STUDY OF EMERGING MARKETS IN THE ENVIRONMENTAL SECTOR

EXECUTIVE SUMMARY

November 2006

Produced by:

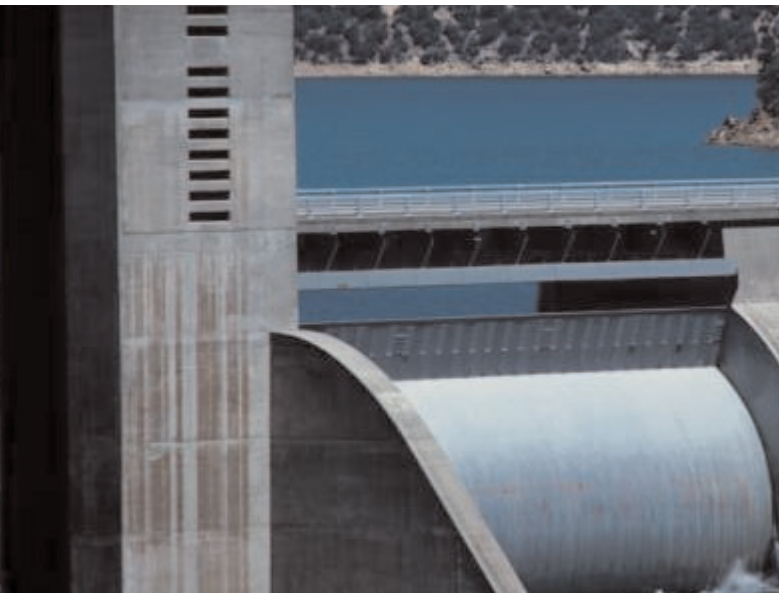
UK CEED

for:

Department of Trade and Industry

ABSTRACT







A Study of Emerging Markets in the Environmental Sector 2006

The full report has three purposes:

>> To estimate the size of the UK and global markets

>> To give a précis of UK supply-base strengths and weaknesses in the sub-sectors listed in Annex 1

>> To identify and analyse a number of promising areas in the Environmental Goods and Services (EGS) sector where new opportunities are likely to occur as a result of forthcoming market influences

Environmental Goods and Services Sub-sectors cover:

- Air Pollution Control
- Cleaner Technologies & Processes
- Decommissioning/Decontamination of Nuclear Sites
- Environmental Consultancy
- Environmental Monitoring, Instrumentation and Analysis
- Energy Management/Efficiency
- Marine Pollution Control
- Noise and Vibration Control
- Remediation and Reclamation of Land
- Renewable Energy
- Waste Management, Recovery and Recycling
- Water Supply and Wastewater Treatment

The full report has not been published in hard copy. The report, including detailed analysis of the EGS sub-sectors, can be found at:

www.dti.gov.uk/sectors/environmental/index.html

FOREWORD



I am very grateful to have the opportunity to write a foreword to this report.

As the Prime Minister has made clear, the environment is a cornerstone of this Government's policies; only through sustainable development can the UK and other economies continue to make progress without continuing to damage our planet.

We must continue to separate economic growth from environmental degradation. I therefore believe we need a new environmental contract between Government, consumers and business. Regulation alone is not enough: we must work with business if we are to achieve our goals.

We need to develop better ways to produce goods, using new, more efficient technologies, while encouraging more eco-innovation and design.

Developing a thriving UK Environmental Goods and Services sector is essential if we are to achieve our goals. I therefore welcome the conclusions in this report and hope both businesses and policy makers will take note of the opportunities.

David Miliband
Secretary of State, Defra



The challenge of moving to a "one planet economy" offers a huge opportunity for business - both to save costs and to lead in the markets of the future.

New innovative environmental technologies and research can bring new business opportunities. They can open up markets and enhance the competitiveness of UK companies while improving the environment. Because as we know, good economic policy is also good environmental policy.

Their potential to contribute to a sustainable economy and be a driver for new business and jobs is increasingly being recognised around the world.

The UK environmental industry is already a dynamic and growing sector. Latest figures for 2004 show the sector had a turnover of £25 billion, and employed around 400,000 and this report predicts that turnover is likely to grow to £46 billion by 2015.

This latest report builds on earlier work and clearly sets out the opportunities for businesses. I want the UK to be a leading player in this significant and rapidly growing market.

Alistair Darling
Secretary of State, DTI

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This report represents an on-going story of British success. The environmental goods and services (EGS) industry sector is hugely diverse, dynamic and growing rapidly year on year. It covers vital, long established industries such as drinking water supply, waste water treatment and solid waste management; sectors where Britain has long been a global player. At the same time, it encompasses newer industries at the leading edge of technological innovation, such as environmental monitoring, renewable energy and clean technologies. These sectors are all playing their part in delivering the solutions to both our global and more local environmental challenges as well as enabling us to meet our climate change obligations. With the right support and investment, the UK can become a world leader in the supply of these goods and services.

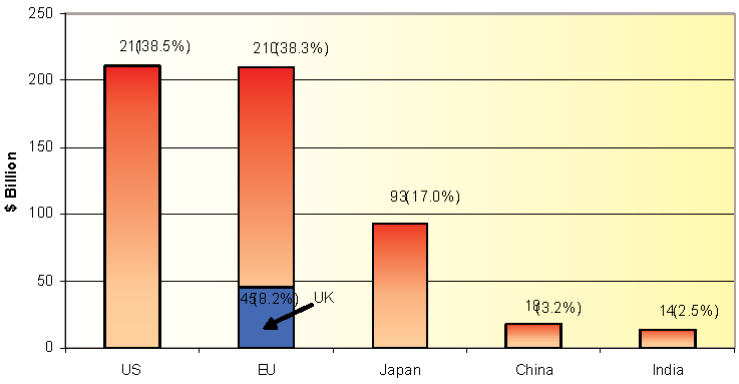
The full report - A Study of Emerging Markets In the Environmental Sector 2006 - puts into a national and global context the strengths of the UK's EGS sector. It highlights both the challenges and the opportunities; and it provides a 'roadmap' of opportunities for growth in key industries. This is only available online at:

www.dti.gov.uk/sectors/environmental/index.html

A Significant Global Business

The global EGS sector was estimated to be worth **$548 billion**[1] **in 2004**, with the EU, US and Japan accounting for around 94% of the total, as shown in Chart 1.

Chart 1: Environmental Goods and Services Market by Country 2004



In the EU, many Member States require substantial investment in basic environmental infrastructure, such as water supply and waste management. This is opening up exciting opportunities for UK EGS companies, although competition is already strong notably from German and Scandinavian companies.

In the developing economies of Asia, South America and non-EU countries of the former Eastern Bloc, the potential is even greater. Many of these markets will require considerable investment in primary environmental services - clean air, waste management, water and land - over the next 10 years, as they continue to industrialise or clean up the legacy of earlier industrialisation.

But without doubt, some of the greatest potential opportunities are likely to be found in China and India. The size of the countries and the scale of the challenges mean that these two markets are predicted to have the fastest growing EGS markets.

At the same time, the speed at which China and India are developing - and the resources they have available - means that they are already looking to move beyond basic service demand and are looking to invest in cleaner technologies, renewable energy and more sophisticated approaches to environmental management - some of the key strengths of the UK's EGS sector.

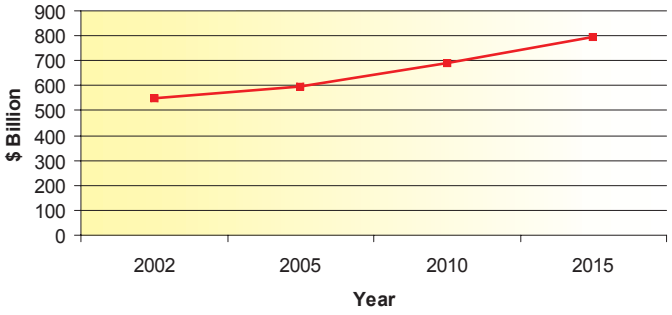
The competition is fierce, though, both from other developed nations and from within the countries themselves. Indigenous environmental sectors are growing quickly in these countries, with large numbers of graduate engineers working on new environmental technologies.

Indeed, technologies from China and India, particularly in the renewable energy sector, are already appearing as imports into Europe, North America and Japan.

The success of Chinese companies in particular is captured in the latest 'Rich List' report on China where leading entrepreneurs are just as likely to be from the EGS sector as they are from more traditional industries.

The global sector is expected to grow by 45% by 2015 [see Chart 2]. Using current world market size data and annual JEMU (Joint Environmental Markets Unit) compound growth figures, growth forecasts can be extrapolated to provide an indication of world EGS market growth to 2015. Using this methodology, the forecasts suggest **world markets growing to $688 billion by 2010 (matching the JEMU 2002 forecasts) and just under $800 billion by 2015.**

Chart 2: World EGS Markets to 2015



1. EBI 2004a



The UK Industry

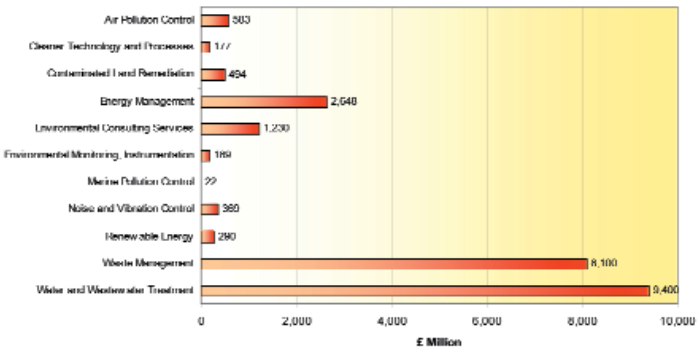
The UK environmental industry is well established, vibrant and diverse. This report shows annual turnover in the sector of around £25 billion in 2005 - roughly the same as the pharmaceuticals and aerospace sectors. It employs approximately 400,000 people in 17,000 companies.

The dynamism of the sector is illustrated by UK CEED's Envirodaq index[2] of UK-listed EGS companies. The index covers both established and newly listed companies on FTSE and AIM which derive at least 60% of their value from EGS activities.

Between January and August 2006, the index grew from 42 companies to 76 as new companies listed and existing companies increased their exposure to the EGS market. During the period June 2005 to end of May 2006, the index grew by 40% in value, compared to the FTSE 100's growth of 17% over the same period.

Although industry strengths vary from region to region, the EGS market is particularly strong in the East of England, the South East, London and the North West. Nationally, water/wastewater treatment and waste management sub-sectors are by far the largest, representing 39% and 34% of the industry respectively (see Chart 3).

Chart 3: UK Environmental Goods & Services Market by Sub Sector 2005



This reflects the global picture, where demand for waste management and water and wastewater treatment services accounts for 72% of the market.

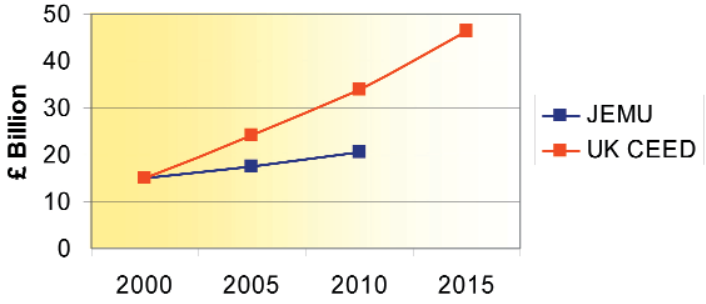
These sectors, with their associated expertise in engineering, consulting and laboratory services, have already spawned a number of market-leading multinational companies in the UK. Other fields where the UK has a strong international reputation include noise abatement technologies, hydro power, metal recycling, energy management and marine pollution control.

UK Market Growth

The 2002 study by DTI's Joint Environmental Markets Unit (JEMU)[3] forecast market growth in the UK to 2010. However, UK CEED's research has shown that, if anything, the JEMU forecasts are on the conservative side. By comparing the JEMU market size forecasts for 2005 with the actual position for the same year, it shows that UK market growth has outstripped JEMU predictions.

Using these figures as a starting point, and integrating more up to date forecasts of growth in individual sub-sectors where these exist (e.g. renewable energy, water and waste water treatment), growth forecasts can then be projected forward to 2015. **These projections suggest that the UK EGS market will grow from £25 billion in 2005 to £34 billion in 2010 (42% growth from 2005) and on to £46 billion by 2015.** The 2010 projection is significantly higher than the JEMU forecast of £21 billion. It also represents a near doubling of the market size between 2005 and 2015 as illustrated in the graph below in Chart 4.

Chart 4: Projected Growth for UK EGS Sector 2000-2015



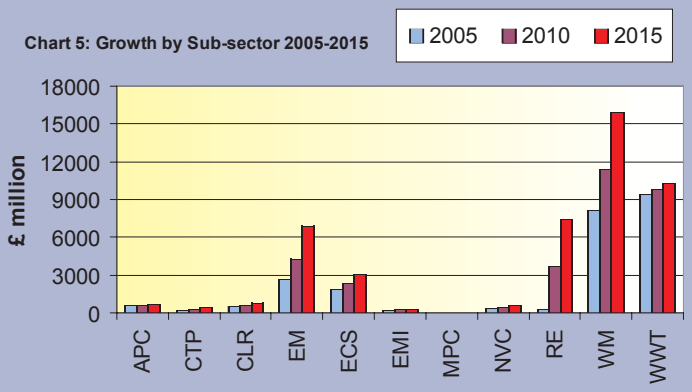
2. The daily updated index can be found at www.envirodaq.com

3. Now the joint DTI/Defra Environmental Industries Unit and Environmental Industries Support Unit.

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UK Sector Strengths

The chart below provides a breakdown of UK EGS growth by sub-sector for the period 2005-2015. It shows that waste management and water/wastewater treatment remain the largest sectors, but that some of the greatest growth potential is in smaller, but fast growing sectors such as energy management, renewable energy, environmental consulting services, and contaminated land remediation.



Key: APC: air pollution control; CTP: cleaner technology and processes; CLR: contaminated land remediation; EM: energy management; ECS: environmental consulting services; EMI: environmental monitoring and instrumentation; MPC: marine pollution control; NVC: noise vibration control; RE: renewable energy; WM: waste management; WWT: water/wastewater treatment.

Undoubtedly, the most concerted policy activity centres on responses to the challenge of climate change. Consequently, the **energy management** sector is expected to grow at double digit rates over the next five to ten years, spurred on by policy drivers such as: the Energy Review 2006; high fuel prices; public R&D funding; grants programmes; and industry/consumer demand.

Renewable energy offers both large domestic and global market opportunities with estimates of over $1 trillion to be invested in non-hydro renewable technologies worldwide by 2030[4] . In the UK, it is forecast that £15-19bn of capital expenditure will be required to meet 2020 targets for renewables[5]. UK businesses are also taking a leading global role in the development of carbon markets and carbon financing, although these services are not traditionally considered part of the EGS sector.

The UK has a rapidly growing (but still limited) skills base for environmental technologies. The UK is also strong in areas such as hydro engineering, landfill gas utilisation, biofuel/biomass development. A growing number of investment vehicles, both private and public/private joint ventures, are being established to invest in the UK renewable energy sector, something which is likely to spur growth in start-up activity.

The **environmental consultancy** sector has also seen double digit growth rates since 2000, with significant overseas activity by the bigger players. With the enforcement of stricter regulation in the developed and developing economies, the UK sector is well placed for further growth at home and abroad.

The market for **contaminated land remediation** is strong and growing in the UK, with prices for brownfield sites rising steadily. At the same time, a number of large scale regeneration projects are gathering pace, such as the London Olympics, Thames Gateway, and Growth Corridors; while in the North, markets are boosted by the ongoing renaissance of major northern cities such as Liverpool, Manchester, Leeds and Newcastle.

These provide clear opportunities at home. In overseas markets, there is strong competition from more established US and EU companies.

Increasing commodity prices and tightening regulations are continuing to provide opportunities in the **waste management** sector, particularly in the area of recycling. In the latter area, there are challenging targets to be met to bring the UK up to the level of many of its EU neighbours and this continues to provide opportunities not just for the large vertically integrated companies that dominate the sector but also from smaller companies introducing innovative technologies.

Forecasts suggest that £20bn of investment is required in the sector to meet legislative requirements by 2010[6]. This scale of investment and the opportunities for sector growth is spurring increasing investor and M&A activity in the sector.

The global **water and wastewater treatment** market is forecast to grow by 33% to 2025. The major opportunities over the next five to ten years are likely to be in the developing economies, where the priority is the supply of basic waster and wastewater treatment infrastructure.

Nevertheless, capital investment of £18.9bn is forecast for England and Wales between 2005 and 2010 and a further £2.25bn for Scotland between 2006 and 2010. The UK market for water consultancy and engineering activities, particularly in project management and network replacement, is also showing strong growth prospects, largely reflecting strong EU and UK policy drivers and also increasing incidents of water shortages.

Market Drivers & Way Forward

Globally, market growth is driven primarily by legislation, whether at the international or national level, particularly in the more mature markets of the US, EU and Japan.

In recent years, rapidly rising resource and commodity prices, exemplified by the recent hikes in oil and gas prices, as well as the growing scarcity of resources like clean water and energy, have also become increasingly critical growth catalysts. As well as stricter regulation, growth in the US, Japan and Western Europe is driven by innovation in existing technologies and the

4. World Energy Council, 2006. 5. DTI, 2004 6. Institution of Civil Engineers, 2004.

development of new step-change technologies. But the rate of development within these markets is far from uniform.

Growing the strength and capabilities of the EGS industry, both nationally and internationally, is the key to the UK maintaining and enhancing its position in worldwide environmental markets, whilst at the same time helping meet increasing domestic and international environmental challenges.

In the UK, the environmental policy framework driving demand for the EGS sector originates both from the EU and from national strategies and policies, which nevertheless reflect international agreements and EU policy. By ensuring that the most appropriate policy framework is in place, the government has a vital role to play in helping UK companies to thrive at home and abroad.

By adopting EU legislation early, the government can help give UK companies a competitive advantage. Countries which transpose directives in a timely, robust manner put their domestic EGS industries in a good position to export to those countries which lag behind.

For example, in terms of waste management, Austria set up an industry agreement for car take back before the End of Life Vehicles (ELV) Directive was proposed. As a result, Austrian companies have a sizeable portion of the UK vehicle 'depollution' equipment market.

Equally, delays in implementing regulations can have the opposite effect. In the ongoing debate on transposition of the Waste Electrical and Electronic Equipment (WEEE) Directive, the UK IT recycling industry has asked that certification to ISO14001 or an equivalent environmental management system be a requirement for licensing WEEE recycling operators.

Such a requirement, it is argued, would make the sector more transparent, thus discouraging bulk export of waste and stimulating innovation in the supply chain. It has not yet been made clear that this will happen.

Central and local Government can also help stimulate growth in the EGS sector through: leading by example in procurement; introducing supporting fiscal measures; providing regional support through RDAs; and stimulating investment in R&D (both centrally and regionally).

In procurement, the government and its agencies could set more stringent sustainability criteria governing central and local purchasing which would stimulate the supply side. Examples of fiscal measures may include increasing the proportion of taxation on environmental impacts, through mechanisms such as the landfill tax or extension of enhanced capital allowances.

Government can facilitate R&D investment by promoting increased coordination between funding programmes; improving industry participation in agenda-setting; simplifying existing funding application procedures and eligibility criteria; and facilitating access to information about all relevant R&D funding sources.



Key Role of Public Sector Procurement

The public sector is the largest procurement agency in the UK, accounting for 13% of GDP. In recent years, the government has begun to set out criteria for seeking to buy products and services with lower environmental impact.

Regional development agencies, devolved administrations and local authorities can also use their procurement more intelligently to stimulate and support innovation. This again provides opportunity for EGS companies on the supply side.

In product categories where the cleaner alternative doesn't yet exist or is prohibitively expensive, it is unlikely that private enterprise will demand it, and equally unlikely that innovators will undertake the investment necessary to bring it to commercial production.

In these cases, public procurement can supply the certainty of a large enough market. The recently launched National Action Plan on Sustainable Procurement[7] suggests how the government and its agencies can build on this vital role and become the lead sustainable procurement body in the EU.

Leading public sector procurement practitioners such as Her Majesty's Prison Service are taking up Forward Commitment Procurement to stimulate environmental innovation. Pioneered by the business-led Environmental Innovations Advisory Group, it is an imaginative but very practical approach to using the power of public procurement to bridge gap between R&D and commercial production - the so-called "valley of death" for new technologies.

Changes in purchasing practices among public as well as private sector organisations also reflect a gradual change in consumer purchasing, with certain products, such as organic food, sustainable timber and lower energy appliances, exemplifying a shift in demand towards products with a lower environmental impact.

7. Chaired by Sir Neville Simms, Defra, 2006.

The full version of this report has not been published in hard copy. The report, including detailed analysis of the EGS sub-sectors, can be found at:

www.dti.gov.uk/sectors/environmental/index.html

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