

# *Nuclear Free Local Authorities* new nuclear monitor



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Number 9, March 2006

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## RESPONDING TO 'OUR ENERGY CHALLENGE'

The Government's Energy Review consultation document can be found at:-  
<http://www.dti.gov.uk/energy/review/>

The document entitled:- "Our Energy Challenge: securing clean, affordable energy for the long term", was launched on 23 January 2006. It says the consultation is broad in scope and considers all aspects of the energy system including both energy supply and demand, and not just the nuclear issue. It sets out the challenges we face, and invites responses by 14<sup>th</sup> April 2006.

Responses can be submitted:-

By email: [EnergyReviewConsultation@dti.gsi.gov.uk](mailto:EnergyReviewConsultation@dti.gsi.gov.uk)

By letter to:

Energy Review Team  
Department of Trade and Industry  
1 Victoria Street  
London SW1H 0ET

Online by using the response form on the DTI website: [http://www.dti.gov.uk/energy/en\\_consult.shtml](http://www.dti.gov.uk/energy/en_consult.shtml)

By printing off the following pdf file,  
[http://www.dti.gov.uk/energy/review/energy\\_review\\_consultation\\_response\\_form.pdf](http://www.dti.gov.uk/energy/review/energy_review_consultation_response_form.pdf); filing out the form and posting it.

## RESOURCES

Recent issues of the Nuclear Free Local Authorities "New Nuclear Monitor" contain further information which can be used to help compile a submission.

[http://www.nuclearpolicy.info/New\\_Nuclear\\_Monitor/new\\_nuclear\\_monitor.html](http://www.nuclearpolicy.info/New_Nuclear_Monitor/new_nuclear_monitor.html)

A longer report "Is Nuclear Power a Solution to Climate Change?" by Pete Roche is available at  
[http://www.no2nuclearpower.org.uk/reports/Nuclear\\_Power\\_April\\_05v2.pdf](http://www.no2nuclearpower.org.uk/reports/Nuclear_Power_April_05v2.pdf)

The 2003 Energy White Paper, "Our energy future – creating a low carbon economy" can be found at <http://www.dti.gov.uk/energy/whitepaper/index.shtml>

Most of the references also give a web address, to enable the development of particular areas of interest for your submission.



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## THE LOCAL GOVERNMENT VOICE ON NUCLEAR ISSUES

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## ENERGY REVIEW CONSULTATION QUESTIONS

### **Q.1 What more could the government do on the demand or supply side to ensure that the UK's long-term goal of reducing carbon emissions is met?**

- 1.1 While climate change is undoubtedly a very serious problem, it is clear that nuclear power can only ever make, at best, a small contribution to reducing carbon dioxide emissions. Nuclear power provides around 22 per cent of electricity, but only about 8% of total energy. The Energy Policy Review needs to focus on policies for the total energy system. Not just electricity.
- 1.2 Nuclear power is much less effective at cutting carbon emissions than energy efficiency or renewable energy. Promoting new nuclear reactor construction would be very likely to have a negative impact on these more cost effective measures. Kevin Anderson, a senior research fellow at the Tyndall Centre for Climate Change Research, says the idea that nuclear power is the only way for Britain to meet its carbon targets are fundamentally wrong: "We can easily deal with climate change without nuclear power." [1] Replacing nuclear reactors with gas and coal power stations by 2020 would raise carbon emissions by 4%-8%. "We could very easily compensate for that with moderate increases in energy efficiency". If we are going to have to spend taxpayers' or consumers' money on driving carbon out of the economy it is far more effective to spend it on reducing demand.
- 1.3 Constantly re-opening the question of energy policy is creating uncertainty for potential investors in energy. If we carry on debating whether or not we should build new nuclear stations over and over again, the uncertainty created could stifle all investment in anything. Professor Gordon Mackerron, a member of the last energy review team, says most people in the energy community were surprised by the decision to hold another energy review only three years after the previous one. The policies set out in the 2003 Energy White Paper have had little time to start taking effect let alone reveal their long-term potential. [2] Dr Catherine Mitchell, also a member of the last Energy Review team, says we don't need another review – what we need to do is implement the recommendations of the last White Paper on energy efficiency and renewable energy. [3]
- 1.4 This review should, therefore, be about how to put in place a robust plan to make sure that the fundamental recommendations of the 2003 White Paper are delivered. It should, for example, recommend a target for renewable energy to provide at least 20% of our electricity by 2020.
- 1.5 We also need policy that provides energy efficiency and demand reduction with an opportunity to achieve their full potential. We could reduce demand very quickly, for example by implementing policies such as making fridges much more efficient, and phasing out the incandescent bulb. A strategy of targeting households with inadequate insulation, particularly houses with uninsulated cavity walls, would also have more of an impact on fuel poverty than providing more supply.
- 1.6 The Government should amend building regulations so that new buildings, as well as being much better insulated than existing stock, include some form of micro-generation. In order to prepare the market for this change we need a very strong programme to support the uptake of micro-generation, between now and 2010 with increased grant support.

- 1.7 One way of delivering both energy efficiency and micro-generation would be to develop Energy Services Companies which do not sell just kilowatt hours, but energy services - a combination of kilowatt hours and energy efficiency services in the best combination for the circumstances of each particular customer. Energy companies say that at the present time they cannot make money from the sale of energy services, they can only make money from the sale of kilowatt hours. The incentive system, therefore, needs to be changed so that a profit can be made from providing energy services, not just selling more energy.
- 1.8 In practice, keeping nuclear power alive means diverting scarce resources from the cheaper market winners, such as cogeneration, renewables, and energy efficiency, to the more expensive nuclear option. Nuclear investment would only reduce and retard the reduction of carbon dioxide emissions, because it would save far less carbon per pound spent and provide less new electricity per year. [4]

*“Each dollar invested in electric efficiency displaces nearly seven times as much carbon dioxide as a dollar invested in nuclear power, without any nasty side effects. If climate change is the problem, nuclear power isn’t the solution. It’s an expensive, one-size-fits-all technology that diverts money and time from cheaper, safer, more resilient alternatives.”* [5]

**Q.2 With the UK becoming a net energy importer and with big investments to be made over the next twenty years in generating capacity and networks, what further steps, if any, should the government take to develop our market framework for delivering reliable energy supplies? In particular, we invite views on the implications of increased dependence on gas imports.**

- 2.1 The current regulatory system reflects the characteristics and needs of conventional technologies - large and centralised power plants such as fossil and nuclear stations, and the rules suit them. The market framework, and regulatory system need to adapt so they promote, rather than act as a barrier to, energy efficiency and decentralised generation.
- 2.2 Households and businesses which want to make use of micro-generation technologies, such as solar panels, rooftop wind turbines and micro-CHP (central heating boilers that also generate electricity) face a bewildering array of hurdles. Expansion of micro-generation has been part of government policy to tackle climate change for more than two years, but specific measures to make this happen have been slow to materialise. Some basic changes in regulations could make a significant difference. The government could shorten capital investment payback times by ensuring, for example, that consumers get paid a fair price for electricity they export to the grid. This electricity is particularly valuable at peak times when national demand is high. [6] Further financial incentives, such as the introduction of a reduction in Council Tax as proposed by the Energy Saving Trust for houses that incorporate certificated energy efficiency or micro-generation measures should also be introduced. [7]
- 2.3 Small-scale technologies could provide a substantial portion of the UK's energy needs by 2050, according to the Energy Saving Trust. [8] It could potentially provide 30-40% of the UK's total electricity needs by 2050. [9]

**Gas Imports**

- 2.4 The idea that building more nuclear power stations will make our energy supplies more secure than imports of gas is a fallacy. Only about 30% of UK gas supplies are currently

used to generate electricity, so nuclear reactors could not replace, for example the gas we use for our central heating or cooking. Neither is nuclear power a cheap or reliable source of electricity. Professor Jonathan Stern, director of gas research at the industry-funded Oxford Institute for Energy Studies believes that importing gas is likely to be a more secure option than relying on nuclear power. Russia has never defaulted on gas supplies, and it has not been in its interest to do so. In any event, the UK is not likely to depend on Russian gas in the foreseeable future, as 'Our Energy Challenge' makes clear. Imports for the next decade or so are likely to come from Norway, Belgium and the Netherlands. The UK is also investing over £6 billion in facilities to import gas from the Middle East, Central Asia, Africa and Latin America in the future.

- 2.5 If we are serious about gas security we should be using it much more efficiently, particularly the gas we burn to generate electricity. Rather than burning it wastefully in big power stations, it should be used in local power stations, which also generate hot water which can be used for district heating. These combined heat and power plants could significantly reduce our need for gas. [10]
- 2.6 Converting coal at a power plant into incandescent light in a house is only 3 percent efficient. Most of the energy is discarded as waste heat at the power station. [11] And we burn our gas wastefully in big power stations when local power stations, which use the heat as well, could significantly reduce our need for gas. By combining the production of heat and electricity it is possible to extract twice as much useful work from gas for every ton of carbon emitted into the atmosphere. The Government should re-double its efforts to ensure the efficient use of gas.
- 2.7 The Government originally set a target for Combined Heat and Power of 5 GW by 2000. This target was missed, and was only reached in 2005. Government also established, as part of the 2000 Climate Change Programme, a further target, committing itself to achieve a doubling of CHP capacity to 10 GW of CHP by 2010. With the right measures in place, the 2010 CHP target could still be achieved. A further 4.5 GW would be required by 2010 – the equivalent of effectively displacing one nuclear power plant per year. [12]

#### **A renewable-friendly regulatory framework**

- 2.8 The Renewable Obligation regime leads developers to concentrate on the least cost, lowest risk technology - onshore wind. Offshore wind and biomass do get some support through capital grants, but this mostly leaves other developing technologies in the cold. The system also excludes small-scale domestic generators.
- 2.9 If renewables are to provide 20% of our electricity by 2020 we are going to have to develop offshore wind. At the moment there is an urgent need to address the funding gap for round two offshore wind development. According to the British Wind Energy Association (BWEA) this need not necessarily involve capital grants, but it will involve some kind of support. [13] Offshore wind alone is capable of providing three times the UK's electricity requirements.
- 2.10 Similarly wave and tidal power will need support to move from the research and development stage to commercialization. The Department of Trade and Industry has a fund dedicated to this of £50 million, which will begin to make a difference, but we will need to do much more if we are to maintain our lead in these technologies against competition from Portugal and Spain in particular, who have the same comparative natural advantages as we

have, but are determined to move those investment profiles forward much faster than is currently planned in the UK. [14]

**Q.3 The Energy White Paper left open the option of nuclear new build. Are there particular considerations that should apply to nuclear, as the government re-examines the issues bearing on new build, including long-term liabilities and waste management? If so, what are these, and how should the government address them?**

**Waste solutions?**

- 3.1 The 2003 Energy White Paper said it was not proposing new nuclear power stations because of cost and because of “*important issues of nuclear waste to be resolved*”. The Scottish Executive Partnership Agreement between the two governing Parties, Labour and the Liberal Democrats, went further saying: “*We will not support the further development of nuclear power stations while waste management issues remain unresolved.*”
- 3.2 The Chair on the Committee on Radioactive Waste Management (CoRWM), Professor Gordon MacKerron, says his understanding is that this is also the position of the Westminster Government: “*The Government always made a commitment that it will need to solve the waste problem before a rebuild decision.*” [15]
- 3.3 According to the Energy Review consultation document, “*CoRWM has confirmed that waste from a new build programme could be technically accommodated by the options it is considering*”. But the Government cannot use CoRWM’s recommendations to declare the nuclear waste problem solved. CoRWM chair, Professor Gordon MacKerron, told the Nuclear Industry Association Energy Choices Conference in December 2004 that whilst publication of the CoRWM recommendations in July 2006 might be a “*significant moment*”, it is only the beginning - the issue will not be resolved. CoRWM’s draft final report (paragraph 64) states: “*If Ministers accept our recommendations, the UK’s nuclear waste problem is not solved. Having a strategy is a start. The real challenge follows.*” [16]
- 3.4 Mackerron says he does not wish his recommendation on the management of existing waste to be interpreted by the government as a green light for building new nuclear stations. “*We think it is important that there is a full review of the waste implications of any new-build programme, and not to take our report as somehow having managed the entire problem - because the politics and ethics are different, even if the technology is not.*” [17]
- 3.5 Ethically it should be the responsibility of the current generation, which has made use of the electricity generated by nuclear power stations, to deal with the nuclear wastes already created, as opposed to leaving them for future generations. However, it is unlikely the issue will be 'resolved' within our lifetimes. We have already burdened future generations to some degree. We are currently in a position where we can limit that burden to wastes already created. But any decision made in the future which results in new waste creating nuclear facilities will burden future generations further, and necessarily future generations have no say over this.
- 3.6 For this reason discussion of a new generation of nuclear power stations is premature, misplaced and unethical. The case for new nuclear build should not be considered until a clearly implementable waste management strategy is in place. CoRWM's draft report identifies three keys steps in dealing with the nuclear waste problem:

1. Choosing the best management option.
2. Deciding on a clear plan for implementation and how a site or sites will be selected.
3. The most challenging step is identifying a host community and actually implementing the preferred option.

CoRWM's report in July will only deal with the first step. There will still be a long way to go after that.

### **Waste volumes**

- 3.7 The nuclear industry says a new generation of reactors would add only 10% to the volume of radioactive waste, but this is highly misleading because the majority of existing waste is made up of bulky, less hazardous material. As the nuclear waste management body Nirex, points out, the volume is not the whole story, we also need to know what type of waste we will be left with by a programme of new reactors. [18]
- 3.8 CoRWM's latest Radioactive Waste Inventory shows that existing reactors will produce 9,900m<sup>3</sup> of packaged high level waste and spent fuel. But ten new AP1000 reactors would leave a legacy of 31,900 m<sup>3</sup> – three times the amount already created. [19]

### **Decommissioning and long-term liabilities**

- 3.9 Nuclear operators producing waste should pay for its management. Provision must be made for waste that arises after a facility has closed and stopped producing an income. Operators therefore need to accumulate adequate funds, in a segregated account, over the lifetime of a facility for long-term management. British Energy's (BE's) segregated fund proved insufficient to meet its liabilities. The Government has taken financial responsibility for around £3.3bn of its waste management and decommissioning costs. The Government needs to legislate to ensure the taxpayer does not pay for similar liabilities in future. Unfortunately the Energy Act (2004) which allowed for the BE rescue, is written generally so if "... *a private sector operator cannot meet its nuclear obligations [the Government] retain[s] the possibility of ... meeting such costs.*" [20] Hidden subsidies, like the underwriting of future liabilities, must be ended. Private sector problems should not become public sector problems - taxpayers should not be expected to shoulder the financial burden from the private nuclear sector.

### **Terrorism**

- 3.10 The terrorist attacks of 9/11 alerted the world to the potential of nuclear terrorism - making it "*far more likely*", according to the UN's International Atomic Energy Agency (IAEA), that terrorists could target nuclear facilities, nuclear material and radioactive sources worldwide. [21]
- 3.11 Recent events such as: (a) suspicions that terrorists in Australia may have been planning to target the reactor in Sydney; (b) reports of a foiled Chechen plot to crash airplanes into a Russian reactor; (c) reports that detailed plans of Britain's most sensitive nuclear sites, including Sizewell, were found in a car linked to one of the London terror suspects after the July 2005 London bombing campaign; have all served to heighten concerns. [22]
- 3.12 An attack on a nuclear facility could have widespread and catastrophic consequences for both the environment and public health. The extent of damage caused will depend on the type of nuclear facility, the nature of the attack, the weather conditions and the emergency

measures in place, such as evacuation and shelter procedures and whether contaminated food is removed from the market. Far from providing energy security, building new nuclear reactors will present a major threat to our national and international security and increase the risk of nuclear terrorism, by creating opportunities for terrorist organisations. We strongly take the view that nuclear power should, therefore, not be part of the UK's energy supply. [23]

### **Terrorism & democratic accountability**

- 3.13 Public concern over the growing threat of nuclear terrorism has led to calls from the nuclear industry to withhold information on nuclear reactors and plans for managing radioactive waste for security reasons. Such moves would serve to prevent public scrutiny of safety assessments for new reactors and of how the industry will cope with the highly radioactive spent fuel the reactors will produce over coming the decades. Nuclear power is increasingly incompatible with a modern, open, transparent and democratic society. [24]

### **Q.4 Are there particular considerations that should apply to carbon abatement and other low-carbon technologies.**

- 4.1 The 2003 Energy White Paper says: “*In future there will be greater emphasis on local and regional approaches in delivering our energy objectives*”. It says the Government will urge local authorities to give energy issues priority at strategic level; to take the lead, acting as catalysts for change and even review whether to include energy as a shared central-local priority.
- 4.2 Local government is uniquely placed with powers and services spanning the full range of activities that will need to be changed to achieve sustainability in energy use. Local government, therefore, has a key role to play in helping to meet the UK's climate change objectives. Working towards a low carbon future has multiple benefits for local authorities and their communities: improvements in health, community cohesion, social inclusion and quality of life. There are already some excellent local authority climate change initiatives, which demonstrate that responding to global environmental challenges presents local authorities with opportunities to advance sustainable community initiatives. For example, one study suggests that if 250 councils adopted Merton's positive planning policy, which expects developers to incorporate renewable energy into new buildings, the market for these technologies could be increased from £35m to £750m. [25]
- 4.3 Government needs to help and enable local authorities to respond to climate change by sending a strong message that climate change is a priority and that local authorities are key to delivering national climate change targets; it needs to adapt the regulatory regime to one which is more conducive to small-scale renewable energy, micro-generation and energy efficiency, for example by encouraging energy suppliers to become energy service companies; seizing the opportunity that large-scale house-building presents to achieve a step change in energy dependence in the housing sector. [26]
- 4.4 The CO<sub>2</sub> emissions embedded in a typical energy intensive UK lifestyle could be substantially reduced with existing technologies, through a combination of energy efficiency in housing, locally-based renewable energy generation, waste recovery and food production, and a reduced need to travel, made possible and supported by local authority policies. Levels of improved energy use awareness through improved public information also requires greater priority.

- 4.5 The Environmental Change Institute's '40 per cent house' research [27] concludes that it would be possible to reduce overall carbon emissions from housing by 60 per cent by 2050 provided government takes a determined and proactive approach to planning and securing the necessary changes. There is no technical reason why all new housing built in the UK could not achieve a zero net carbon standard within a few years.
- 4.6 A new survey, undertaken by the Energy Saving Trust (EST) reveals that the majority of councils feel they are making little progress on tackling climate change, blaming a lack of political will. Significantly, 67% of the councils surveyed cited a perceived lack of leadership from the government as an obstacle to progress. Others blamed a lack of funding and a shortage of staff. But as councils such as Merton and Croydon have shown, if there is political will across parties, local government can drive through changes. [28]
- 4.7 Mini wind turbines, solar panels and other small scale technologies could provide a substantial portion of the UK's energy needs by 2050 – up to 40% of our electricity needs - according to a report published by the Energy Saving Trust. [29] They require more government support to encourage take up by householders and SMEs.
- 4.8 While most media discussion about the Energy Review has centred on the question of nuclear power, it is essential that the Review sets Britain on course to utilise our huge strategic indigenous renewable resources, such as wind, wave and tidal stream. The Energy White Paper of 2003 set an 'aspiration' that 20% of our electricity needs should come from renewables in 2020 with a target of 10% by 2010. Now is the time to turn that 2020 aspiration into a firm target, and ensure that the mechanisms are put in place to achieve it.
- 4.9 The renewable energy industry is still a new industry. It deserves Government support to help get it off the ground, unlike nuclear power which has received subsidies for the past 50 years and has failed. With extra support offshore wind can deliver significant amounts of power quickly, and with wave and tidal we have the chance to establish world-beating industries that can export to the rest of the world.
- 4.10 A recent report commissioned by the Department of Trade and Industry demonstrated that wind power produces more electricity at times when demand is highest, and less electricity when demand is low. This pattern of electricity production improves the reliability of wind power to meet demand. There has never been an occasion where the wind turbines would have stopped operating across the whole of the UK due to high wind speeds. Concerns have also been raised about calm conditions extending across the UK for significant periods of time that prevent wind turbines from operating, however this study found that the UK was never entirely becalmed, and that a diversified portfolio of wind power developments would deliver electricity during all hours. [30]
- 4.11 The report refutes many of the arguments about intermittency and unreliability. As the energy minister, Malcolm Wicks, has said: "This new research is a nail in the coffin of some of the exaggerated myths peddled by opponents of wind power". The Sustainable Development Commission agrees. Wind output can be accurately forecast over timeframes relevant to network operators. Increasing the proportion of wind power in the electricity system does not require greater 'back up' capacity. [31]

## **Offshore Wind**

- 4.12 Offshore wind could provide 30% of the EU's electricity by 2020. [32] Around 25% of current UK electricity consumption could be met by offshore wind off the coast of East Anglia. [33]

## **Wave and Tidal Power**

- 4.13 Marine energy could generate 20% of Britain's electricity and a global business opportunity worth £600 billion, according to UK consulting firm, Douglas-Westwood. The prospects of an entirely new industry with the associated job creation makes wave and tidal power an exciting prospect. Some experimental devices are already in the water with prospects for significant cost reduction. The scale of the opportunity is huge. [34]
- 4.14 The Carbon Trust says marine energy could generate 3% of Britain's total electricity supply by 2020, and 20% of the country's power in the long term. It predicts the unit cost of marine renewables has the potential to decline significantly in future if there is private investment, underpinned by long-term support from government, to unlock the potential.
- 4.15 The UK is in prime position to accelerate commercial progress in the marine energy sector and secure economic value by selling marine energy devices, developing wave and tidal stream farms and creating new revenues from electricity generation. Other key factors which are likely to impact on the growth of marine energy include the availability of grid connections and network capacity, regulation and security of supply considerations. The Trust says that public support and private investment is needed now to step up the pace of marine renewables development in the UK and ensure it meets its potential. [35]

## **Biomass**

- 4.16 The Government's Biomass Task Force identified nearly 3GW of electrical power available from biomass like straw, farm slurry and sewage. This is equivalent to around three new nuclear stations. [36]

## **Q.5 What further steps should be taken towards meeting the government's goals for ensuring that every home is adequately and affordably heated?**

- 5.1 Nuclear power does not offer a solution to fuel poverty. The era of cheap domestic power is now clearly over. Energywatch reports that gas prices have gone up by 30 per cent, and electricity prices have risen by 27 per cent in the past two years threatening to offset various Government initiatives such as the Warm Deal and the Winter Fuel Payment. We know from the Scottish House Condition Survey that every five per cent increase in fuel costs drags 30,000 Scottish households back into fuel poverty. Without action fuel poverty is set to increase again. [37] But nuclear power is expensive. Even if private investors can be persuaded that it is economic to build new reactors, the cost of the electricity produced will not be low enough to make any impact on fuel poverty and it will not, in any event, come on stream for about 15 years. Reducing the energy required by those living on low incomes to keep warm is the most effective way of tackling fuel poverty, and we have the means to do this now.
- 5.2 A staggering £271 million and 0.7MtC (million tonnes of carbon) is being wasted every year because 40 per cent of the UK's social housing do not have cavity wall insulation, according to the Energy Saving Trust. [38] A new programme of ten new nuclear reactors would

displace around 6-8MtC, so just this one measure would replace the carbon saved by one new nuclear station. With around a fifth of the country's housing stock in their hands, local authorities and housing associations have a vital role to play in tackling both climate change and fuel poverty. With a number of grants available, including offers from energy suppliers as part of the Energy Efficiency Commitment, installing insulation in their stock is one of the simplest and cheapest measures that social housing providers can implement and the Government should encourage them to put this at the heart of their housing strategies.

- 5.3 By encouraging the installation of micro-generation by public housing providers, the Government could play an important role in tackling fuel poverty by delivering affordable heat and electricity. The government's fuel poverty strategy itself has recognised the virtue of micro-CHP as regards 'hard to heat' homes. Domestic heat pumps can be a viable alternative in areas where there is no mains gas, such as northern Scotland.

## Summary

- 6.1 Nuclear power only makes a very small contribution to reducing carbon dioxide emissions, which can be replaced relatively easily by implementing energy efficiency measures. Building new reactors will divert scarce resources from solutions which are not only more cost effective, but also absolutely essential to move us beyond the 2010 targets we have set for reducing carbon emissions so that we can achieve a 60% reduction by 2050.
- 6.2 If we are concerned about importing gas we should be using it much more efficiently – not burning it wastefully in big power stations, but using it in local power stations, which also generate hot water for district heating. These combined heat and power plants could slash our need for gas. We also need to look at policies for the whole energy system, including transport, not just electricity.
- 6.3 The Committee on Radioactive Waste Management's (CoRWM) report in July 2006, will not be a solution to the nuclear waste problem and a programme of ten new reactors will produce three times as much high level waste and spent fuel as existing reactors. New reactors could also provide a target for terrorists. The security measures required mean that nuclear power is incompatible with a modern, open, transparent and democratic society.
- 6.4 We should instead focus on removing the barriers to energy efficiency and renewables. Look at how best to promote offshore wind, wave and tidal power as well as small-scale generation. The 2020 aspiration for renewables needs to become a firm target.
- 6.5 Local government is uniquely placed to respond to climate change by delivering small-scale renewable energy, micro-generation and energy efficiency. Large-scale house-building presents opportunities for a step change in the way we use energy. Nuclear power offers no solution to fuel poverty. Reducing the energy required by those living on low incomes to keep warm is the most effective way of tackling fuel poverty.

## References

- [1] “Nuclear power cannot tackle climate change”, by David Adam, Guardian 17<sup>th</sup> January 2006, <http://www.guardian.co.uk/science/story/0,,1688034,00.html>
- [2] “Energy experts say Government Energy Review risks asking the wrong questions” Sussex Energy Group Press Release 24<sup>th</sup> January 2006. <http://www.sussex.ac.uk/spru/1-4-7-5-6.html>
- [3] Evidence by Warwick Business School to the House of Commons Environmental Audit Committee’s investigation on “Keeping the Lights On: Nuclear, Renewables and Climate Change” 19<sup>th</sup> October 2005. <http://www.publications.parliament.uk/pa/cm200506/cmselect/cmenvaud/uc584-i/uc58402.htm>
- [4] Nuclear power, economics and climate protection potential, by Amory Lovins, Rocky Mountain Institute, September 2005 [www.rmi.org/sitepages/pid171.php#E05-08](http://www.rmi.org/sitepages/pid171.php#E05-08)
- [5] Guardian 12<sup>th</sup> August 2004, “Nuclear Plants Bloom” by John Vidal, <http://www.guardian.co.uk/life/feature/story/0,,1280884,00.html> See also “Why Nuclear Power’s Failure in the Marketplace is Irreversible (Fortunately for Nonproliferation and Climate Protection)” by Amory Lovins, Rocky Mountain Institute, Transcription of a presentation to the Nuclear Control Institute’s 20<sup>th</sup> Anniversary Conference, “Nuclear Power and the Spread of Nuclear Weapons: Can We Have One Without the Other?,” Washington, DC, April 9, 2001. <http://www.nci.org>
- [6] Why Government must give power to the people. Sussex Energy Group Press release 23<sup>rd</sup> September 2005. [http://www.sussex.ac.uk/press\\_office/media/media506.shtml](http://www.sussex.ac.uk/press_office/media/media506.shtml)
- [7] Changing Climate, changing behaviour – Delivering household energy saving through fiscal incentives, Energy Saving Trust, 14 July 2005.  
See also Energy Saving and Micro-Generation Bill Proposals, Sarah Boyack MSP, December 2005, <http://www.scottish.parliament.uk/business/bills/pdfs/mb-consultations/microgeneration.pdf>
- [8] Potential for micro-generation: Study and Analysis. EST 14<sup>th</sup> November 2005 [http://portal.est.org.uk/uploads/documents/aboutest/Microgeneration%20in%20the%20UK%20-%20final%20report%20REVISED\\_executive%20summary1.pdf](http://portal.est.org.uk/uploads/documents/aboutest/Microgeneration%20in%20the%20UK%20-%20final%20report%20REVISED_executive%20summary1.pdf)
- [9] DTI Press Release 12<sup>th</sup> December 2005, “Microgeneration could make a significant contribution to the uk’s future energy mix”. <http://www.gnn.gov.uk/Content/Detail.asp?ReleaseID=181382&NewsAreaID=2>
- [10] “Over a barrel” by Rob Edwards, Sunday Herald 8<sup>th</sup> January 2006 <http://www.sundayherald.com/53456>
- [11] More Profit with Less Carbon, By Amory Lovins, Scientific American, September 2005, <http://www.sciam.com/media/pdf/Lovinsforweb.pdf>
- [12] See “50 ways to boost CHP” CHP Association 27<sup>th</sup> June 2005 [http://www.chpa.org.uk/news\\_downloads/2005/50%20ways%20to%20boost%20CHP%20CHPA%20PRES%20RELEASE%20%20June%202005.pdf](http://www.chpa.org.uk/news_downloads/2005/50%20ways%20to%20boost%20CHP%20CHPA%20PRES%20RELEASE%20%20June%202005.pdf)
- [13] Oral evidence by the British Wind Energy Association to the House of Commons Environmental Audit Committee, 26<sup>th</sup> October 2005 <http://www.publications.parliament.uk/pa/cm200506/cmselect/cmenvaud/uc584-ii/uc58402.htm>
- [14] Evidence by Sir Jonathan Porritt to the House of Commons Environmental Audit Committee, 21<sup>st</sup> November 2005 <http://www.publications.parliament.uk/pa/cm200506/cmselect/cmenvaud/uc584-vii/uc58402.htm>
- [15] “Tackle nuclear waste disposal first, warn advisors”, by Steve Connor and Jonathan Brown, Independent 24<sup>th</sup> January 2006, <http://news.independent.co.uk/environment/article340630.ece>
- [16] <http://www.corwm.org.uk/pdf/0700.2%20-%20Final%20report%20-%20draft%20for%20January%202006%20plenary.pdf>
- [17] “Tackling the UK’s nuclear legacy” by Tim Hirsch, BBC 14<sup>th</sup> February 2006 <http://news.bbc.co.uk/1/hi/sci/tech/4700106.stm>
- [18] “Ministers warned of huge rise in nuclear waste”, by David Adam, Guardian, 9<sup>th</sup> January 2006. <http://www.guardian.co.uk/frontpage/story/0,16518,1682244,00.html>
- [19] CoRWM’s Radioactive Waste and Materials Inventory July 2005. <http://www.corwm.org.uk/content-728>
- [20] Lord Whitty, House of Lords, 15<sup>th</sup> January 2004 (Column GC170)
- [21] ] IAEA press release 1<sup>st</sup> November 2001 Calculating the New Global Nuclear Terrorism Threat [http://www.iaea.org/NewsCenter/PressReleases/2001/nt\\_pressrelease.shtml](http://www.iaea.org/NewsCenter/PressReleases/2001/nt_pressrelease.shtml)
- [22] See <http://www.greenpeace.org.uk/fridaythe13th/facts.htm>

- [23] Secure Energy: Options for A Safer World. Oxford Research Group. 2005  
<http://www.oxfordresearchgroup.org.uk/programmes/nuclearissues/secureenergy.htm>
- [24] Terror fears draw veil over nuclear plants, by Richard Norton-Taylor, Guardian 6<sup>th</sup> May 2005.  
[http://www.guardian.co.uk/uk\\_news/story/0,3604,1477455,00.html](http://www.guardian.co.uk/uk_news/story/0,3604,1477455,00.html)
- “Finding a Balance: Guidance on the Sensitivity of Nuclear and Related Information and its Disclosure”, Office of Civil Nuclear Security, DTI, April 2005.  
[http://www.dti.gov.uk/energy/nuclear/safety/disclosure\\_guidance.pdf](http://www.dti.gov.uk/energy/nuclear/safety/disclosure_guidance.pdf)
- [25] “Power Failure” by Peter Hetherington, Guardian 8th February 2006  
<http://society.guardian.co.uk/societyguardian/story/0,,1704119,00.html>
- [26] “Leading the way: How local authorities can meet the challenge of climate change”. Local Government Association, Energy Saving Trust, and Energy Efficiency Partnership for Homes, June 2005.  
<http://www.lga.gov.uk/Documents/Publication/leadingtheway.pdf>
- See also “Delivering the Government’s 2020 Vision for Local Energy Generation” Energy Saving Trust (2005). <http://www.est.org.uk/uploads/documents/aboutest/Delivering%20Gov%202020%20Vision.pdf>
- [27] Boardman B et al (2005) 40per cent House, Environmental Change Institute, University of Oxford, [www.eci.ox.ac.uk](http://www.eci.ox.ac.uk)
- [28] see [25]
- [29] Potential for micro-generation: Study and analysis, November 2005  
[http://portal.est.org.uk/uploads/documents/aboutest/Microgeneration%20in%20the%20UK%20-%20final%20report%20REVISED\\_executive%20summary1.pdf](http://portal.est.org.uk/uploads/documents/aboutest/Microgeneration%20in%20the%20UK%20-%20final%20report%20REVISED_executive%20summary1.pdf)
- [30] Wind Power and the UK Wind Resource, Environmental Change Institute, Oxford, 2005.  
<http://www.eci.ox.ac.uk/renewables/ukwind>
- [31] Wind Power in the UK, Sustainable Development Commission, 2005.  
<http://www.sd-commission.org.uk/pages/media/list/wind.html>
- See also “It’s not a blot: it’s the future of energy” by Jonathon Porritt, Guardian 3<sup>rd</sup> November 2005  
<http://www.guardian.co.uk/comment/story/0,,1607311,00.html>
- [32] Sea Wind Europe, by Garrad Hassan, Greenpeace 2004. (The EU refers to the 15 countries that were members before the recent enlargement).  
<http://www.greenpeace.org.uk/contentlookup.cfm?CFID=712028&CFTOKEN=90306941&ucidparam=20040228103306&MenuPoint=D-B-C>
- [33] Sea Wind East, by AEA Technology, Greenpeace 2002.  
<http://www.greenpeace.org.uk/contentlookup.cfm?&ucidparam=20020710111025&CFID=712028&CFTOKEN=90306941>
- [34] Refocus Weekly 1<sup>st</sup> February 2006
- [35] Refocus Weekly 8<sup>th</sup> February 2006
- [36] Biomass Task Force, Report to Government, October 2005.  
<http://www.defra.gov.uk/farm/acu/energy/biomass-taskforce/btf-finalreport.pdf>
- [37] House Conditions Survey 2002, Fuel Poverty In Scotland, Scottish Executive, Communities Scotland.  
<http://www.shcs.gov.uk/pdfs/FPRReport.pdf>
- [38] “Lack of adequate insulation means 2.5 million tonnes of carbon dioxide wasted in UK's social housing every year”, EST Press Release, 19th January 2006  
[http://www.est.org.uk/housingbuildings/news/pressreleases/index.cfm?mode=view&press\\_id=483](http://www.est.org.uk/housingbuildings/news/pressreleases/index.cfm?mode=view&press_id=483)