

# **Conserving Tomorrow**

## **Energy Policy for the Future**

**Policy Paper 22**

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# Conserving Tomorrow: Summary

*Conserving Tomorrow* sets out Liberal Democrat proposals to reduce the environmental impact of energy use, end the scandal of fuel poverty and assure adequate supplies of energy to future generations.

Our commitment to the principle of *environmental sustainability* means we will adopt tough targets for the reduction of the major energy-related pollutants, including a trend rate of reduction of carbon dioxide emissions of 2% per year.

Since all forms of energy generation cause some level of pollution, however, and because the scope for relatively clean renewable sources is limited, an overall *reduction in energy use through improvements in energy efficiency* is an essential component of our strategy. Our key proposals are:

- The phased introduction of a carbon tax, creating a long-term incentive to save energy and switch to less polluting forms. The revenue generated will be recycled into the economy via cuts in other taxes, with an overall positive economic impact. Those on low incomes will be protected from higher costs through limiting carbon tax increases and providing transitional benefits.
- A major (at least £1 billion per year) programme of investment in energy conservation, organised and funded through the Energy Saving Trust (with EST levies replacing the bulk of the Fossil Fuel Levy currently used to support the nuclear industry) and the energy supply companies. This will target the lowest-income and highest-need households, ending fuel poverty. All households will have access to a range of loans and incentives to invest in energy efficiency improvements.
- The use of mandatory standards to improve the energy efficiency of buildings, machinery, vehicles and appliances; the provision of advice, information and education to encourage consumers to conserve energy.

The achievement of these environmental and social aims implies an *energy market structure* that requires the energy suppliers to treat demand management on a par with supply, with built-in incentives to improve the energy efficiency of their customers rather than sell them ever-increasing amounts of fuel – effectively, to become suppliers of energy services rather than of energy – and ensures that poorer or geographically remote consumers are guaranteed access to supply on terms no less preferential than richer or less remote ones.

This is difficult to achieve under the current Government's plans for the liberalisation of domestic energy supply. We will therefore reform the system of

awarding licences to promote energy conservation investment. A commitment to invest in energy efficiency measures will be a condition of the award of a licence, and suppliers will be monitored by the regulator to ensure they meet agreed targets. We aim to see suppliers compete not only in the provision of energy but also in the provision of energy conservation.

Mergers and take-overs between energy companies should be subject to normal competition legislation, applied with regard to environmental costs and benefits. The separate electricity and gas regulators will be merged into a single effective *Office of Utility Regulation*, with the regulatory system rendered more transparent and accountable.

The *planning system* will be reformed to decentralise planning decisions for small- and medium-scale generation, encouraging greater community participation and a more localised approach to power generation (which we will also encourage through tax incentives). Energy efficiency and environmental impact will become more important factors in planning permission, promoting the use of combined heat and power and creating a presumption against opencast coal mining.

The UK should use the ‘window’ provided by plentiful supplies of cheap gas over the next 10–15 years to invest in energy efficiency improvements and to develop *renewable energy sources* to meet 20% of electricity demand within 15 years. Renewables will be encouraged through extension of the current Non-Fossil Fuel Obligation, an increase in financial support currently available through the Fossil Fuel Levy, and an increase in R&D spending.

Our long-standing objections to nuclear power – cost, safety, waste disposal and risk of proliferation – lead us to conclude that it is neither necessary nor desirable in electricity generation. We therefore aim to see all nuclear stations withdrawn from operation as they reach the end of their design lives; this implies phase-out by 2035 at the latest. In the interim period, the privatised nuclear industry should compete on equal terms with the rest of electricity supply. We will impose a levy to recover FFL money intended for decommissioning but spent on construction of Sizewell B, and ensure that the industry bears the full costs of waste disposal and a higher share of third party insurance. No decision on the long-term disposal of nuclear waste should be taken until a safe option is conclusively identified.

***This energy strategy will bring long-term benefits for everyone. For industry, the efficient use of resources is a key to competitiveness. The switch to cleaner generating technologies and more energy-efficient products, together with the huge backlog of home energy conservation work, will create major export and employment opportunities. For householders, the strategy will provide more comfortable homes and lower energy costs. For everyone, our strategy will produce a cleaner and more healthy environment within the UK while setting an example to the world in averting the potential catastrophic impacts of climate change.***

# *Energy Policy Today*

**1.0.1** The first Liberal Democrat paper on energy policy, *Energy and the Living World*, was published in 1990. Its policy proposals aimed at preventing environmental degradation and assuring supplies of energy to present and future generations. It emphasised measures to improve the efficiency of energy use and to develop renewable sources of energy, and it was the first Liberal Democrat paper to argue for the taxation of energy to reflect the environmental damage caused by its use. It advocated a gradual phase-out of nuclear power.

1.0.2 Many of the policies set out in that paper remain entirely appropriate, but the context in which they must be applied has changed enormously. Since the paper was first drafted, the electricity industry has been privatised, gas supply has been opened to competition and British Gas has ‘demerged’. The more modern part of the nuclear industry is on the point of privatisation. The new regulatory environment has delivered moderate price cuts to consumers, along with very high rates of return to shareholders and job cuts in the energy industries.

1.0.3 The liberalisation of the market for coal in 1992–93 in advance of its privatisation has led to the virtual collapse of the coal industry, whereas oil and gas production has continued to rise steadily. Outside the transport sector, natural gas is now the dominant fuel. Nuclear power currently accounts for 27% of electricity generation, though this figure will decline after 2000. Renewable sources, in contrast, account for only 2%, and this figure is rising only very slowly. (See Figure One, page 26.)

1.0.4 The shape of the electricity market itself is changing fundamentally. In the long run, new, often small-scale, generating technologies and ‘intelligent’ distribution systems will weaken the dominance of separate large scale generating utilities. Energy service providers, offering packages of services (including end-use equipment) tailored to the needs of the individual customer will become increasingly important.

1.0.5 The substitution of coal by gas and nuclear power has contributed to a significant fall in pollution from energy use. The failure to incorporate environmental costs and benefits into economic decisions, however, has meant that energy efficiency levels over the whole economy have hardly improved since the late 1980s. As fuel prices have declined in real terms over the last 15 years, the motivation to invest in energy conservation projects has been largely non-existent, while the regulatory regime has encouraged suppliers to increase sales rather than improve efficiency. Indeed, fuel prices in the domestic sector have only risen by 11% in real terms since 1970, and most of this is accounted for by the imposition of VAT at 8% in 1994. The situation has been exacerbated by the failure of the Energy Saving Trust and Government cuts in the Home Energy Efficiency Scheme.

1.0.6 At the same time, eight million families are affected by fuel poverty, the inability to afford adequate warmth in the home and an absence of capital to make the necessary efficiency improvements. Virtually unknown elsewhere in western Europe, fuel poverty is caused primarily by poor levels of house insulation. Despite requiring high inputs of energy for heating, these homes remain excessively damp and cold, costing the NHS about £1 billion per year for the treatment of cold-related respiratory illness and heart disease, and contributing to an estimated premature 30,000–50,000 deaths each year.

1.0.7 Many of the challenges to energy policy, therefore, remain the same now as in 1990. This paper sets out the Liberal Democrat proposals to reduce the environmental impact of energy use, end the scandal of fuel poverty and assure adequate supplies of energy to future generations.

# *The Liberal Democrat Approach*

**2.0.1 No-one consumes energy for its own sake. What is required by firms and consumers is energy services: heat, light, power, transport. The key question that any political party must address is whether these energy services can be delivered satisfactorily, like other goods and services, through the free operation of the market. Liberal Democrats believe that they cannot. There are four reasons:**

- *Environmental sustainability.* The market price of energy does not reflect the environmental costs of the pollution and resource depletion caused by its use.
- *Social objectives.* Energy is a necessity. We believe that it is unacceptable for any member of society to be deprived of a basic level of energy services due to lack of income.
- *Lack of competition.* Many elements of the energy industry, particularly in distribution, are natural monopolies, and regulation is required to prevent abuse of market power.
- *Strategic security.* Markets alone may fail to guarantee supply in conditions of political disruption in the countries of origin.

Liberal Democrat energy policy is based around the correction of these four instances of market failure. The role of government is to set a framework which takes account of these factors, within which energy companies can compete, diversify and innovate and consumers are enabled and supported in meeting social and environmental objectives.

**2.0.2 *Environmental sustainability.*** Pollution from energy use can be cut through reducing the use of fossil fuels and nuclear power and

increasing the use of renewable sources. Since renewables are limited in extent, however, an equally high priority in the immediate future is an increase in the efficiency with which energy is used and therefore a reduction in overall demand – an approach for which there is enormous scope. We aim to achieve these goals through four key policies:

- Environmental tax reform, beginning a long term switch in the burden of taxation away from employment and income towards pollution and resource use. The key proposal of this paper in this context is the carbon tax (see Section 4.1).
- A major programme of investment in home energy conservation organised through the Energy Saving Trust (EST) and reform of the regulatory structure of the energy industries (see Sections 4.2 and 5.2).
- The use of mandatory standards and information to ensure that new buildings and products are energy efficient, and to encourage consumers to take energy efficiency into account when making purchasing decisions (see Section 4.3).
- Support for renewable sources of energy through use requirements on energy generators and increased R&D (see Section 6.1).

**2.0.3 *Social objectives.*** Fuel poverty should be ended through the priority targeting of energy conservation investments on low-income and high-need households (see Section 4.2), and reforms of the regulatory system to ensure that such households are not discriminated against in the marketplace (see Section 5.2). (Improvements in the social security system also

have a key role to play, and are considered in Policy Paper 7, *Opportunity and Independence for All* (1994).) Regulation also needs to ensure that the system as a whole is capable of delivering adequate supplies of energy without the fear of repeated supply interruptions (see Section 5.2).

2.0.4 *The promotion of competition.* Liberal Democrat policies in this area are set out in full in Policy Paper 16, *Investment, Partnership, Sustainability* (1995); the appropriate reforms of energy market regulation are described in Chapter Five. In addition, we will end the remaining subsidies for the nuclear industry (see Section 6.3) and campaign for the removal of nuclear and fossil fuel subsidies throughout the EU.

2.0.5 *Security of supply.* In the past this argument has generally been used to justify protectionist subsidies for particular favoured industries. The proven reserves of fossil fuels are currently growing faster than their rates of consumption and depletion rates are not high enough to lead to any serious concern over exhaustion in anything other than the long term. In addition, our proposals for investment in energy conservation will reduce the overall demand for energy, and the promotion of renewables will encourage diversity of supply. However, while the UK is currently self-sufficient in energy, the same is not true of the EU as a whole, where security of supply may be more of an issue (see Chapter Seven).

2.0.6 The rest of this paper sets out the strategy which is designed to fulfil these aims. The key proposals of Liberal Democrat energy policy can be summarised as follows:

- Tough targets for the reduction of the major energy-related pollutants, including in particular a trend rate of reduction of carbon dioxide emissions of 2% per year.

The phased introduction of a carbon tax, in order to create a long-term incentive to save energy

and switch to less polluting forms, with the revenue recycled into the economy via reductions in other taxes.

- A major (at least £1 billion per year) programme of investment in energy conservation, targeting the lowest-income and highest-need households. With funding derived from the EST and the energy suppliers, this will both reduce pollution and end fuel poverty.
- The use of mandatory standards to improve the energy efficiency of buildings, machinery, vehicles and appliances; the provision of advice, information and education to encourage consumers to conserve energy.
- The introduction of requirements on suppliers of domestic gas and electricity to meet energy conservation goals.
- Use of the 'window' provided by plentiful supplies of cheap gas over the next 10-15 years to develop renewable energy sources to meet 20% of electricity demand within 15 years.
- The phase-out of nuclear power generation as existing stations reach the end of their design lives (approximately 2035).

2.0.7 This strategy will bring long-term benefits for everyone. For industry, the efficient use of resources, including energy, is a key to competitiveness; further, the switch to cleaner generating technologies and more energy-efficient products together with the huge backlog of home energy conservation work will create major export and employment opportunities. For householders, the strategy will provide more comfortable homes and lower energy costs. For everyone, our strategy will produce a cleaner and more healthy environment within the UK while setting an example to the world in averting the potential catastrophic impacts of climate change.

# Cutting Pollution

**3.0.1 The principle of environmental sustainability lies at the heart of the Liberal Democrat constitution: ‘We believe that each generation is responsible for the fate of our planet and, by safeguarding the balance of nature and the environment, for the long term continuity of life in all its forms.’ Current energy trends, both in the UK and across the globe, are unsustainable.**

3.0.2 The Party’s strategy for building an environmentally sustainable society and economy is set out in full in Policy Paper 8, *Agenda for Sustainability* (1994). In short, it aims to reduce pollution and to conserve resources. This is of particular importance to energy policy; pollution associated with energy use accounts for the majority of the most serious current environmental problems.

3.0.3 All forms of energy result in some pollution. Nuclear power generation creates nuclear waste (see Section 6.3). Even renewable sources cause some pollution, from the energy use required to manufacture the power collection and transmission equipment to the visual and noise pollution caused by installation and operation. This chapter deals with the polluting emissions caused by the burning of fossil fuels, which are the most challenging of all.

## 3.1 Climate Change

3.1.1 Increasing concentrations of greenhouse gases in the atmosphere are responsible for a gradual rise in global average temperature, with potentially catastrophic impacts including sea level rise and an increase in extreme events such as droughts and storms. The economic cost to the UK alone of predicted climate change has been estimated at over £2.5 billion a year for the next hundred years.

3.1.2 The main greenhouse gas is carbon dioxide (CO<sub>2</sub>), which apart from

chlorofluorocarbons (already subject to strict controls because of their ozone-depleting potential) accounts for 87% of UK human-generated greenhouse gas emissions. CO<sub>2</sub> is emitted when fossil fuels (coal, oil and gas) are burnt; emissions have risen rapidly with increasing industrial activity and rising living standards.

3.1.3 The UN-sponsored Intergovernmental Panel on Climate Change (IPCC), in its Second Assessment Report (1996), has confirmed the evidence of a discernible human influence on climate. It estimates that a fall of 60% in current global levels of CO<sub>2</sub> emissions would be needed to return to a pre-industrial level and halt climatic change; this is the ultimate target at which any strategy for environmental sustainability should aim. UK emissions are shown in Figure Two (page 27).

3.1.4 The UK is unusual amongst OECD countries in currently enjoying falling levels of CO<sub>2</sub> emissions, due to the decline of many energy-intensive heavy industries and the switch from coal to gas and nuclear in electricity generation. Thus the present Government believes it will meet the Climate Change Convention target agreed, at the Rio ‘Earth Summit’ in 1992, of stabilisation of CO<sub>2</sub> emissions at 1990 levels by 2000. (This still implies, of course, a rising concentration of CO<sub>2</sub> in the atmosphere). It is *not*, however, on track to meet the target proposed at the Berlin Climate Conference by the Alliance of Small Island States (AOSIS), of a 20% reduction from 1990 levels by 2005. Indeed, UK emissions are projected to start rising once more beyond 2000 (to 15% above 1990 levels in 2010).

3.1.5 Liberal Democrats have consistently advocated a target of reducing CO<sub>2</sub> emissions by 30% over 15 years, with the eventual aim of reaching the IPCC target of 60% reductions.

This target can also be expressed as a trend rate of reduction of 2% per year. The proposals in the remainder of this paper explain how we aim to reduce CO<sub>2</sub> emissions from energy use, through reducing the total amount of energy used in the UK economy, and through fuel switching from fossil fuels to renewables.

3.1.6 The second most important greenhouse gas, methane, is also linked to energy activities. Leaks from older gas pipes in the domestic sector are an important contributor. British Gas implemented a voluntary programme of replacing pipes to reduce emissions by 2% a year. Deregulation and demerger, however, may well threaten this process, as the effect on consumer bills is small and pressures for cost-cutting will intensify. A target for reductions in leakage should become a requirement of a supply licence.

3.1.7 Other aspects of policy on climate change – including transport, development policy, and the design and implementation of the international commitments necessary to reduce emissions of greenhouse gases – will be covered in a policy paper scheduled for publication in 1997, preceding the key conference of the parties to the Climate Change Convention in the autumn of that year.

## **3.2 Acid Deposition**

3.2.1 The use of fossil fuels and derivatives in vehicles, power generation and factories releases acidic gases, principally sulphur dioxide and nitrogen oxides. The resulting ‘acid rain’ inhibits plant nutrition and harms natural habitats (particularly fresh waters), corrodes metals and damages buildings. Over the period 1989–92, 32% of the soil area of the UK, and 17% of its

freshwater area, exceeded the critical load (the level at which damage from acidity starts to occur). This represents a very small improvement on the preceding three years.

3.2.2 The UK is currently on schedule to meet its commitments under the UN Economic Commission for Europe’s (UNECE) Second Sulphur Protocol to cut sulphur emissions by 50%, 70% and 80% of 1980 levels by 2000, 2005 and 2010 respectively. This is due largely to reduced oil and coal burn and the commissioning of flue gas desulphurisation units in power stations. The measures set out in this paper (energy conservation, increased use of renewables and cleaner coal technologies) will have an additional beneficial impact. We will argue for the strengthening of the Sulphur Protocol and also of the EU Large Combustion Plants (LCP) Directive, which controls emissions from individual installations.

3.2.3 The main UK sources of nitrogen oxides are power stations (28%) and road transport (50%). The UK is committed to reducing emissions from the former under the LCP Directive, and is on track to reach the target of a 30% cut from 1988 levels by 1998. EU requirements to equip all new cars with catalytic converters and to implement tougher diesel standards for buses and lorries will substantially reduce emissions levels from road transport. Implementation of Liberal Democrat transport policy, with a shift from private to public and from road to rail transport, will reduce pollution even further. Our aim is to reduce nitrogen oxide levels to 50% of their 1988 level by the turn of the century, a target which the UK should argue for within the UNECE negotiations currently in progress.

# ***Reducing Demand; Encouraging Efficiency***

**4.0.1 A reduction in overall energy use is an essential component of Liberal Democrat energy policy. This is entirely consistent with the maintenance of a high level of energy services because of the appalling inefficiency of current patterns of energy consumption. Government estimates show that 50% of the energy used in the UK could be saved with existing technology alone. Even at current prices, energy use is at least 20% higher than would be economically optimal, representing an economic loss of about 3% of GDP.**

4.0.2 As the Government's recent *Indicators of Sustainable Development in the UK* (March 1996) makes clear, progress towards improving the UK's overall energy efficiency over the last 25 years has been disappointing. While industry has shown rising levels of efficiency (largely due to sectoral restructuring), no progress at all has been made in the domestic or transport sectors, which account for more than two-thirds of energy consumption. Market failures – poor information, lack of access to capital, a regulatory structure which treats energy as a commodity rather than a service – remain deeply entrenched. The sole positive measure taken in the last few years was the passing of the Liberal Democrat-sponsored Home Energy Conservation Act, which requires local authorities to survey the energy efficiency standards of houses in their area and draw up plans to improve them. The potential benefit of this Act has been offset, however, by the Government's recent reduction in funding for the Home Energy Efficiency Scheme by one third.

4.0.3 This chapter outlines our proposals for improving the efficiency of energy use in the UK and thereby reducing overall demand. Our key policy measures are:

- Environmental tax reform: the phased application of a carbon tax to energy sources, with the revenue recycled into the economy through reductions in other taxes. (Section 4.1.)
- A major (at least £1 billion per year) programme of investment in home energy conservation directed through the Energy Saving Trust, a range of financial incentives for energy consumers and via the energy suppliers. (Sections 4.2 and 5.2.)
- The use of mandatory standards to improve the energy efficiency of buildings, machinery, vehicles and appliances; the provision of advice, information and education to encourage consumers to conserve energy. (Section 4.3.)

4.0.4 Improving the efficiency of energy use in transport is an important area of policy; the sector accounts for 30% of energy use in the UK. Liberal Democrat policies for transport are set out in full in Policy Paper 15, *Transporting People, Tackling Pollution* (1995) and are reproduced here where relevant.

4.0.5 It must be remembered, finally, that no-one yet fully understands what motivates people to improve the energy efficiency of their homes and appliances. The energy conservation programme we outline in this chapter must be constantly monitored, and adjusted where necessary, and R&D funding devoted to investigating new ideas and building on measures that prove most effective.

## 4.1 Environmental Tax Reform

4.1.1 The expectation that energy prices will rise in the long term is essential to convince consumers and manufacturers that energy-efficient machines, appliances and buildings are all desirable investments. Yet in real terms UK energy prices have been falling for the last ten years and are lower in the industrial sector than they were in 1970. Raising the price of energy through taxation is the easiest way to reverse this trend. Effectively this represents raising the price of energy to incorporate the pollution costs caused by its use – the much-lauded but widely-ignored polluter pays principle in action.

4.1.2 Analyses of climate change policy invariably show that energy taxation is necessary for all but the mildest CO<sub>2</sub> reduction targets. Furthermore, if the tax revenue is fed back into the economy through reductions in other taxes, analysis almost invariably shows positive effects on growth, income and employment. This is why the Party has consistently favoured environmental tax *reform*; we have not proposed additional taxes, but replacements for existing ones. (These arguments are set out at greater length in Federal Green Paper 32, *Taxing Pollution, Not People* (1993).)

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**The carbon tax is the key element of environmental tax reform, a steady shift of the burden of taxation from labour and income to pollution and resource depletion.**

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4.1.3 Earlier Party policy papers supported the introduction of the carbon/energy tax proposed by the European Commission in 1992. While recognising the unsatisfactory features of this particular scheme, at the time it seemed the best way to make progress. It now seems unlikely, however, that the Commission model will ever be implemented in its present form. While continuing to argue for standard taxation

throughout the EU, we do not believe that environmental tax reform in the UK should be delayed until this is achieved. The environmental imperative is too urgent; and in any case the overall impact on the UK economy will be positive.

4.1.4 We will therefore introduce a phased carbon tax. This will be applied to all energy sources whose use emits CO<sub>2</sub> at the point at which they enter the economy (ie extraction or import). The level of the tax will be proportional to the carbon content of the fuel, penalising the most polluting forms (coal is worse than oil, which is worse than gas). CO<sub>2</sub>-producing renewable sources will be exempted, as the gas they emit is either fixed during growth (eg biomass) or would be emitted anyway (eg landfill gas).

4.1.5 The aim of the carbon tax is to create the *expectation* that energy prices will rise, steadily and gradually, for the foreseeable future. Energy conservation then becomes a powerful incentive for designers and manufacturers, and for consumers when they purchase appliances, vehicles and machinery. The tax should therefore be introduced at a low level, with phased annual increases, allowing industry and consumers time to adjust.

4.1.6 We view the carbon tax as the key element of our long term aim of environmental tax reform, a steady shift of the burden of taxation from labour and income to pollution and resource depletion. Revenue from the tax will therefore be fed straight back into the economy, through reductions in other taxes, ensuring that the overall impact on the economy was positive.

4.1.7 Those on low incomes will be protected from higher fuel prices in three ways:

- We will give an energy costs guarantee: a limit on the rate of carbon tax increase to inflation plus an efficiency incentive. This incentive would be equivalent to the savings that could be expected to be made by the average family through gains in energy efficiency from improved domestic heating, appliances and home insulation; it would be

calculated by an independent body. Householders taking reasonable steps to improve the efficiency with which they used energy would therefore see no rise in their energy bills.

- Our home insulation programme will both improve standards of heating and reduce fuel consumption (see Section 4.2).
- Since the programme will take time to implement, however, transitional protection will be offered through a special heating costs voucher provided to households in receipt of benefits living in houses with energy efficiency ratings lower than a specified figure (identified via the mechanism provided by the Home Energy Conservation Act). The voucher could be used either to offset the relevant fuel bill or to pay for specified energy efficiency improvements; in the latter case, the voucher will be increased in value by a bonus to encourage this option.

4.1.8 The overall impact of the carbon tax on the economy, as well as the environment, will be positive. It will create a powerful long-term incentive to save energy and cut pollution. Industry will benefit from efficiency incentives and new markets for energy-efficient products and services, which will more than offset the effects of slowly-rising energy prices. The phased nature of the taxation will allow ample time to make the necessary investments.

4.1.9 Higher energy prices do not preclude successful and competitive economies: Japan and Germany, for example, both have significantly higher energy costs than the UK (49% and 41%, respectively). Conversely, low energy prices tend to be associated with inefficient and wasteful economies, such as those of the pre-1989 Soviet bloc. Countries which have introduced carbon taxes – including the Netherlands, Sweden, Denmark and Finland – have not experienced any negative impact on international competitiveness, and are often now raising tax rates.

4.1.10 Other reforms of the tax system will contribute to energy efficiency and environmental sustainability:

- We will correct the current imbalance by which VAT is imposed on energy conservation materials and products (insulation, draught-proofing, heating controls, etc) at twice the rate as on domestic fuel. We will maintain VAT at 8% on fuel, while lowering it to 8% on energy conservation materials.
- We will graduate Stamp Duty, which is payable when houses are bought, according to the energy efficiency of the home. A mandatory requirement for all houses to be energy-rated before they are sold will provide the necessary information.
- Taxation of transport should help improve vehicle energy efficiency. We will therefore retain the road fuel duty escalator at 5% per year in real terms. Vehicle Excise Duty will be reduced for vehicles that reach a set fuel efficiency standard; this will be paid for by increases in VED for energy-inefficient cars. We are also committed to the introduction of road pricing in urban areas, with the revenue hypothecated to support improved local public transport. Aircraft fuel, which is currently untaxed in the UK, should also be subject to the polluter pays principle; we will argue for EU-level (or if possible wider) taxation.

## 4.2 Energy Conservation Programme

4.2.1 Environmental tax reform is essential to create a long-term framework of incentives for energy conservation. But the environmental challenge is too urgent to wait until the carbon tax has taken its full effect. Furthermore, in the domestic sector, many households – especially the least well-off, who tend to live in the most energy-inefficient homes – lack the capital to invest in energy-saving. Direct subsidy is therefore necessary for energy conservation investments for the poorest households – which can be identified through the operation of the Home Energy Conservation Act. There are two

main routes to provide such subsidy: the Energy Saving Trust and the energy suppliers.

4.2.2 Chapter Five explains how we aim to reform the regulatory framework for the energy suppliers to require them to improve the energy efficiency of their customers' homes and businesses. Investment in energy efficiency measures will be a requirement of the licence issued to suppliers, helping to transform the supply companies into suppliers of energy services, with built-in incentives to conserve, rather than simply to sell, energy.

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***The energy conservation programme will be targeted on low-income and high-need consumers as a matter of priority.***

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4.2.3 The other route for funding the energy conservation investments described in this section is the Energy Saving Trust. Established by the current Government, the EST has been hamstrung by the refusal of the gas regulator and, to some degree the electricity regulator, to allow adequate funding through levies on domestic energy bills. Within our revised regulatory framework, however, such levies will replace the bulk of the Fossil Fuel Levy currently used to support the nuclear industry (see further in Chapter Six), significantly expanding the EST's role. We will review the structure, responsibilities and management of the EST in line with this greater level of responsibility.

4.2.4 We aim to see a minimum of £1 billion a year (from all sources) spent on raising energy efficiency standards in the UK, through improving home insulation, heating systems and domestic appliances. This energy conservation programme will be targeted on low-income and high-need consumers as a matter of priority. The figure of £1 billion a year would provide sufficient resources for a 15 year programme of 50–100% grants to 8 million low income households to improve both insulation levels and

install efficient central heating. We will increase funding for the Home Energy Efficiency Scheme, which targets grants on particular groups such as those in receipt of benefits.

4.2.5 Local authorities must be a key player in the programme, working with the EST and suppliers to carry out comprehensive energy conservation work in council properties. Councils should be enabled to designate 'energy action areas' (similar in conception to housing action areas) for concentrated initiatives on home insulation, combined heat and power schemes, and so on. Where appropriate, housing associations and private home-owners within such areas should be offered the opportunity to be included in such programmes. Local authorities could also fund such improvements directly through the release of some of their capital receipt cash reserves. The authority would receive a return on this investment through higher rents, which would still leave tenants both warmer and better off financially.

4.2.6 Private landlords will be required to have their properties rated under the home energy rating scheme and to provide this information to existing and prospective tenants. Procedures to set fair rents will be amended to take into account the energy rating evaluation. A minimum energy rating standard will also be made a requirement for homes to be classified suitable for human habitation. For private tenants in receipt of benefits, the special heating costs voucher could be transferred to the landlord, provided it was used to pay for energy efficiency improvements, benefiting the tenant through lower energy bills.

4.2.7 We also aim to extend assistance to households other than the poorest. We will introduce a system of low-interest five year loans for a defined range of energy conservation investments. Loans would be paid off via additions to energy bills; energy suppliers would be statutorily required to act as collectors.

4.2.8 Government itself, central, regional and local, must play its part in the conservation programme in its own properties and equipment. Central government's failure so far to implement even the modest targets of the Conservatives'

Climate Change Programme sets a poor example to the rest of the country and must end.

4.2.9 Much of the energy conservation work this programme requires will be carried out through sub-contracting. We will encourage the development of commercial services offering effective domestic energy conservation work to guaranteed performance levels by establishing a registration scheme for companies providing such services. This work will have significant potential for job creation, as most energy conservation work is labour-intensive. Estimates suggest that a £1 billion annual programme would create about 60,000 extra jobs directly.

### 4.3 Transforming the Market: Labels and Standards

4.3.1 Business is used to making investment decisions based on payback criteria and many energy efficiency investments provide excellent commercial rates of return – and will do so even more after the introduction of the carbon tax. On the other hand, the public rarely make judgements based on lifetime costs, instead concentrating on the initial purchase price. Our final set of proposals is therefore aimed at transforming the market so that energy costs become more visible and consumers are encouraged to take appropriate actions.

4.3.2 Schemes to provide information about energy performance do exist but are not yet effective, partly because they are neither universal nor explicit. We propose:

- Making information about energy performance a mandatory requirement when any building requiring heating or cooling is marketed.
- Extending the mandatory EU appliance energy labelling scheme and making the information clearer by including average lifetime energy costs to compare against the product price.

- Augmenting the current mandatory provision of fuel consumption information for vehicles by the inclusion of average lifetime fuel costs and by relating the tests to more realistic driving conditions.
- Encouraging ‘ecofeedback’ schemes that help householders assess the efficiency of their energy consumption on a regular basis; with the introduction of smart metering, the potential for this approach will increase.
- Establishing a mandatory requirement for all companies with annual energy consumption above a set level to incorporate an energy audit in their annual report, including details of any plans to improve energy efficiency.

These measures will become increasingly effective as market signals on energy pricing begin to change through the application of the carbon tax.

4.3.3 Provision of information, however, is less effective than the introduction of mandatory energy efficiency *standards*. Mandatory standards aimed at the minimum life cycle costs for the consumer can give savings of the order of 40% for many product groups. Higher standards for appliances and machinery will not only reduce energy use but also improve the UK’s competitiveness in world markets, which are increasingly demanding low-energy products. For domestic products such as fridges, freezers, washing machines and so on, we envisage minimum standards being set for 3–5 years ahead, consistent with achievable technological advances. Low-energy light bulbs, for example, should gradually replace inefficient tungsten-filament bulbs.

4.3.4 The EU SAVE (Specific Actions for Vigorous Energy efficiency) Directive 93/76 provides the framework for many regulatory measures such as labelling, and standards for buildings and tradable goods at the EU level. Progress on implementing the programme has been disappointing, however, and we will argue within the EU for speedier action. Government procurement policy should also encourage the development of higher standards – as has

happened in the US, for example, with the 'Energy Star' system for computers, now a requirement for government purchase. More widely, repair, reuse and recycling of all products should be encouraged to reduce energy use in manufacture and disposal; see *Agenda for Sustainability* for further details.

4.3.5 Cars consume more energy and cause more pollution than any other single product. Despite substantial advances in design and technology, little improvement has been made in the fuel efficiency of the average British car, largely because the potential gains have been taken by increases in engine performance. Given the international nature of the motor market, this problem can only be tackled at the European level. We will therefore argue for the EU to develop evolving efficiency standards aimed at reducing the fuel consumption of the average new car at a rate of at least 30% a decade.

4.3.6 The third key area for mandatory standards is, of course, buildings. Even after the

1995 revisions, the UK's building regulations only require insulation standards achieved in other northern European countries 30 years ago. There are now many examples of houses built to far higher standards at little or no extra capital cost. We aim to raise standards by the year 2000 to levels currently in place in Sweden, and thereafter to set a programme of further improvements, to be introduced on a timescale that will allow the building industry time to adopt improved design and construction methods.

4.3.7 The provision of advice on ways to save energy is an essential component of our strategy. Consumer Association surveys have found the advice currently offered by the energy suppliers to be in general hopelessly inadequate. The Local Energy Advice Centres established by the EST have performed far better. We will ensure the EST sets up more local advice centres and advertise their services more widely – for example on the backs of electricity and gas bills.

# Regulation and Planning

**5.0.1 The achievement of Liberal Democrat aims for energy policy in the areas of environmental sustainability and social provision of energy services will be assisted by the introduction of greater competition in energy markets. The production and use of energy at the lowest economic cost frees up resources for investment in energy conservation. Reductions in the prices charged by the energy suppliers mean that our proposed carbon tax (see Section 4.1) and EST levies (see 4.2.3) can be higher without imposing extra costs on consumers, permitting higher levels of investment in energy conservation.**

5.0.2 Energy markets can be split into three sectors:

- Production (gas)/generation (electricity): currently accounts for 42% and 59%, respectively, of the costs to a typical residential customer.
- Distribution and transmission: accounts for 42% (gas) and 31% (electricity) of costs.
- Supply to household (including metering): accounts for 16% (gas) and 10% (electricity) of costs.

5.0.3 Our aims are to increase efficiency gains through competition – for which there is greatest scope in the production/generation sector – while promoting energy efficiency investments and ensuring that suppliers do not ‘cherry pick’ (ie prefer customers with higher incomes, better records of prompt payment, lower costs and larger consumption over their opposites). This will require reform of the liberalised markets for domestic gas and electricity supply which the present Government is currently introducing.

5.0.4 The operation of the energy market will be overseen by our proposed Department of Natural Resources, taking overall responsibility

for environmental protection policy and oversight of energy policy and regulation (see *Agenda for Sustainability*). Our proposals for reforming regulation are set out in 5.3 below.

## 5.1 Production/Generation: Promoting Competition

5.1.1 As Liberal Democrats argued at privatisation, the structure of the electricity generating market was deeply flawed, with the two major fossil fuel generators, National Power and PowerGen, accounting for 78% of market share. Although this has fallen, to 60% in 1994–95, this is still a large enough share that they have a predominant influence on setting prices in the pool (the market for electricity). The electricity regulator has accordingly required the two companies to dispose of some 10% of their capacity to competitors. We believe that this process should continue until genuine competition is more nearly achieved, with no single company able to exercise an undue share of market power.

5.1.2 Gas production is already a fairly competitive market. When British Gas was the sole purchaser, however, it was able to exert considerable market power over the producers. This monopsonistic single-purchaser status has already been eroded by the introduction of competition for non-domestic supply, and will be ended finally when gas markets are fully liberalised in the domestic sector.

5.1.3 The transmission and distribution of electricity and gas is a natural monopoly with little prospect of achieving effective competition. For companies providing infrastructure services only – the electricity grid and gas pipelines currently provided by the National Grid and TransCo International – we believe that the regulator should control prices by setting a maximum rate of return on assets (rather than the RPI-X pricing formula used for supply; see

also Policy Paper 16, *Investment, Partnership, Sustainability* (1995)). The regulator should ensure that the efficiency of transmission is improved, and also that the connection of independent generators to the networks is not hindered (see Section 5.4).

## 5.2 Domestic Supply: Improving Efficiency

5.2.1 From 29 April 1996, domestic gas supply in south west England has been liberalised, with consumers able to choose between competing providers. Other areas of southern England are scheduled to follow during 1997, and complete liberalisation of the domestic gas and electricity supply markets throughout the UK is planned from 1998 – though there are doubts about the feasibility of this date, particularly for electricity. Competitive markets already exist for large users (above 2,500 therms for gas and 100kW for electricity).

5.2.2 Liberal Democrat objectives for domestic supply rest on the concept of integrated resource planning (sometimes called least-cost planning), where the supplier is required to consider whether energy efficiency improvements (ie reduction of demand via conservation) could more cheaply meet the customer's demands for energy services. Indeed, such planning will shortly become a requirement throughout the EU, when draft directive COM(95)369 is adopted. As explained in Chapter Four, such an approach is necessary for both environmental and social reasons.

5.2.3 However, integrated resource planning is rendered more difficult in a market where there is open competition for supply, since there is no incentive for a supplier to invest in energy efficiency for customers if they cannot be sure of recovering the cost of that investment through selling them energy supplies – as the customer can switch to another supplier which can offer lower costs because it has not so invested. Competition will be focused almost entirely on the price of the energy supplied even though the most efficient *service* may come through investment in conservation rather than simply

buying marginally cheaper fuel. Such a system undermines the market for energy efficiency, even if the cost of energy efficiency plus reduced consumption is less than that of supply alone. EST figures show that the average cost of generating a kilowatt-hour (kWh) of electricity is 2.69p, while the average cost of saving a kWh through its conservation programme is only 1.35p.

5.2.4 Since supply costs amount to only 10% of the total costs of electricity distribution, and 16% of gas, the scope for cost reductions for suppliers through efficiency gains is small. The energy conservation work currently undertaken by British Gas and the regional electricity companies (RECs) seems therefore likely to fall foul of cost-cutting pressure in the competition for customers. The consequence of electricity market liberalisation in Norway, in 1991, was a halving of utility investment in energy efficiency. Similarly, British Gas has recently announced that it will be closing down its energy efficiency advice service on the grounds of cost. In addition, the presence of competing suppliers is almost bound to lead to a condition of over-supply, with accompanying damage to the environment.

5.2.5 In terms of social provision, suppliers are likely to 'cherry pick'. They will prefer customers with higher incomes, better records of prompt payment, lower costs and larger consumption over their opposites.

5.2.6 We will therefore reform the system of awarding licences to promote energy conservation investment. A commitment to invest in energy efficiency measures will be a condition of the award of a licence, and suppliers will be monitored by the regulator to ensure they meet agreed targets. Further reforms – such as permitting longer-term contracts only for suppliers offering the most ambitious programmes – will be considered. We aim to see suppliers compete not only in the provision of energy but also in the provision of energy conservation, building significant incentives for energy efficiency improvements into the structure of the market.

5.2.7 We recognise that suppliers will be less likely to offer energy conservation work to households with the greatest need for energy efficiency improvements, since it involves higher costs for them. We will therefore direct the bulk of the funding available through the Energy Saving Trust (see Section 4.2) to such households.

5.2.8 Energy supply is currently paid for through a standing charge plus unit use system. The Party has been committed to the abolition of the standing charge for the most vulnerable members of society. However, recent studies have led us to conclude that there are more appropriate ways to help such groups. The liberalisation of the domestic supply market will allow customers to benefit from a variety of different charging systems offered by competing suppliers suitable to their individual circumstances. We welcome this diversity and the choice it offers consumers, and will encourage suppliers to offer packages which would promote the efficient use of energy (such as a two-part tariff, with the first tranche of units charged at a lower, 'basic' rate, and all additional use at a higher rate). Such packages would be one way for suppliers to fulfil their licence requirement for energy conservation.

5.2.9 We will provide improved legal protection for consumers, including guaranteed security of supply with compensation paid for failures. With the ready availability of prepayment meters and tokens, we can see no reason for disconnections that inevitably cause hardship and potential health risks and will ban disconnections to legally-occupied domestic premises. The extent of 'self-disconnection' as a result of prepayment metering remains unknown, however, and should be investigated as a matter of urgency with a view to introducing appropriate safeguards. Suppliers will be prohibited from charging higher prices to customers on the grounds of income or location.

## 5.3 Improving Regulation

5.3.1 Controls on mergers of energy companies should be applied primarily through standard competition legislation, applied with

regard to environmental costs and benefits. Once markets are fully competitive, 'horizontal integration' between gas and electricity suppliers could make environmental sense, making integrated resource planning easier. Mergers of energy suppliers in the same field, however, would tend to reduce competition for franchises and should generally be presumed against if they would exceed a set percentage of the market. Similarly, 'vertical integration' of suppliers and generators can have environmental benefits, but this needs to be balanced against the effect on competition; we will in general presume against it until both generation and supply markets are fully competitive.

5.3.2 The traditional distinctions within the energy industries are likely increasingly to blur, with electricity and gas services coming together. We will therefore merge the current two regulatory bodies Ofgas and Offer under the aegis of a single Office of Utility Regulation (see *Investment, Partnership, Sustainability* for further details). Regulation of the energy industry (gas and electricity) would form one subdivision of the combined Office. At the same time we will strengthen the resources of the Office to ensure that it possesses a high level of technical knowledge and expertise; this would mean recruiting staff from the energy industries as well as the civil service and providing proper training and a career structure in regulation.

5.3.3 The duties of the regulator should be revised in line with the priorities set out in this paper – primarily, to promote environmentally sustainable development, particularly energy conservation (the regulators are currently required merely to 'take into account' environmental objectives). The regulatory system must also be transparent and accountable. At present, decisions too often seem arbitrary and are rarely properly explained. Substantive decisions should only be made by the regulator after public hearings, and they should be accompanied by a published report. The regulator should have the same rights of access to company records as DTI inspectors, including unannounced visits to companies to inspect records. Accountability should be assured by naming individual directors of the Office

responsible for key components (for example, competition; gas; electricity; consumer protection; environmental sustainability). A Parliamentary Select Committee should be created to monitor the Office.

5.3.4 We will also establish a single body to represent consumers, independent of the industries and the regulator and modelled on the effective and successful Gas Consumers' Council. This body will have a statutory right to information from both the Regulator and the industry, and will have a right of representation both to the Office and to the Select Committee.

## 5.4 Planning

5.4.1 The current system of planning controls for the construction of energy plants and facilities is flawed. It has not adapted to the diversification of energy generation from a relatively small number of large coal, oil and nuclear stations to a far larger number of comparatively small gas-powered stations and an increasing range of renewable energy sources.

5.4.2 We believe that responsibility for planning decisions on medium- and small-sized stations and renewable sites with an output less than 400MW should be passed down to unitary and county councils (and ultimately to our proposed Scottish and Welsh Parliaments and English regional authorities) so bringing accountability closer to the people affected. This change should be accompanied by a requirement for structure and local plans to include details of how local energy requirements are to be met.

5.4.3 We recognise that not all areas will be able to meet their own needs and that some national coordination is essential to ensure security of supply. This role will remain with government at the English, Scottish and Welsh levels, which would have the right to demand amendments to structure and local plans that did not meet the targets set by central government. This process would parallel that for housing, where central government already has such target-setting and amendment powers. Responsibility within central government should be switched from the Department of Trade &

Industry to our proposed Department of Natural Resources, which would be more sensitive to environmental priorities.

5.4.4 Apart from strengthening democratic control over the area of planning, this devolution will have two other benefits. First, it will strengthen the ability of local authorities to take a comprehensive approach to meeting their obligations under the Local Agenda 21 process to act to minimise the consequences of local activities on the environment. Second, it should help the process of developing a more localised approach to energy generation. This should assist the development of combined heat and power, energy-from-waste incineration, and wind, biomass and solar sources, as well as encouraging the spread of more localised gas generation. A requirement on power station developers to minimise the environmental impact of the transmission of the energy produced will also create a presumption in favour of small-scale local generation.

5.4.5 We will support the development of this more local approach through tax and other incentives. Local opposition to wind turbines, for example, is often partly due to local people seeing no benefit for themselves from such a development. This would change if the UK adopted the Danish approach, in which local communities of as few as 40 or 50 households build their own turbines, using the electricity directly and linking to the grid to sell surplus power or top up local needs. We will encourage such schemes by, for example, exempting any profits from tax.

5.4.6 There are some major energy schemes, ranging from future applications for nuclear plants to proposals for large tidal barrage schemes, that must be considered from the national (English, Scottish or Welsh) interest. These should be subject to two-stage planning inquiries. The first stage would assess the need for a new generation plant. If such a need was accepted, the second stage would examine such normal planning issues as pollution, transport and the visual impact and might – where practicable – consider more than one site in order to identify the least damaging. The results of

such an inquiry process should be subjected to Parliamentary approval.

5.4.7 Planning requests for all thermal power stations should be assessed on the efficiency of power generation expected to result. The recent ‘dash for gas’ stations, for example, although environmentally beneficial in that they helped to replace more polluting coal-fired stations, also represent a massive missed opportunity in failing to incorporate CHP technology. We will adopt a presumption against any new thermal generation projects which do not have high efficiency standards.

5.4.8 The planning process has particular difficulty dealing with some of the newer energy generation technologies. Waste incineration raises concerns about local pollution; wind turbines are almost inevitably sited in visually prominent positions; tidal barrages have major consequences for landscape and wildlife; biofuelled stations may require substantial transport movements, and so on. The planning system needs to balance these problems against the reductions in polluting emissions that are their chief benefit; we will initiate an urgent review and appropriate guidance.

5.4.9 Within the coal mining industry, there has been a shift towards opencast techniques, while deep-mined production has more than halved since 1990. While in some communities opencasting is important as a source of employment, it can also cause significant damage to local amenity and habitats. The local community is best placed to strike the appropriate balance between these objectives. Following a comprehensive environmental impact assessment, planning authorities should be free to refuse or accept applications without interference from central government (within the

context, of course, of normal countryside protection policies).

## **5.5 Decommissioning Offshore Installations**

5.5.1 The restrictions on dumping at sea applicable to the offshore oil and gas industries should be no less stringent than those which apply to onshore industry. Disposal procedures for offshore installations need to be considered type by type, but additional regulation is required to set minimum standards for the environmental consequences of offshore decommissioning activities. The cheapest option in the short term may prove expensive and wasteful in the long term, and the emphasis must be on preventing pollution and conserving resources.

5.5.2 An independent body of scientists should therefore be appointed under the aegis of the Environment Agency to assess on a type-by-type basis the best environmental option for disposal. This assessment would cover both the risks from contamination and the resource benefit or disbenefit of reuse or recycling. The final decision would rest with the Secretary of State for Natural Resources and would be subject to review by the relevant Parliamentary Select Committee.

5.5.3 To avoid any future problems in meeting the considerable costs of disposing of offshore structures, the owners of such structures will be required to provide a guaranteed bond to cover disposal costs as part of the licensing system. The UK should also work at international levels to ensure that all new offshore installations are designed to be dismantled for recycling or safe disposal.

# Energy Sources

**6.0.1 The fuel mix of the UK economy has changed substantially in the last decade, and under Liberal Democrat proposals will continue to change – but this time the driving forces will be the imperatives of environmental sustainability. By 2010, coal use in the electricity sector will have fallen to 20–25 million tonnes, the amount that can be burnt in the desulphurised power stations. The volume of gas likely to be available from Russia in the next 10–15 years will keep prices so low that gas will remain the dominant fuel for at least that long. The UK should use this ‘window’ to invest in energy efficiency improvements and renewable sources of energy so that by the time gas prices begin to rise, the country is well on track towards a sustainable future.**

## 6.1 Cleaner Technologies

6.1.1 Support for renewable sources of energy plays a key part in Liberal Democrat energy policy. Some of the longer-established renewables, including onshore wind turbines and landfill gas, are becoming increasingly competitive with fossil fuel sources. Introduction of the carbon tax, which will not affect the cost of renewables (see 4.1.4), will help even more.

6.1.2 Renewable energy technologies are still so undeveloped, however, and their environmental benefits so high, as to justify additional support. We reaffirm the objective of generating 20% of the UK’s electricity requirements from renewable sources within 15 years, with a long term target of 30%. Government figures show that a target of 100 TWh per year (30% of current needs and a higher percentage of future demand assuming progress on energy conservation) is achievable by 2015.

6.1.3 Support will be provided through:

- Increased use of renewables which are cost-effective in the short term, such as onshore wind power, landfill gas and biomass. We will impose gradually rising requirements on the electricity generators to contract for specified amounts of renewable output, together with continued reimbursement for the generators for the higher costs of such purchasing.
- Increased research, development and demonstration funding for renewable sources likely to be cost-effective in the medium and long term, including shoreline and offshore wave power (already almost economic), solar cells and offshore wind, and for storage and transfer systems such as batteries, bulk thermal techniques and hydrogen storage.

6.1.4 The former two forms of support are currently organised through the Non-Fossil Fuel Obligation (England and Wales) and the Scottish Renewable Obligation, and the Fossil Fuel Levy, though the bulk of NFFO and FFL support goes towards the nuclear industry. We will end the nuclear subsidy element (see Section 6.3) but retain and expand the renewables elements, renaming the policy instruments the Sustainable Energy Obligation and Sustainable Energy Levy. The rest of the FFL will be replaced through the EST levies described in 4.2.3 and directed to energy conservation.

6.1.5 Levy funding will also be made available for research, development and demonstration funding for other new and existing cleaner technologies. This will include the development of CHP technology, and continued development of cleaner coal technologies such as integrated gasification combined cycle; coal, as the fossil fuel with the largest reserves, will have a long term future in energy generation. This investment will help not only to achieve our environmental objectives but also to create products for the growing world market for such technologies.

## 6.2 Combined Heat and Power

6.2.1 CHP will play a crucial role in our energy strategy. CHP plant is highly efficient (80%+, compared to 35% for conventional power stations and 55% for newer combined cycle gas turbines) and frequently small in scale. The proposals we have made in this paper for carbon tax (Section 4.1), local power generation (5.4.4) and efficiency requirements for thermal power stations (5.4.7) will all help to accelerate its introduction. We believe a target of 10GW of CHP by 2010 is entirely achievable.

## 6.3 Nuclear Power

6.3.1 16 nuclear power stations currently operate in the UK: eight Magnox reactors (the oldest), seven advanced gas-cooled reactors (AGRs) and one pressurised water reactor (PWR), Sizewell B, completed in 1994. The stations were withdrawn from electricity privatisation in 1989 due to the cost of the guarantees likely to be required by investors to cover the costs of decommissioning and reprocessing spent fuel. The operation of the FFL since then has, however, built up a large sum supposedly to cover these costs, and by the time this paper is to be debated, the AGRs and Sizewell B should have been privatised in one company (British Energy), with the Magnox plants passing to British Nuclear Fuels Ltd, still in the public sector.

6.3.2 Liberal Democrats have four long-standing concerns about nuclear power:

- Costs: the privatisation process has made transparent the high overall full fuel cycle cost of nuclear-generated electricity, including the costs of decommissioning and waste disposal.
- Safety of operation: although the British nuclear industry is proud of its safety record, public anxiety remains about accidental radioactive releases and the long-term effects of low-level doses of radiation. Privatisation may well lead to new pressures to cut costs.

- Disposal of radioactive wastes: no agreed safe solution exists for the long-term management of radioactive waste, which remains highly toxic over hundreds of years.
- Risk of proliferation of nuclear material.

6.3.3 Taken together, these concerns led the Party to conclude (in 1990) that nuclear power was neither necessary nor desirable for electricity generation, a position towards which the other parties have since been forced to edge. Investment in renewable sources and in energy conservation are both more cost-effective and more environmentally sustainable methods of meeting energy demand. We therefore concluded that no further nuclear power stations needed to be built and that the existing ones should be withdrawn from use as they reached the end of their operating lives, with the last one closing by 2020 at the latest. (This predated the commissioning of Sizewell B.)

6.3.4 Nothing has happened in the last six years to change our views; we still believe that there is no medium- or long-term case for the use of nuclear power in electricity generation. In the short term, the nuclear stations should be kept running until the reduction in energy demand and the development of renewable sources allows them to be withdrawn without disruption to UK energy supply. We will retain our target for the phasing out of all nuclear stations, including Sizewell B, as they reached the end of their safe operating lives; this implies all stations other than Sizewell B closing by 2020, and Sizewell B shutting down by about 2035 at the latest. As progress is made on energy conservation and cleaner generating technologies, we will review this timetable to see if it could be brought forward.

6.3.5 The privatised part of the nuclear industry should compete on equal grounds with the rest of the electricity supply industry; we will therefore end all subsidies. This implies:

- Introduction of a levy on nuclear power, with the proceeds paid into a segregated fund for public sector Magnox liabilities. This is necessary because Nuclear Electric has

invested £1.8 billion of FFL receipts in running Sizewell B and the AGRs on the assumption that profits generated would pay for future decommissioning. However, part of the FFL money was intended for Magnox decommissioning. A segregated fund will ensure that decisions on the closure and decommissioning of the Magnox stations are not affected by public expenditure constraints.

- The nuclear industry should carry a greater share of third party insurance. Currently the industry's liability is limited to £140 million, with government paying any claims that are met above that figure. We will argue for a higher operator limit within the framework provided by the Paris and Brussels Conventions on civil nuclear liability.
- Extension of the segregated fund set up for privatised decommissioning liabilities to cover all post-operational liabilities, including all stages of decommissioning, reprocessing of spent fuel remaining in the reactor after closure, and waste management. This will ensure that the costs do not fall on taxpayers by default.
- Amendment of Schedule 12 of the Electricity Act 1989 (which enables government to provide grants, loans and guarantees in respect of liabilities up to £2.5 billion) so that it does not apply to private sector nuclear companies.

6.3.6 We will assess whether the closure programmes for the ageing Magnox stations need to be accelerated on the grounds of safety or cost, insisting that all costs are made fully transparent. We will welcome any decision by British Energy to bring forward the closure of the privatised stations on economic grounds. Many of the AGRs have a poor technical record – Dungeness B, for example, had to be closed for lengthy and expensive repairs in 1995 – and it seems likely that most, if not all, will be closed on either cost or safety grounds before the end of their design lives.

6.3.7 The safe handling and storage of the radioactive waste that is the inevitable consequence of nuclear generation has been a major contributor to its high real costs. Despite years of costly research, no long-term safe option for the treatment and disposal of such waste has been identified. We therefore believe that no decision on long-term disposal methods should be taken yet. Radioactive materials should continue to be stored in sites that can be monitored and where, if unforeseen problems arise, the waste can be recovered and treated in a different manner. Research programmes should be maintained to identify how such waste should be dealt with in the future

6.3.8 Liberal Democrats opposed the opening of the THORP thermal oxide reprocessing plant on both environmental and economic grounds. Its initial justification was the need to provide materials for a growing nuclear industry, which no longer exists. Since storage rather than reprocessing remains the more environmentally acceptable option for dealing with nuclear waste, we will phase out the reprocessing of spent nuclear fuel except where this is proved necessary for safety reasons. We will ban imports of material to be reprocessed from 2002 (the earliest date permitted in BNFL contracts).

6.3.9 We therefore expect the focus of nuclear industry operations to shift from construction to decommissioning tasks, where skilled workers and state-of-the art technical innovation will be in demand for many years to come, both in Britain and abroad (especially in eastern Europe and the former USSR). In particular, there is a need for the development of techniques for early dismantling rather than deferred sarcophagus decommissioning in order to minimise the burden of responsibility handed down to future generations. Research programmes should be maintained (in conjunction with the EU) both in decommissioning techniques and in new technologies such as nuclear fusion – though this is such a distant prospect that it hardly deserves the priority it currently enjoys against renewable energy sources and energy efficiency strategies.

# *The European Dimension*

**7.0.1 In December 1995 the European Commission issued a White Paper on Energy Policy for the European Union. This is due to be considered at the Intergovernmental Conference which started in March in Turin. Liberal Democrats support the development of a clearly defined and coherent energy policy within the EU and broadly welcome the Commission's White Paper.**

7.0.2 The paper established three main objectives:

- Overall competitiveness through market integration.
- Security of energy supply.
- Environmental protection.

7.0.3 Within continental Europe there is still some way to go in market integration, particularly in the gas and electricity markets. We believe that the approach we have adopted in this paper would be of benefit to many continental energy markets as well. Subsidies which distort the market and cannot be justified in terms of environmental externalities should be ended.

7.0.4 We recognise that there is a greater problem over security of energy supply within the EU as a whole than there is in the UK, which has been self-sufficient for many years and will continue to be so. However, we cannot be isolated from trends within the Union. It is at present 50% dependent on imports of energy, and this is predicted to rise to 75% by 2020. While overall there are estimated to be adequate reserves to meet this large import requirement, much of it originates in parts of the world with a high degree of political instability. It is therefore necessary to adopt measures within the EU to provide safeguards against possible adverse eventualities.

7.0.5 Environmental protection and energy conservation are matters particularly well suited to concerted European action, and Liberal Democrats strongly support it. While the carbon/energy tax proposal is at present stalled, there are many other EU initiatives which should be promoted, including the SAVE programme launched some years ago and the Altener programme on renewables. We regret the recent savage cuts in the Commission's proposed funding for the SAVE II programme, and will argue to restore them.

# Figures

Source: *Energy Paper 65* (Department of Trade and Industry, March 1995)

Figure 1a: Predicted sources of UK energy (units: billion therms)



Figure 1b: Predicted sources of UK electricity generation (units : million tonnes of oil equivalent)



Figure 2: UK CO<sub>2</sub> emissions and targets (units: million tonnes of carbon)



## Abbreviations

AGR	Advanced Gas-Cooled Reactor
AOSIS	Alliance of Small Island States
BNFL	British Nuclear Fuels Ltd
CHP	Combined Heat and Power
EST	Energy Saving Trust
FFL	Fossil Fuel Levy
IPCC	Intergovernmental Panel on Climate Change
LCP	Large Combustion Plants
NFFO	Non-Fossil Fuel Obligation
PWR	Pressurised Water Reactor
REC	Regional Electricity Company
SAVE	Specific Action for Vigorous Energy efficiency
UNECE	United Nations Economic Commission for Europe
VED	Vehicle Excise Duty

### Units:

k	kilo (thousand)
G	giga (thousand million)
h	hour
M	mega (million)
T	tera (million million)
W	watt

*This Paper has been approved for debate by the Federal Conference by the Federal Policy Committee under the terms of Article 5.4 of the Federal Constitution. Within the policy-making procedure of the Liberal Democrats, the Federal Party determines the policy of the Party in those areas which might reasonably be expected to fall within the remit of the federal institutions in the context of a federal United Kingdom. The Party in England, the Scottish Liberal Democrats and the Welsh Liberal Democrats determine the policy of the Party on all other issues, except that any or all of them may confer this power upon the Federal Party in any specified area or areas. If approved by Conference, this paper will form the policy of the Federal Party, except in those proposals which are identified herein as the responsibility of the Scottish, Welsh and English regional institutions of government.*

*Many of the policy papers published by the Liberal Democrats imply modifications to existing government public expenditure priorities. We recognise that it may not be possible to achieve all these proposals in the lifetime of one Parliament. We intend to publish a costings programme, setting out our priorities across all policy areas, closer to the next general election.*

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