

# Media Briefing



**Friends of  
the Earth**

Tuesday 29<sup>th</sup> November 2005

## **Nuclear Power and the Energy Review**

Friends of the Earth opposes the construction of a new generation of nuclear reactors because a range of safer, greener and cleaner alternatives can deliver greenhouse gas reductions to meet climate change targets and maintain energy security.

The risks of nuclear far outweigh the benefits:

- Nuclear power produces waste that stays dangerous for tens of thousands of years. The Government still doesn't know what to do with this waste.
- Nuclear reactors have and may again be threatened by terrorists. Attacks, for example by hijacked airliners, could pollute large areas with radioactive materials
- Many processes used as part of nuclear power generation can also be used for covert weapons programmes. If the UK chooses to use nuclear power to cut its greenhouse gas emissions, it will provide an excuse that other countries may use to justify what are really weapons programmes.

Currently, nuclear generates 24 per cent of our electricity. 3.6 per cent of the total energy demand in the UK in 2004 was met by electricity generated by UK nuclear stations (source: DTI energy statistics department). The two figures are often confused by commentators.

Research has shown that a combination of affordable, innovative renewable energy solutions together with sensible measures to improve energy efficiency and the efficiency of coal and gas-fired power plants, means the electricity sector can deliver its greenhouse gas targets, and keep the UK's lights on. Nuclear power is not needed.

### **What are the alternatives?**

- There is more than enough renewable energy to meet all of Britain's needs. Estimates of the practical potential suggest Britain could generate more than half of our current electricity needs from renewable sources by 2025<sup>1</sup>.
- Government estimates show we can save 30 per cent of the energy we use through cost-effective energy saving measures alone. This would save the UK £12 billion every year and cut emissions<sup>2</sup>.

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1 Performance and Innovation Unit, Energy Scenarios to 2050

- All the major renewable technologies, wind, wave, tidal, solar and energy efficiency have shorter timescales for implementation than nuclear. New nuclear reactors take at least 10 years to build, but gas-fired plants can be built in three and renewables in one to three. Any small scale measures, like micro-CHP, can be installed in weeks<sup>3</sup>.
- A programme to replace inefficient light bulbs with new super-efficient LED or compact fluorescent light bulbs could save 7 TeraWatt-hours (TWh) or 1.75 per cent of our current electricity use by 2020. This is the equivalent of one nuclear power station.
- Introducing new standards to ensure appliances waste less electricity on stand-by could save 8 TWh or two per cent of our current electricity use by 2020. This is the equivalent of one nuclear power station.
- Promoting more efficient electric motors in industry could save 24 TWh or six per cent of our current electricity use by 2020. This is equivalent to three nuclear power stations.
- Encouraging households to generate their own electricity through small gas-fired boilers, solar panels and micro wind turbines could generate 18 TWh or 4.5 per cent of current electricity generation by 2020. This is equivalent to more than two nuclear power stations.
- Building off-shore lagoons to harness the power of the tides could generate 30 TWh or 7.5 per cent of our electricity needs by 2020. This is equivalent to almost 4 nuclear power plants.
- Further developing the potential to use the waste heat given off by industrial plants, boilers in offices and other heat sources could generate up to 125 TWh or over 30 per cent of our electricity needs by 2020. This is equivalent to about 15 nuclear power plants.

***....nuclear is not an answer to climate change, as its potential contribution has been overestimated***

- If we doubled the electricity generation from nuclear reactors (from a quarter to a half of our electricity) we'd only reduce greenhouse gas emissions by about 8%.
- Nuclear is not an 'emissions free' solution. The mining and transport of uranium, the making of nuclear fuel rods, the building of nuclear power plants and the storage of nuclear waste all lead to carbon dioxide emissions. Nuclear produces 50% more greenhouse gas emissions than wind power.
- It is clear that given the appropriate support, renewables can make a significant contribution to carbon reduction in a much shorter timescale than the ten years it takes to build the first of a new generation of nuclear reactors<sup>4</sup>.

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2 Performance and Innovation Unit, Energy Scenarios to 2050, page 190

3 Performance and Innovation Unit, Energy Scenarios to 2050, page 202

4 Extracts taken from: Information from the Oxford Research Group, House of Commons Environment and Audit Committee Inquiry, 21 September 2005

**.....many of the costs of a nuclear plant are hidden in the waste disposal, the insurance and the security costs**

- It is currently estimated that the cost of nuclear waste disposal will be around £56 billion, according to the Government's Nuclear Decommissioning Authority (NDA) which is an increase of £8 billion over previous estimates.
- The Government's rescue of British Energy in 2003 is expected to cost British tax payers £12 billion over the next 100 years.
- Since 1974 the UK government has spent £6.8 billion in research and development funding for nuclear fission (compared to £540 million for renewables) according to information from the International Energy Agency.

**.....the Government still hasn't determined the best way to store nuclear waste**

- Britain has 470,000 cubic metres of waste for which there is no agreed long-term management solution - enough to fill the Royal Albert Hall five times.
- Nuclear waste can remain highly radioactive and dangerous for tens of thousands of years.
- The Government can't show that waste might not leak from proposed waste dumps. They can't possibly predict how secure waste dumps will be over tens of thousands of years.
- If spent fuel rods were buried around the time of the Norman Conquest 1000 years ago, they would still be highly dangerous today.
- The Swiss Government's nuclear waste authority assumes that the safety of the repository for spent fuel and High level radioactive waste has to be guaranteed for at least 1 million years.

**.....technology used for nuclear power can be mis-used to make nuclear weapons**

- Nuclear reactors use enriched uranium, made at enrichment plants. Yet enrichment plants can be used to make super-enriched, weapons-grade uranium.
- Reactors produce plutonium that can be separated through reprocessing and used to make bombs.
- Over the past year, Iran have been investigated by international agencies over their alleged misuse of civil nuclear power to make weapons-grade uranium.
- Last week, even Zimbabwe was reported to be planning a civil nuclear programme as a stepping stone to weapons production.

**.....nuclear plants are vulnerable to terrorist attack**

- No nuclear reactor would be able to withstand a direct hit from a 747 crashing into it
- Last year, Australian police stopped suspected terrorists who were believed to be staking out a research reactor near Sydney
- George Bush announced that US troops had found plans of US nuclear power stations at al-Qaeda hide-outs in Afghanistan.
- A successful attack on a nuclear power plant could release radioactive materials and contaminate large areas around. Research for the European Commission has said that a plane crashing into Sellafield could have an impact 40 times worse than that of the explosion at Chernobyl.

**.....nuclear power stations are an inflexible form of electricity generation**

- Unlike other generation sources, nuclear power produces a constant power and cannot reduce and increase capacity due to demand.

**..... nuclear energy is unpopular**

**European Commission poll, June 2005:**

- Across the European Union, 55% of interviewees say they are against energy produced by nuclear power stations whilst 37% say that they are in favour. 8% express no opinion.
- Looking more closely, only 7% of respondents are totally in favour of nuclear, with 30% being 'fairly in favour'. However, among opponents, 24% state that they are 'totally opposed' and 31% say they are 'fairly opposed'.
- This suggests that there is little wholehearted support for nuclear and much opposition and animosity.
- 46% of men expressed a favourable opinion towards nuclear energy, this was true of only 29% of women.
- Seven out of ten people believe the transport of low level radioactive waste presents a risk. 29% saying it presents a very high risk. Three quarters of citizens see that the storage of low level waste presents a risk.

**Institution Civil Engineers, 11 March 2005**

- Poll suggests that just a quarter of people (one-in-four) support the construction of new nuclear power stations.