

# Supporting Cleantech Enterprise in the UK: The Role of Incubators

Submission to the Shadow Cabinet

Working Group chaired by  
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December 2008

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## Foreword

I believe that the great wealth creation opportunity of the 21<sup>st</sup> Century will arise from saving the planet and not from depleting its resources. The UK is exceptionally well positioned to become one of the most productive sources of environmental technologies with the potential to be rolled out internationally. Our nation is blessed with an abundant supply of wind, tidal and wave energy and even a little sunshine. We also have a world class research base that is spread across the leading universities, Government research laboratories and corporations. Finally we have a reasonably attractive environment for enterprise, relative to many countries.

For the UK to succeed and to be a leading global economy of the 21<sup>st</sup> Century, more needs to be done. This paper does not provide all the answers but instead seeks to progress some of the simple and cost effective measures that can be taken at the grass roots of enterprise and contribute to developing a world class Cleantech economy in the UK.

All the major political parties have already received extensive reports and advice on the issues and potential solutions to creating an environmentally focused economy. This report seeks to add an overlay to the work of Sir Nicholas Stern, Zac Goldsmith amid others and offers some practical solutions to supporting the UK's emerging Cleantech enterprise economy.

Government has an important role to play and can be effective in stimulating the private sector and power of enterprise. Much attention has been placed on the so-called 'equity gap' by the current Government. Yet, there are still too many good technologies that fail in their infancy. Market forces have a role to play. We need more failures to get more successes. And the quality and quantity of the successes can be enhanced through support by incubators.

David Mott

Oxford Capital Partners

## Some key facts

- **\$1.3b** Venture Capital funding invested in Cleantech companies in Europe during 2007 (an increase of 27% from 2006) <sup>1</sup>
- This report has tracked **51** Cleantech companies that have gone through **7** incubator's in the UK
- These companies have raised **£80m** private investment since 2004
- **£15m**, the largest funding round (TMO Renewables, Q2 2006)
- **5** IPO's raising **£51m** since 2004

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<sup>1</sup> Source: The Cleantech Group

# Chapter one

## Introduction and acknowledgments

The future of our environment is one of the World's most talked about issues, with new reports being published informing us all how urgent the situation has become.

*Cleantech is new technology and related business models that offer competitive returns for investors and customers while providing solutions to global challenges. It represents a diverse range of products, services, and processes, all intended to: Provide superior performance at lower costs, while greatly reducing or eliminating negative ecological impact, at the same time as improving the productive and responsible use of natural resources*

*Source: The Cleantech Group*

On face value, Cleantech could be viewed as a lucrative industry with potentially high rewards due to an ever increasing worldwide demand. However, during the process of product and service development from the initial idea to commercialisation there are significant market failures that limit and in some cases prohibit success.

Shadow Chancellor George Osborne invited David Mott, co-founder of Oxford Capital Partners, to form a Working Group to submit a detailed report for the Shadow Cabinet to investigate how specialised Cleantech incubators could be supported across Britain. The report offers a fully costed roadmap for rolling out a Cleantech incubator programme, while proposing detailed guidelines on the qualifying criteria for cleantech companies to access incubator services. In doing so, the report investigates the role incubators play in helping companies facilitate their growth from concept to market penetration and therefore act to minimise the impact of various market failures.

To fulfil this mission, Oxford Capital Partners formed a Working Group, comprising experts in the Cleantech sector, to identify the issues and formulate recommendations.

The Chairman of the Working Group would like to express his thanks and appreciation to the following people for their time and insights during the productive Working Group meetings (see appendix for biographies):

Andrea Alunni, Gregory Barker MP, Mike Bowman, Matthew Brown, Paul Coleman, Douglas Dundonald, Alex Hook, Peter Horsburgh, Philip Johnson, Rachael Nutter, Charlie Ogilvie, David Quysner, Dave Raval, Barney Rhys-Jones, Rohan Silva, Julian Wheatland, Mark Wyatt, Rob Wylie.

## Chapter two

### Executive summary and recommendations

#### Key points to note

1. Cleantech companies face a number of sector specific challenges such as high regulatory hurdles, a need for large capital expenditure and often long lead times. This can lead to market failure at the start up phase.
2. Incubators can play a vital role in helping new businesses get off to a good start, increasing their probability of success, with 50% of incubated companies receiving funding. Through the provision of advice, services, seed funding and commercial support from incubators, these new businesses become significantly more attractive to investors.
3. Support for Cleantech new businesses is likely to increase the UK's competitive position internationally, generating exports, creating employment and adding new value into the economy.
4. The Carbon Trust plays an important role in developing and supporting the Cleantech market. Its incubator activities are broadly well received and support recommendations in this report.
5. Incubators are not a new phenomenon; however Cleantech incubators are a relatively new concept. The report highlights the need for sector specific incubators; these incubators will support companies who operate in specialised fields.
6. The British mindset with regard to entrepreneurship and enterprise must continue to change. Failure must not be viewed negatively. The more entrepreneurial failures in the UK, the more successes there will be.

## The problems and recommendations to help increase the number of Cleantech Incubators across Britain to help transform the UK Cleantech Industry

### Problem one: Scope limited to carbon reduction

The Carbon Trust who are funded through the government focus solely on carbon related technologies. The support that is available is only available to companies that have a direct link to carbon reduction. As a result a number of companies that focus on wider environmental sectors do not satisfy the selection criteria and are not eligible to join existing incubator programmes.

### Recommendation one: Widening the scope and definition

The Working Group highlighted this as a significant issue. It is recommended that the scope is widened to include companies that deliver an environmental benefit. In theory this is perhaps the simplest recommendation, however it is the one which has the potential to have significant and dramatic results in increasing the UK's competitiveness in the Cleantech sector.

### Problem two: Shortage of knowledge recycled back into the Cleantech sector

At present there is a significant lack of incentive for people to create private incubators. Our research highlighted that having talented executives in incubator organisations and allowing them to put their knowledge and time into the incubated companies is the most important factor in delivering a successful management programme, and not simply a matter of how much money has been made available. Experienced entrepreneurs and management can recycle their knowledge back into new ventures. Making investments into early stage companies is highly risky and measures need to be undertaken to help abate this and provide potential for a return on the investor's investments. It can be argued that a major weakness for public sector (grant funded) incubators is their inability to take equity stakes in their incubatees due to the conditions of the Government funding. This raises important questions regarding their incentive to focus on quality rather than focus solely on quantity. They must have motivation to see the incubated company succeed and grow rather than being "just another statistic".

### Recommendation two: Cleantech Incubator Support Scheme (CISS)

Taking the above factors into consideration, we recommend that specialist Cleantech incubators are offered Government funding to leverage private sector investment.

It is proposed a ratio of 4:1 is applied subject to a suitable maximum limit, which is to be set at £600,000 per annum for a period of 3 years. The scheme creates a partnership between the public and private sectors, this aims to reduce the risk associated with these opportunities. A commitment of up to £150,000 from the private sector will be enhanced with up to £600,000 of public sector funding to create a pool of capital of £750,000.

*"In the present uncertain economic environment, the UK is at pivotal point in time. The 4:1 public/private leverage associated with CISS would have a massive impact over the next few years."*

*Quote from the Working Group*

The programme is designed to be competitive to attract the best private sector organisations. Compared with many other small business support initiatives, the overall cost of the scheme is low (a big advantage considering the current tough economic environment), however, one which can potentially have a massive impact. The funding will be in the form of a grant and the Government would not seek repayment or a return on the capital granted to the incubator under the scheme.

## Benefits of CISS

### Phase I: After 3 years

A government commitment of £9m leveraged with £2.25m private investment can produce 75<sup>2</sup> Cleantech companies.

### Phase II: After 6 years

A Government commitment of £45m leveraged with £9m private investment can produce 300 Cleantech companies.

## Problem three: Later stage product issues and barriers to entry

The transition from technology in a laboratory to a working prototype requires the use of testing facilities which in turn require large amounts of money and often involve satisfying a high level of complex Government and environmental regulations.

Cleantech companies frequently address emerging needs and have to create their markets by persuading customers to alter long established behavioural and business practises.

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<sup>2</sup> Based on the Working Group discussion

### Recommendation three: Government support through access to facilities and procurement initiatives

There are a number of facilities across Britain that at a cost, give companies the opportunity to test their product prototypes. The report recommends that certain facilities are made available free of charge or at subsidised rates to companies that are currently using or have used a Cleantech incubator. It is proposed that the Government carries out a review of testing facilities across the country to ensure adequate capacity and availability.

Government departments can stimulate innovation by playing the important role of engaging companies as a "reference customer" for new products. The report recognises the need for procurement initiatives that seek to adequately facilitate the growth of SMEs, we therefore fully support the findings and proposals of David Connell and the recently published Glover Committee report, where all the recommendations have been accepted and will be implemented.

## Chapter three

### Cleantech – A challenging environment

**Seven** challenges facing Cleantech companies identified by the Working Group:

1. Capital intensive – many Cleantech companies need to secure large amounts of capital, even to develop prototypes or small scale projects, which can create financing issues.
2. High regulatory hurdles – establishing new projects, building specialist facilities or testing prototypes often involves satisfying a high level of complex Government and environmental regulations.
3. Long lead times are common across Cleantech companies which can inhibit external investment due to a delay in the return of the capital.
4. Government and policy risk – many companies in this industry rely a great deal on Government subsidies, grants, and therefore hope that these will continue. Uncertainty around both UK and EU support programmes and changing policies presents additional risk to both companies and investors.
5. Cleantech is often knowledge based, and as a direct result it can be hard to gain the adequate levels of protection through Intellectual Property frameworks.
6. New market risk – Cleantech companies frequently address emerging needs and have to 'create' their market by persuading customers to alter long established behaviour and business practices.
7. Shortage of entrepreneur/management/engineering talent – the Cleantech industry is not mature enough for experienced entrepreneurs and managers to recycle their knowledge back into new ventures.

## Chapter four

### The role of Cleantech incubators

*UK Business Incubation (UKBI) describes an incubator as:*

*'A facility that provides SMEs and start-ups with the ideal location to develop and grow their businesses, offering everything from virtual support, rent-a-desk through to state of the art laboratories and everything in between. They provide direct access to hands on intensive business support with access to finance and experts and to other entrepreneurs and suppliers to really make businesses and entrepreneurs grow.'*

Cleantech incubators aim to provide early stage companies with a nurturing, instructive and supportive environment for entrepreneurs during the critical stages of starting up a new business. Incubators provide a variety of services for companies ranging from initial market research to in some cases helping to attract institutional investment. The principal goal of incubators is to increase the chance that a start-up will succeed, shorten the time and reduce the cost of establishing and growing its business.

Central to the success of an incubator is the quality of its people. The report recognises that the most successful incubator programmes are led by experienced individuals who combine strong technical and scientific skills with entrepreneurial experience. For the purpose of this report, there is a distinction between the varying levels of incubation. Only incubators that have the ability to provide companies with high levels of support will be included in the research for the report. However, it must be noted that although these incubators have the potential to offer a wide range of services, some of the companies included in the research for this report have only used a fraction of the services available.

Incubators play a vital role in linking, entrepreneurs, incubatee companies, Universities, academics, tech transfer offices and investors (Figure 1).

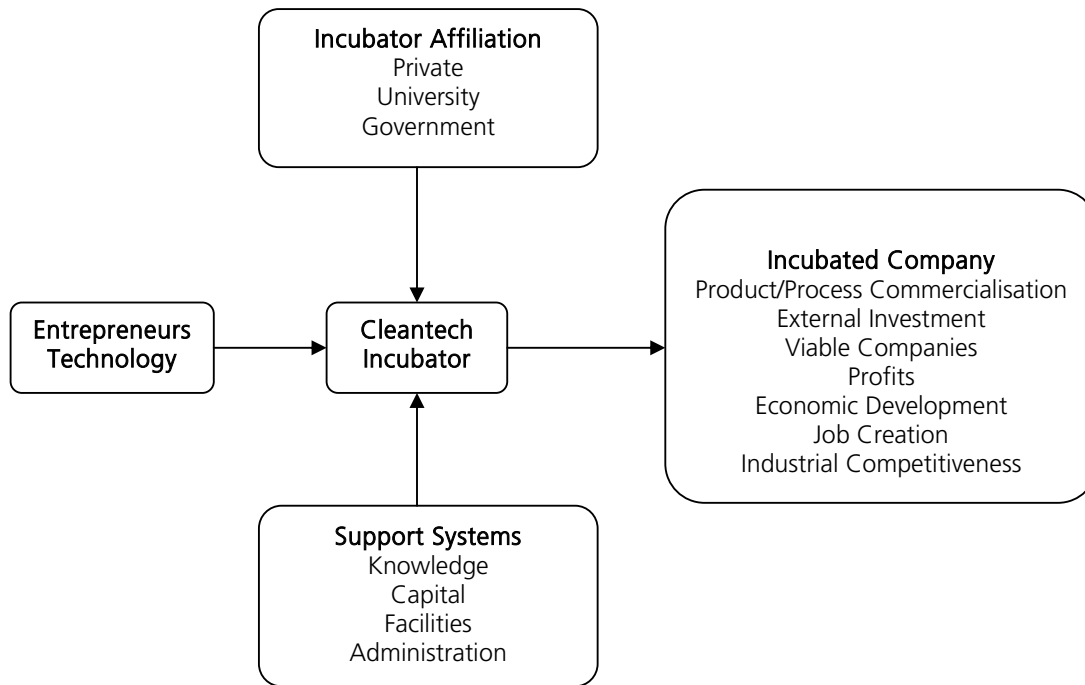


Figure 1: The Input and output of Incubators, adapted from Wiggins, J. and Gibson, D. V. (2003) *Overview of US Incubators*. Incubators take an entrepreneurs technology and add and combine a number of support systems or services to the technology in order to commercialise and make it market ready.

## Incubator business models

Incubators operate a range of business models. Like all businesses, they seek to develop a sustainable business model. The most common models in the private sector involve:

- Fee-based service payable by the incubatee either on the provision of service or on attainment of a pre-determined event, such as a future financing round.
- Equity participation in the incubate with the intention that the stake will be realised in the future generating a profit for the incubator
- A combination of fees and equity participation

*This report does not make any recommendations on which type of model should be adopted by incubators as this is determined by market forces and different business models are to be encouraged.*

Four examples of incubators models:

1. The university incubator: The Imperial Incubator

- Imperial Innovations offers a variety of business support and client services for spin-out companies and more established businesses.
- Imperial Innovations has developed considerable experience and expertise in incubating low carbon and renewable energy technologies.
- Imperial Innovations manages the Imperial Incubator based on the South Kensington Campus which provides incubation space for up to 15 early stage companies.
- To support spin-out companies, Imperial Incubator has maintained relationships with panels of lawyers, patent attorneys, tax and financial advisors from which the spin-out company can choose and benefit from preferential commercial terms and fee rates.
- The Imperial Incubator People Network database, which contains details on the pool of non-executive directors who work with spin-out companies and other potential people of high calibre, facilitates the matching of the right people to the opportunities in spin-outs.

2. The private incubator: H2O Venture Partners

- H2O commercialises early stage technologies from universities, research organisations and existing companies. They work on the proposition that entrepreneur talent is scarce; they put the time and money to build this and recycle into new ventures.
- They invest seed capital and other resources at the critical early stage to bring companies as close to market as possible before raising further finance to deliver to those markets.
- Services include providing market analysis, developing commercial strategy, identifying and negotiating with potential collaborators and customers and business plan development.

3. The public listed incubator: IP Group

- Core business is the creation of value for its shareholders and partners through the commercialisation of intellectual property originating from research intensive institutions.

- Manages the process from finding suitable intellectual property to commercialise to either helping develop businesses and creating value out of them, or identifying and establishing appropriate commercial partnerships to do so.

#### 4. The Government incubator: The Carbon Trust (CT) model

- Funding comes entirely from the CT with companies receiving services at no cost and the CT directly pays the incubator for the service. If an incubator needs to outsource a service, the CT will pay the 3<sup>rd</sup> party service providers directly.
- The CT provides incubators a maximum of £70k (recently increased from £60k) to spend on services for the company during the incubation period.
- What do the incubators get out of this arrangement?
  - CT pays them directly for the services they provide companies.
  - Exposure to potential opportunities through deal flow.
  - Helps incubators understand and keep up to date on new technologies through the development of contracts.
  - The CT pays the incubators a retainer fee

#### Services provided by incubators include:

- Initial technical due diligence
- Initial market due diligence
- Strategy and business plan development
- Business model development
- Financial advisory
- Attract external investment
- Making introductions to investors
- Intellectual property protection
- Team profiling and building
- Business mentors
- Market research
- Market entry strategies
- Product development and engineering
- Assistance with scale-up for manufacture
- Sales and marketing
- Project management
- Licensing advice

## Incubated company funding history

Top 5 funding rounds of tracked companies since Q1 2005

Company	Amount	Stage	Date	Associated Incubator
TMO Renewables	£15m	4	Q2 2007	Angle Technologies
Nujira	£10m	4	Q3 2008	TTP Group
Ilika Technologies	£7m	3	Q4 2007	Angle Technologies
Nujira	£5m	3	Q1 2007	TTP Group
Nujira	£4.3m	2	Q3 2005	TTP Group

IPO's of tracked companies

Company	Date	Amount raised at IPO	Associated Incubator
ITM Power	Q2 2004	£10m	Life Accelerator
CeresPower	Q4 2004	£21.6m	Imperial Innovation
CMR Fuel Cells	Q4 2005	£10.3m	Life Accelerator
Oxford Catalysts	Q2 2006	£15m	Angle Technologies
Disenco	Q1 2007	-	Life Accelerator

## *Company case study 1: 4Energy*

*Incubated through the Carbon Trust framework by the TTP Group*

### *Background*

*4Energy makes cooling systems which use less energy than the average light bulb to cool vital electrical equipment. Its initial target customers – power and telecommunications operators – have tens of thousands of sites worldwide which stand to benefit.*

### *The need*

*With a great energy saving technology and corporate team, but needing expert help to get its business market ready, 4Energy was a natural incubator candidate. It worked with TTP, one of the Carbon Trust's four incubator partners. The sheer size of the opportunity presented challenges. To be taken seriously they had to show they could scale up production and roll out solutions on an industrial scale.*

### *What was done?*

*TTP's contacts overseas and its experience of sourcing technology suppliers were invaluable. The Carbon Trust incubator scheme helped 4Energy to locate outsourced production capacity and manage overseas installations. It also advised the business on strengthening its intellectual property position and ensuring that new products met appropriate certification standards.*

### *The result*

*Today 4Energy is attracting interest from major network operators. For CEO Pat Tindale, having the Carbon Trust and TTP's expertise on tap has made a big difference. "We got great value out of the collaboration" he says. "We have progressed far more quickly with the Carbon Trust's backing".*

*Source: The Carbon Trust Annual Report 2007/08*

## *Company case study 2: Stoneglass Building Products Limited*

*Incubated through the Waste and Resource Action Plan (WRAP)*

### *Background*

*Stoneglass Building Products Limited was established in September 2003 from Staffordshire University to develop the technology to manufacture masonry products from 97% recycled glass. Stoneglass found that they were able to produce bricks, pavers and brick slips with excellent drainage properties and to a high degree of geometric uniformity from large tonnages of post consumer glass.*

### *The need*

*Stoneglass realised that commercialisation of the technology would have a large environmental benefit by diverting significant volumes of glass from landfill; however, the company did not have the necessary funding to take the technology to the next level.*

### *What was done?*

*Initially, WRAP assisted Stoneglass through funding large scale trials and conducting detailed market research, economic feasibility studies and an environmental impact assessment. It helped Stoneglass to carry out the costings for a full scale plant and develop a pilot process, which enabled the production of sufficient quantities to demonstrate process viability. Stoneglass also looked at the potential environmental impact of the process and developed specifications for the input glass. These studies showed that the Stoneglass products required approximately 25% less raw material than traditional clay products to make; had lower drying requirements and could be fired at much cooler temperatures, resulting in lower energy usage. WRAP calculated that the Stoneglass process reduces Co2 impact by one third when compared to traditional clay products*

*Having demonstrated the commercial potential of the process, the project was passed to the Imperial Innovations Recycling Commercialisation Centre. Imperial Innovations acted as an impartial and trusted advisor to the Stoneglass management team, helping to strengthen and deepen their market and financial capabilities. Imperial Innovations took a hands on approach to helping Stoneglass elevate its business into an attractive 'Investor ready' opportunity.*

### *The result*

*Following a multi-million pound investment from Credit Suisse, Stoneglass was acquired by Intellitect Environmental Limited who set up a new company, Geofusion, to manufacture the product.*

*Source: The Waste Resource Action Plan*

## *International comparison 1: Israel*

### *The Technological Incubator Programme: Ministry of Industry, trade and labour*

*The Technological Incubator Programme started in 1991 and is administrated by the office of the chief scientist of the Ministry of Industry, Trade and Labour (OCS).*

*The program nurtures entrepreneurs at the earliest stage of technological innovation, helping them implement their ideas by turning them into exportable commercial products and form productive business ventures in Israel. By absorbing a large portion of the risk in this early stage (where commercial money plays a minor role) the technological incubators provide entrepreneurs with physical premises, financial resources, tools, professional guidance and administrative assistance - so that, during their stay in the incubator, they may turn their abstract ideas into products of proven feasibility, novelty and advantages sought in the international marketplace.*

*There are no predetermined fields of specialisation at the incubators, unless decided by the incubator to specialise in a certain field. However there are a number of specialised or partially specialised incubators in software, life sciences, medical devices, environment, water, IT and communication. The incubator period ranges between 2-5 years. Many companies stay in the incubator for long periods of time. While they are pre-revenue they do not pay for use of the facilities, however once they achieve positive revenue they start to pay rent to the Government.*

*The Israeli Government plays a crucial role in incubating promising technology, with 85% of the approved budget provided as a grant or a soft loan with payback only required in the case of success. Incubators operating as non-profit will have to give the Government 3%-3.5% royalties from product sales and up to the total amount of the initial grant, while private incubators act under the incubators own individual responsibilities.*

*Approximately 200 projects in various stages of R&D are being carried out in the Technological Incubators at any given time. By the end of 2006, over 1000 projects had matured and left the incubators. Of these graduates, 57% have successfully attracted private investments. 41% of the incubators graduates (since the beginning of the program) are still up and running.*

*By the end of 2006, the total cumulative private investment in graduate incubator companies surpassed \$1.5 Billion.*

*Source: The Centre of Incubators for Technological Initiative*

## *International comparison 2: The United States*

### *The Clean Energy Incubator (CEI)*

*The Clean Energy Incubator is a joint collaboration between the Austin Technology Incubator (ATI) and the National Renewable Laboratory (NREL). It was launched in August 2001; with the aim of promoting the development of viable businesses focusing on clean energy.*

*The CEI works with new companies to fill the knowledge gaps, build stronger business propositions, accelerate into the market and increase their chances for success.*

*They provide infrastructure, operational and strategic support services to its client companies for which it receives both market rate service fees and a 1% equity participation in the company.*

*The ATI view the application and company selection process as the most important factor in differentiating incubators. They require both written and oral materials from those who apply. The written materials show the quality of thought put into the business and the depth of domain knowledge the team may have. The verbal presentation provides an opportunity to meet the team and observe what challenges lie ahead in terms of creating and communicating the corporate vision and sales materials. ATI also uses an external review process. The external process involves taking the company to present before a panel of 6-15 investors, entrepreneurs and service professionals from the community. This guarantees that the company will receive a fair hearing of their business. The external panels also provide a way for ATI to connect to the community and provide potential alliances between the presenting company and the audience member.*

*Source: Austin Technology Incubator (ATI)*

## Chapter five

### Recommendation one: Widening the scope and definition

The Working Group proposed that the focus should be on the benefit or outcome that a technology solution can enable rather than the technology itself. As mentioned earlier in the report, Cleantech encompasses a wide range of sectors from energy to recycling and waste (Figure 2). When investigating the qualifying criteria for company selection into incubator programmes, the Working Group agreed there needed to be a wider scope, with the Carbon Trust in particular having a very narrow definition relating to carbon reduction. As a result a number of companies have ‘fallen through the gaps’ and may not be eligible for incubator support despite facing many of the challenges already mentioned in this report.

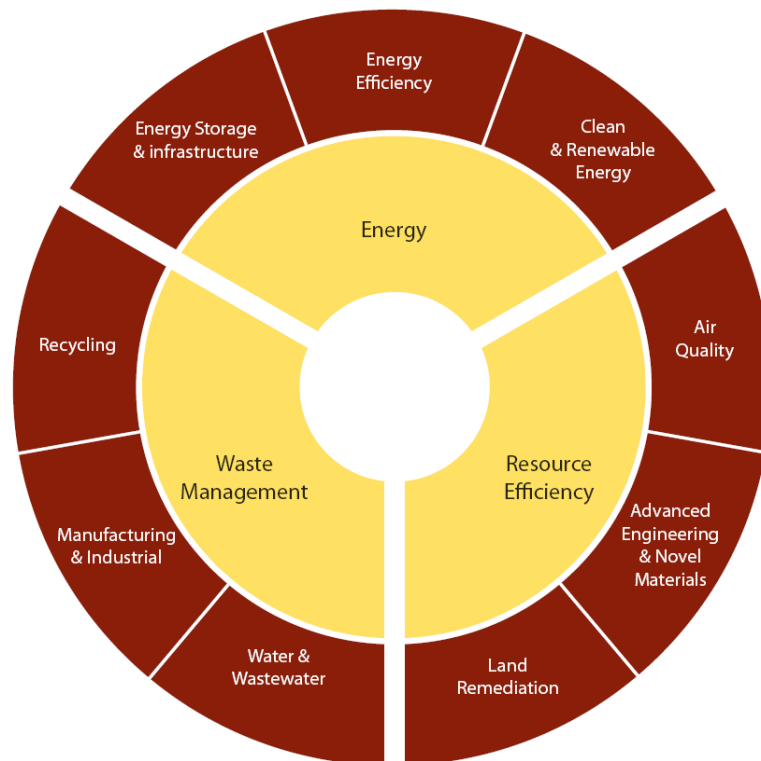


Figure 2: The full scope of Cleantech – Cleantech encompasses a whole range of areas that include but is not limited to carbon reduction.

Using a broader definition can however cause problems for incubators; they may not have the required sector expertise to add the desired value needed to help accelerate a company’s route to market. To combat this, the report recognises a need for specialised, sector specific incubators. This approach has been successfully adopted by incubators in Israel, with incubators such as Kinrot, who focus solely on water technologies and the preservation of water.

Below are examples of Cleantech companies focusing on delivering environmental benefits, but which do not satisfy the criteria of the Carbon Trust. The Working Group identified many companies whose core environmental business failed to meet the criteria set by the Carbon Trust. As a result it is recommended that the scope and definition be widened.

*Example 1: Microbial Solutions  
Incubated by H2O Venture Partners*

*The development of the Microbial Solutions Microcycle technology was initially conducted at the Centre for Ecology and Hydrology at Oxford, part of the UK Government's Natural Environment Research Council (NERC). Industry uses toxic white liquid, made up of water, chemicals and oil, to keep machinery cool, it is difficult to dispose of and is usually boiled and dumped in landfill. The Microcycle technology use bacteria to clean this toxic water, by consuming the harmful chemicals found in industrial waste. Once the bacteria have done this, the water is added to a solution to test its oxygen levels. When it is no longer toxic, the water can be poured into the sewage system without contaminating the supply, therefore providing an environmentally-friendly solution for disposal. Microbial Solutions were not accepted into the Carbon Trust incubator scheme as they were deemed to fall outside the carbon reducing definition required for selection.*

*Example 2: Ionic Polymer Solutions (IPS)  
Incubated by Anglo Scientific*

*IPS core polymer technology was originally developed as part of a UK government defense research program in the late 1990's. It has now been recognised by the UK Department of Trade and Industry with the award of one of the largest Emerging Energy Technology Grants in 2005 to develop market-leading proton exchange membranes (PEMs) for fuels cells. IPS researches and develops molecules for new and existing applications. The technology covers the use of the Ionic Liquids in areas as diverse as electroplating and the replacement of environmentally damaging solvents; the ionic liquid monomers can also be polymerised into membranes for use in Fuel cells and other divided electrochemical cell processes.*

*Source: Ionic Polymer Solutions*

## Chapter six

### Recommendation two: Cleantech Incubator Support Scheme (CISS)

The second recommendation is that specialist incubators are offered Government funding to leverage private sector investment under a new scheme called the Cleantech Incubator Support Scheme (CISS). Under this scheme, private sector commitments to Cleantech incubators will be enhanced by public sector funding. The goal of the CISS is to increase the resources available to incubators and attract talent in order to create more and better quality business.

It is proposed that a ratio of 4:1 is applied subject to a suitable maximum limit, which is proposed to be set at £600,000 per annum for a period of 3 years. The scheme creates a partnership between the public and private sectors. A commitment of up to £150,000 from the private sector will be enhanced with up to £600,000 of public sector funding to create a pool of capital of £750,000.

The programme is designed to be competitive and attract the best private sector organisations. It is deliberately generous in order that incubators can attract talented executives to their organisations, the most important factor in delivering a successful programme.

*“The key limiting step is the ability to build the quality proposition around the right IP and management. The CISS recognises this need, and if adopted would allow the incubators to recruit quality people allowing them to concentrate on the essential areas of incubation.”*

*Quote from the Working Group*

Compared with many other small business support initiatives, the overall cost of the scheme is modest, yet the impact is potentially significant. It is therefore proposed that the funding is in the form of a grant and that the Government would not seek repayment or a return on the capital granted to the incubator.

#### Key fundamentals

##### 1. Qualifying incubators

It is recommended that the scheme is open to a range of organisations and the filtering process is managed through the tender process. Incubators are neither fund managers nor venture capitalists. It is important that their activities are not required to be regulated by the Financial Services Authority. They can be stand alone organisations such as private limited companies or limited liability partnerships or can be part of a wider organisation, either division or subsidiary.

Each incubator will have to demonstrate that it will secure private sector funding of at least £50,000 and up to £150,000 per annum during the three year period. This can be in the form of new capital raised through the private sector (e.g. individual, institutional or corporate investors) or through the allocation of reserves already in the existing organisation.

## 2. Use of funds and restrictions

The funds shall be used to pay for costs of running the incubator and incubating new businesses.

Incubator costs shall include payment of salaries of incubator executives, often attracting new talent, and overheads of the incubator. Incubator costs relating to the activities of incubating new businesses shall include, inter alia, seed funding for new entities, business development, salary costs and professional service costs including patent fee, legal and finance. These costs may be paid directly by the incubator or indirectly by the incubatee company. The incubator can make loan or equity investments directly into the incubatee companies.

## 3. Managing the scheme

The programme is deliberately flexible in order to accommodate and to encourage a variety of business models across different incubators. It is proposed that the scheme could be managed by Capital for Enterprise Limited, a subsidiary of BERR, Capital for Enterprise Limited, in selecting successful bidders, shall have the discretion to determine whether a suitable operating plan has been devised. This will be the principle factor in controlling the quality of the incubators admitted onto the programme.

At least 80% of the funding must be allocated to the Cleantech activities of the incubator. This will be confirmed through an audited return to be submitted annually by each qualifying incubator. Funds may not be used for activities that are not related to the incubator programme. The default conditions will be set out by Capital for Enterprise Limited. In the event of a default, Capital for Enterprise Limited will serve notice to the incubator. If the default is not corrected in a timely manner, payments to the incubator will be terminated. Termination is the principle sanction to regulate the scheme and avoid abuse.

## 4. Funding and operating costs

It is proposed that a programme could seek to provide funding to 5 incubators in the first year resulting in a maximum funding commitment from the Government of £3 million per annum for 3 years. If successful, this could be expanded to up to 20 incubators. The maximum funding commitment from the Government would be £12 million per annum. These maximum commitments assume that all incubators will seek to raise the upper limit of private sector funding of £150,000 per annum.

The scheme's running costs would be low as it would benefit from the existing infrastructure of Capital for Enterprise Limited. The estimate of £300,000 per annum would comprise:

- One full time manager, approx £60k
- A selection committee, approx £100k
- Increase for overhead by 2x

Potential sources of funding:

- UK Environmental Transformation Fund (ETF)
- Enterprise Capital Fund (ECF)
- Carbon Trust
- Technology Strategy Board (TSB)
- Diverted funds from current Government programmes, e.g. Business Link and Regional Development Agencies (RDA's)

*"A large constraint for us is time, the leverage under the CISS is exactly what we would need to expand and incubate more companies."*

*Quote from the Working Group*

## Application

### 1. Criteria

The scheme will be open to both new and existing incubators. Only SMEs may apply for the scheme, according to the official definition. This will ensure that the scheme is focused on those enterprises that may not have the internal resources to fund a programme independently. The applicant would be required to demonstrate that it had secured the required private capital investment for the scheme. Each applicant shall be required to set out a financial plan setting out how the funds will be used. The programme will be subject to an annual audit which shall form part of the returns to the Government. It is anticipated that applicants would include inter alia specialist incubators, early stage venture capital fund managers, specialist consultancies and technology transfer offices.

### 2. Process

Capital for Enterprise Limited will put out a tender, inviting bids for the scheme. There will be one round of bids per annum. Capital for Enterprise Limited, through its selection committee, shall have full discretion to select the winning

bids. At the end of a three year period, incubators will be able to reapply to secure further funding. The granting of new funding will be at the discretion of Capital for Enterprise Limited and be based on the incubators demonstrable success.

## Measuring success and quantifying the benefits of the scheme

The success of incubators under the programme can be measured by collecting data across a range of metrics. This data will be valuable to the government in tracking the development of the UK's Cleantech economy. These include:

- No. of potential opportunities reviewed
- No. of opportunities accepted onto the programme
- Amount of private finance raised by incubated companies– anything that engages the private sector
- Share price
- Profitability
- Employment – in the incubated companies and the incubator itself
- Environmental impact
- Speed of cycling of opportunities – will encourage incubators to go through more opportunities to find more great ones
- Form for companies in the incubator – enquiring about employment, revenue/profits.

## Background to the scheme

The scheme builds on an initiative launched by the Government in 2006 called the Enterprise Capital Funds (ECFs). The ECF programme is managed by Capital for Enterprise Limited, a subsidiary of BERR, based in Sheffield. The Chairman of CfEL is David Quysner, a senior executive of the UK's venture capital industry. He has confirmed that Capital for Enterprise Limited has a suitable capability to manage this scheme should it be adopted by Government.

Under this scheme, fund managers raise private sector capital for a fund and the Government will triple this commitment, thereby increasing the size of the fund. There is a maximum limit on the size of the funds of £30 million (including £20 million from the Government). The private sector investors are attracted to the

opportunity by the leverage of Government funds and the opportunity to generate a high return. A similar programme has been operating in the US where it is known as SBICs.

The funds target companies raising funds in the 'Equity Gap', where companies are seeking to raise up to £2m.

## Positioning of CISS

At present there are many schemes (Figure 3) that offer support to Cleantech companies, however, at present there is limited, if any help available for incubators themselves. The CISS aims to address this, offering direct support to all incubators that qualify for the scheme.

Basic Research		Applied research & development			Demonstration		Pre-commercial deployment	
1	2	3	4	5	6	7	8	9
Research Councils								
The Technology Strategy Board								
The Energy Technologies Institute								
					BERR			
					DEFRA			
							The Energy Saving Trust	
		Carbon Trust						
The Cleantech Incubator Support Scheme								

Figure 3: Support available for UK early stage Cleantech companies – The above Figure highlights some of the programmes available to support Cleantech companies. The CISS will naturally sit alongside these and offer direct support to all incubators that qualify for the scheme. The incubator will offer support from basic research to pre-commercial deployment.

## Chapter seven

### Recommendation three: Government support

A supportive environment is one of the key factors in promoting the success of incubators and the companies that they are creating. A number of suggestions have been made by the Working Group:

#### 1. Government procurement programme

The report recognises the need for procurement initiatives that seek to adequately facilitate the growth of SMEs. We Working Group therefore support the findings and proposals of David Connell to implement a US style SBIR programme into the UK. The recent report by the Glover Committee has a number of recommendations for the current Government. The recent pre-budget report has highlighted that these have been fully accepted and will now be implemented into Government procurement policy.

Government departments can stimulate innovation by funding feasibility studies, prototypes and trials of technology they need in the future. Government therefore play the important role of engaging with companies, acting as a "reference customer" for new products; Government should therefore be an early adopter of new products and solutions. Government should take more risk in adopting new technologies.

For many SMEs "a contract with the Government is more valuable than a grant". SMEs prefer to secure a profitable contract from Government rather than a grant. A contract is recognised by shareholders and potential investors as a demonstrable sign of tangible commercial progress.

#### 2. Access to specialised technology facilities

There are a number of facilities across Britain that, at a cost, gives companies the opportunity to test their product prototypes. The report recommends that certain facilities are made available at subsidised rates to companies that are currently using or have used a Cleantech incubator. It is proposed that the availability and investment for specialist facilities is reviewed and that any bottlenecks are removed which may slow or hamper the development of Cleantech companies. Two examples of such facilities are highlighted below.

##### *NaREC wave, tidal and wind facility at Stockton on Tees*

*In August 2007, NaREC launched an independent large scale testing facility for companies to develop / test renewable energy product prototypes. The facility is open to anyone who submits a proposal, with project duration typically lasting*

*between 1-3 days. It costs £2500 a day (cost varies depending on size of project) after an initial set up fee of £1000.*

### *European Marine Energy Centre (EMEC)*

*Emec is based at Stormess in Orkney, Scotland and was established to help the evolution of marine energy devices from the prototype stage into the commercial market place. Emec has an international role to play in driving the advancement of tidal and wave technologies.*

*Emec offers developers the opportunity to test full scale prototypes devices in wave and tidal conditions, where wave and tidal energy convertors are connected to the national grid via seabed cables running from open water test berths. To date Government and public organisations have invested around £15m in the creation of the centre and its two marine laboratories. As above the facility is open to anyone who submits a proposal, with projects lasting up to 5 years. There is an annual cost which includes a number of services as well as the direct use of the facility. There is also an external cost due to its location. Transporting the prototype up to Orkney can be a large process, meaning that companies that use the facility must have a certain financial backing.*

*Source: European Marine Energy Centre*

## Chapter eight

### The survey

#### Key survey facts

- Ratio of survey respondents, 44% still in incubator program: 56% have graduated.
- 94% of companies only applied to one incubator.
- The top 4 factors most important when choosing an incubator: Access to seed capital and funding, cost, the incubator management team and reputation.
- 54% of companies did not receive management team development and recruitment services from the incubator.
- 92% of companies did not receive access to specialised laboratory facilities.
- 36% of companies were very satisfied with the services provided, with 14% being dissatisfied.
- 77% of companies thought the incubation period in terms of length was perfect.
- 43% of companies gave the incubator first right of refusal in exchange for the services.
- 64% of companies have raised private investment since leaving the incubator.
- 75% of companies were not introduced to investors by the incubator.
- 73% of companies did not receive investment from the incubator.
- 55% of companies thought that their participation in the program increased their success in raising funds.

- 77% of companies thought their participation in the program accelerated the development of their business.
- 89% of companies have not received support since leaving the incubator; with 50% stating that they would like to have had received support.

## Appendix

### About Oxford Capital Partners

Oxford Capital Partners is a venture capital firm working on behalf of institutional and private investors. Its focus is on emerging science and technology and its expertise lies in accelerating businesses with potential for high growth in global markets. Oxford Capital Partners looks for the best opportunities, backing exceptional management teams and investing across all stages of development, from start-up to IPO.

Oxford Capital Partners assists portfolio companies in accessing international markets in Europe, North America, Middle East and Asia. Oxford Capital Partners manages several funds and oversees a portfolio of companies in a range of technology sectors, including sustainability technologies, communication technologies and healthcare.

#### The report task force:

##### David Mott, Chairman

David Mott is a director and co-founder of Oxford Capital Partners; he has led over 30 venture capital transactions since 1999 in science and technology companies including numerous spin outs from universities and large corporations, notably in the fields of sustainability. His investment experience in sustainability technologies has spanned a range of sectors, from software to renewable energy and from biotech to novel materials. In 2006, he was named Young Venture Capitalist of the Year and has been cited as one of the rising stars of the UK venture capital industry.

##### Kurt Laskow-Pooley, Project co-ordinator

Kurt has been working with Oxford Capital Partners to help produce the Cleantech Incubator Report. He has an extensive knowledge of clusters, having previously worked as a Cluster Analyst for the Oxfordshire Bioscience Network where he was responsible for researching and producing the OBN BioCluster Report 2008. Kurt studied for his MBA at Southampton University. He also received a BA (hons) in Business Economics with Business Law from Portsmouth University.

##### Michael Anstey, Analyst

Mike is an investment analyst at Oxford Capital Partners where he is responsible for managing new proposals and supporting the investment managers. His area of expertise is neuroscience, with international research experience in Canada, Australia and the UK. His specific investment focus is on opportunities in the healthcare and sustainability sectors. Mike is a graduate of Queens University, Canada, where he received a 1<sup>st</sup> Class BSc (hons) in Biology and holds a DPhil from the Department of Zoology at the University of Oxford.

## Working Group Members

Andrea Alunni, Seed Investment Manager, Isis Innovation

Andrea joined Isis in August 2008 as Seed Investment Manager to help the University raise finance for progressing technology spin-outs. An electronics engineer by background, Andrea gained an MSc in Strasbourg (France-1994) in the field of Technology Transfer and an MBA in Rome (Italy-1995) focusing on finance. His professional experience spans 15 years in financing technology, from corporate finance in Telecom Italia, investment banking at Nomura and private equity at CDC Capital Partners. Andrea is the author of two books in the field of competitive acquisitions in the technology sector, published in Italy in 2006 and 2007.

Mike Bowman, Director, eSynergy

Mike holds a degree in Electric Engineering, and prior to joining E-Synergy Ltd was an executive with GEC/Marconi where he was responsible for a range of IT activities. In 2002 he co-founded a company spin-out of Marconi Technology. His role at E-Synergy Ltd is to develop and manage the investment Readiness Programme, and he is a Director of KeCrypt Ltd.

Matthew Brown, Investment Director, Life Accelerator

Matthew is Investment Director of LIFE. He has spent most of his professional life in Spain, where he worked for Lehman Brothers, the American investment bank, and headed up the Corporate Finance function for a local strategy consulting firm before moving to Amadeus, the quoted travel technology company, as Corporate Development Manager. In 1999 he returned to the UK to found and run a VC-backed mobile technology venture. Recently, he has worked as a freelance business strategy consultant and as a Deal Manager for Advantage Business Angels. Matthew holds a BSc (Hons) in Systems Management from The City University, an MSc in Environmental Technology from Imperial College and an MBA from Manchester Business School.

Paul Coleman, Co founder and Director, H2o Ventures

Prior to March 2006, Paul was a Principal Consultant at PA Consulting Group, where he worked on key issues of commercial strategy for biotechnology firms, international pharmaceutical companies, investment banks, venture capital and private equity houses. Previously as Business Development Manager at Oxitec, he worked to drive early stage company growth. Paul studied at University College, Oxford and the London School of Hygiene and Tropical Medicine.

### Douglas Dundonald, Founder and Director, Anglo Scientific

Douglas is a founder and director of Anglo Scientific and a number of other technology companies. Previously, Douglas served as an executive main board director of Anglo Pacific, a quoted (UK and Australia) public company. Douglas has been involved in building a number of start-up companies and has many years' experience both as an active business investor and as an active manager.

Douglas trained at the Royal Agricultural College, Cirencester, securing a Diploma in land management. Douglas' career started in property development and investment, migrating quickly to general business investment and building innovative technology businesses. He has now been involved in technology companies both as an investor and director for the last 15 years and describes himself as a "firelighter".

### Alex Hook, Investment Manager, NESTA Investments

Alex joined NESTA in June 2008. He makes and manages investments in the Cleantech, Engineering and Healthcare sectors. Alex started his career in the creative industries before joining Foursome Investments in 1999. During his time at Foursome, Alex was involved in multiple transactions, across a number of sectors and geographies, with a predominant focus on early-stage environmental technology businesses. Alex also managed Foursome's early-stage fund, the FourVision Fund LP. Alex has a Bachelor of Social Science in History and Social Science from the University of Birmingham.

### Peter Horsburgh, Partner, Environmental Technology Fund

Peter has over 20 years experience in investment banking, stock broking and corporate finance. His experience includes ten years at PaineWebber International (UK) Ltd as Senior Vice President, and Head of US Equities for the UK as a Director in NatWest Markets Inc. During these years he worked on a variety of transactions involving companies such as Ionics, US Filter, Fuel-Tech NV, Thermo Electron and Culligan Water.

### Philip Johnson, Chief Executive, Life Accelerator

Philip is the Chief Executive of the LIFE accelerator. He has extensive experience in the electricity sector having held a variety of executive and senior management positions covering all aspects of the supply chain. He is a Member of the Board of the Northern Ireland Authority for Utility Regulation [www.niaur.gov.uk](http://www.niaur.gov.uk) and his previous appointments include periods with Ocean Power, National Power, Coopers and Lybrand, North of Scotland Hydro Electric Board, British Electricity International and the Central Electricity Generating Board with whom he originally undertook a student apprenticeship. He has raised finance and built a number of successful new energy technology businesses including Innogy, CoGen and Energy Direct. Philip is a Chartered Engineer; he has an MBA (Insigni Laude) from Glasgow University and a B.Sc. (Hons) in Energy Technology from Aston University; he is a fellow of the Energy Institute.

### Dave Raval, Incubator Manager, TTP Group

Dave is the Incubator Manager. Dave has 10 years' experience of helping new technology companies to grow; he has worked with start-ups, small and medium-sized enterprises, spin-outs from large companies, academia and university technology transfer offices, finance providers, charitable bodies, the DTI/DIUS and all of the UK's Regional Development Agencies and Local Assembly Governments. Dave has degrees in Engineering and Business from the Universities of Oxford and Cambridge and has lived and worked in the UK, USA and Germany. Previous roles include starting a dotcom internet security company, managing research and development for 5 lines of London Underground and being part of a team developing nanotechnology businesses in the UK.

### Barney Rhys-Jones, Managing Director, Good energy

Barney is Managing Director of Good Energy, the UK's only 100% renewable electricity supplier. Prior to this appointment Barney was an Investor Director at Low Carbon Investors responsible for investment in and management of early stage low carbon technology businesses. Barney has six years strategic consulting experience with Bain and Company. Whilst at Telewest Broadband (now part of Virgin Media) Barney was responsible for the launch of award winning Broadband internet services to small and medium sized UK businesses. Barney spent 12 months with the Royal Marines and graduated with a first in Civil Engineering from Imperial College before starting his career as a field engineer with the oilfield services business, Schlumberger in Asia.

### Julian Wheatland, Chief Executive, Consensus Community

Julian is Chief Executive of Consensus Community, the venture capital and investment management arm and offset services division of Consensus Business Group. Consensus is a major investor in a broad range of technology and services businesses, from early stage university intellectual property through to late stage projects. Over half of the Consensus portfolio is in the environmental and renewable energy sector. Julian is a Chartered Engineer, having graduated in electrical and electronic engineering from The University of Leeds and gained an MBA from The Wharton School. He spent his early career working for BICC Cables where he held a variety of industrial management posts. Julian was subsequently a Managing Consultant at PA Consulting, before founding Edengene, one of the UK's leading growth and innovation consultancies.

Mark Wyatt, Manager Biosciences Ventures, Imperial Innovations

Mark's in depth knowledge of life sciences coupled with his extensive commercial ability will allow him to effectively engage with life scientists. Over the last four years he has worked at the Rising Stars Growth Fund, latterly as an Investment Director, investing in seed and early stage technology companies, and prior to that he worked for 6 years at Merlin Biosciences shaping new life science propositions and undertaking due diligence on existing ones. Mark has a BSc in Pharmacology from Bath University, a PhD from the Glaxo Institute of Applied Pharmacology at the University of Cambridge and an MBA from Warwick University.

Rob Wylie, Partner, Wheb Ventures

Rob has focused on the Cleantech investment area for almost 20 years. Prior to forming WHEB Ventures, Rob ran the WHEB Partnership with Kim Heyworth where together they helped over twenty Cleantech companies secure investment, develop routes to market and establish management teams. A chemist with an MA and PhD from Cambridge University, Rob spent ten years in Shell's agrochemical business before working with Rothschild's Bioscience unit looking at Cleantech investment opportunities. He then joined Kim at KPMG, where he spent three years advising on the development of a variety of environmental funds in Central and Eastern Europe.

# Submission to the Shadow Cabinet

Working Group Chaired by  
David Mott, Oxford Capital Partners

The End

December 2008