

# Chapter 7 Productivity, competitiveness and innovation

7.1 Raising the sustainable rate of economic growth and maintaining industrial and business competitiveness are central to our economic strategy. Energy has an important role to play as a key input - without reliable supplies the economy and our national infrastructure would not function. But we must also ensure that the price of energy allows us to maintain our competitiveness. Our recent white paper on 'Productivity and Enterprise'<sup>1</sup> set out the benefits of liberalised markets. As in other markets, vigorous competition in energy stimulates innovation and ensures the efficient allocation of resources, improving service quality and driving down prices.

7.2 To boost productivity and competitiveness we need to:

- ensure efficient markets which deliver competitive prices for business and domestic consumers;
- promote resource productivity - this will benefit the economy and individual businesses as well as increasing energy security and reducing carbon dioxide emissions;
- pursue our energy policy objectives through market mechanisms which promote competition, flexibility and efficiency; and
- help business by setting a clear and consistent long-term policy framework.

7.3 To deliver these goals in the energy system we need to address what the Government has identified as the key drivers of productivity. These are:

- to strengthen the **competition** regime to encourage firms to innovate and minimise costs and to deliver better quality goods and services to customers;

- to promote **enterprise** to help new and established businesses to start up, develop and grow;
- to improve **skills** through better education for young people and greater training opportunities for those already in the workforce;
- to support **science, research and innovation** to utilise the potential of new technologies and to develop new ways of working; and
- to encourage **investment** to improve the stock of physical capital.

## We need to maintain competitive energy prices...

- 7.4 The energy sector represents around 4% of UK GDP but is a required input to the other 96%. To maintain competitiveness and encourage inward investment, energy for businesses and consumers must be competitively priced, including in comparison with other EU and G8 countries.
- 7.5 Vigorous competition improves efficiency and drives down prices. This has already been seen in energy markets. For domestic consumers, average prices in real terms fell by 10% for gas and 19% for electricity between 1997 and 2002. For industrial users, between 1997 and 2001, electricity prices fell by 22% in real terms, even when the climate change levy is included. This can be attributed to measures like the introduction of NETA, increasing competition in the supply market and the reduction in the fossil fuel levy feeding through to contracts. Our industrial gas and electricity prices were the second and third lowest respectively in the EU in 2001. Our domestic gas and electricity prices were the second and fourth lowest.

<sup>1</sup> Productivity and Enterprise: A World Class Competition Regime: July 2001

7.6 The impact of the measures to promote energy efficiency proposed in this white paper should mean that, for many households and users, energy bills should fall as the amount of energy needed and consumed is reduced, although the unit price for energy charged to consumers and users is likely to rise. Over the 17 years to 2020, the policy measures suggested here - on emissions trading, renewables and energy efficiency - might add approximately: 5-15% (per unit) to household electricity prices and less than 5% to household gas prices; and 10-25% to industrial electricity prices and 15-30% to industrial gas prices<sup>2</sup>. Such price increases would not translate into similar increases in energy costs. A part of the price impact reflects energy efficiency measures which should lead to reductions in energy use.

7.7 Assessments like these are very uncertain and it will be important to keep price impacts under review. Much of the impact is due to the EU emissions trading scheme (which, being EU-wide, will impact widely on European prices) and is dependent on how the scheme develops as well as on the price of carbon in the trading market. It is important to put these potential rises in context. Electricity prices have fallen significantly in real terms over the last 20 years to their current historically low level. Even under a high case scenario the price of electricity to domestic consumers should remain below that for, for example, the 20 years to 1995. For industrial consumers, prices might return to the levels of the early 1990s but remain below those for the whole of the 1970s and 1980s. For domestic consumers, a high case scenario could see prices rising to late 1990s levels, although

this would still be below the level during nearly all the 1970s and 1980s. Industrial gas prices have already increased from a historically low level in the mid 1990s. The high case scenario is that they might return to the level of the late 1980s. To the extent that such an increase in gas prices reflects a rising wholesale price, this will also affect the UK's competitors in Western Europe in a fully liberalised gas market.

7.8 NETA was introduced in 2001 to replace the electricity Pool and was designed to bring greater efficiency to wholesale electricity trading while maintaining the operation of a secure and reliable electricity system. Under NETA the bulk of electricity is traded forward through bilateral contracts and power exchanges. It also includes a short term balancing mechanism to ensure supply meets demand at all times. NETA provides for more direct competition in wholesale electricity than occurred under the Pool. Traded wholesale electricity prices are around 40% lower than in 1998. The market has now seen a significant increase in liquidity and trades.

7.9 Our market is also - unlike California in 2000 - dynamic. Under NETA, generators and suppliers are encouraged to use hedging arrangements and contracts to avoid exposure to volatile prices in the balancing mechanism. In California, regulators prevented suppliers buying power on long-term contracts. As a result, forward signals were too weak to trigger new generating plant. California also faced the reluctance on the part of regulators to adjust price controls on consumer prices (price controls in GB were abolished in 2002), transmission

<sup>2</sup> All price assumptions in real terms.

constraints, and very fast demand growth. The UK market is different. Nonetheless we recognise we must remain vigilant.

7.10 The UK market is also increasingly competitive. The number of companies generating electricity has risen considerably from 6 at the time of privatisation to over 30 by October 2002. Competition is also forcing companies to work harder to attract and retain customers. By June 2002, 8.3m domestic electricity customers - 34% of total domestic customers - had switched from their incumbent electricity supplier. So had 7.1m domestic gas consumers - 36% of the total. Although switching continues to take place at a high rate - 115,000 electricity customers change their supplier every week - the market is not yet mature. We are working with OFGEM, Energywatch and the industry to ensure that the market works better and that consumers have confidence in it. In particular we are supporting efforts to stamp out mis-selling of electricity contracts, improve the customer transfer process and ensure that mistaken transfers are corrected quickly.

7.11 Energywatch will also be seeking to ensure that both the industry as a whole and individual companies improve their performance in a range of other areas of customer contact, including the administration of complaints and the management of accounts. This is designed to reduce complaints by addressing them at source. We will also consider, with Energywatch, OFGEM and the industry, whether the funding arrangements that support Energywatch can more accurately reflect the performance of suppliers in relation to their customers.

### Energywatch

Energywatch was established under the Utilities Act 2000 as an independent advocate for consumers in the gas and electricity markets. It works closely with OFGEM, the gas and electricity regulator, which carries enforcement powers. Energywatch's aim is to provide consumers with a 'one stop shop' service that:

- investigates and resolves consumer complaints about energy companies;
- helps the energy companies improve their complaint and enquiry handling;
- deals with enquiries from members of the public; and
- produces consumer information and advice.

Energywatch recently published its Forward Work Programme for 2003/4 outlining its key priorities. The document is available on Energywatch's website:

([www.energywatch.org.uk/about\\_energywatch/forward\\_work\\_plan/index.asp](http://www.energywatch.org.uk/about_energywatch/forward_work_plan/index.asp))

### ...there is a clearly defined role for Government...

7.12 The role for Government in the market is to set the right competition and regulatory framework. We recognise that competitive markets cannot deliver some wider policy objectives. We have a role in correcting market failures, including countering socially or environmentally undesirable outcomes. For example the market may not properly value externalities created by energy efficiency or innovation. But government intervention is justified only where it is well targeted, cost-effective, affordable and efficient, promoting appropriate signals within a credible long-term framework.

- 7.13 As stated in chapter 1, this white paper demonstrates our commitment to the principles of better regulation. In particular:
- to engage with stakeholders to find out what they need from policy;
  - to examine what instruments are available to achieve those outcomes, with a preference for market measures;
  - to treat regulation as the last option if nothing else will work;
  - to use existing regulations where possible; and
  - to impose new regulation, exceptionally and then only when it is fit for purpose.

### **We must seize opportunities to promote enterprise...**

- 7.14 Moving to a low carbon economy also presents opportunities for businesses to seize competitive advantage. We have established a number of Innovation and Growth Teams (IGT) and some of these have looked specifically at energy issues. For example the Automotive IGT considered the future contribution of low carbon transport within its overall remit of safeguarding the competitiveness of the UK's automotive sector. Manufacturing standards - be they quality, environmental, health, safety or security - also have a vital role to play.
- 7.15 Businesses will need to adjust their own operating practices to reduce their carbon intensity and will need advice and incentives to help them. This means simplifying access to funding, particularly for smaller businesses, alongside DTI's reform of its general business support schemes, replacing

them by fewer, streamlined schemes. All this will help businesses to seek funds for the purposes of energy innovation. Local Energy Efficiency Advice Centres will also be able to advise on national sources of funding.

**We will complement this by developing a single web-based portal for businesses wanting access to energy support schemes, as part of a single knowledge bank for business support schemes. The Energy Saving Trust and the Carbon Trust are also piloting a project for Small and Medium-sized Enterprise Energy Advice Centres (SMEEACs).**

- 7.16 The PIU called for a fundamental review of low carbon support programmes aimed at business, particularly the Carbon Trust and the Energy Saving Trust. Although we consider that some of these bodies and programmes are too new to review now, **we will review low carbon delivery programmes and associated support bodies before the end of 2004 in the context of a review of low carbon instruments more generally in advance of the introduction of the EU emissions trading scheme.**



### Resource Productivity and Sustainable Consumption and Production (SCP)

The Strategy Unit's (formerly PIU) report, *Resource Productivity: making more with less* (November 2001) was one of three linked reports which also included its Energy Report and its recently published waste report, *Waste not, want not* (November 2002). The outcome of the World Summit for Sustainable Development last year, particularly a commitment to a ten-year drive on SCP, has recently re-focused our follow-up work on resource productivity. In coming months we will develop a strategic overview of resource productivity and SCP more widely. This will:

- set out the economic, social and environmental rationale for long-term policy planning to decouple economic growth from environmental degradation and resource use;
- draw on the two major policy blocks of energy and waste as core elements of an SCP future;
- consider the case for and identify further indicators for resource use as a means to stimulate and track long-term improvements;
- set out our approach to sustainable consumption, with specific proposals to help empower consumers and improve environmental impacts of goods and services (eg with better information right through the supply chain); and
- identify the key policy levers for encouraging SCP, and set out how a co-ordinated use of tools and instruments could drive such a programme - eg economic pricing instruments, support for innovation, procurement, signalling of future targets and minimum standards.

### Addressing skills...

7.17 We need to address skills development, training and an ageing workforce in the energy industries. The problems are widespread:

- nearly a third of staff in offshore oil companies are over 45 and only 6% under 25. 20% of companies provided no regular staff training - nearly 40% for smaller companies<sup>3</sup>;
- even without new build the nuclear fuel cycle, power generation and environmental restoration sectors are likely to need around 19,000 graduates and skilled trades people over the next 15 years to replace retirements and satisfy demand in environmental restoration<sup>4</sup>;
- the Gas and Water Industry National Training Organisation (GWINTO) has predicted that there could be a major shortage of skilled gas installers in the coming years; and
- key skills in companies building major infrastructure such as power stations and refineries are currently concentrated in the over-50s.

7.18 Many employers invest in training but finding time and resources can be difficult, particularly for smaller companies. Our *Manufacturing Strategy*<sup>5</sup> emphasised the importance of a skilled workforce to a productive and competitive economy - not only technical skills but also leadership and management

3 Skills Foresight, *The Industry Survey*, OPITO 1999

4 *The Report of the Nuclear Skills Group*, DTI, December 2002 ([www.dti.gov.uk/energy/nuclear/skills/nsg.shtml](http://www.dti.gov.uk/energy/nuclear/skills/nsg.shtml)). The figure of 19,000 is based upon the age profile that currently exists in the sector and the assumptions that the fuel cycle will remain stable, the planned closure programme of Magnox and AGR power stations will proceed and that the numbers engaged in environmental restoration will double over the next 15 years. No allowance has been made for potential new build.

5 *The Government's Manufacturing Strategy*, DTI, May 2002 ([www.dti.gov.uk/manufacturing/strategy.htm](http://www.dti.gov.uk/manufacturing/strategy.htm))

skills. It also highlighted the need for a demand-led approach, combining government investment, access to best practice support and increased support for the science base. This implies close co-ordination across the industry, in particular between employers and education and training providers and also through supply chains (especially where seasonal shifts in workloads are a factor).

## **We are addressing similar skills needs across the economy...**

- 7.19 Such problems are not energy-specific. We are already addressing common problems across the economy<sup>6</sup> which are also relevant to the energy sector. In particular we are:
- investing an extra £100m per year by 2005/06 through the Office of Science and Technology (OST) to improve the development of the UK's science and technology skills base;
  - targeting science and mathematics teaching in schools to ensure that we have the right mix of teaching skills at primary and secondary level and also providing resources (including £60m between 2000 and 2002) to modernise and upgrade science laboratories;
  - commissioning an independent review into how business can draw more effectively on university expertise, to report in summer 2003;
  - publishing a new skills strategy for England in June 2003 aimed at reducing our productivity gap with major competitors.

It will cover both demand (from employers and their investment in skills and training) and the supply of skilled people.

Government, business, the new Sector Skills Councils (SSCs), the Sector Skills Development Agency, the Learning and Skills Council, Regional Development Agencies, other public and private bodies and employers will need to work together to identify skills needs and measures to deliver them. Resources for SSCs will increase to £42m in 2003/04, to £45m in 2004/05 and to £48m in 2005/06<sup>7</sup>;

- raising the profile and attractiveness of apprenticeships with a major marketing campaign to promote Modern Apprenticeships. A new National Modern Apprenticeship Task Force has been set up as a high level, employer-led body, driving the expansion and development of Modern Apprenticeships, so helping to meet the nation's skills needs and the aspirations of young people; and
- extending training for lower-skilled workers, helping highly skilled individuals to enter the UK and encouraging take up of Investors in People in small firms.

## **The energy sector also has specific needs...**

- 7.20 We will ensure that these cross-cutting initiatives take proper account of energy issues, such as the move to a low carbon economy, which will affect businesses across the economy. For example:

<sup>6</sup> Links to more detailed information about the measures set out in this paragraph and others can be found on the DFES and HM Treasury websites ([www.dfes.gov.uk/learning&skills/index.shtml](http://www.dfes.gov.uk/learning&skills/index.shtml)) ([www.hm-treasury.gov.uk/Documents/Enterprise\\_and\\_Productivity/Research\\_and\\_Enterprise/ent\\_res\\_roberts.cfm](http://www.hm-treasury.gov.uk/Documents/Enterprise_and_Productivity/Research_and_Enterprise/ent_res_roberts.cfm))

<sup>7</sup> [www.ssda.org.uk](http://www.ssda.org.uk)

- our Fuel Poverty Advisory Group is considering ways to encourage small firms to take on apprentices and possible links to government and local authority funded programmes; and
- we are working closely with the industry and training providers to review the skills and research capabilities required to manage more distributed generation in the future. And we are looking into supporting the creation of a 'centre of excellence' in distributed generation which will bring together universities that have power systems expertise to enhance UK R&D capability.

7.21 We recognise the interrelationship between skills, research and innovation: skills tend to drive innovation; in turn innovation creates more demand for new and established skills. A healthy research base is crucial to nurturing the skills needed to manage the effective application of emerging new energy technologies. Not all research training in our universities will produce radical new technologies but the skills and expertise developed will equip people for the vital task of implementing and maintaining new energy infrastructure.

7.22 We are committed to working with employers in the energy sector, both through the evolving SSCs and the SSSA, involving Government and other bodies at central, devolved<sup>8</sup>, regional and local level as well as education and training providers. This includes the SSC for the oil and gas extraction and chemical manufacturing sector (COGENT<sup>9</sup>), which was set up in April 2002.

<sup>8</sup> Training and education are devolved issues and both the Scottish Executive and the Welsh Assembly Government will have their own skills strategies and policy measures

<sup>9</sup> [www.cogent-ssc.com](http://www.cogent-ssc.com)

## COGENT

COGENT works with employers, Government and education and training providers. It aims to stimulate action at all levels of industry and emphasises that skills and training have to be a Board-level concern. It has already launched:

- an offshore technician training scheme to bring in 150 new trainees each year;
- a programme aimed at engineering undergraduates, promoting careers in the oil and gas sector; and
- interactive web-based material for schools, featuring young people talking about their jobs in the industry.

It also includes the developing SSCs for the Process and Manufacturing sector and the Science, Technology and Engineering Training Alliance (SEMTA), which will address some energy-related areas.

7.23 Upgrading skills will be vital for effective delivery of the step change in energy efficiency, particularly in the household sector, which is our goal. We therefore welcome the proposed creation of an Energy Utility SSC and look forward to working through such an SSC, provided it achieves licensed status, to develop new ways to enhance the skills and training of employees in the energy efficiency industries.

7.24 It would be premature for Government to attempt to prescribe in detail what action should be taken to address skills in the various sectors of the energy industry at a time when a network of employer-led SSCs is emerging. **Through the SSSA we are working closely with employers to ensure**

**that, as soon as possible, all parts of the energy industry are included within the emerging SSC network which has recently received a substantial increase in Government funding (see paragraph 7.19).**

This will enable energy employers to articulate their needs, influence training providers and improve productivity and service delivery - at the same time building on existing work in the energy industry (in many cases undertaken by the former National Training Organisations) and new ideas and proposals. For example:

- the Electricity Training Association is commissioning a Skills Foresight Project to identify the skills requirements of the renewables industry to 2010; and
- GWINTO has made proposals to address shortages of gas installers including a pilot project with EAGA to deliver around 400 qualified central heating installers.

7.25 In December 2002 we published the results of a nuclear and radiological skills study<sup>10</sup>. Although there is no immediate, general skills shortage, some shortages do exist, particularly in safety case production and radiological protection; there are problems associated with an ageing workforce; competition for engineering and science skills; and uncertainty about the future of nuclear power. In response, a task group is being formed across the sector to develop and implement a workforce development strategy.

## **We need to support action by others...**

7.26 We aim to achieve a better and more appropriately skilled workforce to meet our energy objectives - which means adopting a common approach that connects supply and demand for skills development. This must be driven by employers, in collaboration with others - with education and training providers and with related and supply chain partners. Innovative thinking will be needed, for example to make the most of transferable skills. Offshore construction and engineering skills can be adapted to the development of offshore windfarms, and engineers leaving the armed forces can be retrained to work in a variety of energy sectors. Employers could encourage older workers to stay on to help meet skills shortages and to assist with succession planning or training. Such a collaborative approach will enable industries to build on the skills that already exist rather than pulling against each other.

## **We also need to become more innovative...**

7.27 To achieve our objectives we need to exploit existing and develop new technologies. Industry will need to innovate to maximise the opportunities offered by a low carbon economy and by global markets in environmental goods and services.

7.28 Government needs to play a role in developing innovation, because the benefits, in terms of the environment and security of supply, do not always deliver short-term profits for the private sector. This is particularly true for low carbon technologies where innovation is needed to support major changes over a significant period of time. We should be wary

<sup>10</sup> [www.dti.gov.uk/energy/nuclear/skills/index.shtml](http://www.dti.gov.uk/energy/nuclear/skills/index.shtml)

of picking technology winners, but we are ready to fund innovation where this can achieve the best results in terms of its policy objectives. We will also work to create a policy environment that encourages the private sector to bring the key technologies forward, and play a key role in the delivery of major new infrastructure. Of particular importance will be the move towards internalisation of the cost of carbon, through emissions trading (discussed in chapter 2). This should also help to incentivise low carbon innovation.

### **We are keeping innovation policy under review...**

In November 2002 we began a broad review - including energy - that will by July 2003:

- assess the UK's relative innovation performance;
- identify strengths and weaknesses and where market or institutional problems inhibit innovation;
- identify how Government policies can help; and
- set out a new strategy, involving key stakeholders, to improve the UK's innovation performance.

We have also set up an independent review, led by Richard Lambert, on strengthening links between business and universities. The review team will consult widely with business, universities and national and regional administrations in the UK and overseas. The review will complement and contribute to the Innovation Review and will report to Ministers in late summer 2003.

### **We will invest more in energy innovation...**

7.29 For the PIU Energy Review, a report on the Government's support for energy research, development and demonstration was prepared by the Government's Chief Scientific

Adviser and a group of experts. This Energy Research Review Group (ERRG) was asked to look particularly at whether the overall level of expenditure on research, development and demonstration was sufficient and whether it was being targeted at the right areas.

7.30 The group concluded that the UK's spending should be raised. We are increasing public spending on energy research, development and innovation. DTI spent around £40m supporting sustainable energy-related research and technological development in 2001/02. We have already put in place a substantial renewables support programme worth in total £250m between 2002/03 and 2005/06. We will also, as described in chapter 4, increase the funding by a further £60m in this period. This is additional to the extra funding announced in the 2002 Spending Review, which allocated an additional £38m for energy policy objectives in 2005/06 compared with 2002/03.

7.31 We set up the Carbon Trust in April 2001 to lead on low carbon technology and innovation. It is spending £75m over the next three years. Funding for energy-related technology has also been available via the DTI's Innovation and Business Support programmes and through various European programmes. The Research Councils will spend over £11m on energy-related research in 2002/03. They have been allocated an additional £28m under spending review 2002 for further research in support of a sustainable energy economy.

## **Prioritise and properly co-ordinate our resources...**

7.32 We endorse the ERRG's research priorities:

- carbon dioxide sequestration;
- energy efficiency;
- hydrogen production and storage;
- nuclear (particularly waste);
- solar PV; and
- wave and tidal power.

All these have been identified as areas in which increased support for research and development is particularly likely to result in step-change breakthroughs which will contribute significantly to carbon reductions.

7.33 ERRG also recognised the need for further research into social, economic and environmental factors as well as the crucial role of cross-cutting research, for example, in advanced materials, super-conductors, nanotechnology and biotechnology. It noted the importance of targeting support at basic research, as this is the point at which the maximum number of options can be generated for development and commercial application. We agree that basic research is critical to sustaining innovation over the longer-term.

7.34 A new Energy Research Network is being developed by the Research Councils to establish interdisciplinary teams with expertise in the scientific, technological, social, economic and health impacts of energy, providing much needed co-ordination and cohesion. A new UK Energy Research Centre will act as the hub, providing a national

and possibly European focus to integrate and accelerate research in this priority area. It will play a key role in co-ordinating research, facilitating collaboration with industry and UK participation in international projects, as well as being a centre of excellence in its own right. The centre will also signal the importance the UK attaches to energy research, helping to attract high-calibre scientists and graduates to the sector.

## **Work with others internationally...**

7.35 A number of countries are developing low-carbon technologies. We need to focus on areas where UK industries can deliver innovations before or better than others. But international collaboration is important where pooling resources can encourage innovation at lowest cost.

7.36 **We are promoting an international initiative to strengthen efforts to bring science, engineering and technology to bear on efforts to slow climate change, initially through the G8.** We will also continue to collaborate in IEA work in areas such as renewables, end use and fossil fuel technologies, fusion and the exchange of scientific and technical information on energy technology. In our relations with the United States we will build on the Memorandum of Understanding on energy R&D between the DTI and the US Department of Energy to develop a more strategic collaboration on energy technologies. We have recently published a report that shows that it should be technologically and economically feasible to achieve a virtually zero carbon energy

system in the long-term, if we use energy more efficiently and develop low carbon technologies<sup>11</sup>.

### **The European Framework Programme**

The European Framework Programme supports R&D projects across a range of science and technologies.

The new programme, beginning in 2003, gives more emphasis to renewables. We will continue to assist UK applications for its support. The DTI has also commissioned a study on how Germany, Spain and the Netherlands promote the programme and organise energy research, especially in relation to small and medium sized companies.

The ENERGIE programme supports R&D in the three broad categories of renewables, rational use of energy and fossil fuels. UK participants have received nearly €180m from this programme, around 20% of its budget.

The UK also participates in nuclear research under the EURATOM Programme, primarily on fusion research.

- 7.37 In the long term, nuclear fusion could provide power generation from an abundant fuel source with zero carbon emissions and without the problems associated with long-term highly radioactive waste. We are a long way from a commercial power plant, but the technical feasibility of fusion power generation could be demonstrated within 25 years given adequate resources, possibly leading to full-scale power generation within 30 years. The next step towards this is the construction of the International

Thermonuclear Experimental Reactor (ITER) and the International Fusion Materials Irradiation Facility (IFMIF). The US and China have both signalled their intention to join ITER, an ambitious international research project to harness the potential of fusion energy. The project will involve the UK, US, China, Russia, Japan, Canada and other European nations. We expect ITER to lead, by the middle of this century, to the commercially viable production of clean, safe and renewable energy without the emission of greenhouse gases. The UK has considerable expertise in fusion and a complementary national fusion programme will also be needed to maximise the benefit from this expertise.

### **There will be significant new opportunities for investment...**

- 7.38 The UK has a world-leading manufacturing, service and research capability in the energy field and a world-class science base. The power generation, transmission and distribution equipment and service supply industry alone makes a very substantial contribution to the UK's economy by way of goods, services and jobs. In 2001 21% of all industrial investment was made by the energy industries, compared to 20% in 1980<sup>12</sup>. There will be considerable opportunities for the UK energy industry to invest to meet the challenges of delivering the infrastructure, new technologies and solutions we will need in the future. With its long-standing knowledge and experience of the UK energy scene, the UK equipment and service supply industry has a central role

<sup>11</sup> *Assessment of Technological Options to Address Climate Change, A Report for the Prime Minister's Strategy Unit*. December 2002 ([www.strategy.gov.uk/whatsnew/whatsnew.shtml](http://www.strategy.gov.uk/whatsnew/whatsnew.shtml))

<sup>12</sup> *UK Energy Sector Indicators*, DTI, December 2002 ([www.dti.gov.uk/energy/index.shtml](http://www.dti.gov.uk/energy/index.shtml))

to play in helping us to achieve our objectives. The white paper sets a clear, consistent and settled framework against which business can plan to that end. We will continue to work with industry to help business move up the value chain and reap the commercial benefits this will bring, both in the UK and abroad through export opportunities.

