GREENPEACE

Part 2 of submission of evidence to:

House of Commons Environmental Audit Committee Inquiry:
Keeping the Lights On: Nuclear Power, Renewables and Climate Change

Summary

1. The Government's Energy White Paper (EWP) set out key objectives of developing renewable energy and energy efficiency measures in response to the threat of climate change and the need to secure future energy supply. Progress to date aimed at meeting these objectives however has been either slow or non-existent.

2. It is the view of Greenpeace that these two key objectives can only be met through comprehensive reform of the whole regulatory and fiscal system that currently stifles their progress. Greenpeace proposes a three pronged approach with decentralisation of the electricity system at its heart, providing the framework that will genuinely facilitate the speedy development of the other two prongs, renewable energy and energy efficiency. Greenpeace sets out in detail its vision of a decentralised energy system in the attached report *Decentralising Power*, but the following summary in tabular form is designed to illustrate how a decentralised model is preferable in delivering all of the EWP objectives when compared to a centralised model.

Summary of Decentralised Energy vs Centralised Energy in meeting Energy White Paper (EWP) policy objectives, and summary of further considerations/indirect costs

	Centralised pathway	**Decentralised pathway**
EWP Objective		
Promoting a step change in energy efficiency	Current centralised regime rewards network expansion and demand increase. Remote energy remains irrelevant to the individual. Therefore personal energy efficiency has to be driven by ever increasing number of initiatives. Such as: EEC - remains a square peg in a round hole. Sat with energy suppliers it will forever remain contrary to their core business of increasing profit from energy sales. Has no way of dealing with massive resource wastage through heat loss during combustion process.	Decentralised regime rewards demand reduction and network contraction. Tackles supply-side energy inefficiency head on through more efficient system model. Individual/ESCO ownership of generating technologies offers tangible economic benefits for efficiency and drives energy awareness. Proven effect on reducing energy demand. Captures heat loss from combustion processes thus delivering a highly efficient energy infrastructure.
Deployment of renewables	Centralised grid is extension of fossil-fuel and nuclear technologies since fossil-fuels globally concentrated.	Reflects reduced network needs of highly dispersed RE resources.

	Centralised grid designed for large scale generation away from point of demand. Remains unsuited to majority of dispersed renewable energy sources which are often intermittent. Only allows in RE technologies that are centralised (even then penalised) – i.e. focused on areas of concentrated RE such as wind on hills / out at sea and marine. Renewables investment decisions in hands of global multinationals pursuing short-term profit.	Transforms economics of RE by mitigating network costs. Delivers active local networks able to cope with intermittency. Highly complementary to renewable heat. Supports a much wider range of renewable energy technologies in many more locations. Empowers many new actors to invest in renewables capacity and challenge existing sector inertia.
Security of supply	Massive inherent system inefficiency demands excessive primary energy inputs weakening national energy security. Dependence on a few energy sources (most of which (fossil fuels and nuclear) will remain a serious environmental threat) brings with it security of supply risks: a. Failures and shut downs on nuclear power takes out significant proportions of generating capacity b. Limited storage of gas and increasing reliance on import bring obvious risks; Small incidents can cause major impacts on a centralised grid leading to major and costly interruptions of supply. Dependence on fossil fuels leaves system open to massive price increases. Dependence on few global suppliers presents security risk (e.g. of bankruptcy e.g. Enron, BE) Increasing vulnerability to climate change impacts, e.g. pylons, nuclear power stations on coastlines etc.	Highly efficient model reduces primary energy inputs enhancing security. Diverse and embedded renewable technologies spread the risk widely Each property has some form of security Impact of system failures can be locally contained and have limited impact and have options from grid / neighboring networks for supply. Impact on district heat networks and private wire systems are therefore limited and short lived Diversified ownership increases security of supply. Reduced exposure to climate change impacts, reduce consequences of climate change impacts.
Tackling Fuel Poverty	Focus on cheap kWh on grid is poor policy mechanism as households not protected when fossil-fuel prices increase. Failure of suppliers under EEC to meet poor households targets.	Close relationship with energy efficiency insulates householders from effect of price rises. Removal from fossil-fuel market volatility through renewables increases energy security at household level. DE networks suited to council/association owned estates/tower blocks and already used to reduce bills.
Carbon reduction (see energy	Remains incredibly wasteful. Centralised thermal combustion will always waste associated heat.	Widespread adoption of renewable (low / no carbon technologies) is demanded.

efficiency and renewables above)	Centralised grid will continue to waste significant amounts (of even renewable) electricity through losses in transmission. Supports business demands of global fossil-fuel industry.	Emissions are therefore minimised Maximum efficiency of technologies is achieved Supports business demands of low-carbon technologies.
Other matters		
Global dissemination	Continued adherence to appalling and outdated energy model undermines bid for international leadership on climate change. Would replicated two-thirds wastage of energy world-wide Would build in reliance on fossil fuels and / or nuclear (and do so for a generation) Raises the question of whether nuclear is suited across the globe – clearly not given uranium rare resource and obvious security problems.	Incubation of low-carbon model offers genuine international leadership. Promotes renewables energy sources which are readily available across the globe Technology is ideal for transfer for international development Releases vulnerable societies from fossil-fuel industry dependency and political manipulation.
Security	Large scale infrastructure open to major attack and disruption Dependence on imported fuel fundamentally changes interaction with foreign policy Nuclear remains very risky	Widespread and distributed so resistant to any form of interference (scale of impact very limited) Limited dependence on imported fuels Reduced fossil-fuel dependency fosters wholesome international relations.
Adaptability to changes in circumstances	Big capital investments require long term returns – thus the investment community leads energy policy Large generating plants can't be readily altered to developing circumstances Reliance on diminishing fossil fuels leaves system open to massive price increases	Allows for more adaptability to technology changes – switching gas CHP to biomass CHP etc. Can adapt to the varying renewable energy sources
Cost	High grid investment Locks in investments to big generating plant. Increases investment risks. Fosters technological timidity. Offloads huge social and environmental costs locally and globally.	Avoids the need for massive investment in centralised grid. Investments made in smaller chunks over a longer period of time – reduces market risk. Therefore fosters technology innovation. Mainstream uptake drives cost reductions in RE technologies.
Technology issues		
Technological progress	Rules and regulations and infrastructure rewards old technologies and suppresses technological progress Drives vulnerable grant-dependency for low-carbon technologies ill-suited to centralised model.	DE model and regulatory regime captures the benefit of technological progress through mainstream market access and incentivises innovation.

Fossil fuels	Is wasteful of the energy within the fuel Large capital investment delivers dependence (addiction) on to a single fuel type. Fossil fuels will seek public money to address emissions e.g. “clean coal” to prolong fossil-fuel economy.	Can readily accept fossil fuel powered generation – very efficient CHP – but level of investment allows for changes to be made as future markets and technologies develop. Moves away from supporting economic logic of fossil-fuels.
Nuclear	Is the only system in to which nuclear can fit. If nuclear is considered an answer to CO2 emissions then it dictates a wasteful; centralised system should be built across the globe. Demands huge public subsidy to address emissions.	Simply doesn’t allow for it (and it is basically unnecessary / irrelevant) Many DE technologies can reduce emissions without public subsidy under this model.
Micro generation and decentralised energy	Has to work incredibly hard to be allowed on to the centralised system. The two technologies are largely incompatible. Microgen/DE need the grid to be remodeled.	Provided the ideal platform to delivgher large amounts of micro generation and larger decentralised energy plant.

1.0: The extent of the Generation Gap.

What are the latest estimates of the likely shortfall in electricity generating capacity caused by the phase-out of existing nuclear power stations and some older coal plant? How do these relate to electricity demand forecasts and to the effectiveness of energy efficiency policies?

3. The DTI’s “Updated Emissions Projections’ (November 2004)[1] compiled to inform the forthcoming Climate Programme Review indicate that gross electricity supplied to the grid in 2005 is expected to be 361 TWh. Of this, nuclear will contribute 22% and coal 32%.

4. By 2020 all but three of our nuclear plants are due to close, with only Sizewell B expected to be operating beyond 2030. By 2020, these three stations will represent around 7% of overall capacity.

5. The European Large Combustion Plant Directive (LCPD), due to come in to force in 2008, is having a significant impact on the investment decisions of

[1] DTI ‘*Updated Emissions Projections – November 2004, Addendum Projections beyond 2010’* See: http://www.dti.gov.uk/energy/sepn/uep_addendum.pdf

utilities with coal capacity. To adhere to the requirements of the LCPD, expensive flue gas desulphurisation equipment will need to be fitted. Utilities that choose not to fit the equipment can opt out of complying with the Directive, leaving them a maximum of 20 thousand hours of operating time before the plants must close for good. The utilities are free to choose when they run the plants, but they cannot exceed the 20 thousand hour limit.

6. The exact number of stations that will be refitted in line with LCPD regulations is not yet clear. According to Government figures[2], however, it looks likely that of the 19 coal plants currently operating, contributing a combined capacity of 28.6GW, 5 plants have either already fitted or are currently fitting desulphurisation equipment with a further 3 strong or reasonable candidates. Together, they represent 14.5GW of which 10GW will certainly be available after the 2008 deadline.

7. So we can deduce that roughly half of the UK's current coal capacity will be committed to closure by 2015.

8. The loss of half the UK's coal capacity along with the large majority of our nuclear plants will result in the loss of around 30 - 35% of current generating capacity by around 2025, but exactly how this affects the scale and nature of the likely 'energy gap' is unclear. What size and form that gap takes depends on many factors that are difficult to predict, such as the progress of renewable energy development, installation of future gas capacity, effectiveness of long term demand reduction measures and the extent of the UK's connection to the EU electricity grid as part of the liberalised European market.

9. The DTI's Updated Emissions Projections suggest that the shortfall in capacity expected by 2020 will be met through a combination of increased gas capacity and the fulfilment of the current RO obligation of 15% by 2015, leading to total output generation in 2020 of 381 TWh. This does not account for any increase in renewable capacity that might result from an extension of the RO beyond 2015.

---

[2] Mott Macdonald *'UK Coal Production Outlook: 2004 - 2016'*, March 2004 see:

http://www.dti.gov.uk/energy/coal/invest_aid/lcpd_report.pdf

10. There is little doubt however that we have enough practicable renewable energy potential to fill this gap, however large. According to estimates from the DTI[3], the combined practicable renewable potential by 2025 in the UK is at least 230 TWh/year. DTI projections for electricity output in 2020 stand at 381 TWh, indicating that even with a highly conservative estimate of what is possible, there is still enough practicable renewable energy available to fill almost twice the gap left by the closure of most nuclear and some coal capacity (forecast for energy demand?).

11. More importantly though, the prospect of an energy gap simply reinforces how urgently we need to see effective energy efficiency and renewable energy policies that will stabilise the overall energy demand and make this practicable renewable potential a reality. It is therefore imperative in our opinion that we select a unified energy model that is flexible and resilient enough to deal with this challenge.

12. A current centralised model leaves us poorly equipped to respond to such challenges because:

- It makes highly inefficient use of the primary energy inputted, thereby unnecessarily driving up primary energy demand
- It leaves us dependent on a few energy sources, most or which must be imported, that create security of supply risks:
- Small incidents have major impacts on a centralised grid leading to major and costly interruptions of supply.
- Dependence on fossil fuels leaves the system open to price fluctuations.

13. A decentralised energy grid provides the best model for overcoming such problems as it maximises the efficient use of the primary energy used to generate the power by capturing and using the waste heat, as well as unlocking the currently unexploited agency of the domestic consumer, giving them the opportunity to become suppliers. The easiest and cheapest way to address the possible energy gap remains to use less energy. The decentralised model provides a genuine economic incentive to use energy efficiently, as well as bringing an understanding of energy use directly in to their homes.

[3] DTI *'Renewable Energy in the UK'* DTI - 1998

14. Greenpeace believes that the long term framework within which the energy gap can most effectively be closed is through a decentralised energy model that maximises the efficiency of the primary energy inputted and promotes conservation right through the chain from generation source to point of use.

2.0: What are the main investment options for electricity generating capacity? What would be the likely costs and timescales of different generating technologies?

15. Concentrating on the investment opportunities of different technologies, putting them in to direct competition with each other, is unhelpful. Greenpeace believes that a more holistic view of investment in the full generating cycle would be more useful. The following illustrates the economic benefits (and therefore investment return) of directing generation capacity down the pathway towards decentralisation represents the best value for money in achieving the objectives set out in the EWP. The varying abilities of each technology type to respond to the different challenges of decentralised generation will then determine their different costs and timescales. This approach allows the model of decentralisation - characterised by small-scale flexibility and reliability - to determine the success of the different technologies, rather than conventional technologies that currently dictate the model of centralisation.

16. Modelling from the World Association of Decentralised Energy (WADE) indicates that application of a DE pathway globally by 2020 would yield 25% reductions in electricity retail prices. In China, similar modelling found that a full commitment to meeting growth through DE rather than centralised power would yield savings of $400 billion.

17. Similar conclusions have been reached for the UK. Most recently, Mott Macdonald's analysis for OFGEM concluded that the cost of embedding DE capacity in local low-voltage electricity networks would be "considerably outweighed by the benefits". The same study estimates that embedding a quarter of UK peak demand capacity on local grids would deliver economic benefits of around £1.3 billion per year.

18. There's seems little doubt that investment in technology and infrastructure consistent with a decentralised grid as opposed to the wasteful and inefficient centralised grid we have at present represents excellent value for money.

2.1: What are the likely construction and on-going operating costs of different large-scale technologies (eg, nuclear new build, CCGT, clean coal, onshore wind, offshore wind, wave and tidal) in terms of the total investment required and in terms of the likely costs of generation (p/kWh) Over what time scale could they become operational?

19. Construction and operating costs for different technologies are notoriously difficult to accurately estimate, due to the myriad assumptions that must be made on future fuel prices, steel prices, differing levels of technological maturity and so on. Some attempts have been made to quantify these costs however, a recent example being the detailed assessment of renewable supply costs by Enviros as part of the Government's ongoing Renewable Obligation consultation (February 2005). Other relevant studies include Oxera's "Non-Market Value of Generation technologies" (2003) and the cost estimates of wind power in the Sustainable Development Commission's report, 'Wind Power in the UK' (May 2005).

20. None though are comprehensive, with the most authoritative study of future generating costs still being those quantified by the Government's Performance and Innovation Unit as part their research to inform the EWP[4]. The PIU concluded that by 2020, onshore wind will offer the lowest generation costs, closely followed by energy crops, offshore wind and Combined Cycle Gas Turbines. Nuclear power and fossil fuels with carbon capture and sequestration internalised in to the cost price did not do so well.

2.3: Is there the technical and physical capacity for renewables to deliver the scale of generation required? If there is the capacity, are there any policy changes required to enable it to do so?

21. As previously stated, conservative DTI figures indicate the impressive scale of practicable potential from renewable generation in the UK. Regarding what scale of generation is required, that depends on which pathway we choose to go down in the future. Under a centralised system, even with complete exploitation of our renewables potential, the anticipated explosion in energy demand will severely undermine any efforts - renewable or otherwise - to decarbonise supply whilst ensuring security.

22. Greenpeace proposes a three pronged approach where policies and investment are focussed upon decentralising the entire electricity system, from generation to end use. A decentralised electricity network will enable more efficient use of the primary energy input (under the current centralised system, only 22% of the primary energy inputted is used in the home), reducing primary energy demand whilst creating an energy environment that is genuinely conducive to the development of dispersed, small scale technologies such as renewables.

---

4 [4] Performance and Innovation Unit '*The Energy Review*' - 2002

23. Equally important, it would also create the correct environment for individuals to take responsibility for energy conservation by fostering greater understanding of the value of electricity, and providing economic incentives either as individuals or as part of community owned Energy Service Companies to conserve power and translate the three pronged savings in to tangible financial reward. Only through pursuit of this approach, with a shift towards decentralisation at its centre, will we be capable of meeting the four key objectives set out in the EWP of cost, security of supply, decarbonising the system and fuel poverty.

24. In terms of policy changes that are needed to achieve the overhaul outlined above, current policies are designed to deliver cheap electricity under a centralised system. There would therefore need to be a complete overhaul of the policy and regulatory system that facilitates rather than obstructs a transition towards decentralisation. Greenpeace proposes:

- A complete overhaul of energy regulation, with OFGEM transformed in to a sustainable energy regulator with its primary duty being to deliver substantial emissions reductions through the encouragement of DE.
- The use of tax incentives for householders and businesses that install DE technologies, such as reduced stamp duty or business rates
- All new buildings to be required to incorporate DE technologies
- Removal of current limits on the development of private wires in order to encourage localised sustainable electricity systems
- Regional statutory CO2 reduction targets to engage local Government in implementing the transition to DE
- Legislation requiring all electricity suppliers to purchase power from domestic generators
- Tightening of the NAP allocations as part of EU ETS in order to accurately reflect the social and environmental cost per KWh of fossil fuel generated electricity
- No new fossil fuel generation to be permitted unless it incorporates cogeneration
- The publication of a Decentralised Energy White Paper

2.4: What are the relative efficiencies of different generating technologies? In particular, what contribution can micro-generation (micro-CHP, micro-wind, PV) make, and how would it affect investment in large-scale generating capacity?

25. Under a decentralised framework, micro generation would be set to contribute the mainstay of domestic consumption, which currently represents around a third of overall electricity consumption. As detailed above, a shift to a decentralised generation system of which micro-generation would be part would have a significant impact on current investment practices. It would enable many more energy actors to take part, diversifying the investment landscape away from merely the solely corporate investment in large scale projects and towards community ownership and management of complete energy service packages. Many barriers still exist however that currently impede the growth of microgeneration, with the recently announced Building Regulations Part L from the Office of the Deputy Prime Minister constituting another missed opportunity to bolster the industry by failing to oblige new buildings to meet energy performance targets.

26. The lack of a user friendly retail package for microgenerators to gain reward for generating surplus power also remains a significant problem. The Distributed Generation Co-ordinating Group recommended that electricity supply companies should be obliged to publish terms for the buying of excess electricity from microgenerators and purchase surplus electricity under those terms. Greenpeace believes it is imperative that suppliers are obliged to engage with microgeneration industry in such a way as only then will they develop a commercial interest that expertise in resolving the currently outstanding obstacles to the growth of microgeneration.

27. See the Greenpeace report *Decentralising Power* for more details.

3.0 What is the attitude of financial institutions to investment in different forms of generation?

3.1 What is the attitude of financial institutions to the risks involved in nuclear new build and the scale of the investment required? How does this compare with attitudes towards investment in CCGT and renewables?

28. One can assume that confidence in the nuclear market and the returns on investment has to be high in order for the billions of pounds to be offered by the financial institutions. The intervention of Government and the massive underwriting of the industry by the public purse is the only way in which this confidence and level of return can be provided. On the other hand investment in Greenpeace's three-pronged approach, requiring the same confidence and levels of return, can be secured without vast sums of public money being committed for many years in to the future.

29. The investment required is not in CCGT (although this will be required for the short term bridging period) but in the three prongs of decentralising the system, energy efficiency and a portfolio of renewable energies. When investment is looked at in this balanced way it is easy to envisage finance being made available.

30. The confidence that Government needs to provide is not entirely financial; it is principally regulatory. A complete overhaul of the regulatory system to support a decentralised model and the ensuing EE and RE would unlock the billions required to deliver. The simple basis for this is that energy is a multi trillion-dollar business.
    - As an industry, in Europe, it is already planning to invest $648 billion dollars[5] in the centralised grid over the coming 30 years.
    - The UK domestic electricity sales are valued in billions each year
    - As an economy we lose £12 billion worth of energy each year through its inefficient use[6].

31. Should the Government confidently set the decentralised framework then all three sources of investment can be readily accessed. Financial institutions, whose investment will be required, will respond to this clear signal. In addition a completely new set of investors can be brought to the table with, small and medium sized enterprises, industry, householders and communities making their own investments in energy performance and embedded generating technologies on the basis that this both saves and makes them money. An enthusiasm for personal financial investment along the same scale as for British Gas and British Telecomm can be envisaged with the difference being that the investment is in their own energy needs and financial interest.

32. A new fiscal framework is needed to drive investment by all these sectors in energy generation capacity. Please see Decentralising Power and earlier comments.

3.2 How much Government financial support would be required to facilitate private sector investment in nuclear new build? How would such support be provided? How compatible is such support with liberalised energy markets?

33. When considering a liberalised energy market we should first and foremost note that a truly liberalised electricity market simply does not exist in the UK or in Europe. Of the 25 European countries, 10 companies operate the majority of the total installed capacity and control over 60% of the overall electricity market. In addition it is also worth recognising that the only electricity that you can buy through any of these suppliers is expensive, inefficient and polluting centralised electricity. The entire system is tilted towards serving centralised power and actively discriminates against small scale and low-carbon technologies. This illiberal and unfair market place is supported by the current maze of regulation and fiscal incentives.

34. Greenpeace's three-pronged solution can deliver a truly liberalised market. It seeks to remove the bias in the market, economic and sector regulation in favour of centralised power. It therefore introduces to the market place a whole new set of electricity products that are cheaper, more efficient and less polluting that can exploit the economic advantage of proximity to consumers. Consumers therefore have increased choice. It can also foster a much wider range of

[5] World energy Investment Outlook 2003, International Energy Agency, 2003

[6] The Energy review 2002, Performance and Innovation Unit, Annex 6.

Energy Services Companies that can be backed by existing multinationals operating on a large scale down to community owned businesses and private individuals. It can allow other existing and successful sectors of the economy (such as retailers) to enter the energy market place encouraging new private sector businesses to grow and become important competitors in a truly liberalised market place.

35. If this route is adopted the level of Government investment would be restricted to supporting the introduction and adoption of emerging EE and RE technologies. The market place would deliver them to the mainstream and ensure all energy was efficient, more affordable and less polluting. The principle purpose of Government would be delivering appropriate regulatory and fiscal frameworks.

3.4 What impact would a major programme of investment in nuclear have on investment in renewables and energy efficiency?

36. In short, the impact would be disastrous. As demonstrated above, the scale of nuclear programme necessary to achieve anything like competitive economies of scale would require a colossal investment programme. Redirection of the finite investment funds available away from renewables towards nuclear would fatally undermine the still fledgling investor confidence currently being bred in the renewables industry, send out a signal internationally that renewables effectively has no future in the UK, and commit both private and public investment to another generation of nuclear for decades, with nuclear waste and clean up costs that would follow.

37. As Gordon Mackerron, one of the principle contributors to the PIU's Energy Review, noted in reference to the nuclear industry's proposal for 10GW of new build:

38. "The nuclear industry's proposal for a 10GW programme was almost the minimum needed to reduce costs to an acceptable level, and in practice a 10GW programme would have crowded out most other generating investment"[7]

39. Most significantly, however, a major programme of nuclear investment would stifle the opportunity that currently exists to decentralise the grid and facilitate the small-scale, dispersed, highly efficient portfolio of renewables necessary to meet the White Paper objectives.

40. Investment in nuclear would require grid reinforcement to accommodate the inflexible, baseload characteristics of nuclear power, rather than the needs of potential renewable developments. Regulatory changes would also have to be made to guarantee a long term price for nuclear, directly contradicting the Government's professed intention the liberalise the market and 'let the market decide'.

---

[7] Gordon Mackerron *'Nuclear power and the characteristics of 'ordinariness' – the case of UK energy policy'*, Energy Policy issue 17 - November 2004

5. In respect of these issues [Q 4], how does the nuclear option compare with a major programme of investment in renewables, microgeneration, and energy efficiency? How compatible are the various options with each other and with the strategy set out in the Energy White Paper?

41. The principle at the heart of this question is whether investment in RE and EE is compatible with nuclear. The simple answer is no. The commitment of massive funds to a new nuclear programme has two basic negative effects:

42. The first is that it simply removes cash from the energy investment economy making less available to EE and RE. The result is that we will not gain any control over our growing energy demand because we cannot resource EE and that RE will never make it to the mainstream because it is starved of funds.

43. The second negative impact will be that the clear signal will be for a centralised energy pathway. Investments that will last 50 years will commit us to wasteful and expensive generating technologies and the opportunity for empowering a whole new energy industry will be lost. The imperative for regulatory and system reform to fairly support and incentivise RE and EE will be lost and the power balance will remain business-as-usual. The sad result of this is that our only genuinely sustainable opportunity for tackling climate change, keeping the lights on and offering meaningful international leadership will have been squandered.

44. The ONLY investment route that is compatible with the strategy set out in the energy white paper is a decentralised one. A simple options analysis shows that investment in a centralised energy pathway – whether it be fuelled by nuclear or fossil fuels – CANNOT provide long-term energy security, relatively affordable costs, tackle climate change and eradicate fuel poverty. Nor is any other investment model able to be disseminated around the globe.

45. In terms of the strategy set out the Energy White Paper, Greenpeace maintains the government has failed to operationalise those objectives by retaining the singular primary remit of the regulator Ofgem. It is embarrassingly obvious that a regulator with a single remit cannot deliver on the four integrated Energy Policy Goals set out in the Energy White Paper. We do not believe there has been a serious attempt by government to pursue them. Further, continuing to bury its head in the sand plays in to the hands of the nuclear lobby. There is an alternative energy scenario that meets all the EWP objectives. It is cheaper, more reliable, more flexible, easily disseminated abroad and uses existing technologies. But it requires courage on the part of Government to look beyond the myopia of centralised generation model that assume demand can only grow and that fuel will always be available.