The economic insanity of the Government's renewable energy strategy

GOVERNMENT'S WIND STRATEGY	NUCLEAR ALTERNATIVE
	
7,000 of these or …	**7 of these and saving, at the very least, £100 billion**

The subsidy for the proposed onshore and offshore wind turbines would pay for two nuclear power stations per year!

The Government has put out for consultation its Renewable Energy Strategy document (http://renewableconsultation.berr.gov.uk/consultation/consultation_summary). This is the document that proposes that Britain's renewable energy targets for electricity generation will be largely met by 3,000 offshore wind turbines and a further 4,000 onshore turbines.

At the same time, the Government is in the process of establishing the new support structure to encourage investment in renewable energy, particularly, wind turbines (http://www.berr.gov.uk/files/file43545.pdf). The Government's main support mechanism for the generation of renewable electricity consists of Renewable Obligation Certificates which are issued to those who invest in and generate renewable electricity, but the cost of this support is borne directly by the consumer.

At no point has the full cost of the proposed wind strategy been fully and simply explained to the public and at no point has the public been told what alternatives there might be. The wind industry, green lobbyists and the EU have done a brilliant job of leading the Government and the Opposition down a path that not only makes

absolutely no economic sense but is the height of irresponsibility. The numbers involved are so shocking it is difficult, at first sight, to believe them.

Under the new banding structure for the Renewable Obligation Certificates (ROCs) it is proposed that 1 ROC will continue to be issued for each MWh of onshore electricity generated and 1.5 ROCs for each MWh of offshore electricity. As far as onshore wind is concerned, this is despite the National Audit Office telling the Government in 2005 (para 3.19, part 3 http://www.nao.org.uk/publications/nao_reports/04-05/0405210.pdf) that the subsidy given for onshore wind was twice the level it needs to be to encourage onshore wind turbine investment, this at a time when the ROC was worth only £30 (but currently £53). The fact that the level has been maintained at 1 ROC is yet another example of how ready the Government has been to cave in to any lobbying from the wind industry.

In parallel with the new banding arrangements it is also proposed that wind turbines becoming operational will be guaranteed the specified level of ROV subsidy for a pre-determined period, namely 20 years.

When these subsidy levels are applied to the numbers of wind turbines proposed in the Renewable Energy Strategy Document the results are quite incredible. Although the calculations are extremely simple there seems to be an almost deliberate attempt to conceal them, unless, which would be even worse, neither the Government nor BERR have done the sums themselves.

The following calculations take the government proposals at face value. They are, after all, the distillation by the Government of thousands of man hours of consultants' input and are being put forward in the Renewable Energy Strategy as a credible policy. The calculations also use the Government's estimated load factors for onshore and offshore turbines (the load factor being the estimated annual output of the turbine as a percentage of the total theoretical capacity). These load factors are 29% and 42% of theoretical capacity respectively. The percentages are not spelt out in the document but can be derived from the information presented therein and are effectively sourced from the Sinclair Knight Merz (SKM) report commissioned by BERR (http://renewableconsultation.berr.gov.uk/related_documents); this report being one of the key reports used by BERR in the development of the strategy.

The strategy assumes that the additional 4,000 onshore turbines will have a 3MW capacity and the 3,000 offshore turbines will be 5MW so these capacities are used in the calculation as is the current ROC value of £53. The ROC value is market driven and may increase or decrease but the Government has also stated in its strategy document that it wishes its value to be stabilised so that investors can have confidence in the returns.

The following table sets out the total amount of annual subsidy that the consumer would pay if all these turbines were in place, if the estimated load factors are correct and if the ROC level is maintained at £53.

	Additional turbines	MW	%Capacity assumed by Govt	Hours per year	MWh output pa	ROC £	Factor proposed	Total subsidy £
Onshore	4,000	3	29	8,760	30,484,800	53	1	1,615,694,400
Offshore	3,000	5	42	8,760	55,188,000	53	1.5	4,387,446,000
					85,672,800			
Therefore total annual subsidy								6,003,140,400

The annual subsidy would therefore be £6 billion per annum!

This calculation has been shown to BERR. The results are not disputed but BERR likes to think that ROC prices might decline in time and other factors might result in a reduction of overall cost. As far as ROC prices are concerned, any expectation that they will decline seems in total contradiction with the Government's stated policy of keeping the prices stable (page 97 of the Strategy document). Other factors may undoubtedly have an impact but this should also be seen in the context of the Government trying to establish a reasonably certain future for the wind industry so that their returns are predictable. The public has no reason to assume that the cost being locked-into will not be maintained going forward and no certainty at all that it would not even increase. The BWEA, in fact, is already telling everyone that the proposed ROC levels are not adequate and will have to be increased (http://business.timesonline.co.uk/tol/business/industry_sectors/natural_resources/article4449130.ece?token=null&offset=24&page=3). In their view it should be at 2.4 instead of 1.5.

These numbers are so shocking that it is hardly surprising that no one has been made aware of them. Given that those investing in wind turbines will lock into the support regime for 20 years the consumer is being asked to pay £120 billion in costs over and above the market price of electricity in order for a renewable energy target, imposed by Brussels, to be met.

If that was not bad enough it gets even worse. The article recently disseminated by the Kentish Weald Action Group (http://www.telegraph.co.uk/earth/main.jhtml?xml=/earth/2008/07/23/nosplit/eawind123.xml#comments) has provided conclusive proof that these turbines would additionally require to be backed-up at virtually 100%, if the country's electricity supply is to be guaranteed at times of peak demand. This would necessitate equivalent stand-by thermal generating capacity being built and the cost of this would also have to be borne by the consumer. This, in itself, is enough to demonstrate the folly of using wind as anything more than a very small part of the energy mix. Finally, the turbines being proposed can only be connected to the grid and the electricity consumer if huge amounts of money are spent rewiring the national network and covering the country in yet more pylons.

In summary, the British public is being asked to pay, either directly in increased energy costs or indirectly through taxes, considerably more than £120 billion in order to support an ill-conceived and exceptionally naïve energy policy largely driven by anti-nuclear lobbyists. The Conservative Opposition, in the thrall of Zac Goldsmith,

and keen to show their green credentials, are pursuing the same grossly irresponsible wind-driven policy. The Government and others will no doubt come up with as many mitigating factors as they can to dispel the clarity but the simple fact that remains is that there is a clear economic choice for which the headline numbers can be reasonably well-quantified.

A wind turbine has an expected useful life of roughly 20 years. As far as nuclear reactors are concerned, the latest generation European Pressurised Reactors (EPR) have an expected life of 60 years. One can therefore assume that a wind-driven policy that is designed to match the life-expectancy of nuclear reactors will continue to have some kind of subsidy driven investment for a further 40 years after the first wind turbines are decommissioned. The £120 billion therefore would have to be raised to whatever level is required to ensure continued supply. Perhaps not a simple three times at £360 billion but perhaps not far off £240 billion.

What does the nuclear equivalent cost?

The AREVA 1,650 MW EPR reactors, such as being built by EDF at Flamanville, operate at a load factor of 93%. You would therefore only need 7 such reactors in order to match the total estimated capacity (86 million MWh pa as shown in the earlier table) of the 7,000 turbines being proposed. The calculations demonstrating the capacity output are shown below.

	MW	%Capacity assumed by Areva	Hours per year	MWh output pa
Each 3rd generation EPR nuclear reactor	1,650	93	8,760	13,442,220
Therefore 7 reactors	11,550	93	8,760	94,095,540

Seven such nuclear reactors would therefore provide an output of nearly 10 million MWh per annum in excess of the anticipated output of the 7,000 wind turbines. Far more importantly, they would operate for 40 years longer than the turbines.

The current cost estimates for such a reactor are € 3.3 billion (£2.6 billion), less than half the annual subsidy being proposed for the wind turbines, but this cost is fully met by the private sector. The clean-up costs for these modern reactors, where the clean-up process is fully anticipated, are certainly no more than £1 billion per reactor but, again, the private sector is expected to provide for these costs. EDF for example, puts aside a fixed amount per MWh generated in order to build up the fund required at the end.

It is simply unbelievable but, it is being seriously proposed by this Government that the consumer pays an additional £6 billion per annum for an intermittent source of electricity which would require to be fully backed-up anyway and would necessitate considerable addition to the infrastructure of the National Grid.. It would have to be replaced after 20 years and, as far as the 4,000 onshore turbines are concerned, would do irreparable damage to the countryside, would leave approximately 5 million tons of concrete in the ground, would require around 1.5 million tons of scrap-metal and other components to be disposed of and with no certainty that the wind companies would still be in existence or have the wherewithal to carry out the decommissioning when required.

The alternative is no more than 7 nuclear power stations which would cost the public virtually nothing in additional cost and could be placed near easy connection points to the grid. At the limit, the Government could set-aside, say, £10 billion to cover any failure to meet nuclear clean-up costs and to pump money into the communities receiving the nuclear reactors.

It seems incredible that we are faced with such totally blinkered and mindless policy making and it is time that everyone recognises the economic insanity it represents.

The European green lobby is driving a compliant Government toward the brink of a precipice with a total disregard of the consequences for the public. The wind industry (mainly represented by the well-funded BWEA), hardly believing their luck, have jumped onto this and are pushing out their confusing and misleading propaganda in order to try and make sure they cash in on the goldmine. It is time to call a halt.

If the public were actually presented with all the facts and asked how their money should be spent the answer is a foregone conclusion since the folly of the wind policy would be evident for all to see. It would be difficult for even the most fervent wind supporters to ignore the evidence and argue a case for the vast expansion of turbines being proposed.

The Government, supported by the Conservatives should stop any further funding of wind turbine technology and resolve, or ignore, any issues that such action might create with Brussels. Adequate and very generous funds should be allocated for distribution to those communities that are willing to have nuclear reactors built in their localities and such sites should be identified as soon as possible. Funds should also be set-aside as a contingency clean-up fund or steps taken to ensure that any funds set aside by the nuclear industry are held in escrow.

The Government, by its failure to make timely decisions regarding the replacement of electricity generation capacity, has already totally failed the public. Further pursuit of its absurd wind policy, which is distracting attention away from the hard decisions that need to be made as soon as possible, would be totally unforgivable.

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