in the UK, so that technology-enabled businesses sustain or attain global significance. It provides support for research and development to build partnerships between business, research and Government to address major societal challenges; and to run a wide range of knowledge exchange programmes to help innovation flourish. Funding is available for business and in some cases the academic base. The vision for the TSB is to make the UK a global leader in innovation and a magnet for innovative businesses, where technology is applied rapidly, effectively and sustainably to create wealth and enhance quality of life. With respect to energy this means a focus on energy technologies

where the UK has a clear competitive advantage such as microgeneration for low impact buildings; carbon abatement technologies, hydrogen and fuel cells, oil and gas. The strategic criteria it uses in selecting activities are the UK capacity to develop and exploit the technology, the size of the global market opportunity, the right potential for impact in the right time frame, and a clear role for the TSB to add value.

The TSB identifies areas for support in consultation with business and a wide range of other stakeholders. It seeks to develop priorities proactively and in a manner that is complementary to other activities in the landscape. Trends and developments in new technologies are also monitored, and in funding projects, it seeks to ensure that the outputs have the potential to be sold into large global markets.

In addition to direct support to energy generation and supply technologies, the TSB also leverages the knowledge and the networks supported in all the other technologies that underpin energy.

Working with the Regional Development Agencies and the Research Councils, the TSB will jointly invest over £1 billion in the next three years. In addition, it will continue to work with government departments, the devolved administrations and other funding partners to increase the overall total.

The TSB recently published strategy, 'Connect and Catalyse', highlighted an investment strategy focused around three themes: challenge-led innovation, technology-inspired innovation and the innovation climate. 'Challenge-led innovation' will account for approximately 50% of the Technology Strategy Board's overall budget, and looks to stimulate business research and innovation focused on addressing key societal challenges and maintaining a world leading position. The approaches highlighted include Innovation Platforms, the number of which will be doubled. 'Technology-inspired innovation' focuses on core technologies that provide underpinning capability alongside investments in the commercialisation of emerging technologies that potentially underpin the growth sectors of tomorrow. 'Innovation Climate' covers continued support for networking activities and Knowledge Transfer Partnerships. The Technology Strategy Board will also support UK engagement in a range of European and international innovation activity such as the Eurostars scheme for research-performing SMEs.

**Expenditure:** Since 2004, the Advisory TSB and since 2007 the Executive TSB, has funded collaborative projects on emerging low carbon energy technologies to a total value of £90 million (with around £40 million public sector contribution). Currently it supports significant programmes of work focused on reducing energy usage in buildings and transport through the Innovation Platforms and on key underpinning technologies such as 'Advanced Materials' and 'Electronics, Photonics and Electrical Systems' and 'Information and Communication Technologies', which can also have a direct impact on application areas such as 'Energy Generation and Supply', and 'Environmental Sustainability'.

Since its establishment as an executive body the TSB has continued to offer support for these technologies with the announcement of a £10 million call for low carbon technologies and complimentary calls on 'Materials for Energy' (£12 million) and 'Lower energy, advanced lighting, lasers and displays' (£10 million).

### 3. The Energy Technologies Institute (ETI)

The Energy Technologies Institute (ETI) is a 50:50 public:private partnership, which was established as a limited liability partnership in December 2007, and was fully operational in 2008. It has a target to secure 11 private sector partners, each contributing £5 million per year for 10 years, with the UK Government matching these investments to create a potential £1.1 billion investment fund for low carbon energy technologies and solutions. The current industrial partners are BP, Caterpillar, EDF Energy, E.ON UK, Rolls-Royce and Shell. DIUS provides the core government funding, with BERR and other public organisations having a direct interest and involvement in its activities.

The ETI will focus on the critical area of integrating and demonstrating novel technologies into whole system solutions. It will provide the opportunity to de-risk new technologies by demonstration at full energy system level in relevant environments. The relevant organisations, both academic and industrial, will be supported in forming consortia appropriate to submit detailed technical and financial proposals to the ETI.

ETI's unique features are its ability to fund projects directly with no requirement for further private sector support and secondly the opportunity for research and technology groups to access the skills, capabilities and market access routes of the private sector Partners.

The ETI's vision is for a secure, sustainable and affordable energy supply for present and future generations. Its mission is to accelerate the development, demonstration and eventual commercial deployment of a focused portfolio of energy technologies which will increase energy efficiency and reduce carbon emissions, helping to achieve the UK's energy and climate change goals.

The ETI Board (comprising nominees from each Industry Member and Government) takes all decisions unless it decides to delegate to another tier in the ETI organisational structure. The ETI Board, with advice from its Technical Committee, agrees the Technology Programmes that will be carried out (both technical scope and size of budget required to deliver). Additional "Programme Associate" partners may subscribe to individual Technology Programmes. Competitive mechanisms (with appropriate review for quality and for commercial relevance) will be used to allocate funds to specific R&D projects.

**Expenditure:** ETI's current budget stands at £600M over the next 10 years with the potential to reach £1.1 billion over the period (up to £110 M p.a). The provision of funding by the partners to ETI is on a "pay as you go" basis to match payments by ETI to project participants. DIUS/public sector funding will match Industry Member contributions, ideally 11 Industry Members at up to £5m p.a. each.

### 4. BERR Capital grant programmes

The BERR Sustainable Energy capital grant programme has now become part of the ETF which is focused on the acceleration of technologies that will be deployed to a longer timescale and contribute to the UK's carbon savings in 2020 and beyond, through investment in the demonstration and early phase deployment of low-carbon energy technologies, for heat, electricity and transport, including renewables and low-carbon fossil fuel technologies (such as carbon capture and storage). Supported projects are industry focussed, often involving a single business. In general grants are awarded to individual projects based on a competitive process. The size of grant varies between individual programmes and is dependent on the technology, its application, the market failure to be

addressed and the maturity of the technology. The grant from BERR will only cover a proportion of the costs (generally between 25 – 50%) depending on the nature of the activities to be supported and in compliance with state aids principle.

The overall strategy for support is set out in the Energy White Paper and funding decisions on individual programmes have generally been linked to the Government's three year spending cycle. In addition awards for individual activities have been made at the time of budget or pre budget reports. Funding decisions are taken by the Minister, and are based on advice from Government policy officials, consulting with relevant industry bodies such as the Renewables Advisory Board and Energy Research Partnership and other Government departments.

**Expenditure:** BERR's spend on existing capital grant programmes in the 2006/07 financial year was around £54 million. Under the new ETF, and through the next Spending Review period, investment levels are expected to be maintained and to increase to around £60 million by 2009/10.

## 5. The Carbon Trust

The Carbon Trust is a private company, limited by guarantee, launched in April 2001, as part of the Climate Change Levy package, to take the lead in promoting business and public sector energy efficiency and encourage the development of a low carbon economy in the UK. The Carbon Trust is grant funded by DEFRA, BERR and the Devolved Administrations, and in addition re-invests the profits from its commercial activities.

The mission of the Carbon Trust is to accelerate the UK's move to a low carbon economy, by helping organisations reduce their carbon emissions and develop commercial low carbon technologies. The Trust supports innovations with the aim of developing commercially promising low carbon technologies and brings technologies to market early. It works through partnerships, funding, expert advice and large-scale demonstrations. This includes applied research grants to help UK businesses and research institutions develop commercially-promising low carbon technologies. It also provides "technology accelerators" (which help move low carbon technologies closer to commercialisation by helping remove barriers to adoption) and "business incubators" (which support the development of low carbon businesses by providing strategic and business development consultancy).

The Carbon Trust's key selling point is its flexibility to fund activities at different stages of the innovation system, allowing for an integrated approach to a technologies development. It uses a three stage process to identify low carbon technology interventions. This involves prioritising technologies based on their potential carbon saving and economic value; identifying barriers and opportunities to interventions and prioritisation of opportunity based on fit with Carbon Trust's capabilities and mission. Key decisions are taken by the Board and Investment Committee at the development of ideas for intervention; full scoping and pilot work and finally on project selection.

**Expenditure:** Total Government funding of the Trust in 2007/08 was ~£105m, of which ~£89m was granted by DEFRA.

The Carbon Trust Innovations Business Area spend on accelerating the development of low carbon technologies through funding for R&D projects, “Technology Acceleration” demonstration projects and business incubation was around £15m in 2007/08

Venture capital financing for early stage clean technology businesses from the Investments Business Area amounted to £1.6m in 2007/08.

The Enterprises Business Area spend on creating new, low carbon businesses that deploy proven technology to unlock new markets was £7.3m in 2007/08.

The Solutions Business Area offered interest-free loans for energy-saving capital equipment worth over £21.5m to more than 720 SMEs in 2007/08.

Under the new ETF, and through the current Spending Review period, the Carbon Trust plans to increase spending levels on these activities significantly, with a total envelope including commercial funding and all sources of Government funding for the next three years planned at over £250m.

## 6. DEFRA

DEFRA supports the development and deployment of low carbon technologies, such as biomass heating and CHP, in a similar manner to the BERR capital grants scheme. DEFRA also directly funds research to provide evidence for, and monitor progress on its energy efficiency policy objectives, and a programme for demonstrating anaerobic digestion technologies.

## 7. Energy Saving Trust (EST)

The Energy Saving Trust (EST) is a non-profit organisation, funded by government and the private sector, which aims to cut emissions of carbon dioxide by promoting the sustainable and efficient use of energy in the domestic and public sectors. The EST provides technical support to local authorities, housing associations and their project partners for innovative energy efficiency projects across the UK.

## Chapter 3: Introduction to core schemes

The aim of this report is to provide a comprehensive overview of the principle funding opportunities that are available to support the demonstration of Low Carbon Technologies. The report will provide details on the principle schemes available for NW based organisations at a regional, National and EU level. All forms of external funding are accounted for; Chapter 4: Grants, Chapter 5: Soft loans, Chapter 6: Tax Incentives and Chapter 7: Awards. Details of potential Private sector Investor Funding can also be found in the accompanying Annex.

### Programme Timeline and Grant Matrix

Scheme	2009												2010												2011			
	Month (commencing May 09)																											
	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M			
Grants for R&D	Open Programme																											
GBI	Open Programme																											
Collaborative R&D	[ ]												Spring call						Autumn call									
CRD Energy Generation and Supply Competitions	EOI												Deadline full 15th Oct 09															
Energy Technology Institute	New technology specific calls throughout the year																											
Low Carbon Technology, Demonstration Programme	Summer 09				Autumn 09																							
Directed Research Accelerators	New technology specific calls throughout the year																											
Low Carbon Buildings Programme	Awaiting New call																											
Bioenergy Capital Grants													Expected Autumn Call						Awaiting new call details									
FP7 Cooperation Environment	2010 call												5th Jan 2010						Awaiting new call details									
FP7 Cooperation Energy 2010 -	[ ]												15th Oct 2009						Awaiting new call details									
FP7 Cooperation Energy 2010 - 2	[ ]												4th March 2010						Awaiting new call details									
FP7 Cooperation Energy 2010 FET	[ ]												15th Oct 2009															
Intelligent Energy	[ ]				25th June 09				Awaiting new call details																			
CIP Eco-Innovation	[ ]												10th Sept 09						Awaiting new call details									
LIFE +	[ ]												15th Sept 09						Awaiting new call details									
R&D Tax Credit	Open Programme																											
Enhanced Capital Allowance	Open Programme																											
Shell Springboard	2009 likely call												2010 likely call															

Programme	Type of programme	Funding body	Who supported?	Technologies supported	Level of funding	Call/Deadline
Grants for R&D	R&D Grant	RDA	SME Business	Open (Low Carbon Priority) - Technological innovation is critical	up to 60%	Open
GBI	Capital Grant	RDA	Business	Open (focus on employment implications)	up to 25%	Open
Collaborative R&D	Research Grant	TSB	Business (and academics for business led activities)	Thematic based programme, All energy technologies (Technological Innovation)	25%-75% depending on stage of research	Typically 2 calls per annum
Energy Technology Institute	R&D and Demonstration Grants for low carbon technologies	ETI	Business and Academics	To date calls have been published across the following themes: Marine, Offshore Wind, Carbon Capture & Storage, Transport, Energy Networks	Up to 100%	Directed Programmes but with open access
Low Carbon Technology, Research, Development and Demonstration Programme	R&D and Demonstration Grants	Carbon Trust	Business, academics and public sector	All Low Carbon Technologies (Innovation)	Up to 60%	Typically 3 calls annum
Directed Research Accelerators	R&D Grant	Carbon Trust	Business, academics and public sector	Identified Low Carbon technologies (previous technologies supported include: PV, Bioenergy, Pyrolysis, Algae biofuels, Fuel Cells)	Up to 100%	Directed Programmes but with open access
Low Carbon Buildings Programme	Capital Grant	Dpt of Energy and Climate Change	Public sector and Not for profit	Microgeneration (Solar PV, Solar thermal hot water, wind turbines, Ground source heat pumps, Biomass)	Up to 50%	New calls to be announced
Bioenergy Capital Grants	Capital Grants	Dpt of Energy and Climate Change	All organisations (including charities and not for profit)	Installation of complete biomass fuelled boilers and CHP equipment	Up to 40%	Typically 1-2 calls per annum
FP7 Cooperation	R&D and Demonstration Grant	European Commission	Business, academics and public sector	Thematic based programme, All energy technologies (Technological Innovation)	50 - 100%	Typically 1- 2 calls per annum
FP7 Capacities	R&D Grant	European Commission	SME Business	Open topics	50-100%	Typically 1- 2 calls per annum
Intelligent Energy	Promotion and dissemination projects, Market replication projects	European Commission	Typically used by Public Organisations, Chambers of Commerce, Universities, Trade/Sector Organisations, Industry	SAVE: - energy-efficient buildings - industrial excellence in industry -energy-efficient products ALTENER: - electricity from renewable energy sources - renewable energy heating/cooling - domestic and other small-scale renewable energy applications - biofuels STEER: - alternative fuels and clean vehicles - energy-efficient transport	Up to 75%	Typically 1 call per annum 2009 deadline 25 June
CIP Eco-Innovation	Demonstration	European Commission	All organisations - SME participation particularly encouraged	Priority topics Materials handling (better sorting, innovative recycling products/markets). Buildings (sustainable construction materials, water treatment) , Food and drink (cleaner more efficient processes, Greening businesses & Smart purchasing	50%	Typically 1 call per annum 2009 deadline 10th Sept
LIFE +	Demonstration	European Commission	All organisations - SME participation particularly encouraged	Demonstration of innovative environmental technologies	Up to 50%	Typically 1 call per annum 2009 deadline 15th Sept
R&D Tax Credit	Tax incentive	HMRC	Industry	R&D activities	Various	Open
Enhanced Capital Allowance	Tax incentive	Carbon Trust	Industry	Capital Investment on Energy saving machinery	Reduction in tax bill	Open
Shell Springboard	Award	Shell	SME Business	Innovative low carbon approaches	up to £40k	Typically 1 call per annum, November deadline

# Chapter 4: Grant Funding

## 4.1 Regional Funding Programmes

### 4.1.1 The Grants for Research and Development Programme

#### Programme Description

The Grants for R&D Programme is a national scheme (managed by the Regional Development Agencies) targeted at supporting SME businesses to carry out research and development work on technologically innovative products and processes. There is no automatic entitlement to the grant. The grant is discretionary and project proposals are assessed against selection criteria to ensure quality and value for money.

Support is awarded across 5 principle categories;

#### 1. Proof of Market

- Small scale projects lasting between 3 and 9 months
- To carry out desk based research into the commercial potential of an idea
- For all small to medium sized enterprises (SME's) with less than 250 employees and a turnover of less than €50m or balance sheet of less than €43m
- Grant of 60% of the market research costs, (£5,000 to £20,000)

#### 2. Micro project grants

- Small scale development projects lasting up to 12 months
- To develop a simple, low cost prototypes of an innovative product or process
- For micro companies with less than 10 employees and a turnover of less than €2m or a balance sheet total of €2m
- Grants of 45% of the R&D costs, (£5,000 to £20,000)

#### 3. Research project grants

- Lasting between 6 to 18 months
- To assess the technological and commercial feasibility of turning highly innovative technology into new products or processes
- For small companies with less than 50 employees and turnover of less than €10m or a balance sheet total of €10m
- Grants of 60% of the R&D costs, (£20,000 to £100,000)

#### 4. Development project grants

- Lasting between 6 to 36 months
- To develop a pre-production prototype of a new product or process involving a significant technological advance including new carbon reduction technologies
- Grants of 35% of the R&D costs, (£20,000 to £250,000) for all SMEs with up to 250 employees and turnover of less than €50m or a balance sheet total of €43m
- Grants of 40% of the R&D costs, (£20,000 to £250,000) for micro and small companies with less than 50 employees and turnover of less than €10m or a balance sheet total of €10m

## 5. Exceptional project grants

- Lasting between 6 to 36 months
- Exceptional research or development projects are for the development of a new technology that is strategically important to an industrial or technology sector
- Exceptional research projects - for micro and small companies with less than 50 employees and turnover of less than €10m or a balance sheet total of €10m
- Exceptional development projects - for all SMEs with less than 250 employees and turnover of less than €50m or a balance sheet total of €43m
- Grants available of 60% of the R&D costs, (£100,000 to £250,000) for Exceptional research.
- Grants available of 35% or 40% of the R&D costs, (£250,000 to £500,000) for Exceptional development.

There is potential to apply for more than one type of support as your project and business develops, for example, starting with a proof of market grant, then a research grant to develop the basis for the innovation and then a development grant, or even an exceptional grant, to aid commercialisation of the technology.

### Eligible Costs

Labour Costs, General Overheads, Capital Equipment, Materials, External costs, costs associated with IP, Market assessment, training.

### Key Criteria

Applications are appraised on the following:

- The level of technical risk and technological innovation
- The commercial potential of the product or process
- The experience, skills and track record of the project team abilities
- The need for the grant
- Wider environmental or social benefits

### Timelines

You can apply for a grant at any time, and applications usually take between 40 and 45 working days to assess.

### Recommendations

The scheme is designed specifically to support innovative projects that have a solid commercial potential. For larger grants, projects must involve a significant technological advance. In all cases, projects must demonstrate an element of scientific uncertainty that needs to be overcome within the proposed research and development activity.

### Estimation of Effort required

A Grants for R&D application will require on average between 20 – 40 hours of effort

### Further Information

Further Information can be found at <http://www.nwdabusinessfinance.co.uk/research-and-development-grants>

## 4.1.2 Grants for Business Investment

## Programme Description

Introduction to the scheme: Grant for Business Investment (formerly known as Selective Finance for Investment in England or SFIE grants) provides support for investment projects which will increase productivity, skills and employment in the region. They are discretionary and usually take the form of a grant or occasionally a loan. Generally this will be the minimum necessary for the project to go ahead.

*The grants can be used to:*

- launch a new business
- modernise, expand or re-organise your existing business
- upgrade your business by introducing innovative new technology or processes
- take a new product, service or process from the development stage to production

All sizes of business can apply, and the maximum level of grant available ranges from 10%-25% of the total project cost depending on location and size of the business. The level of grant will depend on where the project is based and the size of your business.

## Conditions

Projects must;

- Have the potential to increase the region's economic output
- Show a proven need for financial support - without a grant it would not happen, or only happen on a more limited scale
- Involve capital investment on fixed assets such as property or machinery
- Create new jobs or safeguards jobs which would otherwise be at risk
- Show that the majority of jobs created or safeguarded are at NVQ level two or equivalent
- Demonstrate that the business/project will become self-sustaining within a reasonable timeframe
- Have most of the finance for the project coming from private sources, such as banks or company funds

## Funding Available

The amount depends on the needs of the project and its impact on productivity and skills. Successful businesses typically receive around 10 - 25% of a project's total eligible capital expenditure but support can vary widely either side of these figures depending on the need and quality of the project. There is a minimum application threshold of £10,000 assistance.

The grant is normally calculated as a proportion of eligible capital investment. However, where this expenditure is insufficient, the grant may be assessed against new jobs created or safeguarded.

## Eligible Costs

Eligible expenditure includes fixed assets such as property, plant and machinery. Assets can be purchased outright or by finance lease or hire-purchase terms. Some property leases may also be eligible. Certain costs of a non-recurring nature (patent rights, professional fees) may also qualify.

## Timelines

Continuous submission is possible however as GBI is a scheme that focuses on the need for a grant, applications must be submitted before any capital expenditure and commitment etc can take place. The target time taken for decisions on applications, from the date of receipt of a fully completed application (including all specified financial information) is 40 days. Larger more complex cases may take longer than this to appraise.

## Recommendations

Applicants are more likely to be considered for a grant if they operate within one of the Northwest Regional Economic six priority sectors:

1. Advanced manufacturing (aerospace, automotive, chemicals, advanced flexible materials)
2. Biomedical (biotechnology, medical and pharmaceuticals)
3. Creative and digital industries
4. Business and professional services
5. Energy and environmental technologies
6. Food and drink

In all cases, a well considered business case for support is required. Applicants should clearly demonstrate the;

- ❖ Financial need for support,
- ❖ The sustainability of the business and its ability to serve more than a local market
- ❖ The experience, skills and track record of the project team
- ❖ That consideration has been given to the impact of the project on customers and competitors

## Estimation of Effort required

A GBI application will require on average between 20 – 50 hours of effort

## Further Information

Further Information can be found at <http://www.nwdabusinessfinance.co.uk/research-and-development-grants>

## 4.2 National Funding Programmes

### 4.2.1 The Environmental Transformation Fund (ETF)

#### Programme Description

At National level one of the principle funding programmes for the demonstration of low carbon technologies is the Environmental Transformation Fund –a new initiative designed to bring forward the development of new low carbon energy and energy efficiency technologies in the UK. The fund formally began operation on 1 April 2008, and is jointly administered by DEFRA and BERR.

#### UK funds

The ETF has UK and international elements. Funds within the UK element of the Fund will total £400 million during the period 2008/09 to 2010/11.

### **What does the UK ETF aim to do?**

The UK element of the Fund aims to accelerate the commercialisation of low carbon energy and energy efficiency technologies in the UK. In doing so, it will help reduce the carbon intensity of energy production as well as reduce energy demand. The fund will therefore contribute towards the UK's climate change and renewable energy goals for 2020 and beyond.

The fund will specifically focus on the demonstration and deployment phases of bringing low carbon technologies to market. It will work closely with other organisations funding earlier stage research and development including the Energy Technologies Institute, Technology Strategy Board, and the Research Councils' Energy Programme.

The Environmental Transformation Fund itself will not be open for funding requests. Instead, schemes funded by the ETF will be administered through bodies such as the Carbon Trust and BERR.

### **What will be covered by the UK ETF?**

The UK ETF brings together DEFRA's and BERR's existing low carbon technology funding programmes together with a number of new investments to begin in 2008/09, as follows:

- Hydrogen Fuel Cell and Carbon Abatement Demonstration Programme
- Marine Renewables Deployment Fund
- Low Carbon Buildings Programmes
- Bio-energy Capital Grants and Bio-energy Infrastructure Schemes
- Offshore Wind Capital Grants programme
- Carbon Trust's innovation programme, including research accelerators, technology accelerators, and incubators
- Carbon Trust funding for new low carbon technology enterprises, including Partnership for Renewables
- Carbon Trust investments in low carbon technology businesses
- Carbon Trust energy efficiency loans scheme for small and medium sized enterprises (SMEs)
- Salix Finance public sector invest-to-save loan schemes

### **Further Information**

Further information can be found at;

<http://www.DEFRA.gov.uk/environment/climatechange/uk/energy/fund/>

## **4.2.2 Technology Strategy Board**

The role of the TSB is to stimulate technology-enabled innovation in the areas which offer the greatest scope for boosting UK growth and productivity. Low Carbon technologies are a key application area for support within the TSB and a priority theme since the first establishment of the Collaborative R&D funding initiative in 2004. As documented in Chapter 2 of this report, 'Challenge-led innovation' will account for approximately 50% of the Technology Strategy Board's overall budget.

### **Grant Funding within the TSB**

*Collaborative Research and Development*

## **Programme Description**

Collaborative research and development (R&D) is designed to assist the industrial and research communities to work together on R&D projects in strategically important areas of science, engineering and technology - from which successful new products, processes and services can emerge. Regular competitions for funding of collaborative R&D projects have been held since 2004, and by June 2007 a portfolio of over 600 projects was being supported with a combined business and Government investment in excess of £1 billion.

Calls are typically bi-annual (Invitations to apply typically issued in April and October) Topics vary with each call (low carbon technologies typically a core theme within each call). The application process is typically spread across 2-3 stages (expression of interest, full application).

## **Key Criteria**

Projects must comprise collaborative activity either science-to-business or business to-business interactions involving a minimum of two partners.

## **Eligible Expenditure**

Pay of staff, overheads, consumables plus training, capital equipment and travel that are used exclusively for the project.

## **Level of Support**

Grant levels can be anything in between 25% (for experimental development) and 75% (for applied research executed by Universities). Funding typically between £250K - £800K.

## **Recommendations**

This is one of the UK's most competitive Funding programmes with typical chances of success around 15%. To ensure the best chance of success the key considerations are;

1. Alignment to the theme. Projects considered should provide specific alignment to the thematic priority.
2. The strength of the consortium and value added by the partners.
3. Technological Innovation: All technologies need to offer a significant advancement upon existing state of the art technologies.
4. Route to market: Needs to be clearly defined
5. Quantified benefits both economical and environmental
6. Project Management capabilities: Here the TSB will be looking for confidence in the ability to deliver the project in line with the timeframes.
7. As the application process is typically spread across 2-3 stages, it is important to consider that the start date of projects may not be until 6 months after the submission of the initial Expression of Interest.

## **Estimation of Effort required**

An application to the Collaborative R&D Programme will typically require on average between 30 - 80 hours of effort across the entire consortia.

## Further Information

Further information can be found at

<http://www.innovateuk.org/deliveringinnovation/collaborativeresearchanddevelopment.ashx>

*Future Low Carbon related calls in 2009*

### Energy Generation and Supply competitions

In the next 2 months a new call for Carbon Abatement Technologies is planned which is targeted towards the reduction in greenhouse gas emissions from fossil power stations and other CO2 intensive process industries. Development of these technologies will contribute significantly to meeting UK and EU climate change targets whilst providing significant market opportunities for a strong UK capability base. The key areas being addressed are:-

- Efficiency improvements
- Co-firing
- Carbon capture, storage and use
- Underpinning technologies (materials, instrumentation, condition monitoring)

In this competition an indicative amount of up to £15M of funding is allocated to innovative collaborative research, development, component and pilot scale demonstration projects that address one or more of the areas indicated above. There will be two levels of application:

1. Feasibility studies – as part of the total programme, indicative funding of up to £1M will be allocated to short-term (6-12 month) feasibility studies (attracting up to 75% public sector funding), with a total project size of up to £150k. These studies must be industry-led and are specifically targeted at SMEs.
2. The balance of the programme will focus on industry-led collaborative projects which will normally last 2 to 3 years, require public sector funding investment of typically £250k to £2.5M, spanning both applied R&D (attracting up to 50% public funding) and component or small-scale pilot demonstrations (attracting up to 25% public funding), or a combination of both. These projects should generally aim to implement business change 3 to 5 years from the end of the project.

## Timing

### ***Feasibility study applications***

Competition opens 15th June

Compulsory Expressions of Interest deadline 23rd July

Successful applicants informed by 21st August

### ***Collaborative R&D applications***

Competition opens 15th June

Compulsory Expressions of Interest deadline 23rd July

Full stage (for invited applications) opens 1st September

Deadline for receipt of full applications 15th October

Decision and feedback to applicants 16th November

*Knowledge Transfer Networks (KTN)*

## Programme Description

Although not specifically a funding programme, a Knowledge Transfer Network is a single over-arching national network in a specific field of technology or business application which brings together people from businesses, universities, research, finance and technology organisations to stimulate innovation through knowledge transfer. Knowledge Transfer Networks (KTNs) have been set up to drive the flow of knowledge within, in and out of specific communities. There are currently 24 KTNs.

The objective of a Knowledge Transfer Network is to improve the UK's innovation performance by increasing the breadth and depth of the knowledge transfer of technology into UK-based businesses and by accelerating the rate at which this process occurs. The Network must, throughout its lifetime, actively contribute and remain aligned to goals of the Technology Strategy Board.

KTN for Low Carbon Technologies: The Technology Strategy Board has announced that it intends to establish a Knowledge Transfer Network in the field of energy generation and supply in 2009/10.

### **Further Information**

Further information can be found at

[http://www.ktnetworks.co.uk/epicentric\\_portal/site/KTN/?mode=0](http://www.ktnetworks.co.uk/epicentric_portal/site/KTN/?mode=0)

## **4.2.3 Energy Technologies Institute (ETI)**

### **Programme Description**

The Energy Technologies Institute (ETI) was established in 2007 to accelerate the development and deployment of low-carbon technologies to meet the UK's energy targets bridging the gap between laboratory proven technologies and full scale commercially tested systems.

Over the next ten years the ETI will select, commission, fund, and manage the delivery of specific technologies. Funds will be invested in a small number of key technology areas with the greatest promise for deployment on the basis of their projected contribution to low carbon, secure energy supplies.

The "key technology areas" or ETI Programmes, are made up of a portfolio of projects - see below. The first three Programmes - Offshore Wind, Marine and Distributed Energy - were launched by a public invitation for Expressions of Interest. Going forward, The ETI intends to engage participants in projects in the way that is most appropriate to the Programme.

### **Project Funding**

The ETI is funded 50:50 by the Government and Industry Members who, as the ETI's Executive Board, decide which projects are commissioned and how funds are awarded. There are currently 6 Core Industry Members who each commit up to £5million per annum, matched by the UK Government. The ETI has agreed a unique flexible funding framework with the European Commission that allows a variable mix of public and private funding. Projects may be co-funded with project participants, giving flexibility in access to Arising Intellectual Property to reflect contributions in cash and in kind. The ETI may also fund 100 per cent of project costs, or directly procure services at market rates, varying the

mix of ETI public and private funds to allow for profit. Projects outside the European Economic Area countries can also be funded.

The ETI aims to fund a relatively small number of large-scale projects in the £5million to £25million range. Projects are funded via a set of agreed deliverables, and an agreed budget and timeframe. Payments of actual costs, within budget, are made based on milestones achieved and accepted by the ETI.

## Technology Programmes

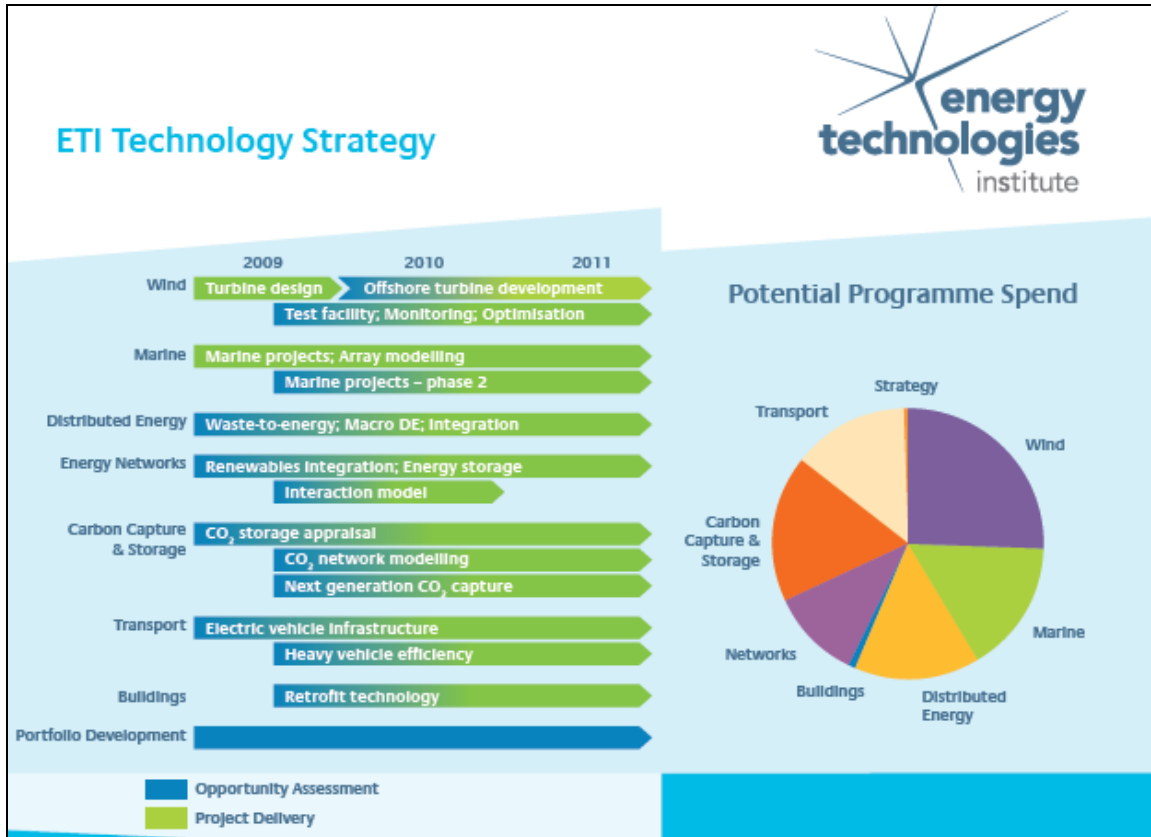
The key technology programmes identified to date are;

1. Marine Programme – ‘Demonstrating low cost and innovative wave and tidal stream energy technologies’. The ETI aims to bring together UK and international expertise to accelerate the development of marine technology into projects that have the potential for rapid commercial deployment. The request for Expressions of Interest in this Programme is currently closed.
2. Offshore Wind Programme – ‘Accelerating the development of novel technology solutions including new turbine designs’. The ETI and the Carbon Trust joined forces in December 2007 to launch a £40M initiative to cut the costs of offshore wind power and accelerate its deployment around the UK. The request for Expressions of Interest in this Programme is currently closed
3. Carbon Capture and Storage (CCS) Programme: ‘UK offshore CO<sub>2</sub> storage appraisal, CO<sub>2</sub> networks modeling and low cost CO<sub>2</sub> capture technologies’. A Strategy Advisory Group (SAG) commissioned by the ETI to investigate Carbon Capture and Storage identified that widespread deployment of CCS could potentially mitigate CO<sub>2</sub> emissions more than any other single energy technology, including nuclear and renewables. Over the next 12 months, the ETI aims to create a focused portfolio of CCS research, development and demonstration projects, which will leverage the unique capabilities of its Industry Members to support large-scale rollout of CCS in the UK.
4. Transport Programme: ‘Infrastructure demonstration for electrified light vehicles and improving heavy duty vehicle efficiency’
  - Electrification of Light Vehicles: The ETI is exploring the opportunities for conducting an ambitious large-scale demonstration project for the infrastructure to support the electrification of light vehicles. The project could involve a significant number of vehicle users, representative of a broad cross-section of the consumer market.
  - Efficiency of Heavy Duty Vehicles: The ETI is exploring the opportunities in the combinations of the technologies that are scalable and transferable across the heavy duty vehicle sector to achieve a significant step change in the efficiency improvement.
5. Energy Networks: ‘New electricity, gas and heat infrastructure solutions enabling a substantial deployment of low carbon energy systems in the UK. This includes large scale energy storage’ (Project selection currently closed).

## Further Information

Further Information can be found at <http://www.energytechnologies.co.uk/Home.aspx>

## Details of Future calls and fund allocation per technology area within the ETI



Source: ETI Technology Strategy

## 4.2.4 Carbon Trust

Since 2001, the Carbon Trust has committed over £16m to supporting Applied Research in business and academia, leveraging over £24m of other investment into these projects.

### Low Carbon Technology Research, Development and Demonstration Grant

#### Programme Description

The Low Carbon Technology Research, Development and Demonstration Grant is aimed at projects that could underpin change in the low carbon economy. Activities that will be supported by this grant are fundamental, industrial and pre-competitive research, and feasibility studies that contribute towards this aim. The scheme is open to any UK business, university, public sector or voluntary organisation, with collaborative projects involving technology providers and end-users being particularly encouraged. Funding is available up to £500,000, up the value of 60% of project costs (unlikely to fund projects

with total value of less than £50,000). Therefore within the scheme, a minimum 40% match funding is required, subject to state aid legislation.

### **Eligible Costs**

Personnel costs, Instruments: equipment, land and premises used for research activity, Services: cost of consultancy and equivalent services used exclusively for the research activity, additional overheads incurred directly as a result of the research activity, other operating expenses: materials, supplies and similar products incurred directly as a result of the research activity, patenting costs - for SMEs only.

### **Key Criteria**

To receive support, projects must demonstrate;

- Genuine innovation and the potential to contribute to substantial reductions in UK greenhouse gas emissions
- That the work is a well planned and builds on previous work in the area
- That the results of the work will allow a clear step forward on the path towards commercialisation
- That it represents good value for money
- Provides demonstrative benefit to the UK

The programme is a two-stage application process, with a competitive element at both stages. To date all calls have been substantially over-subscribed and competition has been intense.

### **Timelines**

Forthcoming calls for proposals (typically 3 calls per annum):

Summer 2009: 22nd June - 20th August

Autumn 2009: 26th October - 24th December

### **Recommendations**

Due to the consistently high level of competition associated with the Applied Research scheme, it is critical that potential projects demonstrate the following;

- ❖ The ability to deliver direct or indirect reductions in greenhouse gas emissions with a clear understanding of the scale of potential reductions. Ideally technical evidence will be available supporting the feasibility of the project .
- ❖ High level of innovation. Either the technology being developed or the application of a technology/process must be innovative. Projects must demonstrate how the work will build on an existing 'state of art' technology.
- ❖ The ability to address a specific market need with a clear understanding of how this will be achieved (commercialisation strategy)

### **Estimation of Effort Required**

An Applied Research application will require on average between 30 – 50 hours of effort (in total across both stages).

### **Further Information**

Further information can be found at

<http://www.carbontrust.co.uk/technology/appliedresearch/>

Further Information Number: 0800 085 2005

## **Directed Research Accelerators**

### **Programme Description**

The Directed Research Accelerator initiative focuses on overcoming the specific technical barriers that are holding back the next generation of low carbon technologies. This will be achieved through the engagement of the best of UK industrial and academic research talent to identify and deliver projects that will realise the next big breakthroughs low carbon technologies. Within the scheme, the Carbon Trust focuses on specific 'themes' or 'innovation gaps' that are identified as areas of strong potential making investments of up to £10 million per 3-5 year project.

To date, the following initiatives have been launched within the Research accelerator programme

1. Advanced Photovoltaics
2. Advanced Bioenergy
3. The Pyrolysis Challenge – Aimed improving the production of Pyrolysis oil from sustainable sources of biomass as a potential source of low-cost fuels
4. Algae Biofuels Challenge – Supporting the development and commercialisation of microalgae biofuel technologies
5. Building on Low Cost PEM Fuel Cell Research breakthroughs - (potential call for support may be launched in this theme in June or July 2009)

### **The process through which technologies are selected**

The Directed Research Accelerators pipeline process is designed to be flexible and may vary from technology to technology,. However, it is likely that the following elements would be undertaken in most cases:

1a. *Selection of technology area:* which prospective low carbon technology is most likely to benefit from a directed research intervention at the current time?

1b. *Identification of topic:* which specific innovation gap within the selected technology could be best addressed by a Carbon Trust directed research project?

2. *Solicitation of proposals:* The Carbon Trust will run a public competition for partners to work with the Carbon Trust to resolve the innovation gap. Partnerships could involve a combination of the private sector – including both SMEs and larger businesses - and universities and other research establishments.

3. *Evaluation of proposals:* The Carbon Trust will bring internal and world-class external expertise to bear on assessing the merits of the proposals. Assessment criteria will usually include the following: degree of innovation; carbon saving potential; potential for results to contribute economic value in the UK; and strength of consortium research capability relative to the rest of the world.

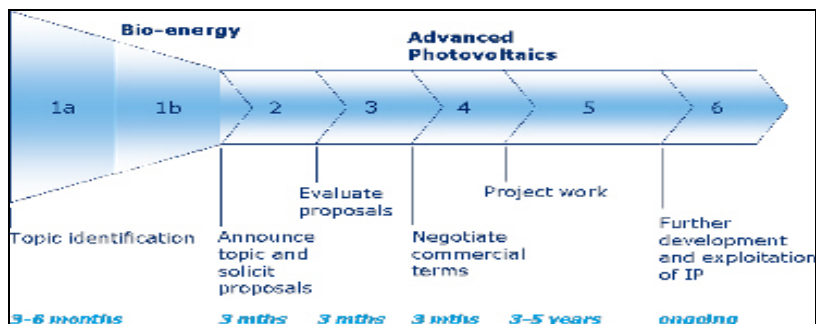
4. *Negotiate commercial terms:*

5. *Project work:* The Carbon Trust will remain actively involved in the research work, and in some cases, investment will be staged and dependent on achievement of pre-agreed milestones.

6. *Exploitation:* a key feature of Directed Research Accelerators will be the establishment of flexible commercial structures to enable a seamless transition from research to commercial exploitation of the results.

### **Timelines**

An indication of the timescales regarding the above is shown below



Source: Carbon Trust

## Recommendations

As the scheme focuses on specific technological themes, it is important that regular assessment of the Programme website is made. New thematic calls are likely to be made throughout the year.

## Further Information

Further information can be found at

<http://www.carbontrust.co.uk/technology/directedresearch/>

Email address: [directed.research@carbontrust.co.uk](mailto:directed.research@carbontrust.co.uk)

Contact Number: 0800 085 2005

## 4.2.5 Low Carbon Buildings Programme

### Programme Description

The Low Carbon Buildings Programme grant programme for microgeneration technologies, launched in April 2006 offering capital grants to successful applicants. The main objectives are to demonstrate the potential for encouraging both energy-efficiency and microgeneration technologies in a range of buildings, driving down costs in the process, and making the microgeneration market more sustainable.

Since the programme was launched, uptake has been considerable. As a result only Phase 2 of the programme is available – grants open to public sector buildings (including schools, hospitals, housing associations and local authorities) and charitable bodies.

### What can be funded?

Grants of up to 50% of total project costs are available for the supply and installation of any combination of the following technologies:

- Solar photovoltaics
- Solar thermal hot water
- Wind turbines
- Ground source heat pumps
- Automated wood pellet stoves
- Wood fuelled boiler systems

Framework Suppliers have been appointed to oversee the supply and installation of microgeneration technologies under Phase 2 of the Low Carbon Buildings Programme. In

order to qualify for a grant, applicants are required to enter into agreements with one or more of these suppliers.

### **Recommendations**

The current call for the programme is due to close in June 2009. New budgets have yet to be determined and allocated.

### **Further Information**

Further information can be found at <http://www.lowcarbonbuildingsphase2.org.uk/index.jsp>

## **4.2.6 Bio-energy Capital Grant Scheme**

### **Programme Description**

The purpose of the Bio-energy Capital Grants Scheme is to promote the efficient use of biomass for energy, by stimulating the early deployment of biomass fuelled heat and biomass combined heat and power projects. It will do this by awarding capital grants towards the cost of equipment in complete installations

### **Funding available for each project**

The maximum grant available to each project, irrespective of location or type of organisation (including charities and not for profit organisations), may not exceed 40% of the difference in eligible costs of installing the biomass heat boiler or combined heat and power plant compared to installing the fossil fuel alternative. The scheme is competitive. Applicants must bid for the minimum grant aid that will enable their project to proceed. Value for money, as represented by the total grant requested per kW installed and per annual tonne of carbon dioxide saved, and the percentage of grant as a proportion of total costs, will be key assessment criteria.

The maximum single award is £500,000 per installation. Applications covering several installations can apply for up to £500,000 for each installation. There is no minimum threshold.

### **Total Grant funding**

The total funding available is around £12m over the two year period from April 2009 to March 2011.

**Future calls:** The latest call closed on the 30th April 2009. Further rounds are expected in autumn 2009. Further details will be announced in summer 2009.

### **Key Criteria**

Grants are available to support the installation of complete biomass-fuelled boilers and combined heat and power equipment, including anaerobic digestion plants.

The industrial and commercial sector may apply for single or multiple installations of:

- heat boilers of any size fuelled by any eligible biomass;
- combined heat and power plants of any size fuelled by any eligible biomass.
- anaerobic digestion plants of any size fuelled by any eligible biomass where the primary purpose is the generation of heat or CHP.

The community sector may apply for single or multiple installations of:

- heat boilers with a rated output of less than 45kW thermal, fuelled by biomass other than wood;
- heat boilers with a rated output of 45kW thermal or more, fuelled by any eligible biomass;
- combined heat and power plants of any size fuelled by any eligible biomass.
- anaerobic digestion plants of any size fuelled by any eligible biomass where the primary purpose is the generation of heat or CHP

Applications can only be submitted by the ultimate owner of the installation for which grant aid is requested.

### **What is eligible biomass fuel?**

The boiler or CHP plant must be fuelled by biomass. For the purposes of this scheme, biomass fuel is defined as fuel of which at least 90 per cent of the energy content is derived from plant or animal matter or substances derived directly or indirectly from that (whether or not such matter or substances are waste). It includes, but is not restricted to:

- Purpose grown energy crops (e.g. miscanthus, short rotation coppice willow and poplar etc);
- Clean wood fuel derived from any part of a tree as a result of forestry operations, arboricultural tree management operations, and primary processing, including saw milling;
- Wood waste or residues, provided it is not covered by the Waste Incineration Directive;
- Agricultural residues originating from production, harvesting, and processing. It includes straw or husks, animal manures and slurries, poultry litter and biomass material from excess production or insufficient market, such as silage;
- Food industry wastes and residues not covered by the Waste Incineration Directive.

In all cases, the plant or animal matter must not be derived directly or indirectly from fossil fuel, and shall not include any substance that, at the time it is used as fuel, is a fraction of any mixture of wastes that, taken as a whole, is not itself biomass.

### **What are eligible costs?**

For the purpose of this scheme, eligible costs are those legitimate costs that are incurred over and above the installed costs of equipment necessary to deliver the same energy output using natural gas or other fossil fuel. Eligible costs comprise:

- Only costs incurred after the date of the acceptance of the final offer of a grant;
- Cost of all purchased goods and services necessary to build and commission the proposed project. This includes the cost of fuel used in the installation and labour up to and including certified acceptance of commissioning; less the cost of building an equivalent fossil-fired installation.
- In the absence of other information, the equivalent cost of a fossil-fired heat only installation should be taken as £40/kW.
- For projects that will install a series of appliances over time, the eligible costs will be those up to the certified acceptance in writing of each fully functioning appliance as satisfactory following a performance test.
- Buildings and building work are not eligible except in the following cases;
  - steelwork when it is an integral part of the boiler support structure;
  - simple, barn type structures used solely for the fuel storage immediately associated with the energy installation;

- excavations for fuel storage and reclaim equipment.
- foundations and mounting pads for equipment.
- The cost of purchased services for the evaluation of the project and the dissemination of the results.
- Own labour costs, including agreed overheads, but not profit, for construction, commissioning, and project management. These costs should be directly linked to the design, construction, commissioning and evaluation of the equipment contained in the project and auditable as such.

**Further Information:**

Further information can be found at <http://www.bioenergycapitalgrants.org.uk/>

## 4.3 EU Funding Programmes

Several grant opportunities, mainly associated with multidisciplinary research and cooperative activities in Europe are available to support the demonstration of Low Carbon Technologies. Most schemes involve the creation of a consortium of companies and research organisations in more than one Member State country. The most significant funding schemes which have relevance to Low Carbon demonstration activities are as follows;

### 4.3.1 The 7th Framework Programme

The Framework Programme (FP) is the EU's primary funding mechanism for collaborative Research and Development projects in science, technology and engineering. The FP supports collaborative and trans-national activities and provides a mechanism for pooling facilities and knowledge, which is a useful mechanism through which UK research organisations can gain access to wider networks and competences.

The Seventh Framework Programme for research and technological development (FP7) is most important instrument of the European Union for funding research in Europe. Running from 2007 to 2013, the programme has a budget of 50 - 500 million euros.

Within FP7 EU contributions normally fall within the range of 50 – 100% of the eligible cost. Average project sizes are between 500 k€ and many Millions of Euros depending on the type of project. In the past the “average” contribution to a research and development project in which several industrial and academic partners collaborate was approximately 2 M€

The broad objectives of FP7 have been grouped into four categories: Cooperation, Ideas, People and Capacities. For each type of objective, there is a specific programme corresponding to the main areas of EU research policy. All specific programmes work together to promote and encourage the creation of European poles of (scientific) excellence.

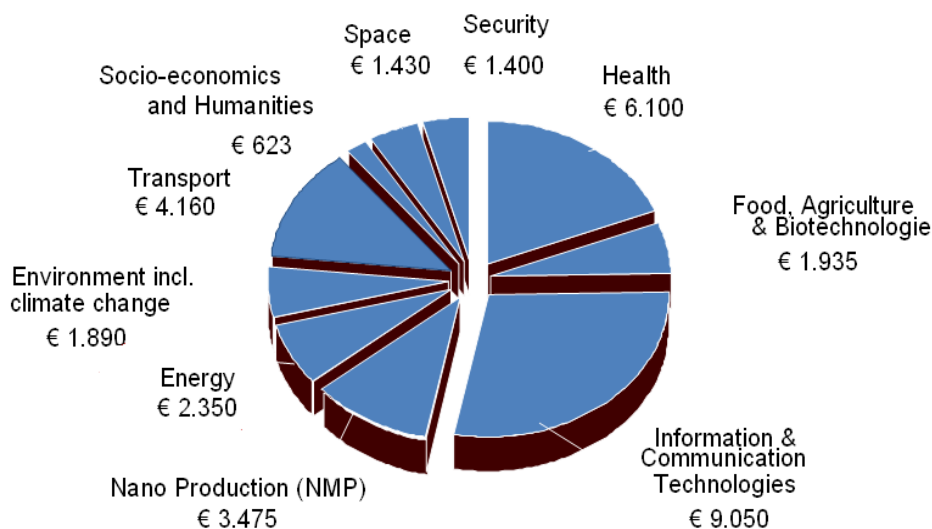
## Cooperation

### Programme Description

The specific programme on 'Cooperation' supports all types of research activities carried out by different research bodies in trans-national cooperation and aims to gain or consolidate leadership in key scientific and technology areas. FP7 allocates € 32.3 billion to the Cooperation programme. The budget will be devoted to supporting cooperation between universities, industry, research centres and public authorities throughout the EU and beyond.

The Cooperation programme is sub-divided into ten distinct themes. Each theme is operationally autonomous but aims to maintain coherence within the Cooperation Programme and allowing for joint activities cutting across different themes, through, for example, joint calls.

The ten identified themes reflect the most important fields of knowledge and technology where research excellence is particularly important to improve Europe's ability to address its social, economic, public health, environmental and industrial challenges of the future. Their continued relevance will be guaranteed by relying on a number of sources from the research sector, including the European Technology Platforms (ETP). Important themes identified in the Strategic Research Agendas (SRAs) developed by the ETPs are therefore covered by the Cooperation programme.



Budget breakdown of Cooperation sub programme

### Future Low Carbon related calls within Cooperation

Theme	Call	Publication date	Deadline	Budget (M€)
Environment	FP7-ENV-2010-	30/07/2009	05/01/2010	
Energy	FP7-ENERGY-2010-1	30/07/09	15/10/09	54
Energy	FP7-ENERGY-2010-2	30/07/09	4/03/10	135
Energy	FP7-ENERGY-2010-FET	30/07/09	15/10/09	18

## **Environment Theme: Areas of technological interest**

### *Climate change, pollution and risks*

- ❖ Pressures on the environment and climate
- ❖ Environment and health
- ❖ Natural hazards

### *Sustainable Management of Resources*

- ❖ Conservation and sustainable management of natural and man-made resources and biodiversity
- ❖ Management of marine environments

### *Environmental Technologies*

- ❖ Environmental technologies for observation, simulation, prevention, mitigation, adaptation, remediation and restoration of the natural and man-made environment
- ❖ Protection, conservation and enhancement of cultural heritage, including human habitat improved damage assessment on cultural heritage
- ❖ Technology assessment, verification and testing

### *Earth observation and assessment tools*

- ❖ Earth and ocean observation systems and monitoring methods for the environment and sustainable development
- ❖ Forecasting methods and assessment tools for sustainable development taking into account differing scales of observation

## **FP7 Theme: Areas of technological interest**

- ❖ Hydrogen and fuel cells
- ❖ Renewable electricity generation
- ❖ Renewable fuel production
- ❖ Renewables for heating and cooling
- ❖ CO2 capture and storage technologies for zero emission power generation
- ❖ Clean Coal Technologies
- ❖ Smart energy networks
- ❖ Energy efficiency and savings
- ❖ Knowledge for energy policy making

## **Recommendations**

Projects should demonstrate the following

- ❖ Alignment of project to call
- ❖ Scientific excellence
- ❖ High level of innovation
- ❖ SME & Large Industry involvement
- ❖ Strong partnership (EU partnership - min 3 partners from 3 member states)
- ❖ Excellent project management capability
- ❖ Link to wider EU policies

## **Estimation of Effort required**

An FP7 Coop Proposal will require between 150 and 200 hours of effort, on average.

### *Ideas (frontier research € 7,5 billion)*

Supporting 'investigator-driven' research carried out across all fields by individual national or transnational teams in competition at the European level.

### *People (€ 4,7 billion)*

Through the People Programme, organisations that are active in EU leading Research and Development can attract European researchers (of different levels of experience) for their specific research projects enabling you to increase your research capacity and your international networks. The main advantage of this scheme relates to the high level of funding available (between 75 – 100%) and the flexibility allowed with the theme of the research topic.

The 'People' Programme will be implemented through actions under five headings:

- '[Initial training of researchers to improve mostly young researchers](#)' career perspectives in both public and private sectors, by broadening their scientific and generic skills, including those related to technology transfer and entrepreneurship.
- '[Life-long training and career development](#)' to support experienced researchers in complementing or acquiring new skills and competencies or in enhancing inter/multidisciplinarity and/or intersectoral mobility, in resuming a research career after a break and in (re)integrating into a longer term research position in Europe after a trans-national mobility experience.
- '[Industry-academia pathways and partnerships](#)' to stimulate intersectoral mobility and increase knowledge sharing through joint research partnerships in longer term co-operation programmes between organisations from academia and industry, in particular SMEs and including traditional manufacturing industries.
- '[International dimension](#)', to contribute to the life-long training and career development of EU-researchers, to attract research talent from outside Europe and to foster mutually beneficial research collaboration with research actors from outside Europe.
- '[Specific actions](#)' to support removing obstacles to mobility and enhancing the career perspectives of researchers in Europe.

### *Capacities (€ 4,2 billion)*

Supporting key aspects of European research and innovation capacities such as research infrastructures; regional research driven clusters; the development of a full research potential in the Community's convergence and outermost regions; research for the benefit of small and medium-sized enterprises (SMEs). Science in Society issues; support to coherent development of policies; horizontal activities of international cooperation.

### **Further Information**

Details of all calls within FP7 can be found at <http://cordis.europa.eu/fp7/>

## **4.3.2 Intelligent Energy – Europe (part of the CIP Programme 1)**

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<sup>1</sup> CIP - Competitiveness & Innovation Framework Programme: aims to encourage the competitiveness of European enterprises. With SMEs as its main target, the programme will support innovation activities (including eco-innovation), provide better access to finance and deliver business support services in the regions. It will also promote the increased use of renewable energies and energy efficiency.

## Programme Description

This programme is typically used by Public Organisations, Chambers of Commerce, Universities, Trade or sector Associations with some participation of industry. The main features of the programme are;

- IEE is the main Community instrument to tackle non-technological barriers to the spread of efficient use of energy and greater use of new and renewable energy sources.
- IEE schemes are Energy efficiency and rational use of resources (SAVE), New and renewable energy resources (ALTENER), Energy in transport (STEER) and Integrated Initiatives which include actions integrating energy efficiency and renewable energy sources in several sectors of the economy and/or combining various instruments, tools and actors within the same action or project
- The programme is therefore oriented at funding the following type of activities: spreading of know-how, exchanges of experience, policy input, awareness raising, education and training. Be aware that IEE programme will NOT fund "Hardware" type investments, demonstration projects, and technical research & development projects.
- The minimum consortium requirement is a team of at least 3 independent undertakings established in 3 different eligible countries.
- Funding rate: is up to 75% of the total eligible costs for projects. This call is expected to result in 60 to 70 projects being supported, which means 900.000-1.000.000€ grant by project in average
- The average success rate of this programme, based in the 2008 call, was about 14%.

## Timelines

Typically 1 call per annum- Deadline for 2009 is the 25 June 2009

Total budget for 2009 call is €64.741.400

## Estimation of Effort required

An IEE Proposal will require between 150 and 200 hours of effort, on average.

## Further Information

Further information can be found at <http://ec.europa.eu/energy/intelligent/>

### 4.3.3 EU Eco-Innovation Programme (part of the CIP Programme)

#### Programme Description

Through the Eco-innovation funding scheme, the EU looks to support innovative products, services and technologies that can make a better use of our natural resources and reduce Europe's ecological footprint. There is nearly €200 million available to fund Eco-innovation projects between 2008 and 2013.

The new priority topics for the 2009 call are:

1. **Materials recycling:** better sorting processes, innovative recycling products, new recycling solutions, new markets for recycling products
2. **Buildings:** sustainable construction materials, water treatment/saving etc.
1. **Food and drink sector:** cleaner production processes aiming at higher resources efficiency, reduction of waste and increasing recycling and recovery, high efficiency in the water process

2. **Greening business and smart purchasing:** integration of eco-innovation in supply chains and green purchasing.

### Timelines

The 2009 call opened on the 20 April 2009 with a deadline of 10 September 2009

- Evaluation: end of 2009 and first projects to start by march/April 2010.
- Funding 50% of eligible costs
- Maximum of 3 years project duration
- There will be funding for around 40 projects

### Estimation of Effort required

An Eco-Innovation Proposal will require between 150 and 200 hours of effort, on average.

### Further Information

Further information can be found at [http://ec.europa.eu/environment/eco-innovation/index\\_en.htm](http://ec.europa.eu/environment/eco-innovation/index_en.htm)

## 4.3.4 LIFE + Programme

### Programme Description

With a budget of €2.143 billion (up until 2013), LIFE+ is Europe's key funding instrument to support projects that contribute to the development and implementation of Community environmental policy and legislation. The scheme is comprised of 3 key components;

1. LIFE + Nature and Biodiversity:  
Aimed at supporting projects that offer best practice or demonstration projects that contribute to;  
The implementation of the objectives of the Birds and Habitats Directive (Council Directives 79/409 EEC and 92/43/EEC) OR  
Demonstration and/or innovation projects contributing to the implementation of the objectives of the Commission Communication COM (2006) 216 final: "Halting the loss of Biodiversity by 2010 – and beyond".
2. LIFE+ Environment Policy and Governance: Aimed at supporting projects that demonstrate new solutions for important environmental issues. It is this sub-programme that offers strongest alignment to the required demonstration of low carbon technologies
3. LIFE+ Information and Communication: Aimed at supporting communication and awareness raising campaigns related to;
  - The implementation, updating and development of European environmental policy and legislation.
  - Awareness raising campaigns for the prevention of forest fires and training for forest fire agents.

## Programme details

Programme	Publication date	Deadline	Notes
Nature and biodiversity	15/05/2009	15/09/2009	Best practice or demonstration projects that contribute to the implementation of the Birds and Habitats Directives and Halting the loss of biodiversity by 2010
Environment policies and governance	15/05/2009	15/09/2009	The development of innovative policy approaches, technologies, methods and instruments, the knowledge base as regards environment policy and legislation.
Information and communication	15/05/2009	15/09/2009	Implement communication and awareness raising campaigns on environmental, nature protection or biodiversity conservation issues, as well as projects related to forest fire prevention

### LIFE+ Environment Policy & Governance

The LIFE + Environment Policy and Governance Programme aims at bridging the gap between research and development and the widespread implementation of environmentally sound innovations. Support will be allocated to the best proposals in terms of innovative, financially robust solutions for important environmental issues, leading to concrete results. In a LIFE project, the demonstration character and dissemination of the project results are particularly important.

Projects should provide alignment to one of the following 12 priority objectives identified by the Commission; It, climate change (energy), water, air, soil, urban environment, noise, chemicals, environment and health, waste and natural resources, forest monitoring, and the demonstration of innovative technologies generating potential environmental advantages. Climate change combating projects are a particular priority.

### What type of projects can be funded under LIFE+ Environment Policy & Governance?

Projects eligible for funding are, amongst others, demonstration and/or innovation projects, related to the above mentioned environmental objectives. Projects can be either national or transnational, but the actions must exclusively take place within the territory of the 27 Member States of the European Union. Ideally, a project will be 2-5 years in duration.

### What are the selection criteria?

The main selection criteria are:

- Technical coherence and quality
- Financial coherence and quality
- Contribution to the general objectives of LIFE+
- European added value
- Complementary and optimal use of the EU funding

- Transnational character
- National added value according to the LIFE+ national authority

### **Who can apply for funding?**

LIFE+ is open to all legal persons, whether public or private, commercial or non-commercial that are legally established in the European Union. Project proposals can either be submitted by a single beneficiary or by a partnership which includes a project beneficiary and one or several (preferably not more than five) project partners. The participation of public authorities at regional or local level is in particular encouraged.

### **What is the co-financing contribution?**

The maximum rate of co-financing is 50% of the eligible project costs. There is no fixed minimum size for project budgets, but the European Commission favours the co-financing of large, ambitious LIFE+ proposals with a substantial budget. Historically, the average grant awarded has been in excess of € 1 million, although no project will be dismissed on size alone.

### **Estimation of Effort required**

A LIFE Proposal will require between 100 and 150 hours of effort, on average.

### **Further Information**

Further information can be found at

<http://ec.europa.eu/environment/life/funding/lifeplus.htm>

# Chapter 5: Soft Loans and Example Investors in Low Carbon Technologies

## 5.1 The Carbon Trust

### Carbon Trust Investments

Carbon Trust Investments finances emerging clean energy technology businesses that demonstrate commercial potential. It specialises in identifying and investing in early stage technologies and credible management teams with the ability to create and deliver clean energy businesses

The principal aim of venture capital at Carbon Trust Investments is to invest its own funds, which are leveraged with other private funding, into the UK's clean energy technology industry. Carbon Trust Investments is one of the UK's leading co-investors in the clean technology investment community. The Carbon Trust typically invest between £250k and £3m in any given business, with an average transaction size between £500k and £10m. In providing venture capital finance Carbon Trust Investments differentiates itself from other venture capital investors by being:

An informed investor focusing on clean energy technologies bringing financial and technical experience with respect to climate change, mitigation policies, carbon abatement and technologies that address these challenges and focusing on both carbon emissions reductions and financial returns.

### Investment Criteria

All investment proposals must clearly demonstrate how Carbon Trust Investments' funding will lead to material CO2 emissions savings while also generating a commercial return.

In addition, applicants should address the following:

- **Financial Position** - The business plan must be accompanied by a financial outline that allows for a detailed appraisal of the organisation's economic viability.
- **Management Experience** - Teams should demonstrate any relevant sector experience combined with the ambition to turn their business plans into reality.
- **Market Assessment** - The business plan should detail what the key commercial market is and the critical market drivers.
- **Competitive Advantage** - The business proposition should demonstrate a clear competitive advantage with respect to a specific need or market demand.
- **Identify Funding** - As Carbon Trust Investments will only invest up to 50% in any one transaction, other private investors must be identified.
- **Technical and Innovation Evidence** - The business plan will need to demonstrate innovation either through a step-change in technology design or in the application of a technology process.
- **Confirmation of Intellectual Property Protection** - What Intellectual Property Rights (IPR) already exist prior to the investment, and how any IPR arising during the investment will be protected and exploited.
- **All Investments Need to be UK-Based.**

## Funds

It is generally accepted both by the UK Government and the UK venture capital industry that there is an “equity gap” in respect of the supply of early-stage risk capital to technology-based small businesses. Traditionally this equity gap affects businesses seeking to raise between approximately £250k and £2 million of equity finance and that this gap is most severe for sub-£1 million investments. However, for the clean-energy sector, this equity-requirement gap is more severe, as transactions are potentially up to £10m in size due to:

The early nature of the clean-technology sector;

- The reluctance of investors to back regulatory-driven markets; and
- The capital-intensive nature of clean energy businesses.

To address this, Carbon Trust Investments has created two investment funds

### *Low Carbon Seed Fund*

This Low Carbon Seed Fund aims to take equity stakes in companies raising up to £1m, where the equity gap is most severe. The fund is focused on identifying early stage cleantech investment opportunities that emerge both from the Carbon Trust Incubators as well as from other dealflow sources. The fund may invest up to £500k in any UK-based clean energy business that meets the fund's investment criteria. The total investment transactions will typically be between £500K and £1.5m. The fund must invest alongside other commercial investors on a pari passu basis.

### *Clean Energy Fund*

Carbon Trust Investments directly invests into clean-energy technology businesses through its Clean Energy Fund. Following its establishment in May 2002, it has been one of the most active UK investment funds in the sector. We typically invest between £250k and £3 million in a business, with the average transaction-size being between £500k and £10 million. The fund must invest alongside other commercial investors on a pari passu basis

## Further Information

Further Information can be found at

<http://www.carbontrust.co.uk/investments/venturecapital/>

## Carbon Trust - Energy-Efficiency Loans

### Programme Description

Energy-Efficiency Loans are offered by the Carbon Trust to help SMEs save significant amounts of money on their energy bills, whilst at the same time helping to save the environment. Financial assistance is available through interest free loans to help businesses reduce their energy costs.

- Loans are interest free, unsecured and repayable over a period of up to four years.
- Maximum loan available in England, Scotland and Wales is £200,000,
- Multiple loan applications can be made, up to the maximum value.
- Loan offer valid for three months.
- Regional variations in loans offered may apply.

### Key Criteria

- Each application will be considered on its technical merits.
- The applicant needs to demonstrate that the project will deliver real carbon savings and have a payback period of up to four years.
- Open to SMEs in England and Scotland and all businesses in Northern Ireland and Wales that have been trading for at least 12 months.

### **Eligible Expenditure**

Examples of the type of equipment that can offer considerable energy savings to business include:

- Energy saving lighting.
- High efficiency electric motors and drives.
- Boilers and heater controls.
- Building insulation.
- Compressed air systems and fittings.
- Insulation for boilers, hot water tanks, and pipe work.
- Heat recovery systems.
- Lighting controls.

### **Restrictions**

Loans cannot be applied for retrospectively.

Energy-Efficiency Loans are not available to organisations operating in the following sectors:

- Transport
- Coal
- Export
- Agricultural

### **Further Information**

Further information can be found at

<http://www.carbontrust.co.uk/energy/takingaction/about-loans.htm> Tel: 0800 085 2005

## **5.2 Barclays Commercial Bank - Green Cashback Loans**

### **Programme Description**

Barclays Commercial Bank, the business banking arm of Barclays plc, and the European Investment Bank (EIB) have teamed up to fund a £50m scheme that offers small businesses a cashback payment when they take out a loan to pay for environmental capital expenditure projects such as:

- Investing in low carbon technologies.
- Relocating to more energy efficient business premises.
- Purchasing environmentally-friendly equipment and machinery.

Cashback payments of between £600 and £51,000 are available on loans with a minimum term of five years ranging from £25,000 and to £17 million.

### **Key Criteria**

Eligible businesses must meet the definition of an SME, for example, not employing more than 250 employees. Applications will be assessed on a case-by-case basis. However, to

be eligible, projects must have any relevant planning permissions in place, including authorisation from the environmental and nature conservation authorities.  
Environmental projects should cost between £200,000 and £17m.

### **Eligible Expenditure**

Costs associated with eligible projects.

Restrictions:

Projects that have already received EIB funding cannot be supported.

### **Application Procedure:**

In order to gain more information about the scheme, interested businesses are asked to register online at the Barclays Commercial Bank website.

## **5.3 Example Investor: 'Environment Technologies Fund'**

### **Description**

ETF is normally a lead investor, active on the boards of companies supported. ETF focus primarily on European companies that already have some revenue and have great growth prospects, although ETF have the ability to invest both at an earlier and a later stage. Typically ETF support a business through more than one investment round, committing €5m-12m overall.

Typically Companies will have the following attributes:

- Huge growth prospects – typically because of meeting a critical customer need
- One or more great customers
- The potential to lead their market, as they define it
- Sustainable competitive advantage – typically because of some unique technology
- The key individuals have demonstrable integrity and execution capability
- A business model that is highly scalable and relatively capital efficient

Probably not in a sector already crowded by other venture-backed companies

- The markets we focus on are primarily within the high growth segments of:
- Energy efficiency and power conservation
- Renewable energy generation
- Material sciences and their industrial applications
- Environmental services, waste reduction and recycling
- Water – treatment and conservation
- Transportation
- Agriculture and silviculture

### **Further Information**

Further Information can be found at <http://www.etf.eu.com/index.cfm>

## **5.4 Salix Finance**

Salix is an independent, publicly funded company set up to accelerate public sector investment in energy efficiency technologies through invest to save schemes.

Salix has public funding from the Carbon Trust and is working across the public sector with Local Authorities, NHS Foundation Trusts, Higher and Further Education Institutions and Central Government.

Salix can enable Public Sector bodies to improve energy efficiency, attain targets, reduce energy bills and raise green credentials. Salix do this by using long term, ring fenced, interest free conditional grants to make carbon saving projects happen in the public sector. Salix focus is on supporting basic projects. In general all projects pay for themselves within 50% of their useful life so real energy bill savings are seen in the organisation

### **Funding**

Typically, Salix provide funding of around £250,000, and in some cases as high as £500,000. This is matched by you and fed into a ring-fenced fund to be spent on proven energy saving projects with a payback of less than five years and that also meet the other compliancy requirements.

The energy savings are returned to the fund until the original project investment is repaid. After that, you are free to keep the savings to spend on front-line services. The fund itself can stay in place, and as long as sufficient compliant projects continue to come forward, Salix will not normally ask for our original investment to be returned

### **Projects sought**

Projects must deliver both CO<sub>2</sub> and revenue benefits and, in line with the Salix objective, must offer long term CO<sub>2</sub> savings. For example, a cavity wall insulation project will deliver CO<sub>2</sub> savings far more consistently over a very long period compared to discreet user adjustable heating controls which tend to diminish after just a few years. Domestic and transport projects are not covered by the scheme since they are covered by other Government schemes.

To ensure that the fund is used for projects that deliver long term energy and CO<sub>2</sub> savings, all compliant projects must be prioritised on the basis of their capital cost per tonne of CO<sub>2</sub> saved on a lifetime basis

Projects must comply with the following criteria:

- Maximum 5 year payback period and £100/tCO<sub>2</sub> lifetime basis, for energy efficiency projects;
- or Maximum 7.5 year payback period for projects with lifetime £/tCO<sub>2</sub> =<£50, for approved energy efficiency and renewable projects.
- Projects must be identified as being additional.

### **Technologies and projects**

Key examples of projects:

- BMS – bureau remotely managed
- Boilers – controls & replacement
- Heating – controls, distribution improvements, electric to gas, pipework insulation
- Hot water – point of use heaters
- Insulation - Building Fabric such as cavity wall & loft
- Motor controls – fixed & variable speed
- Office equipment improvements
- Radiator reflective foils

- Swimming pool covers – liquid, manual & motorised

Where clients express an interest for new technologies to be considered, Salix are happy to receive material and in some cases pilot projects so that we can evaluate and incorporate them into the fund

### **Further Information**

Further information can be found at <http://www.salixfinance.co.uk/thecompany.html>

# Chapter 6: Tax Incentives

## 6.1 R&D Tax Credits

### Programme Description

Research and development (R&D) tax credits are a company tax relief which can either reduce a company's tax bill or, for some small or medium sized companies, provide a cash sum.

The aim of the tax credits is to encourage greater R&D spending in order to promote investment in innovation. To find out whether you can benefit, read the further information below.

The R&D tax credit works by allowing companies to apply an uplift to their qualifying expenditure on R&D activities when calculating their profit for tax purposes. For large companies this uplift was 25% until 31 March 2008 and 30% after that date. For SMEs, the uplift was 50% until 31 July 2008 and is 75% from 1st August 2008. SMEs can, in certain circumstances, surrender this tax relief to claim payable tax credits in cash from the HM Revenue & Customs.

### Who can claim R&D tax credits?

Only companies can claim. There are two schemes depending on whether the R&D is carried out by;

- a small or medium company (SME), or
- any company other than a SME (a large company).

### What is R&D for tax purposes?

R&D is defined by reference to BERR (formerly DTI) Guidelines. Broadly, these guidelines define an R&D project as one that seeks to, for example,

- (a) extend overall knowledge or capability in a field of science or technology; or
- (b) create a process, material, device, product or service which incorporates or represents an increase in overall knowledge or capability in a field of science or technology; or
- (c) make an appreciable improvement to an existing process, material, device, product or service through scientific or technological changes; or
- (d) use science or technology to duplicate the effect of an existing process, material, device, product or service in a new or appreciably improved way (e.g. a product which has exactly the same performance characteristics as existing models, but is built in a fundamentally different manner)

The project will be R&D for tax purposes if the project seeks to achieve an advance in overall knowledge or capability in a field of science or technology, not a company's own state of knowledge or capability alone.

### What costs qualify for the R&D tax credit?

- Companies can claim R&D Tax Credits for their revenue expenditure on
- employing staff directly and actively engaged in carrying out R&D,
- paying a staff provider for staff provided to the company who are directly and actively engaged in carrying out R&D,
- consumable or transformable materials used directly in carrying out R&D (broadly, physical materials which are consumed in the R&D), and

- power, water, fuel and computer software used directly in carrying out R&D.

There are special rules regarding expenditure on sub-contracted R&D which differ between the SME and large company schemes. And there are rules which mean that in some cases projects which benefit from a subsidy or grant may have the amount of qualifying expenditure reduced.

### **How much can a company claim?**

Claims can only be made in respect of the qualifying expenditure detailed above. Claims are made by reference to a company's accounting period. There must be qualifying expenditure of at least £10,000 on R&D in the accounting period in order for a claim to be made. There is no upper limit on the amount of the claim.

As noted above, the R&D tax scheme works by allowing SME companies to deduct 175% (150% prior to 1st August 2008) or large companies 130% (125% prior to 1st April 2008) of qualifying expenditure on R&D activities when calculating their profit for tax purposes.

SMEs may be able to claim payable tax credits in cash from HM Revenue & Customs if they have losses in the accounting period. The payable tax credit could amount to £24.50 (£24 prior to 1/8/08) for every £100 of actual R&D expenditure, but the enhanced relief must be surrendered in order to receive this payment.

### **When will the company receive the tax relief or cash payment?**

The tax relief reduces a company's profit chargeable to corporation tax so this will benefit the company on its usual corporation tax payment date for the accounting period.

The tax credit is paid by HM Revenue & Customs to the company after the corporation tax return containing the tax credit claim is received, unless an enquiry is opened into the return. Where an enquiry is opened interim payments may be agreed. When an enquiry is concluded any balance of the tax credit that is due will be paid.

### **How are SMEs and large companies defined?**

The definition of a SME is that used by the European Commission;

Prior to 1/8/08, an SME was defined as a company with fewer than 250 employees, and either annual turnover not exceeding €50M or a balance sheet totalling €43M, and which is not part of a larger enterprise that would fail these tests.

On 1/8/08, these limits were doubled (for the purpose of RDTCS) to 500 employees, €100M turnover and €86M of balance sheet assets, opening the more generous SME scheme to a wider range of companies.

### **What are the differences between the SME scheme and large company scheme?**

SME scheme	Large company scheme
175% (150% before 1/8/08) rate of enhanced deduction	130% (125% before 1/4/08) rate of enhanced deduction
Payable credit at £24.50 (£24 prior to	No payable credit

1/8/08) for every £100 of qualifying expenditure.	
Company can claim for expenditure on R&D it sub-contracts to others	Company can only claim for expenditure on R&D it carries out itself, unless it sub-contracts R&D in certain limited circumstances to certain entities
Company cannot claim for contributions to independent research	Company can claim for contributions to independent research
Claim can be reduced if the R&D project is subsidised or a grant is received in respect of it	No reduction for grant or subsidy
Company must own the intellectual property arising out of the R&D	Company need not own the intellectual property arising out of the R&D

### How can the R&D tax credits be claimed?

A company claims R&D Tax Credits in its company tax return (form CT600), at the end of its accounting period.

### When is the latest a company can claim?

A company can claim retrospectively up until two years after the end of their last tax year. A company can claim retrospectively even if it has filed a tax return (and request an adjustment).

### Further Information

Please contact HMRC - <http://www.hmrc.gov.uk/randd/>

## 6.2 Enhanced Capital Allowances

### Programme Description

The Enhanced Capital Allowance (ECA) Scheme provides up-front tax relief for businesses paying corporation tax or income tax that invest in qualifying plant and machinery. ECAs enable businesses to claim 100% first-year capital allowances on their investment in the year in which the expenditure is incurred. ECAs bring forward relief, so that it can be set against profits of a period earlier than would otherwise be the case.

There are three schemes for ECA's

1. Energy Saving plant and Machinery
2. Low Carbon Dioxide emission cars and natural gas and hydrogen re-fuelling infrastructure
3. Water conservation plant and machinery

To qualify for ECA the equipment must be listed on the Energy Technology List which details over 9,000 products meeting Government prescribed energy efficiency criteria, and is designed for companies and organisations wishing to procure energy efficient equipment.

### What are the benefits?

- Products listed on the Energy Technology List are energy efficient, resulting in significant long-term financial benefits.
- Enhanced Capital Allowance, permits businesses to deduct 100% of capital expenditure against taxable profits, delivering a significant cash flow boost resulting from the reduction of the business's tax bill of the year in which the investment is made, in addition to shortening the payback period on the investment.
- Investing in energy-efficient technologies reduces energy costs, Climate Change Levy payments and climate change impact

### **Qualifying technologies under the Energy Saving Plant and Machinery scheme**

The technologies currently supported by the ECA scheme are:

- Air to Air Energy Recovery
- Automatic monitoring and targeting equipment
- Boilers
- Compact Heat Exchangers
- Combined heat and power
- Compressed air equipment
- Heat pumps for space heating
- HVAC Zone Controls
- Lighting
- Motors
- Pipe insulation
- Refrigeration equipment
- Solar thermal systems
- Thermal screens
- Variable speed drives
- Warm air and radiant heaters

If a product does not appear in the list above, it means that the ECA scheme does not support it at the present time. However the Scheme is reviewed annually and there is scope for further technologies to be included subject to low carbon criteria and financial constraints

### **Who can claim an ECA?**

Businesses in the charge to income tax or corporation tax, apart from those who are leasing the assets i.e. the end-user, not the supplier or contractor. However, investments from 17 April 2002 in qualifying energy-saving equipment for leasing, letting or hire can qualify for an ECA.

To claim an ECA the following procedures must be followed:

1. First check the Energy Technology List before investing in any new equipment to ensure that it is eligible to receive the ECA.
2. You can claim the allowance on the cost of the product, along with any costs directly associated with the provision of the product, such as installation costs.
3. Claim your ECA, as part of the normal income/corporation tax return calculations.

### **Further Information**

Further information can be found <http://www.eca.gov.uk/>

# Chapter 7: Awards

## 7.1 Shell Springboard Award

### Programme Description

Shell Springboard is a programme that provides a financial boost to innovative, low carbon SME business ideas from across the UK. Key features of the programme are;

- Up to 6 awards of between £20,000 and £40,000 are on offer in each of 3 UK regions
- The regions are: North (Scotland/Northern Ireland/North East England – Durham and Northumberland, North West England – Cumbria). Central (Central England – East and West Midlands, Yorkshire, Lancashire, Cheshire and Wales). South (Southern England – South West, South East, East Anglia and London)
- The number and quality of entries will determine the number of awards given. Each region has a maximum number of awards it can give, but no minimum. The actual number of awards made, and the level of each award will be at the judges' discretion.
- Up to 2 businesses from each region will then meet a national judging panel prior to the announcement of an overall UK winner

### Recommendations

In short, the judges are looking for business plans for a product or service which:

- Will lead to greenhouse gas emissions reductions
- Is commercially viable
- Is innovative

There are two further aspects that the judges will take into consideration; 1) The likely material impact that the Springboard award will have on your project 2) the credibility of the team behind the project.

### Fund Value

Between £20,000 and £40,000 is available per project. The independent panel of judges determines the number of awards and amount given. Typically up to 18 Projects are supported each year

### Timelines

The call is annual typically opening in June with a deadline for applications in November

### Estimated Effort

Up to 20 hours

### Further information

Further information can be found at <http://www.shellspringboard.org/home/>

## 7.2 FT Climate Change Challenge

### Programme Description

The aim of this competition is to track down the most innovative solutions to the problems caused by climate change and help them attract the funding they need to make a real impact.

It is important that to demonstrate how following criteria will be met:

- How is your entry innovative? - This could be the way in which you are developing or delivering the product or service rather than the product itself.
- How does your idea contribute to tackling climate change? - This could be by reducing emissions or developing resilience to climate change impacts.
- How have you demonstrated that your idea is feasible? - We are looking for products or services that have been piloted, prototyped, and attracted seed financing or gained recognition locally.
- How would investment help you to develop your product/service to reach a wider audience or have a bigger impact? – Innovations which already have major financial support or have been developed by a large company will not be considered.
- What is the cost of scaling up your idea? We will ask you to provide basic costing for taking your idea to the next stage.

### Scope

The competition is open to the following entrants:

- Small and medium sized enterprises
- Academic institutions and think tanks
- Non-governmental organisations (NGOs)
- Individual entrepreneurs

### Value

Winning this competition will give your project \$75,000 prize money to get it off the ground and running. You will also have been voted the most exciting innovation to tackle climate change by the readers of the Financial Times.

But all five projects which make the shortlist will get considerable exposure to global business leaders through coverage in the FT.

### Timing

Competition typically opens in November with an April closing date

### Further Information

Further information can be found at <http://www.ft.com/indepth/climatechallenge>