

Draft EST Response to the Energy Policy Review

Summary

The Energy Saving Trust sees 3 major strands which need to be addressed in the PIU Energy Policy Review for a balanced assessment of UK energy needs and resources:

- 1 Reduction in demand for energy: minimising demand for energy must be the first principle in sustainable energy policy through energy efficiency and increased use of CHP.
- 2 Diversity of energy supply: through increased exploitation of indigenous renewables which will provide CO2 emission-free energy, and clean fuel vehicles in transport. Small scale electricity generation at community and household level will be a flexible, locally-owned source.
- 3 Employment opportunities and industrial development potential in the energy efficiency and renewable energy technology industries.

It will be important that energy demand and energy supply issues are addressed with equal weight throughout the Review. Throughout the Review the costs of achieving the various objectives by supply and demand side measures should be compared. In this context we are concerned by the gas and oil papers, which assume that levels of demand will continue to rise, without suggesting that demand side measures would prolong the life of indigenous supplies, and reduce the need to depend on gas imports.

Integration in government policy between departments covering energy, environment and transport issues, will be essential for a low-carbon economy with sustainable economic growth to be achievable.

In summary **we want the Energy Policy Review to recommend:**

1 Reduction in Demand

- That significantly increased government funding be channelled into a greatly expanded programme to improve household energy efficiency. This programme should include an active effort to increase consumer awareness and change consumer attitudes and behaviour in relation to energy use in the home. Activity should be closely co-ordinated with the efforts made by suppliers, energy efficiency manufacturers and retailers.
- That an Energy Efficiency Strategy to 2010 be developed to give a target for energy efficiency, to provide clear direction and co-ordination, and to identify where funding will be sourced, including confirmation of continuation and expansion of the Energy Efficiency Commitment beyond 2005, subject to success.
- That government should help encourage the deployment of technologies such as domestic CHP and community level CHP, solar thermal, biomass burners, and other renewables, through ongoing encouragement and review of the legal, regulatory and market barriers that may arise.
- That government should consider an energy supplier obligation for electricity generated from quality CHP, expressed in TWh/a so the environmental benefits are achieved.
- That fiscal incentives be given to householders to improve the energy efficiency of their homes, including reduced stamp duty at the home moving stage and tax incentives, and that VAT is reduced on all energy efficient products.
- That housing policy be focussed towards improving housing stock above the existing thermal efficiency levels

2 Diversity of Energy Supply

- That government gives full support for domestic and community based renewable energy projects, including subsidies as necessary for the electricity fed into the supply system, and fiscal incentives for capital investments.
- That Government issue planning guidance to local authorities on deploying renewables, setting out the national and regional context in which they should make future planning decisions on such issues
- That Ofgem makes decisions consistent with the government's environmental objectives, and truly internalises its Environmental Action Plan.
- That Ofgem actively makes provision for encouraging embedded generation in the electricity supply system.
- That Ofgem incorporates environmental externalities within its decision-making processes.
- That government funding and incentives for suppliers be given to developing the infrastructure for clean fuel vehicles, including natural gas suppliers, electric vehicle recharging points, and the relevant infrastructure to encourage hydrogen powered vehicles.
- That fiscal changes are made to differentiate VED for vehicles on the Powershift and CleanUp registers, and the fuel duty differential is maintained to keep clean fuels cheaper than petrol and diesel at the pump.

3 Employment Opportunities

- That energy efficiency and renewables will provide job opportunities and export potential
- That government policies need to be developed to encourage this.

Our Interest

The Energy Saving Trust was established as part of the Government's action plan in response to the 1992 Climate Change Convention. The Trust is the UK's leading organisation working towards the sustainable and efficient use of energy by households and small organisations. Our main activities are in the field of household energy efficiency and clean vehicles, with smaller programmes covering non-domestic energy efficiency and renewable energy.

This response should not be taken as representing the individual views of the Trust's members.

1. Reduction in Demand

Minimisation of demand for energy must be the first principle in any sustainable energy policy. Energy efficiency policies help the UK to meet all its key energy and environment objectives, and such policies are good for:

- carbon dioxide reduction.
- fuel poverty, as energy efficiency is the sustainable solution
- consumers, as their energy bills are reduced if cost effective energy efficiency measures are implemented
- energy security (as recent EU work recognises) because if demand is lower:
 - Import dependence for gas and oil will be reduced and/or postponed
 - Any existing nuclear or coal capacity will represent a higher proportion of demand, thus helping diversity
 - There will be spare capacity in the networks which is good for security (and for competition between suppliers)

- Reductions in demand may not ultimately remove the need for intervention on diversity/security grounds but they could postpone it which would be very helpful.
- employment

Given all these advantages, it is surprising that support for energy efficiency is so restricted. In particular current expenditure of around £40m to encourage energy efficiency in over 16 million households not on benefits, is inadequate.

By reducing demand energy supplies will be conserved for longer, and losses from transmission and storage are reduced. In addition emissions from generation do not deplete or degrade other natural resources

1.1 Energy Efficiency: Costs and Benefits

The UK has had successful energy efficiency programmes for a number of years, but a much greater level of effort will be needed in all sectors to achieve reduced CO2 emissions, even to the levels expected in the Climate Change Programme by 2010.

The residential sector contributes 27% to total UK CO2 emissions, amounting to 39.7MtC (year 2000), of which 20.5MtC is from gas. Using cost effective measures there is potential for improving efficiency by 20% to 2010.

The Trust has identified a **realistic programme of home energy efficiency** measures to reduce annual emissions by 7.8 MtC by 2010. All the measures are cost effective. Current activity is achieving reductions of around 1.3MtC/a and we estimate that this will rise to around 2.5MtC/a by 2010 with the planned activity under the Energy Efficiency Commitment (EEC) from 2002.

The following measures are cost effective and have the potential to deliver the savings:

Table 1. Household Energy Efficiency: Achievable Potential by 2010 - Energy and CO₂ Savings

	Potential	Households improved by 2010	Annual Savings by 2010		
	Households		Energy	Total CO ₂	Policy CO ₂
	M		MTWh/year	MtC/year	MtC/year
Building fabric					
Cavity Wall Insulation	9		5.4	27.2	1.75
Double glazing	10.5		8.5	10.4	0.68
Low E glazing	20		9.7	4.5	0.29
Loft insulation	7.5		6	7.4	0.46
Tank/pipe insulation	9		6	5.5	0.35
Sub-total				55	3.53
Heating					
Condensing boilers	15.7		4.4	17.1	0.85
Controls	7		3	6.3	0.35
Residential CHP ¹	1.2		0.7	2.2	0.14
Sub-total				25.6	1.34
Lighting					
CFL	120*	100*		6	0.7
Appliances					
Cold	All	15		6.2	0.76
TV/VCR	All			3.4	0.41
Wet	All			2.1	0.25
Other	All			2.3	0.27
Sub-total				14	1.69
New build					
Standards/promotion	2.1			10.1	0.52
TOTAL				110.7	7.8

* Number of CFLs, not households

All: Approximate number of UK households in 1998 (25M)

NB: The lighting numbers have been revised since the original EST publication

The achievable potential takes account of the existing state of the housing stock and appliance market, makes a realistic assumption of capacity increases in the energy efficiency industries to 2010, and makes assumptions about changing attitudes and consumer behaviour. Achievable potential is therefore less than technical potential.

Funding for such measures could be expected to come from suppliers (through the Energy Efficiency Commitment) and government, which would also stimulate spending from other parties. The government and Regulator should provide incentives for the energy suppliers to promote energy efficiency and energy services alongside an expansion of government funding to change customer attitudes. Total investment will probably need to rise to £1 billion annually to achieve the potential of reducing annual emissions by 7.8MtC by 2010.

The EEC will deliver annual carbon savings of 0.4M tonnes and £250M in customer benefits (worth £10/a for every household in Britain) for the expected annual cost of £3.60 per customer per fuel. Total lifetime benefits are £2,800M², of which £2,300M is on energy bill savings. After taking account of the total cost to suppliers, customers, landlords and other parties, the net benefit to "UK plc" from the Commitment is over £2 billion. Therefore the cost of carbon savings to the UK is actually negative, at -£215 per tonne of carbon.

¹ Excluding domestic CHP (micro-CHP) see 1.4 below

² Total benefit = bill savings plus comfort benefit. All lifetime benefits quoted are present value.

1.2 An Energy Efficiency Strategy

The EEC has proved to be a very effective way of achieving reduced CO₂ emissions from households, but has made only a minor impact on consumer behaviour. The energy suppliers achieve the targeted CO₂ savings as required under the EEC, but there is little recognition by the consumer of the effort being made, the reason for it, nor the environmental and financial benefits of energy efficiency.

EEC is planned over the period 2002-5, but there are no indications of the mechanisms that might follow that. An Energy Efficiency Strategy is needed to 2010 to bring together all the activity on energy efficiency, and to decide what deliverable goals need to be achieved by 2010. This Strategy needs to include a clear target for energy efficiency improvements and CO₂ savings to be achieved. With a clear strategy government, energy suppliers, the energy efficiency industry (manufacturers and retailers), local authorities and householders will see the long-term policy direction. The Strategy should also underline the importance of the effort currently being made by suppliers under the EEC, and increase the transparency of the process through which the funding for energy efficiency is being met.

1.3 Changing Consumer Attitudes

Householders are not currently much interested in energy efficiency. The environmental impacts of energy use (particularly electricity) are largely either unknown, or the messages are confused in their minds. The long term financial benefits of energy efficiency are often outweighed by the short term capital investment that needs to be made (in insulation, or an efficient boiler). Consequently, to date only limited impact has been made in getting householder to improve voluntarily the energy efficiency of their house. While the EEC to 2005 will increase the availability and attractiveness of energy efficiency (through reduced prices and financing arrangements from the suppliers), it will not change consumer behaviour on a mass scale.

There needs to be a very much increased effort funded by government to **inform householders** of the impacts of energy use, and the value of energy efficiency. A greatly increased advertising and publicity campaign needs to be linked (as currently but on a much greater scale) with manufacturers' and retailers' efforts in promoting energy efficient products and appliances. Information on fuel bills about energy use, environmental impacts and the improvements they could make to the energy efficiency of their home would also be useful for informing some householders at the point of payment. Ofgem needs to be encouraged to draw up guidelines accordingly

High-income households consume more energy than low-income households and therefore the carbon savings from energy efficiency measures in a higher income household can be much greater. This is particularly true for households in older, energy inefficient properties. These householders need to be targeted to emphasise the environmental and financial benefits of energy efficiency, so mass-market changes in consumer behaviour and purchasing choices are achieved. Current activity through the HEES and even in EEC (50% of activity) is targeted more heavily to the fuel poor. While this is the only really sustainable solution to fuel poverty (see 1.4 below), the benefits of improving energy efficiency in high-income homes must be recognised and tackled.

Beyond 2010 some of the measures not currently promoted through the various energy efficiency programmes should be examined and compared with other means of meeting CO₂ objectives.

We want the Energy Policy Review to recommend:

- **That significantly increased government funding be channelled into a greatly expanded programme to improve household energy efficiency. This**

programme should include an active effort to increase consumer awareness and change consumer attitudes and behaviour in relation to energy use in the home. Activity should be closely co-ordinated with the efforts made by suppliers, energy efficiency manufacturers and retailers.

- That an Energy Efficiency Strategy to 2010 be developed to give a target for energy efficiency, to provide clear direction and co-ordination, and to identify where funding will be sourced, including confirmation of continuation and expansion of the Energy Efficiency Commitment beyond 2005, subject to success.

1.4 Additional Opportunities

In addition to the measures outlined in the table above, some properties would benefit from additional measures. Solid wall housing, for example, would benefit from exterior cladding or interior lining, and further carbon savings can be made by using alternative sources of energy such as domestic CHP or domestic scale renewables (PV, solar thermal, ground source heat pumps, biomass burners).

Domestic and community **CHP** provides the maximum efficiency in fuel use associated with electricity generation, with efficiency reaching 90%. The current UK CHP capacity of 4,700 MWe is estimated to save around 4MtC/a compared with coal-fired power stations.

The Climate Change Programme has set a target of 10,000MW of CHP capacity by 2010. This target will not be met unless difficult trading conditions such as the New Electricity Trading Arrangements are alleviated for CHP. Further policy supports, such as exempting electricity exports from good quality CHP from the Climate Change Levy, are also needed. One such initiative would be to have an energy supplier obligation for good quality CHP, expressed in TWh/a, so the environmental benefits are achieved

Domestic CHP (dCHP) will soon become more widely available on the market. This technology will provide 90% efficient technologies in the home, generating electricity while providing heat, and will cover up to 75% of the needs of the household. Excess electricity can be fed back into the network. Domestic CHP can save about 1.5tC/a per unit installed, dependent on the boiler and electricity generation fuel it replaces. Some estimates suggest that there will be around 1 million units installed by 2010, saving around 1.5MtC/a, about 4% of UK household carbon emissions³. The long term potential for this technology is likely to be even greater. Estimates on cost/tC saved are about £80/tC for lifetime savings.

If dCHP becomes widely installed in houses, potential technical and regulatory difficulties in the electricity distribution system will have to be overcome. Government activity to overcome information barriers will also be needed to encourage householders to take up the new technologies.

Household lighting and **appliances** contribute 68% of household electricity use (33% of household CO₂ emissions) and is set to increase by 12% by 2010. While progress is being made to encourage householders to choose energy efficient appliances, there is still considerable potential for improvements, as highlighted in the table above. In addition **minimum standards** will be necessary to ensure that manufacturers reduce the level of energy used by appliances when on standby. Many new appliances, such as set-top boxes for digital TV are continuously consuming energy needlessly, and this situation is unlikely to improve unless standards are introduced. The UK government needs to take a proactive role in EU negotiations.

Additional effort to encourage suppliers to offer **energy services** would also help achieve greater energy efficiency. Considerable energy savings can be made if a householder is offered sufficient energy to power all its needs, while responsibility for insulating the house and installing an efficient heating system is left to the energy supplier. Energy suppliers have so far been reluctant to offer energy services as they do not currently see it as commercially

³ EST will be providing their estimates of installations to 2010 shortly

interesting. While the Energy Efficiency Commitment goes some way to encouraging this approach, further commercial incentives are needed to encourage suppliers to offer energy services on a large scale.

R&D programmes in the UK and Europe will undoubtedly give rise to yet more technological improvements in the areas of insulation, heating and lighting. Currently the expenditure on household energy efficiency R&D is £1million, a totally inadequate sum in view of the challenge.

We want the Energy Policy Review to recommend:

- **That government should help encourage the deployment of technologies such as domestic CHP and community level CHP, solar thermal, biomass burners, and other renewables, through ongoing encouragement and review of the legal, regulatory and market barriers that may arise.**
- **That government should consider an energy supplier obligation for electricity generated from quality CHP, expressed in TWh/a so the environmental benefits are achieved.**

1.5 Fiscal Incentives

All energy efficient products should receive reduced VAT to make them financially more attractive to the householder. Currently there is inconsistency in this policy. Condensing boilers, for example, are more energy efficient than other boilers, however they remain more expensive and are still only a small percentage of boiler sales. If VAT were reduced to 5% (in line with the VAT on fuel) these boilers would be cheaper and therefore more attractive to the purchaser. We recommend the reduction of VAT for all energy efficient products to 5%.

Householders are most interested in the physical state of their property at the home moving stage. This is probably the most effective point at which to encourage them to make significant improvements to the energy efficiency of their home. A number of fiscal incentives could encourage further energy efficiency activity, such as reduced stamp duty for energy efficient homes (meeting set criteria for the level of efficiency), reduced mortgage rates when the appropriate energy efficiency measures have been made, or tax relief offered if the measures are made.

A number of other countries offer fiscal incentives for energy efficiency, and the Review team could examine the success of some of these measures in making it's recommendations. These include The Netherlands, Greece, Finland, Czech Republic, Canada, Japan and Korea.

We want the Energy Policy Review to recommend:

- **That fiscal incentives be given to householders to improve the energy efficiency of their homes, including reduced stamp duty at the home moving stage and tax incentives, and that VAT is reduced on all energy efficient products.**

1.6 Fuel Poverty

Improving energy efficiency in fuel poor homes achieves environmental objectives while at the same time increasing the comfort levels in the homes. Energy efficiency is the only sustainable solution to fuel poverty. Homes with improved insulation, efficient heating systems and energy efficient appliances will remain out of fuel poverty even if/when fuel prices rise.

The government has considerably increased its funding in this area through the Home Energy Efficiency Scheme, Warm Homes in Northern Ireland, and Warm Deal in Scotland, and will continue to do so through the EEC from 2002. However the government needs to do more to

help the most disadvantaged, particularly those who do not respond to “normal advertising”. There are also a number of types of properties which cannot be improved with the usual measures, and these will require more creative solutions such as dCHP, interior lining or external cladding.

Once fuel poverty has been resolved through energy efficiency and wider housing initiatives, more serious disincentives on energy consumption might be considered. There is a need to very clearly link the Government's Fuel Poverty Strategy with its climate change strategy, in order that delivery agents can exploit the synergies and make consistent long-term plans.

1.7 Housing Policy

Housing policy is of course critical to long term plans for energy efficiency. The Building Regulations are very important for this and we welcome the revised Regulations, coming into force in 2002, with it's improved requirements for efficient boilers. Nevertheless, there is more that can be done to ensure that the Regulations are met in practice, to improve the thermal insulation of housing, and to improve the efficiency of appliances and lighting in homes. The government should announce at an early date its intention to tighten the Building Regulations, to narrow the gap between the housing standards in the UK and in similar EU countries e.g. Germany. A clear warning of the timescale for revising the Building Regulations is needed.

We believe that local authorities have a critical role to play in improving energy efficiency in the housing stock in general: firstly as landlords, and particularly at the time of large scale voluntary transfer to housing managers; and secondly as key influencers in their communities. Energy efficiency needs to be a core consideration for housing policy, and not an ‘add-on.’

Some of the UK housing stock is the poorest in Europe, and only 15,000 houses are demolished and replaced each year. Over the long term this policy should be closely re-examined

We want the Energy Policy Review to recommend:

- **That housing policy be focussed towards improving housing stock above the existing thermal efficiency levels**

2 Diversity of Energy Supply

As the UK's leading organisation working towards the sustainable and efficient use of energy by households and small businesses, the Energy Saving Trust sees significant opportunity for the deployment of household and community-level renewable energy supply .

We note with interest that the recent Californian experience has raised interest and investment in energy efficiency and domestic scale renewables (PV).

2.1 Renewables

Renewables provide an indigenous source of carbon-free energy to complement fossil fuels. Renewables currently contribute 3GW to UK electricity supply (3%). The 2010 target for renewables is 10% of electricity supply. The trend in electricity supply over the past decade has been towards smaller more flexible sources (smaller CCGT rather than previous large scale coal and nuclear powered stations).

There are a number of renewables suitable for small scale production at community and household level. The renewable technologies considered most economically viable in this context are:

- Small scale wind power projects, if planning arrangements are sensitively handled with local communities;
- Energy crops. Land will not be made available for these crops unless government policy in relation to renewables is clear. Production of energy from biomass can be a local community-based scheme.
- Photovoltaics are deployed in domestic houses in Germany and Japan. The DTI PV project will help raise awareness of PV technologies, but much greater effort is needed for these to become cheaper (from mass production). Subsidies are needed for this technology to become market competitive, and this will include a favourable buy out rate for the electricity generated. In commercial buildings, PV panels are already cost-effective when compared with prestige cladding materials. In this sense, there is already potential for 250MW PV (a small power station) by 2010.
- Solar thermal technologies provide water heating for the home. This is a relatively inexpensive technology. Denmark and Austria have extensive capital and tax support mechanisms for this technology.
- Ground source heat pumps are widely used in the US and Scandinavia. This technology could be particularly efficient for providing energy to households in rural regions off the gas supply.

Support measures are necessary to overcome local resistance to renewables development at the planning stage (providing help for developers to gain community approval for schemes). Favourable buy-out tariffs, and help in overcoming the problems engendered by NETA will be essential. Renewable energy operators have realised this, and new initiatives aim to secure local support, e.g. National Windpower's 'WindWorks' initiative.

It would also be important for energy suppliers to be offered incentives for encouraging embedded generation in the electricity network. It is likely that this will entail a completely different approach to the regulation of distribution networks, allowing them to invest in smarter networks, capable of coping with large numbers of very small distributed generators.

We want the Energy Policy Review to recommend:

- **That government gives full support for domestic and community based renewable energy projects, including subsidies as necessary for the electricity fed into the supply system, and fiscal incentives for capital investments.**
- **That Government issue planning guidance to local authorities, setting out the national and regional context in which they should make future planning decisions on such issues**

2.2 The Energy Regulator: Ofgem

Ofgem has a critical role in the success or failure of government policies on energy efficiency and renewables.

Ofgem's recent publication of its Environmental Action Plan is encouraging, and is a significant step towards recognising the environmental impacts of its activities. However, the EAP will only be effective if it is truly integrated into Ofgem's decisions. The operation of NETA is just one example where policy has adversely affected the renewable energy and CHP suppliers, particularly for new generators. The potential impacts of NETA were clear even before the arrangement came into effect, and Ofgem's attempt to pass responsibility back to the government is a discouraging interpretation of its environmental responsibilities.

The government has clear powers to give guidance to Ofgem about its duties, and DTI's role in doing this will continue to be critical to ensure that Ofgem truly internalises its Environmental Action Plan and makes consistent policy decisions.

Ofgem's role as regulator has a clear impact on embedded generation issues, which will be important if domestic and community scale renewables and CHP are to succeed. In addition technologies such as smart meters should be encouraged so consumers, electricity

distributors and suppliers see the benefits of energy efficiency and power generation in the household.

We want the Energy Policy Review to recommend:

- **That Ofgem makes decisions consistent with the government's environmental objectives, and truly internalises its Environmental Action Plan.**
- **That Ofgem actively makes provision for encouraging embedded generation in the electricity supply system.**
- **That Ofgem incorporates environmental externalities within its decision-making processes.**

2.3 Transport

Emissions from the *transport* sector contribute 27% to UK CO₂ emissions and are projected to rise. Use of petroleum products in the long term will be unsustainable and will undermine efforts to achieve a low-carbon economy. In the transition to a low-carbon economy based on hydrogen and bio-fuels it will be important to ensure that as clean fuels and vehicles as possible are deployed.

2.3.1 Infrastructure

The infrastructure for clean fuel supply such as Liquid Petroleum Gas (LPG) has increased successfully through the EST's programmes, and the major petroleum suppliers now offer LPG at 800 refuelling sites throughout the UK. Developing refuelling sites for Liquid Natural Gas (LNG) and Compressed Natural Gas (CNG) remains slow, as this is a much more expensive option. Similarly the infrastructure for electric vehicle recharging is not yet in place, but will need to be developed if clean fuel vehicles are to make a serious impact in reducing CO₂ emissions from transport, and improving local air quality.

While the EST's programmes offer incentives to depot operators to install refuelling stations for CNG and LNG, more effort is needed for these fuels to become an attractive alternative to petrol and diesel.

Powershift can reduce CO₂ emissions per vehicle by up to 15% and *CleanUp* significantly improves local air quality by reducing emissions of particulate matter, oxides of nitrogen (NO_x), hydrocarbons and carbon monoxide.:

In the long term hydrogen power for vehicles, resourced from renewables should be the goal. However further development of the technology is needed for this to become a realistic alternative. Government incentives will be needed to encourage this development.

2.3.2. Fiscal Measures

Initiatives such as the EST's *Powershift*, *CleanUp* and *CleanUp Haulage* programmes are contributing to the shift towards clean fuel vehicles but a more integrated approach to fiscal incentives is needed over the long term to encourage vehicle owners to choose clean fuel vehicles. If the price at the pump is cheaper for LPG then drivers will see an immediate benefit in choosing an LPG car. However, consumers are sceptical of government intentions, and so it will be necessary to assure drivers that cleaner fuels will remain cheaper over a number of years to convince them of the long-term advantages. Over the long-term fiscal support will be needed to encourage switching to CNG, LNG, electric and hybrid cars and ultimately hydrogen powered vehicles.

EST has created a vehicle register to ensure that the correct technology is properly fitted to vehicles, thus ensuring both a safe conversion and lasting environmental benefits. Clean Fuel Vehicles on the *Powershift* and *CleanUp* registers need a fiscal incentive to remain attractive

options for the consumer. Vehicle Excise Duty should therefore be lower for vehicles on the registers.

Equally, manufacturers need to see the market opportunity in promoting clean fuel vehicles in their showrooms. Demand for clean fuel vehicles is only likely to rise when the price of the vehicle is not significantly more expensive than a comparable petrol or diesel model, and the fuel is readily available.

2.2.3 Low Emission Zones

As local air pollution in cities continues to rise, and vehicle ownership increases as projected, low emission zones in towns and cities would be an important stimulator for serious action to be taken to limit vehicle emissions. With particulate traps on buses and lorries, and incentives on individual vehicle owners to choose clean fuel vehicles, some of the worst environmental impacts could be significantly reduced.

LEZs could provide an important stimulus for the deployment of electric vehicles which will be most widely used in city areas. In the longer term hydrogen fuel cells would equally benefit.

We want the Energy Policy Review to recommend:

- **That government funding and incentives for supplier be given to developing the infrastructure for clean fuel vehicles, including natural gas suppliers, electric vehicle recharging points, and the relevant infrastructure to encourage hydrogen powered vehicles.**
- **That fiscal changes are made to differentiate VED for vehicles on the Powershift and CleanUp registers, and the fuel duty differential is maintained to keep clean fuels cheaper than petrol and diesel at the pump**

3 Employment Opportunities

The *energy efficiency* industry provides many employment opportunities which are currently not being fully realised. There is a critical shortage of qualified insulation installers, and further efforts are needed in the short term to overcome this so that existing government programmes such as the Home Energy Efficiency Scheme (HEES) and the Energy Efficiency Commitment (EEC) are successfully implemented. Similarly there are shortages of heating engineers in some regions, and some effort is made to encourage school leavers to train in this sector. Employment opportunities are good in the heating sector, and will allow for diversity as household renewables are increasingly installed.

A recent study for the EST estimated that in 1998 5,000 additional jobs were created through the Home Energy Efficiency Scheme alone⁴. As that programme has been expanded since then this figure will certainly have risen, and would rise further if there were sufficient insulation and heating engineers to meet current demand. An enhanced government programme for encouraging domestic energy efficiency would need to address the capacity problems in the industry. Employment opportunities are available across the UK, not confined to more affluent areas, and are equally available in rural regions.

In the *renewables* technology sector, the UK stands in a good position and it can easily exploit its position to develop exciting market opportunities for the renewables technology sector. Denmark is world leader for on-shore wind farm technology, but the UK (with its extensive experience in oil and gas drilling and extraction) is well placed to become a world leader in off-shore wind technology development. Small scale renewables at community level will encourage the development of technologies to burn biomass in district heating schemes, providing local employment opportunities and will also increase acceptability of renewables

⁴ *Energy Efficiency and Jobs: UK issues and case studies*. Energy Saving Trust, London

technologies in the early years of their development. At the household level PV technology is sufficiently new for the UK to take its place as a world expert in the technology if it wishes. Similarly ground-source heat pumps are not so widely used in Europe that any other country is a natural leader. These provide exciting industrial development opportunities for the UK.

We want the Energy Policy Review to recognise:

- **That energy efficiency and renewables will provide job opportunities and export potential**
- **That government policies need to be developed to encourage this.**