

Sustainable energy - response to the Government's 'Energy Policy: Key Issues for Consultation'

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Sustainable
Development Commission

SUSTAINABLE DEVELOPMENT COMMISSION

SUSTAINABLE ENERGY!

Response to the Government's 'Energy Policy: Key Issues for Consultation'

This paper comprises the Commission's response to the Government's 'Energy Policy: Key Issues for Consultation' published in May 2002. The response was submitted on 20 November 2002; its provisions are as follows:

The response constitutes our case for the Government's forthcoming Energy White Paper to consist of proposals for a sustainable energy policy, itself geared to helping stimulate a low carbon economy. Our case is more fully developed in our published report "*forging an energy policy for SD*" submitted to the PIU review in October 2001, and in our unpublished analysis of the PIU report against our submission to the PIU – both documents are enclosed with this submission **and should be read as supporting analysis for our treatment of energy efficiency and renewables, in particular**. We also fully concur with the thrust of the RCEP report and the Select Committee on Trade and Industry's second report.

The response is structured as follows:

- An Executive Summary (paras a-f)
- A list of Principal Recommendations – strategic and operational
- The Main Response (paras 1-51)
- Annexes 1 and 2

Executive Summary

(a) The Commission believes that the UK Government can and should set the economy on a clear and unambiguous low-carbon trajectory, a move which would enhance competitiveness and satisfy the demand of UK plc for energy services. Whilst the right blend and mix of energy policies are crucial to this aim, the Commission believes that the benefits of a low-carbon economy can best be realised, and any downside minimised and resolved, by developing these policies within a transparent and consistent framework of sustainable development.

(b) The case for energy policies directed at a low-carbon economy is clear, bearing in mind that:

- The contribution it will make to international endeavours to mitigate climate changes will be significant;
- The transition process itself offers significant market opportunities, both nationally and internationally;
- It will promote greater environmental justice, particularly (for example) through lowered emissions and corresponding lower exposure to pollutants;
- Enhanced security of supply, stemming from lower fuel demand (and corresponding less need for fuel imports), is an increasingly important priority;
- Reduced fuel poverty, stemming from greater energy efficiency and lower energy bills, forms a critical element in the Government's antipoverty strategies;
- Fewer inefficiencies in the system will free up resources for the economy as a whole.

(c) The Commission therefore recommends that the White Paper should be based on a sustainable energy strategy for the UK, incorporating clear long-term targets and associated milestones, and that:

- its key policy proposals are primarily directed at helping accelerate a low-carbon economy for the UK;
- its policies should be set in a transparent and consistent framework, based on our recommended principles of sustainable development;
- its centrepiece be the inclusion of a strategy which puts the UK on a path to reducing carbon dioxide emissions by some 60% from current levels by around 2050, as similarly recommended by the Royal Commission on Environmental Pollution;
- it should address, head on, the conflict between a cheap energy policy and reducing energy demand, through an emphasis on resource productivity, improved regulation and cost internalisation; and the provision of effective measures to relieve fuel poverty.

(d) Within this framework, there should be a new, core policy:

“To ensure that the demand for energy services (and the systems through which they are delivered) are managed in such a way that demand is met by secure and diverse supplies of energy, which are delivered at competitive prices for industry, which are accessible to all households and businesses for the satisfaction of their basic needs, and which are produced and consumed in ways that do not damage human health or have serious and irreversible negative effects on the environment.”

(e) The White Paper’s associated policies should:

- Focus on the demand side, as well as the supply side;
- Reflect the fact that the most cost-effective measures for achieving these purposes are energy efficiency, micro and macro CHP, and a variety of different renewables;
- Emphasise that demand management can best be achieved through measures principally aimed at individuals’ self-interest where this matches overall improvements to quality of life.

In support of these policy proposals, there should be a clear correlation in the White Paper between the Government’s spending plans and its associated proposals for the sustainable energy strategy.

(f) The Commission also sees, along with many others, the value in establishing a Sustainable Energy Agency which we recommend be established to implement, oversee and monitor the White Paper’s policies.

Principal Recommendations

The following list comprises our Principal Recommendations for the content of the White Paper, separated into two sections: strategic (intended outcomes of the sustainable energy policy); and operational (what is required to attain the outcomes).

A STRATEGIC

1. The establishment of a sustainable energy strategy, with its centrepiece being the inclusion of the RCEP’s recommendation for a strategic commitment to reduce carbon dioxide emissions by some 60% from current levels by about 2050 [para 5.9] with associated milestones, including a 30%

reduction in CO2 emissions by 2020. [para 5.10]

2. The adoption of a new policy objective of ensuring that the demand for energy services (and the systems through which they are delivered) are managed in such a way that demand is met by secure and diverse supplies of energy, which are delivered at competitive prices for industry, which are accessible to all households and businesses for the satisfaction of their basic needs, and which are produced and consumed in ways that do not damage human health or have serious and irreversible negative effects on the environment [para 5.9].

3. Potential policies for inclusion in the White Paper should be assessed against the SDC's six energy policy judgement criteria¹ of sustainability, as described in Box 2.2 (P.9) of our input to the PIU energy review, and technologies against the matrix at Table 5.1 (P 36) of that input [para 5.3].

4. We concur with the PIU report's recommendation that the Government should adopt a target of a 20% renewables contribution to electricity supplies by 2020. However, we regard such a target as a minimum, and on the basis of the analysis carried out for the Government at the time of the Renewables Review we call for a target of 25% by 2020 [para 6].

5. The sustainable energy strategy should recognise the enormous value to security of supply considerations of adapting the grid to accommodate micro CHP and the dispersed nature of renewables, so reducing the need for imports [para 29]. We also recommend a Home Energy Efficiency strategy (see also rec. 7 'strategic' below), to incorporate measures to stimulate the market for micro CHP, including the necessary developments in technology and associated infrastructure. [para 16].

6. Given that Nuclear power does not overall score as well against our six energy policy judgement criteria of sustainability as do renewables, CHP and energy efficiency, the option of building of new nuclear power stations should therefore be held in reserve, for consideration only if the full potential of energy efficiency, CHP and renewables is not realised.

It should not be allowed to deflect effort and commitment from the more desirable goal. Should it, nevertheless, be necessary for that option to be pursued, such consideration should ensure all costs are internalised, so that nuclear operates on a level playing field with other energy sources [para 9]

7. We welcome the PIU report's comprehensive treatment of the contribution energy efficiency can make, and endorse the two proposed targets of developing indicators, targets and monitoring mechanisms for each sector of the economy, and for the Home Energy Efficiency strategy, including a home energy efficiency target of a 20% improvement by 2010, followed by a further 20% improvement by 2020. We also recognise, with concern, the growing energy consumption by the commercial office sector and we recommend that similar reduction targets for 2010 and 2020 be adopted for this sector. [para 15].

¹ which stem from our six principles of sustainable development See Annex 2

8. The sustainable energy strategy's short-medium term demand side priorities should be assessed on their potential to offer a range of benefits [para 14] - for example where substantial emission reductions can be achieved alongside net financial savings to all sectors, greater (skilled) employment opportunities and reductions in the number of fuel poor.
9. The White Paper should spell out for the international community how the UK sees it in its own self-interest to go down the low-carbon route [para 35]

B OPERATIONAL

1. We urge that HMG reviews NETA to (i) include sustainable development as a consideration to support renewables and CHP, and (ii) introduce arrangements to overlay the existing market system with a carbon market that explicitly values carbon [paras 8 and 38].
2. Ofgem's principal objective should be amended immediately (to read, for example, : "*to protect the interests of consumers wherever appropriate by promoting competition within a sustainable development framework.*"), and this change be heralded in the White Paper [paras 8 and 38].
3. We concur with the PIU report's recommendation for a Sustainable Energy Agency to be established to implement, oversee and monitor the White Paper's policies [para 37].
4. Regional Development Agencies should be specifically required to reflect and include in their Regional Economic Strategies the national targets set out in the White Paper and to account for the contribution they will make in meeting these targets [para 24].
5. Government must tackle the major barrier that planning currently presents to the take-up of renewable energy projects; guidance note 22 on Renewable Energy be urgently reviewed. [para 8, plus 48]
6. We recommend Government examines the scope for an additional target of achieving a 100% renewable electricity supply to all Govt. buildings by 2020 [para 25.]
7. The White Paper should set in motion a suite of arrangements for developing micro/domestic CHP and easing the path for larger scale CHP. We would also welcome more research into clean technologies for, and by, industry [paras 10 and 12]
8. The White Paper must make explicit the impact of its recommendations on public expenditure plans; given that the sustainable energy strategy is unlikely to be delivered without major additional investment in renewables, CHP and energy efficiency, we urge DTI to reconsider its own energy-related spending programmes. [paras 24 and 45.]
9. Government should be prepared to intervene, using regulation or fiscal instruments, to ensure that energy supplies in the short-term are maintained

from diverse sources and geographical areas, whilst working towards minimising the reliance on imports by reflecting the potential costs of damage from disruption to supplies on imported energy in favour of local, renewable sources [para 30].

10. New guidance should be issued stipulating the inclusion of low-carbon and energy efficiency provisions in all PFI projects [para 24].

11. Government should set up a high-level Commission to consider the whole question of vulnerability of nuclear facilities to terrorist attack, including the possibility of electronic terrorism [para 31].

12 Our recommendations regarding the use of economic instruments [principally paras 43-45, plus para 10] are as follows:

- to give unequivocal signals to the industries concerned that environmental costs will be internalised over time;
- to favour environmental taxation over labour taxation – which will send long-term signals to gain market confidence and help secure project finance;
- to signal an intention to introduce a Carbon Tax to replace the Climate Change Levy along the RCEP-recommended lines (ie to *“be announced at least a year in advance of its introduction, be set at a modest level initially, and be preceded by or launched alongside the other measures [we] recommend for raising energy efficiency, reducing energy consumption and reducing fuel poverty.”*) with suitable measures to protect low income groups;
- to develop specific proposals which will focus the market on phasing out inefficient coal-fired plant [para 10].

13. On the implications for employment arising out of the proposed transition to a low carbon economy, our principal recommendations area as follows [para 46]:

- The Government, the energy industry, regional development and skills agencies, and education/training providers will need to work closely together with other stakeholders such as the trade unions to develop an effective approach which causes least disruption of the labour market, and maximises job opportunities and competitiveness.
- The Government should undertake an analysis of the balance between the positive employment impacts of a sustainable energy strategy against possible negative consequences of contraction in other energy sectors
- The Government should review its economic modelling and policy assessment capabilities for assessing the detailed employment implications of environmental taxes and other economic instruments and work with RDAs, Skills Councils, the Environment Agency, the Carbon Trust and other stakeholders, including trade unions to carry out more detailed impact studies.
- Regional Development Agencies should take the lead through the new FRESAs to secure a co-ordinated evaluation and dialogue on skill

needs and transitional arrangements in the energy sector.

14. We recommend that the Government should prepare a communications strategy, in particular to reflect the most crucial message of the White Paper ie for its policy proposals to emphasise the 'quality of life' benefits they herald. [para 49]

15. We recommend various demand-management measures, including transport in particular, [paras 19-20] covering planning; congestion charging; Government transport spending being prioritised towards travel by foot, cycle, Bus, rail, rather than roads; *Homezones*; SMART cards, and particularly Carnets; car sharing and pooling, aviation; and – in the longer term – hydrogen fuel.

16. We also make the following recommendations:

- an interim assessment of the success of the Renewables Obligation and the other support measures to be made in 2004/05. [para 8]
- communities should receive real and sustained benefits of Projects located on their doorsteps.
- the (private sector) market to undertake an ongoing programme of developing innovative technological improvements – both for oil and for 'clean' coal. [para 10]
- the inclusion of policies requiring a systematic effort to overcome barriers to energy efficiency improvements in homes, strict regulations on new construction, and the accelerated development of energy service provision. [para 23]

Main Response

1. Perhaps THE most crucial theme for the White Paper is for its policy proposals to emphasise the 'quality of life' benefits they herald – in order for stakeholders and the public at large to appreciate their own 'self-interest' in adopting the measures proposed.

2. Securing the benefits of economic growth has simultaneously generated both social and environmental externalities of varying kinds and severity. Many argue that these adverse externalities are so grave as to imperil nature's self-regenerating capacities – and, in the process, imperil human kind's own capacity to improve our quality of life. Yet despite a general and widespread recognition of the threats to the environment, the cause has yet to be adequately championed by government and, to a lesser extent, addressed by society.

3. In fact the case is strong for the Government to be considerably more explicit in its commitment to a low carbon economy than described in the climate change programme:

- Firstly, as mentioned above, unsustainable loads continue to be placed on the environment – greenhouse – gas emissions, polluting waste, poor air quality – and the pace of take-up of low carbon measures

including renewables and energy efficiency is slow; 'business as usual' will not speed matters up sufficiently to meet the challenges we face.

- Achieving our international GHG and (aspirational) domestic CO₂ targets represent 'low-hanging fruit', so meeting these targets would do little on its own to win over the 'heart and minds' on a scale necessary to achieve the changes envisaged in the PIU report to move the UK to a low carbon economy. In addition, achieving these targets could lull us into a false sense of complacency, while other countries who are less well placed to achieve their commitments are facing up to them more squarely

- We doubt the adoption of 'second tier' targets, such as those proposed in the PIU report for renewables and energy efficiency, will alone signal the completely new direction of the UK energy system envisaged in the report. There is little evidence that targets of these orders (eg the 2010 10% renewables contribution, 10 GW CHP; 20% reduction in carbon on 1990's level) provide the necessary galvanising pressure for policy and behavioural change.

- We consider a strongly-declared commitment by government to a low carbon economy would send a clear and helpful incentivising signal to the investment community in particular, enabling it to develop its corresponding plans with confidence, and also offer a lead to the international community.

- Given the long lead times* involved in moving to a low carbon economy, there is a urgent need for government to drastically step up its commitment to this route.

*investment strategies, development of new technologies, spread of knowledge and development of skills, and an overall cultural change.

4. Going down the low carbon route has huge implications for society – cultural as well as technical, so we also see great merit in the White Paper outlining the contribution a low carbon economy could make to a vision of sustainable life over the coming decades. This would not be a blue print but an integrated set of sustainable ideas - micro CHP in every home becoming common place is an obvious example. A quick scan of developments within the UK over the past fifty years shows the scale of changes that have occurred in that time, and we can expect at least similar degree of change over the next fifty. But some of those historic changes were planned with an eye to the longer term quality of life: garden suburbs, the Metropolitan line are but two examples. The case for illustrating and planning for decades ahead is no less today, and the White Paper offers a major opportunity to outline such prospects

A Low Carbon Economy

5. The principal theme of the White Paper should be a wholehearted commitment to further assist the establishment of a low carbon economy, by describing a sustainable energy strategy, including policies, designed to achieve that aim. As well as directly linking into the provisions of the Government's own sustainable development (SD) strategy, proposals for a

low carbon economy should:

- Be set within a sustainable development framework
- Outline a vision of a low carbon economy
- Contain targets and milestones

Our suggestions for these element are as follows:

A sustainable framework methodology

5.1 Sustainable development, in a nutshell, aims to meet people's needs without compromising our future, and in setting out to achieve that aims, takes full account of the social, economic and environmental impacts of our decisions, over the long term.

5.2 With this definition in mind, we believe setting the White Paper's provisions within a sustainable development framework offers the best prospects for the integrated achievement of the paper's policies. Such a framework should therefore be the central organising principle guiding energy policy choices.

5.3 To help apply this framework, the Commission has developed six criteria for judging energy policy for their contribution to sustainable development (and which stem from our six principles of sustainable development, listed in Annex 2), against which all the White Paper's policies should be evaluated. **We recommend that Government assess its energy policies, as they are developed, against these energy policy judgement criteria, as described in Box 2.2 (P.9) of our input to the PIU energy review, and technologies against the matrix at Table 5.1 (P 36) of that input**, by assigning a qualitative marking of high, medium, low, negative or fail/not relevant. Although a policy that scores more 'highs' than another may not necessarily be a 'better' policy than another – the depth and focus of a policy are also important – the process does provide a useful, quantitative indication of the value in sustainability terms of some policies over others, including helping identify conflicting policies where trade-offs may be required.

5.4 We also recommend a positive tone for the White Paper. SD is principally about improving the quality of life, and that message needs to come across strongly to maximise (self) interest in responding to the White Paper's proposals. To help achieve that aim, the WP needs to initiate a culture change: to give equal weight to demand, as well as supply side, consideration – by clearly linking the benefits from, for example, improvement to home energy efficiency, Homezones, air quality, fuel poverty and community building to upstream policies for building regulations and economic instruments etc.

Our vision for a low carbon economy

5.5 Our vision draws heavily on the cost/benefit analysis of energy and carbon reduction costs detailed in the PIU report's tables 6.1 (p.108) and 'summary of key findings' (p.199). Essentially, and taking into account scoring

against our six SD principles, this vision comprises:

- A carbon-neutral competitive economy, utilising clean energy, and aimed at improving society's quality of life combined with greater resource productivity, which (already) lies at the heart of DTI's SD strategy. This approach would aim to break the link between economic growth environmental impact - principally by internalising some if not all costs that are currently externalised, so that the price we pay more accurately reflects the cost of production. The landfill tax and the Climate Change levy are good examples of measures aimed at internalizing, costs as are the CAP reform proposals.

- An energy supply system based on renewables-generated electricity (primarily on and offshore wind and energy crops in the short-medium term); plus large and micro CHP; increasingly efficient carbon-fuelled vehicles, being replaced over time with fuel cells and hydrogen fuel (from green electricity).
- Falling demand* for energy, brought about by significant energy efficiency improvement across all sectors
**(the PIU report envisages a fall of 10%)*
- Preference being given to planning developments based on proximity to transport nodes, higher residential densities and smaller, more locally based facilities (including cornershops, not superstores).
- Environmental justice, particularly for balancing the interests of drivers with those of pedestrians, cyclists etc. Greater investment in bus priority measures would be significantly beneficial to the poor, as would (further) tackling fuel poverty and reducing the emission of pollutants from power stations etc.

5.6 The combined effect of achieving this vision, from the energy perspective, would be to reduce energy demand – an overall sustainable achievement in itself – and in so doing reduce emissions from which health improvements as well as climate change benefits would accrue.

Sustainable energy strategy and targets

5.7 As mentioned briefly above, the Commission perceives a strong case for targets and associated milestones. We therefore welcome the Government's recognition of the value of targets –The *Powering Future Vehicles* strategy for example talks usefully about targets helping to promote progress towards shared goals, and sending signals to the market about the Government's priorities.

5.8 But targets must be part of a coherent strategy, and supported by mechanisms by which they will be attained. Our economic section below includes a sustainable mechanism that is designed to deliver energy efficiency improvements, renewables etc. at least cost to society.

5.9 We recommend Government establish a sustainable energy strategy, with its centerpiece being a strategic commitment to reduce carbon dioxide

emissions by some 60% from current levels by about 2050, as recommended by the RECP. Such a target would carry the weight and status of a 'long-term policy signal' which the PIU Review believed necessary for the development of a low carbon energy system. **We also recommend the adoption of a new policy objective of ensuring that the demand for energy services (and the systems through which they are delivered) are managed in such a way that demand is met by secure and diverse supplies of energy, which are delivered at competitive prices for industry, which are accessible to all households and businesses for the satisfaction of their basic needs, and which are produced and consumed in ways that do not damage human health or have serious and irreversible negative effects on the environment.**

5.10 The SDC also welcomes and endorses the PIU's recommended targets for domestic energy efficiency and renewables – see below – and **favours setting associated milestones, for example a 30% reduction in CO2 emissions by 2020.**

Key factors bearing on the case for a low carbon economy

Renewables

6. Renewable technologies score very highly against our six principles of SD analysis, and have the economic potential to make a significant contribution at both macro and micro levels. **We concur with the PIU report's recommendation that the Government should adopt a target of a 20% renewables contribution to electricity supplies by 2020,** bearing in mind the PIU review's assessment of the cost of achieving that target being around a 5-6% addition to household energy prices compared to 4.5% from meeting the 2010 10% target). **However, we regard such a target as a minimum, and on the basis of the analysis carried out for the Government at the time of the Renewables Review ², we call for a target of 25% by 2020.** Such a target is more in tune with the EU's overall (2010) target of 22.1% and seems achievable at acceptable costs to consumers. A target of this scale is required, so as to more than compensate for the progressive phasing out of nuclear, otherwise there will be no net gain for non carbon sources.

7. We welcome the Government's acknowledgement of the need for renewables support mechanisms, and the corresponding introduction of the Non-Fossil Fuel Obligation (NFFO) and the Renewables Obligation (RO), to help achieve the 10% target. We also welcome the announcements in recent years about the substantial increase in Government programme expenditure on renewables*. We have however two major worries: persisting barriers that threaten the prospects for achieving this target, and that the support mechanisms as currently designed will do little to bring on those technologies that are still some distance from being commercial prospects.

** Energy R&D has been allowed to decline precipitously, in part at least as a result of privatisation. The targets for new and renewable sources of energy depend on much more investment than has been announced by the Government so far, starting as it is from a very low base.*

² DTI 1999, New Renewable Energy: Prospects in the UK for the 21st century: Supporting Analysis

8. We therefore make the following recommendations:

- Support mechanisms: we acknowledge the PIU report's advocacy for allowing sufficient time to elapse before assessing the impact of the RO and introducing revisions in 2006/07. The benefits of the enhanced spending programme should also be evident by then. Nevertheless, the Commission is concerned to avoid unnecessary delays, and recognises a need to support both near-market, competitive technologies and those further removed from it (the latter especially if the market shows little interest), possibly through an enhanced Renewables Obligation involving technology banding, and government-financed demonstration projects. **We call for an interim assessment of the success of the RO and the other support measures, to be made in 2004/05.**
- Planning: renewables have suffered from being launched as the spearhead of sustainable development in the UK without receiving the necessary contextual support of a planning regime based on the principle of sustainability. In our recent response to the Planning Green Paper (see also 'Planning' below), **we recommend that guidance note 22 on Renewable Energy be reviewed urgently.** And from the broader perspective of environmental justice, **we consider communities should receive real and sustained benefits of projects located on their doorsteps** (there appears to be little in it for them at the moment); possibilities include significant annual community grants from developers/operators, and post-code based reduced electricity bills. Such an approach could then encourage communities to be more willing to accommodate renewable energy projects. **Government must tackle the major barrier that planning currently presents to the take-up of renewable energy projects**
- NETA: We welcome HMG's efforts to date to minimise the impact of NETA on the renewables industry, and also the Government's current work on embedded generation. But given the seriousness and scale of the impediment that NETA as currently constituted presents to renewables (and CHP), particularly to the achievement of the Climate Change Programme itself, **we urge that HMG reviews NETA to (i) include sustainable development as a consideration to support renewables and CHP, and (ii) introduce arrangements to overlay the existing market system with a carbon market that explicitly values carbon** (see also para 38 below).
- We were disappointed in the absence of any clear reference to sustainable development in Ofgem's recent first year review of NETA and **we recommend that Ofgem's terms of reference be revised to incorporate sustainable development** (for example, Ofgem's principal objective might be "to protect the interests of consumers, wherever appropriate by promoting competition within a sustainable development framework").

Nuclear

9. Given that Nuclear power does not overall score as well against our six energy policy judgement criteria of sustainability as do renewables, CHP and energy efficiency, the option of building of new nuclear power stations should be held in reserve, for consideration only if the full potential of energy efficiency, CHP and renewables is not realised. It should not be allowed to deflect effort and commitment from the more desirable goal. Should it, nevertheless, be necessary for that option to be considered, such consideration should ensure all costs are internalised, so that nuclear operates on a level playing field with other energy sources.

Coal, gas and oil

10. Like nuclear power, coal, gas and oil do not score well against sustainable development criteria, primarily because of the (non-internalised) costs of the fuels' environmental impact plus a potentially increasingly heavy reliance on imports. As renewables 'kick in', the demand for the proportion of electricity generated from (brown) coal and gas-fired power stations should fall, as should the demand for oil for transport (see below). But, in any case, to achieve a 60% cut, demand for electricity from gas and coal (coal more so than gas, because of its contribution to the climate change) will have to fall, and that is very challenging. So to help minimise the environmental impact of fossil-fuel-generated electricity, **we encourage the (private sector) market to undertake an ongoing programme of developing innovative technological improvements – both for oil and for 'clean' coal.**

Innovation

11. After a period of declining investment in energy R&D following privatization, it is crucial that long term and sustained investment in a wide range of non CO2 producing fuel sources and the associated engineering infrastructure to deliver them should be developed, as recommended in the Chief Scientist's Energy Research Review.(Annex 8 to PIU Report). It is particularly important for the Government to encourage and finance research, development and demonstration of renewable sources that have not been tackled adequately by the private sector.

12. Our recommended priorities for R&D reflect the cost/benefit analysis of energy and carbon reduction costs described in the PIU report. In addition to the welcome attention (now) being given by Government and industry to PV, Fuel Cells and- in the longer term – hydrogen based on green electricity, **we recommend that the White Paper should set in motion a suite of arrangements for developing micro/domestic CHP and easing the path for larger scale CHP. We would also welcome more research into clean technologies for, and by, industry.**

We also advocate low tec., as well as high tec. solutions; the use of wool for insulation, for example, has environmental advantages over glass fibre materials. On the demand side, we see value in industry speeding up the

introduction of Smart cards, including Carnets, as a means of making public transport more attractive to car users, by providing greater flexibility and possibly financial advantage in mode of travel choices from day-to-day.

13. Success in innovation depends critically on attracting and retaining high quality research staff, an issue which has been recognised by the Roberts Review of the supply of Science, engineering and technology research staff, whose recommendations have recently been accepted by the Government and should be implemented without delay. Innovation also depends on "intelligent customers" in both industry and government, which cannot necessarily be taken for granted following privatization and fragmentation. Also the lack of engineers could seriously limit the translation of basic research into practical technology.

Handling supply and demand side issues

14. For ease of presentation, we have treated individual (predominantly) demand-side issues separately – see below. However, this distinction is to a degree artificial, and **the Commission therefore recommends that the strategy's short-medium term demand side priorities be assessed on their potential to offer a range of benefits.** Energy efficiency (and CHP) is one obvious example, **where substantial emission reductions can be achieved alongside net financial savings to all sectors, greater (skilled) employment opportunities and reductions in the number of fuel poor.** Transport is a second area, where a greater focus on planning for accessibility – for example around development 'nodes' - can reduce the need to travel with the consequent reductions in emissions, road accidents and potentially a greater proportion of necessary journeys being made by public transport.

Energy Efficiency and CHP

15. Energy efficiency, including both macro and micro CHP, scores highly against our sustainable development criteria. And as our submission to the PIU review said, much more ambitious energy efficiency measures than those in the Climate Change Programme will be required if the UK is to achieve annual carbon intensity reductions of 4%pa, in working towards achieving the 60% cut in emissions by around 2050. **We therefore welcome the PIU report's comprehensive treatment of the contribution energy efficiency can make, and endorse the two proposed targets of developing indicators, targets and monitoring mechanisms for each sector of the economy, and for a Home Energy Efficiency strategy, including a home energy efficiency target of a 20% improvement by 2010, and a similar amount again by 2020. We also recognise, with concern, the growing energy consumption by the commercial office sector and we recommend that similar reduction targets for 2010 and 2020 be adopted for this sector.**

16. We recognise that these energy efficiency targets seem ambitious and the Commission recognises the challenge to policy makers which they set. To aid the process, including helping draw up the home strategy and address the issue in other sectors, we propose the following range of

measures which, as mentioned above should be read in conjunction with our two enclosed supporting papers:

- **Focus of attention:** we share the PIU team's view that the public in general are not sufficiently seized of the value to them of improving the energy efficiency of their homes, offices etc. We therefore recommend that the Home Energy Efficiency strategy continue to target households (primarily as they have most influence over energy efficiency in the home), and separately seek to influence house builders, installers and landlords.
- **Building Regulations:** we remain concerned that the Building Regs. are insufficiently demanding to require the energy efficiency improvements in new build necessary to achieve the targets, and we concur with the RCEP's recommendation (31) for their enhancement. Bearing particularly in mind the Government's announcements about the need for 200,000 homes in the UK, we suggest the following measures be incorporated into the next review round :
 - For refurbishment, or where a regeneration or other project involves new build, for example, these should be assessed in terms of the sustainability of construction materials and design. By choosing the correct aspect and materials at design stage the solar heat gain can be maximised, thereby reducing the amount of energy required to heat a building, essential in tackling fuel poverty.
 - Similarly, minimising resource use by installing low flush toilets, grey water recycling systems and energy efficient boilers. A number of sustainable housing and construction good practice guides are already available and regeneration programmes should adhere to these, e.g the Scottish Homes/Scottish Natural Heritage guidebook '*Sustainable Housing Design Guide for Scotland*'.
 - Companies should be required to consider sourcing as many local materials and tradesmen as possible, which will have benefits to the local economy. For example, the BEDZED development in South London sourced as many materials locally as possible, although certain materials such as high specification windows and solar panels were not available locally and had to be purchased from abroad.
- **Provision of energy efficiency information:** we strongly endorse the Advisory Committee on Consumer Products and the Environment's recommendations for a family of graded energy labels, comprising energy labelling covering cars, homes and domestic equipment; a car rating label for fuel efficiency and CO2 emissions; home energy rating information for purchasers of all homes; and energy rating and labelling to be extended into other product ranges.
- **Community energy generation schemes, macro CHP:** Community energy generation schemes are an efficient way of generating electricity. A number of projects have illustrated the value of using innovative local energy supplies, for example Shettleston Housing Association in Glasgow generated heat from

geo-thermal energy from local mining shafts, or again the BEDZED CHP plant. Projects should consider what scope there is to generate local energy supplies through innovative design. We therefore recommend that the Home Energy Efficiency strategy include provision for promoting community energy generation schemes, including macro CHP, and signposting relevant information – for both households and organisations.

- **Micro CHP:** Along with renewables, CHP offers the lowest carbon options for the future. **We therefore recommend the Home Energy Efficiency strategy incorporate measures to stimulate the market for micro CHP, including the necessary developments in technology and associated infrastructure.**

Transport

17. The White Paper's treatment of the transport dimension will be crucial to its provisions' overall effectiveness. Promoting transport measures that entail no or low carbon consumption can provide various important benefits: fewer emissions; lower fossil fuel consumption, more cycling/walking with their associated health benefits; and reduced incidence of road accidents. All such measures will contribute to greater environmental justice.

NB We would be concerned to see the transport dimension being delegated to other Government 'vehicles' rather than in the White Paper itself. If this is to happen, we would expect to see subsequent monitoring and reporting arrangements no less stringent than those prescribed for following up the White Paper.

18. We concur with the Commission for Integrated Transport's recent initial assessment of the Government's ten year transport plan, including its call for action to change behaviour at the margins and for a balanced package of measures – especially on demand management. We also welcome the DfT's *Powering Future Vehicles Strategy*, including the (modest) target for 10% of new cars sold in the UK to be low carbon by 2012.

We are also concerned to see action taken to dampen the demand for large engined/less efficient 'gas guzzlers', through a range of measures including higher fuel duties and/or higher road tax for less efficient vehicles.

19. For the Commission's part, our fundamental view is that demand management can best be achieved through measures principally aimed at individuals' self interest where this matches overall improvements to quality of life. Our recommendations comprise the following:

19.1 PLANNING (see also para 8 above): The Government, in following up its Green Paper on Planning, should adopt the Commission's six principles of sustainability as material considerations when assessing transport-related planning applications, in particular where they include provisions for linking into existing or planned public transport nodes/systems, urban regeneration(including higher density housing).

19.2 CONGESTION CHARGING: We welcome the Government's initiative in this area and encourage the adoption of congestion charging in conurbations across the country

19.3 GOVERNMENT SPENDING to be prioritised towards travel by foot, cycle, bus rail, rather than roads, and including the relocation of road space to favour these transport modes. For Government to promote and develop further financing proposals, with new arrangements to be announced in 2003.

19.4 HOMEZONES (enhanced quality of urban environment, by providing better accommodation between the interest of motorists with those of pedestrian, cyclists etc

19.5 SMART cards, and particularly Carnets (flexible option for car drivers to vary day-to day journeys; cheaper fares for part-timers). SMART cards offer considerable sustainability benefits, so the rail tariff system should become carnets, rather than season ticket, based, a provision that should be promoted principally by the rail and bus industries, with the Strategic Railway Authority's active support. The rail industry should announce its corresponding plans in 2003.

19.6 CAR SHARING AND POOLING, based on simple arrangements, which should be promoted by local authorities, employers and the car industry – with the Government as an employer giving a lead.

19.7 AVIATION: We are concerned for the White Paper to take account of the significant level of emissions from international aviation emanating from the UK. These are not currently accounted for in the national inventory, nor are they counted under the Kyoto protocol.

20. We also look forward to the part hydrogen may well play in fuelling vehicles in 20-30 years' time.

The availability of renewables-generated electricity to produce the hydrogen sufficient to meet demand is one key determinant of the success of that objective, which therefore reinforces the importance of the UK acting now to significantly ramp up the contribution of renewables over the next ten years and beyond. We acknowledge the magnitude of that task, as shown in the following table, taken from the Environmental Audit Committee fifth report³:
(Figure 6)

UK renewables performance and targets

Industry:

21. The announcement of a sustainable energy strategy will provide an important long-term policy signal to industry. The strategy needs to include and explain the principle of carbon valuation, confirming the link to climate change policy of a programme of economic instruments (see also below) including the Climate Change Levy, the Emissions Trading Scheme, and planned instruments including a Carbon Tax.

³ Environmental, Audit Committee fifth report session 2001-20 'Sustainable energy strategy'.

22. We welcome the introduction of the UK emissions trading scheme, and we look forward to the expected significantly greater take up by companies.

Domestic

23. Energy use in the domestic sector is being driven upwards by a number of powerful trends. In addition, a wide range of barriers prevent households from making cost effective investments in energy efficiency, and the poor quality of the UK housing stock contributes to widespread fuel poverty. The initiatives in the Climate Change Programme do not address these problems to an adequate extent.

We would welcome the White Paper including policies requiring a systematic effort to overcome barriers to energy efficiency improvements in homes, strict regulations on new construction, the accelerated development of energy service provision, and the introduction of domestic energy taxes with suitable compensation measures to protect low-income groups.

Government

24. **Spending Plans:** Given the long-term importance of a low carbon economy, **the White Paper must make explicit the impact of its recommendations on public expenditure plans. Given that the sustainable energy strategy is unlikely to be delivered without major additional investment in renewables, CHP and energy efficiency, we urge DTI to reconsider its own energy-related spending programmes.** Other areas where the White Paper and its strategy need to correlate with public expenditure plans include the hospital building programme; the Government's proposals for 200,000 new homes in the SE; and the energy efficiency implications of transferring housing authorities' buildings; plus transport demand-side measures, as outlined in paras 17-20; and demonstration projects. **New guidance should (therefore) be issued stipulating the inclusion of low-carbon and energy efficiency provisions in all PFI projects.**

In addition, **Regional Development Agencies should be specifically required to reflect and include in their Regional Economic Strategies the national targets set out in the White Paper and to account for the contribution they will make in meeting these targets (see also para 48).**

25. **Government estate:**, We welcome the introduction of the *Framework for Sustainable Development on the Government Estate*. We view the Government's target of ensuring that, by 31 March 2008, at least 10% of departments' electricity supply from renewable sources as a modest, but useful milestone. **We recommend Government examines the scope for an additional target of achieving a 100% renewable electricity supply to all Government. buildings by 2020.**

Cross-cutting issues:

Security

26. Security of supply is an integral element of a sustainable energy system. To minimise the risk of fuel supply disruption, the Commission considers that the need for imports and the long-distance transport of fuels can be reduced through developing an energy supply system increasingly based on a network of distributed power sources and demand-restraint. Renewables, from a national perspective, are potentially the most secure energy source, with a very large indigenous, widely dispersed potential, which is not really subject at all to major external disruption. We recognise however that they are less secure on a more local basis.

The PIU report considers (para 6.36) that the cost of electricity from intermittent sources, including renewables are less than 0.2p/kWh for a 20% penetration of the market.

27. However, the Commission does recognise that there may be economic and diversity of supply value in a security policy including an import element, noting that the UK will soon become a net importer of oil and gas and that renewable hydrogen as a road fuel may not become widely available until after 2020/2030.

28. Weighing all this up, adopting a supply policy predominantly geared towards renewables, CHP, energy efficiency and demand restraint/redirection offers increasingly enhanced security of supply, including a capacity to manage any major fuel supply disruptions that may occur.

29. We would therefore welcome the sustainable energy strategy's recognising the enormous value to security of supply considerations of adapting the grid to accommodate micro CHP and the dispersed nature of renewables so that the economic value of these energy sources can be experienced as a benefit rather than a cost, and that these (renewable) sources can be developed in a complementary way to remove the disadvantages of the intermittency of some renewables. This approach should reduce the need for imports (oil and gas, uranium).

30. We also consider that the PIU Report seriously undervalued the potential dangers to security of supply. The Commission therefore argues that the Government should note the security of supply issues associated with a reliance on energy from limited sources, particularly when situated in politically unstable areas of the world. **The Commission recommends that the Government should be prepared to intervene, using regulation or fiscal instruments, to ensure that energy supplies in the short-term are maintained from diverse sources and geographical areas, whilst in the longer term, working towards minimising the reliance on imports, because of the potential costs of damage from disruption to supplies on imported energy in favour of local, renewable sources.** (NB. This approach needs to be assessed against WTO rules).

31. We recognize the vulnerability of energy infrastructure/facilities to

disruption by terrorist attack etc. This is a serious issue, and **we recommend that Government should set up a high-level Commission to consider the whole question of vulnerability of nuclear facilities to terrorist attack, including the possibility of electronic terrorism.**

Climate Change

32. The environmental dimension of sustainable development demands that the energy supply system fully accounts for the real costs to the environment. The primary environmental issue associated with energy supply, though by no means the only one, concerns the greenhouse gas emissions that lead to human-induced climate change.

Our audit of the Climate Change Programme, which we aim to publish in early 2003, will include an assessment of the UK's progress to meet its Kyoto target and domestic goal. But it is important that policies for reducing carbon emissions also achieve wider social and economic objectives of sustainable development. In particular, the PIU report noted that effective improvement in demand-side efficiency would have a net economic benefit, as well as having the potential to substantially reduce emissions. Further deployment of such policies, which are discussed in more detail in the Economic section, is in the self-interest of the UK, and should be pursued, with concomitant leadership on the international stage.

International

33. For the UK to develop a low carbon economy would be taking a strong and economically, socially and environmentally-justified lead on the international scene, to which other countries would see self-interest value in adopting. It would also be a positive response to growing international pressure on governments to phase out historical subsidies that promote inefficiency and unsustainable production processes. In addition, climate change is a global concern and the Commission believes that all governments should now be looking well beyond Kyoto's (modest) targets and timetable to reduce global emissions to a sustainable level.

34. Within the European context, the liberalisation of the energy market under the proposed EU directive will effectively impose much of the present UK trading system, warts and all, throughout the EU. It is important therefore that it is implemented in such a way that it does not repeat the same defects as the UK system but that it guarantees that energy supply remains a public service with rights of access by all customers within the sustainable low carbon principles set out elsewhere in the paper.

35. The White Paper should therefore spell out for the international community how the UK sees it in its own self-interest to go down the low-carbon route, whether or not we make a significant impact on global emissions and whether or not other countries go down the same route. In expressing this view, we note the report of the Inter-departmental Analysts Group which assessed that "In terms of overall costs to the economy, moving to a carbon-free generation system by 2050 could cost between -0.1% and

+0.2% of GDP (with GDP having grown threefold by then)”.

36. EU regulations are increasingly important to ensure a fair market across the EU. Similarly, much can be learned by benchmarking best practice in other European countries against UK experience. However, as leaders of the liberalisation of energy markets, and as one of the leaders for policies to reduce greenhouse gas emissions, international debate should not be used, as it appears to be at present, as a convenient sop to avoid taking decisions about the UK's own direction. For example, as we demonstrate elsewhere, over-achieving against Kyoto targets is in our self-interest for social and economic reasons, and we do not need to wait for international rules to be clarified before taking action.

37. Sustainable Energy Agency: The White Paper's scope should (rightly) be wide ranging and embracing the remits of many Government departments. **We therefore concur with the PIU report's recommendation for a Sustainable Energy Agency to be established to implement, oversee and monitor the White Paper's policies.** We see merit in such an Agency having a duty of 'sustainability' care for OFGEM so that regulation for all the regulatory bodies, including the Environment Agency as well, fit together to meet a common goal; this issue needs to be considered in detail. In addition, to be effective the Agency should be regulated to work closely with Regional Development Agencies and Devolved Administrations. And more generally, there is also a need for transparency of co-ordination and co-operation mechanisms across government.

38. Ofgem: We are very concerned that Ofgem does not yet have sustainable development built into its terms of reference. We share the Environmental Audit Committee's concern⁴ about Ofgem's inadequate consideration of the environmental dimension in its 'Review of the first year of NETA' published in July 2002 – especially as one of the review's objectives was “*to consider what change in the electricity trading arrangements will best.... be compatible with Govt. policies to achieve.....sustainable supplies of energy ..and with wider government policy, including on environmental and social issues.*” We acknowledge that Ofgem does have some specific environmental (and social) elements to its work, but these do not amount to sustainable development being a fundamental guiding principle. **We therefore recommend Ofgem's principal objective should be amended immediately (to read, for example: “to protect the interests of consumers, wherever appropriate by promoting competition and within a sustainable development framework”)** and this change be heralded in the White Paper (and see also para 8 above). At a more technical level, we concur with the PIU report's recommendation that Ofgem develop arrangements for accommodating micro-CHP.

Coherence

39. As our input to the PIU review said, the essential question for energy policy is what will be the most economic mix in the medium to long term of demand-side measures, low-carbon energy sources, fossil fuels, carbon

⁴ Ibid

sequestration, and other technologies including nuclear fusion, fuel cells and the 'hydrogen economy' more generally, which will meet the challenges of ensuring diversity and security of supply and the mitigation of climate change. This question raises inherent potential conflicts: balancing diversity of supply - and therefore imports - with security (minimising imports); and minimising costs to the consumer with raising prices to improve environmental protection by reducing excessive consumption.

40. Whilst there are no easy answers, we do consider that (our recommendation at para 5.3 above for) assessing policies against our six principles of sustainability and technologies represents the best methodology for resolving conflicting options. Our own analysis using this approach identifies the energy efficiency/renewables/demand restraint package combined with the resource productivity (as covered in para 5.5 above) as the most cost-effective one for achieving sustainable development.

Economic dimension and role of financial/regulatory issues

41. The Commission welcomes the growing interest in sustainable development being shown by industry, and the public at large. Government clearly does have a leadership role in setting the framework for a low carbon economy, and in doing that, has a duty to analyse and make public any costs of embarking along that route, as well as advertising the potential opportunities and benefits.

42. The PIU report states that the costs of a low carbon energy policy will be small, with the full 60% carbon reduction by 2050 recommended by the RCEP costing (between -0.1% and $+0.2\%$ of GDP⁵). The Commission's opinion is that, given the kind of cost-effective potential for energy efficiency identified by the PIU Report, and assuming the cost reductions widely expected for the main renewables, a low carbon energy policy could actually be economically beneficial out to 2020. But even if the outcome is as envisaged by the PIU Report, this is hardly a situation of major macro-economic risk. In fact, given the very large environmental externalities associated with the energy system (which the report perceives as probably greater than that of any other industrial activity), a programme to internalise these would lead to benefits well in excess of the costs estimated by the Review, leaving overall social welfare significantly higher as a result.

43. To elaborate further, the Commission considers that regulated market economies offer the best prospects for achieving sustainability, including enhancing opportunities for greater public participation in the democratic process. We therefore welcome the provision in the Government's sustainable development strategy '*A Better Quality of Life*' that the Government will explore the scope for using economic instruments, such as taxes and charges, to deliver more sustainable development. The SDC sees government's use of economic instruments as playing a key role to ensure organisations pay for environmental damage created by their operations - for example by internalising all their costs; and to offer, for example, tax credits to encourage

⁵ "Long-term education in greenhouse emissions in the UK"; Inter-departmental Analysts Group (IAG); July 2002

them down the path of sustainable development. A fuller note describing our initial assessment of the value and best use of economic instruments is at annex 1.

44. So, and with the specific aim of increasing social welfare without industrial disruption, **our recommendation is to give unequivocal signals to the industries concerned that environmental costs will be internalised over time** (an increasing carbon tax rate or some proportion of grandfathered emission permits) that amount to an attenuated perpetuation of cost externalisation over a prescribed period of time, together with measures which encourage the industries to become less energy intensive. This would build on the approach already being pioneered by the Climate Change Levy package and the Emissions Trading Scheme. Over time the economy would gradually become less carbon intensive as capital and investment flowed preferentially into sectors and activities that were not incurring a carbon penalty because they were not inflicting social costs.

45. Our more specific recommendations are:

- **To favour environmental taxation over labour taxation – which will send long-term signals to gain market confidence and help secure project finance**
- **To signal an intention to introduce a Carbon Tax, to replace the Climate Change Levy and along the RCEP’s recommended lines (ie to “*be announced at least a year in advance of its introduction, be set at a modest level initially, and be preceded by or launched alongside the other measures [we] recommend for raising energy efficiency, reducing energy consumption and reducing fuel poverty⁶.*”) with suitable measures to protect low income groups.** Proceeds from the carbon should be recycled to help achieve the broader socially enhancing/social welfare aim mentioned in para 44 above.

Employment

46. Energy policy carries implications for employment in terms of its impact on the overall level through competitiveness and the balance of trade, and on its regional and occupational distribution. There will be ‘winners’ and ‘losers’ and a need to facilitate a “just transition” and to ensure the sustainable development objective of high levels and high quality of employment can be met. A carefully managed transition is also vital to securing public support for the changes required and to ease the process of adjustment for the economic sectors and communities who are most directly affected. We do not want a repeat of the collapse of the mining industry where “for the miners involved the consequences were catastrophic. Many of those who lost their jobs were left with redundant skills and the prospect of long-term or permanent unemployment ,and the damaging social and economic impacts on their families and communities are still felt today” (DEFRA “Reaching the [Johannesburg] Summit)

⁶ Energy ‘ The Changing Climate’; RCEP 200

Equally, the availability of the appropriate skills at the right time and place are crucial to preventing “bottle necks” and ensuring that the UK can take a lead in the research, development and production of sustainable energy resources and low carbon technologies.

As with energy strategy as a whole, the market is unlikely to provide this smooth transition automatically. The lead times are too long, the institutional framework too fragmented and relevant labour force data on which to base planning is sparse. **We therefore recommend that the Government, the energy industry, regional development and skills agencies, and education/training providers will need to work closely together with other stakeholders such as the trade unions to develop an effective approach which causes least disruption of the labour market, and maximises job opportunities and competitiveness.**

Identifying those sectors or regions of the economy where job losses will increase the need for retraining or regeneration, or where skill shortages may hinder new developments, is crucial. Current labour market data is inadequate for the sophisticated analyses required. **The Government should undertake an analysis of the positive employment impacts of a sustainable energy strategy balanced against possible negative consequences of contraction in other energy sectors.** This should also take account of indirect effects, such as employment implications in the UK of a reliance on energy imports. **The Government should review its economic modeling and policy assessment capabilities for assessing the detailed employment implications of environmental taxes and other economic instruments and work with RDAs, Skills Councils, the Environment Agency, the Carbon Trust and other stakeholders, including trade unions to carry out more detailed impact studies.**

Despite the lack of comprehensive data there are reports, case studies and anecdotal evidence to suggest certain trends. Most macro-economic analysis, and several case studies done by NGOs and others, show job gains are likely to outnumber job losses overall. However, work commissioned by the Trade Union Sustainable Development Advisory Committee has shown that the adjustment process is likely to be less smooth in those areas where there are large concentrations of energy intensive industries, and that the ability of a region to adapt to the structural changes required by a low carbon economy will depend on the flexibility and skill level of the workforce and the degree of innovation in the local economy. Most studies say little about the quality or skill content of the jobs required. What evidence there is suggests that scientists and engineers will be in high demand if the required research, development, design and technology is to be provided. Similarly, many craft skills such as roofers and plumbers are in short supply, and there is a general need for a better skilled workforce in the building industry in order to facilitate renewables and energy efficiency in the housing stock.

The recent Roberts Review catalogues in detail the shortage of people with science, technology, engineering and mathematic skills, and highlights in particular the decline in the supply of engineers and physical scientists; a key area as far as the energy sector is concerned.

They urge the Government and employers to take action, including the

importance of skills planning and coherent skills dialogues between businesses and universities through the new Framework for Regional Employment and Skills Action (FRESAs).

The Energy Futures Task Force has expressed major concerns over the shortfall of newly qualified entrants to disciplines of importance to the energy sector, which they attribute partly to the attractions of higher paying sectors such as finance and IT but also to the heavy staff reductions in the energy sector which has created an image of insecurity of employment. Key issues identified include the need for increased “distributed generation” skills if the opportunities offered by micro-CHP and embedded generation are to be realised; and the need to rebuild the extensive knowledge and expertise lost from the nuclear industry during fragmentation and privatisation, if only to deal with decommissioning and the management of radioactive waste.

Whatever the energy policies adopted it is essential that adequate time and resources are allocated to the transition and that institutional arrangements are adequate to the task of planning and implementing employment requirements. Government departments and public agencies at national regional and local level all have an important role to play, in close cooperation with stakeholders, including employers, education providers and trade unions. Particularly crucial are Regional Development Agencies who should be incorporating the skills dimension into their sustainable economic strategies and their renewable energy assessments.

Also vital are local and sectoral skills councils and the Sector Skills Development Agency which has a cross cutting remit for sustainable development training and education. Unfortunately the structure of sector skills councils (SSCs) is incomplete following a major reorganisation. It is vital that the projected cross-sectoral science, engineering and technology SSC, and the rest of the SSC framework, is established quickly so that they can develop the training and skills required. **Regional Development Agencies should take the lead through the new FRESAs to secure a coordinated evaluation and dialogue on skill needs and transitional arrangements in the energy sector.**

Planning:

47. The Government’s intention to review the planning system, heralded by launch of its launching a Green Paper, is timely for developing a sustainable energy strategy. As our response to the Green Paper said, we recognise “an intrinsic link between sustainable development and planning. Fundamentally, sustainable development is about shaping and changing patterns of development to ensure that social, economic and environmental needs can be met simultaneously, for present and future generations. The planning system, which will determine the location and form of development, is therefore a key mechanism for delivering sustainable development. It affects the use of resources, especially land, but also key 'life support' systems (e.g. water, biodiversity, air quality).

It also determines the spatial distribution and intensity of activities that have

wide-ranging and lasting social, economic and environmental impacts. Accepting sustainable development as the central organising principle for reforming the planning system would therefore not only ensure a planning system that can deliver, but also one which delivers outcomes which are sustainable.”

48. We have commented above on our proposals for handling planning in relation to renewables specifically, so here we rehearse our more general responses to the Green Paper, **which should, again, be incorporated into the sustainable energy strategy:**

- Across all decision-making levels there has been a missed opportunity to require the inclusion of a statement of sustainable development within each plan/strategy. This could be a simple statement that "the purpose of planning is to deliver sustainable development”.
- We also want to see a greater focus on better participation by communities affected rather than more consultation. We believe that substantial good practice exists nationally and internationally on engaging communities in the planning process and detailed guidance needs to be worked up based on this.
- Ensuring the delivery of sustainable outcomes at the regional level requires that the priorities set out in the Regional Spatial Strategies (RSS) are reflected in other regional strategies, such as those on waste, energy, bio-diversity, social inclusion and transport, and especially those produced by the RDA on regional economic development. We feel that the linkages between the RSS and other regional strategies has not been adequately stated in the Green Paper and need further consideration.

Role of Communications

49. Given the scale and nature of the changes we, the PIU report and the Climate Change Programme itself envisage, **we recommend that the Government should prepare a communications strategy.** This would principally reflect the most crucial message of the White Paper ie for its policy proposals to emphasise the ‘quality of life’ benefits they herald – in order for stakeholders and the public at large to appreciate their own ‘self-interest’ in adopting the measures proposed. In putting across this message, the communications strategy would seek to transmit long-term signals about the opportunities of a sustainable economy to all key players, including industry, financial market, local planning authorities, and the public generally. In particular, it would describe a vision of sustainable life over the coming decades, not least to help explain and justify the case for a low carbon economy.

We also see value in including in the communications strategy an energy efficiency education programme aimed at all sectors of the economy, public and private alike. Such a programme could include guidance for the building trade, advice to schools, and signposts to green electricity schemes. Indeed, the strategy should in part be directed at consumers, as the transition to a low carbon economy will require recognition and acceptance of the inherent changes in that move

Conclusion

50. The White Paper's planned publication date falls within a few months of the WSSD itself and directly within its follow-up period. 'The eyes of the World' will therefore be on the UK to take its own lessons to heart and demonstrate the Government's commitment to sustainable development through the provisions of this major statement of energy policy.

51. But also from a national perspective, for the reasons outlined above, the Commission consider it vital that the Government take the policy decision to reinforce its commitment to a low carbon economy, and for that commitment to be reflected in its White Paper policy proposals for a sustainable energy strategy, incorporating clear, long-term targets and milestones, based on: security and diversity considerations, which put the environment first in balancing trade-offs; energy supply being increasingly based on renewables and CHP – micro and macro - and, longer term, hydrogen; demand restraint measures including energy efficiency and a range of transport initiatives; and a sustained communications strategy.

SDC

September 2002

Annex 1

SUSTAINABLE DEVELOPMENT COMMISSION

This note comprises the SDC's initial assessment of the case for the use of economic instruments for achieving sustainability - it is NOT our final word!.

Overview

The Commission considers that regulated market economies offer the best prospects for achieving sustainability, including enhancing opportunities for greater public participation in the democratic process. We therefore welcome the provision in the Government's sustainable development strategy '*A Better Quality of Life*' that HMG will explore the scope for using economic instruments, such as taxes and charges, to deliver more sustainable development. And we welcome the Cabinet Office's *Principles of Good Regulation*, which include promoting the efficient working of markets, and protecting the environment and promoting sustainable development. We believe that regulation, including the use of economic instruments, should be one of a number of market-influencing options for helping achieve sustainability; others include the provision of advice and information, partnerships, financial incentives, self-regulation, and – perhaps most importantly – community involvement.

Policy framework

The Commission believes that sustainable development should be the central organising principal guiding policy choices on all issues and at all levels of government. Our contribution (copy enclosed) to the UK Government's recent Energy Policy Review was based on our six specific criteria for sustainable development – a (recently updated) version of these Working Principles for Sustainable Development is also attached. It included an analysis, and associated

recommendations, for a low carbon economy which in part were directed at significantly lessening the environmental impact of energy consumption, and so contributing to the Climate Change Programme.

The role of economic instruments

The SDC sees government's use of economic instruments as playing a key role:

- to ensure organisations pay for environmental damage created by their operations - for example by internalising all their costs;
- and to offer, for example, tax credits to encourage them down the path of sustainable development.

SDC-favoured economic instruments

The SDC favours net revenue-raising instruments over those raising little or no net revenue. Although both types provide for more efficient resource use at the margin, the net revenue-raising type:

- differentiates between more and less resource intensive activities (which the other kind of instrument does not), and encourages the latter relative to the former;
- represents a proper internalisation of environmental costs;
- enables its revenues to be used to substitute for other taxes which would otherwise have to be levied to cover government expenditure, including the government promotion of a low carbon system.

(We do, however, recognise that revenue neutral instruments can have value. Although the CCL, for example, disseminates its revenues only on a broadly targeted basis, it has made some CCL-exempt products – green electricity for the commercial market, for one – more price competitive.)

Revenue use

As suggested above, we favour using revenues to finance low carbon, and ideally community-based schemes – both supply side (eg renewable energy projects) and demand side (eg Homezones, cycleways etc).

We were interested in the Urban Task Force's call for environmental impact fees as a means of reflecting the full environmental costs of new developments, and we welcomed in principle the proposal contained in DTLR's subsequent consultation paper on reforming planning obligations for introducing a tariff system. Such a system can provide 'transparency' (offering greater certainty for developers and a clearer negotiating position for local authorities) and 'subsidiarity', (the rate at which it is set should be locally determined). More generally, the principle of the reform to create a system which produces positive ways to meet planning objectives (desirable outcomes), as opposed to just those which mitigate negative impacts, is also welcomed.

Timing

It is crucial that a drive to maximise the use of economic instruments is instigated now. We welcome the introduction of the various mitigating instruments introduced in recent years, including the Landfill Levy, the Climate Change Levy and the

Emissions Trading Scheme. But – as Margaret Beckett said at the launch on 26 April of the new report on climate scenarios – some changes are already locked into the climate system and cannot be reversed. This reinforces the urgency of taking decisions now to widen the application of economic instruments. Furthermore, the UK Government should reinforce and sustain the message to the market that it sees such regulation as a fundamental and continuing element of the Climate Change Programme, and a fact of economic life for the foreseeable future.

SUSTAINABLE DEVELOPMENT COMMISSION

May 2002

Annex 2

SUSTAINABLE DEVELOPMENT COMMISSIONS SIX PRINCIPLES OF SUSTAINABILITY

These Principles have been formulated to help the Sustainable Development Commission in delivering its work programme. We are a UK body, focussing primarily on the UK Government and other key sectors in the UK. These Principles are not therefore designed to be either a work of art or utterly definitive. Indeed, first and foremost, they are operational principles, in that we shall be using them to inform our own deliberations and to steer all external contributions we may seek from academics, partners, consultants and so on. They have been debated and agreed by the Commissioners themselves, embodying our own experience and conviction of what is most important in the Sustainable development debate.

We acknowledge the work of many who have gone before us in seeking to define what is meant by Sustainable development. We respect the fundamental importance of the principles agreed by governments in the Rio Declaration of 1992 at the Earth Summit. The principles elaborated by the UK Government in DEFRA's Sustainable development strategy cover similar ground. And for a more elegant articulation of the relationship between humankind and the natural world, we warmly recommend the approach of the Earth Charter (<http://www.earthcharter.org>).

Defining Sustainable Development

Sustainable development provides a framework for redefining progress and redirecting our economies to enable all people to meet their basic needs and improve their quality of life, while ensuring that the natural systems, resources and diversity upon which they depend are maintained and enhanced both for their benefit and for that of future generations.

Sustainable development is inevitably a contested idea, dependent of finding the right balance between different and often conflicting objectives through much more integrated policy-making and planning processes. Putting its principles into practice demands debate, experimentation and continuous learning, and therefore requires a thriving democracy to allow it to evolve and flourish.

Principles for Sustainable Development

1. Putting Sustainable Development at the Centre

Sustainable development should be the organising principle of all democratic societies, underpinning all other goals, policies and processes. It provides a framework for integrating economic, social and environmental concern over time, not through crude trade-offs, but through the pursuit of mutually reinforcing benefits. It promotes good governance, healthy living, innovation, life-long learning and all forms of economic growth which secure the natural capital upon which we depend. It reinforces social harmony and seeks to secure each individual's prospects of leading a fulfilling life.

2. Valuing Nature

We are and always will be part of Nature, embedded in the natural world, and totally dependent for our own economic and social wellbeing on the resources and systems that sustain life on Earth. These systems have limits, which we breach at our peril. All economic activity must be constrained within those limits. We have an inescapable moral responsibility to pass on to future generations a healthy and diverse environment, and critical natural capital unimpaired by economic development. Even as we learn to manage our use of the natural world more efficiently, so we must affirm those individual beliefs and belief systems which revere Nature for its intrinsic value, regardless of its economic and aesthetic value to humankind.

3. Fair Shares

Sustainable economic development means “fair shares for all”, ensuring that people’s basic needs are properly met across the world, whilst securing constant improvements in the quality of peoples’ lives through efficient, inclusive economies. “Efficient” simply means generating as much economic value as possible from the lowest possible throughput of raw materials and energy. “Inclusive” means securing high levels of paid, high quality employment, with internationally recognised labour rights and fair trade principles vigorously defended, whilst properly acknowledging the value to our wellbeing of unpaid family work, caring, parenting, volunteering and other informal livelihoods. Once basic needs are met, the goal is to achieve the highest quality of life for individuals and communities, within the Earth’s carrying capacity, through transparent, properly-regulated markets which promote both social equity and personal prosperity.

4. Polluters Pays

Sustainable development requires that we make explicit the costs of pollution and inefficient resource use, and reflect those in the prices we pay for all products and services, recycling the revenues from higher prices to drive the sustainability revolution that is now so urgently needed, and compensating those whose environments have been damaged. In pursuit of environmental justice, no part of society should be disproportionately impacted by environmental pollution or blight, and all people should have the same right to pure water, clean air, nutritious food and other key attributes of a healthy, lifesustaining environment.

5. Governance Matters

There is no one blue-print for delivering Sustainable development. It requires different strategies in different societies. But **all** strategies will depend on effective, participative systems of governance and institutions, engaging the interest, creativity and energy of all citizens. We must therefore celebrate diversity, practice tolerance and respect. However, good governance is a two-way process. We should all take responsibility for promoting sustainability in our own lives and for engaging with others to secure more sustainable outcomes in society.

6. Adopting a Precautionary Approach

Scientists, innovators and wealth creators have a crucial part to play in creating genuinely sustainable economic progress. But human ingenuity and technological power is now so great that we are capable of causing serious damage to the environment or to peoples' health through unsustainable development that pays insufficient regard to wider impacts. Society needs to ensure that there is full evaluation of potentially damaging activities so as to avoid or minimise risks. Where there are threats of serious or irreversible damage to the environment or human health, the lack of full scientific certainty should not be used as a reason to delay taking cost-effective action to prevent or minimise such damage.