Greenpeace complaint to the Marketing Standards Board concerning Opinion Leader Research and Talking Energy Consultation.

Greenpeace, 10th October 2007

Introduction:

Greenpeace is hereby making a further, fuller and more comprehensive formal complaint to the Market Research Standards Council. This complaint follows an initial complaint submitted by Mr John Sauven, Executive Director of Greenpeace on the 14th September 2007. The complaint concerns the public consultation – Talking Energy - conducted by Opinion Leader Research September 2007 on nuclear power. The consultation constitutes an important part of the Government's consultation on nuclear power, ordered by Justice Sullivan in the High Court in February 2007. A previous consultation was deemed unlawful due to its biased and misleading nature.

Opinion Leader Research, as a 'company partner' of the Market Research Society, is bound by the MRSC code of conduct.

This complaint is based on an analysis of the questions asked to members of the public at the deliberative meetings and the stimulus materials shown to the public in concert with the questions. This document is structured as to provide an assessment of:

A: The methodology and presentations during the meeting
B: The handouts – stimulus materials
C: Reference materials
D: Concerns from participants and other stakeholders

Background:

In the summer of 2006 Greenpeace challenged the legality of the Government's conclusion - that nuclear power had a "role to play" in the UK's future energy supply. On 15th February 2007 Mr. Justice Sullivan found in favour of Greenpeace and ruled that the Government's pro-nuclear decision was "unlawful." In his Judgment he described the consultation as "seriously flawed" and "manifestly inadequate and unfair"[i] because insufficient and "misleading" information had been made available by the government for consultees to make an "intelligent response".

As a result the Government was obliged to re-consult *comprehensively* on nuclear power prior to making decisions to allow or support new build. Consequently, in May 2007 the Government launched this new consultation, "*The Future of Nuclear Power: The role of nuclear power in a low carbon UK economy*," to seek "views on the information and arguments set out on whether the private sector should be allowed to build new nuclear power stations."

As a matter of law the Government must keep an open mind on new nuclear power until after the "fullest public consultation."

A. An assessment of the methodology used by Opinion Leader Research
http://nuclearpower2007.direct.gov.uk/docs/Events_070908_PresentationSlides.pdf.

A summary of the points concerning the consultations structure and documents starts here:

A1. Greenpeace notes point B.14 of the MRSC code of conduct, which dictates that members must take reasonable steps to ensure that the design and content of questionnaires are appropriate for the audience being researched; respondents are able to answer the questions in a way that reflects the view they want to express; that respondents are not led towards a particular answer; and that answers are capable of being interpreted in an unambiguous way.

Greenpeace also notes point 7 of the Principles of the Code, which states: 'Market researchers will ensure that projects and activities are designed, carried out, reported and documented accurately, transparently, objectively and to appropriate quality.'

The statements which people were asked to respond to and the questions they answered, were as follows:

- Tackling climate change is a critical challenge for the UK
- Nuclear power stations could make an important contribution to reducing the UK's CO2 emissions
- Ensuring a secure and reliable supply of energy is a critical challenge for the UK
- Nuclear power stations could make an important contribution to providing the UK with secure and reliable energy supplies in the future
- How concerned are you about safety and security issues associated with nuclear power?
- How concerned are you about the creation of new nuclear waste?
- How satisfied are you with the Government's proposal to manage new nuclear waste in the same way as existing waste?
- How satisfied are you with the measures in place to minimise the safety and security risks associated with nuclear power?

Greenpeace notes that positive messages for nuclear are made as statements of fact ('Nuclear power stations could make an important contribution to reducing the UK's CO2 emissions') while negative issues for nuclear power required answers by degree, with the loaded term 'satisfied' included in the question ('How satisfied are you with the Government's proposal to manage new nuclear waste in the same way as existing waste?')

This complaint contends that OLR did not take reasonable steps to ensure that the design and content of the questionnaires were appropriate for the audience being researched; that respondents were not able to answer the questions in a way that reflected the view they wanted to express and that respondents were led towards a particular answer.

For example:

We believe that the use of a non-standard qualitative forum (many group discussions all taking place together) and merely adding hand-held voting pads raises some serious issues about the reliability of the information (particularly the quantification of views) gathered by either technique:

- Qualitative research allows clients to investigate issues in depth, to really understand the motivations and gain valuable insights. The facilitation of a group in these circumstances is a highly skilled job, especially in relation to group dynamics which (without careful management) can be very strong and persuade the group to express views that are not held by the majority of participants. In this forum there were many groups together (around tables) and there was clear potential for a group dynamics to influence the discussion to a greater extent than one would normally expect in qualitative research.

- Hand-held voting pads were then used to gain a quantitative view of a group (qualitative discussion). Given the structure of the groups, it is likely that any group-dynamics effect was reflected in this score, especially as the results of the vote were made public at the session – in time to influence others.

- In addition to this the participants were told that the scores were to be used during the session, and the introductory slides event stated this (rather than their final use in the press release). It is possible, of course, that the facilitator told people at the events that they would be counted and used publicly, but this is not clearly stated in the written guidance given (as shown below) which frames these votes as purely an indication of what is happening in the room. As these numbers seem to have taken on great significance by the Government since the events, it should have been made clear to the participants what their use would be, both during and *after* the event.

A2. Objectivity of the facilitators

This was a government consultation, led by an independent research company. Whilst it was clearly a government event, the objectivity of the facilitators is key at an event like this, which is discussing an extremely controversial issue. We are concerned that this objective position was not taken by the OLR facilitators, and we ask MRS to request transcripts of the events in order to determine whether the facilitators remained objective or not. Our concern stems from reading the facilitation of previous (stakeholder) consultation events conducted by OLR. These events were run slightly differently in terms of structure (they were more qualitative than quantitative) but the question and deliberations were very similar.

At these events (run in July) the facilitator often took on the government position on issues. Obviously the strength of position a facilitator has in being able to persuade the group participants is strong. This person has a position of authority and this has a significant influence over the subjects, and so this needs careful handling. The objectivity of the researcher, who needs to solicit views of the participants, not to persuade is fundamental. The facilitators in these groups often take a subjective, pro-nuclear position, which was not always factually correct. See below for representative examples:

- "**we** want to remove these roadblocks…"
- "For the government to say that it does not have a view would be absolutely disingenuous because the government has considered this issue for quite a while. **We** went out for consultation last time around and took a decision which was then obviously overturned by the judicial review; to say that **we** do not really know what to do would not be genuine. This consultation is therefore really about testing that view." BRISTOL

The use of the term '**we'**, as highlighted in the examples above could be interpreted as OLR representing the Government's position on this.

Further evidence of this lack of objectivity and examples of where the term "we" is used can be found at: http://nuclearpower2007.direct.gov.uk/events.asp where we draw your attention to the summary notes from each of the regional stakeholder meetings.

Please also see **Appendix A** for reference to concerns over the use of repetitive questions and participant persuasion, which contravenes MRS on repeated questioning, which is one of the four key issues that can negatively affect the quality of the results.

A2.1 The Film the tone of the short video shown at the events was set up to portray alternatives to nuclear power in a negative light and nuclear power in a positive light. We requested to view the content of the CD presentation to assess its objectivity, but were refused, and subsequent requests have gone unanswered. The testimony below comes from a participant at the Newcastle event who contacted Involve, a public consultation facilitator, following the event to raise her concerns at the manner in which the consultation was conducted.

"*The alternative viewpoints tended to come first, with doom ridden music in the background. The Government's viewpoint was then given against calm, relaxing music*." Jackie Turpin, September 13, 2007 2:34 PM
http://www.involve.org.uk/index.cfm?fuseaction=main.viewBlogEntry&intMTEntryID=3107

A3. Greenpeace also believes the materials were not of 'appropriate quality'.

- The handouts and stimulus materials used by OLR to achieve the desired polling results were inaccurate in many respects, and are addressed in sections B and C. As such, OLR contravenes the necessity under point B.14 for members to take reasonable steps to ensure that the design and content of questionnaires are appropriate for the audience being researched and that respondents are not led towards a particular answer. The use of inaccurate stimulus material also means that point 7 of the Principles of the Code is contravened 'market researchers will ensure that projects and activities are designed, carried out, reported and documented accurately, transparently, objectively and to appropriate quality.'

A3.1 Printed Materials: As part of the assessment of the nature, structure and objectivity of the materials, it is also important to draw attention to the design, which has been used in a biased and manipulative way:

- The use of green to colour nuclear and renewables, as opposed to coal, oil, and gas that were coloured blue, sends a clear expectation that these two are to be considered as similar.
- Questions and answers were not asked in a randomly presented way, for example on the issue of energy security the answers to both were the last on the list (thus inflating the magnitude of the answer). To be objective, we believe that all answers should be presented in a random order.
- Using terms that are close but not the same (e.g. swapping from renewables to wind power) reduces further the objectivity of the information being presented.

A4. Greenpeace also notes that section A2 of the MRS code of conduct states that: 'Members must take reasonable steps to avoid conflicts of interest with Client s or employers and must make prior voluntary and full disclosure to all parties concerned of all matters that might give rise to such conflict'.

However, OLR have not declared that they have very close links with their client which could threaten the impartiality and objectivity of the manner in which the consultation is constructed.

"*Many juries are run by Opinion Leader Research (OLR), whose chief executive, Deborah Mattinson, is one of the Prime Minister's most trusted advisers and his personal pollster. It runs juries, forums and polls for an array of public and private sector clients*".
http://observer.guardian.co.uk/politics/story/0,,2180216,00.html

Section B. Handouts

The following section goes through the printed materials in order of the handouts and then reference materials to highlight incidences of inaccuracy and bias in statements or text throughout these materials. There were 10 handouts and we have identified a series of problems with all but one of them which are set out in the following assessment. These issues may not be exhaustive, but represent the obvious examples that we believe contravene the code.

Please note that all questions and statements within the materials which are scrutinised in this complaint have been bullet pointed and placed in quotation marks for ease of reference, which can be seen in full here:

http://nuclearpower2007.direct.gov.uk/docs/Events_070908_StimulusMaterials.pdf

B1. Handout 1: Why are we here/ why are we discussing nuclear energy now?

- "The Government believes it is important to have option open to make sure we do not limit the ways that we can tackle them [***the problems of climate change and energy security-*** *emphasis added]*. The Government believes that having many different ways of producing energy is central to helping to tackle climate change and to ensuring a secure energy supply for the UK.

From the start the handouts confuse energy with electricity – this is a particularly problem as nuclear power is concerned only with electricity production. However, the materials do not adequately present the options that we have for conserving energy (namely energy efficiency), which outside the consultation Government admits is the most effective short-term approach to becoming much more efficient with its use. It only draws a comparison with renewables, which themselves represent a diverse array of energy sources and not just one thing, and in essence does not provide the participants with sufficient information to make a full and informed decision on all future energy options.

- "In order for nuclear power to continue to be an option in our future energy mix to replace the capacity closing over the next two decades, a decision on whether energy companies should have the option of investing in new nuclear power stations needs to be taken this year."

This is a subjective point made as a statement of fact, and is wholly unsubstantiated. The timeline is driven by political considerations, and many experts contend that a decision could be put off for many years. Neither of these possibilities are communicated, instead an opinion articulated by supporters of nuclear power is presented as fact. The statement also obscures the fact that there is currently no restriction on investment in nuclear power. Any positive Government decision will not 'allow 'nuclear, but will facilitate it.

It also fails to mention that energy companies have already submitted plans and reactor designs and have applied for generic design assessment to the HSE / NII so that participants were made fully aware of the current situation.

- "In the context of tackling climate change and ensuring energy security do you agree or disagree that it would be in the public interest to give energy companies the option of investing in new nuclear power stations?"

With regards to the question above, participants should be made aware of exactly how much nuclear power would be needed to have any significant contribution to reducing our CO2 emissions by X amount, and by when. Otherwise, this question is meaningless. As with the question below, the energy mix and electricity generating capacity – along with the amount that could be saved (or averted) through other measures - should have been fully presented. As for security of supply, this too should have been spelt out e.g. where will our gas imports come from, if there's too much reliance on one country how can we reduce that by spreading the sources etc (as they imply with uranium). The distinction between an electricity generating gap and fuel security, within a global context, should reflect that fuel is a global market where gas is no different from oil. The energy gap can be met in many ways, not just one.

- "Are there any conditions that you believe should be put in place before giving energy companies the option of investing in new nuclear power stations (for example restricting build to the vicinity of existing sites, or restricting build to approximately replacing the existing capacity)?"

The question of replacing our existing nuclear reactors is a huge question. Making a decision on whether to go ahead at all is very complex, of which the 'conditions' for doing so are much more layered than presented and only relevant with a deep understanding of the issue. It requires a broad and thorough understanding of the issues such as the economic case, waste storage and possible disposal, transportation of wastes, security, skills gap and the alternative energy sources to enable participants to give an informed response. This is not accommodated in the materials provided. Information on possible future energy (and electricity) needs and how they might be reduced would be crucial in giving people the adequate information they need on **all** the options that could be deployed.

According to the Sustainable Development Commission (herewith referred to as the SDC), for example, building 10 GW of new nuclear capacity (replacing the lost capacity from the closure of existing nuclear plants) would offset only 4% of the UK's CO2 emissions compared to 1990 levels, assuming that otherwise the equivalent amount of electricity is generated from fossil fuels instead (i.e. that this nuclear capacity directly displaces an equivalent output of fossil fuel energy). While doubling that capacity to 20 could, reduce emissions 8% (see below for fuller explanation), this scale of construction would have huge implications for timing, costs, safety, security and waste management none of which are effectively covered within the information provided. The SDC makes clear that any benefits would take decades to be fully realized.

The information for discussion fails to explain the total UK energy mix and expected future trends (e.g. what sector is expected demand will increase most (e.g. transport) and what impact that might have on CO2 emissions, the security of supply implications of various scenarios and – most importantly – whether electricity is something which can play a role in addressing these challenges. Greenpeace highlights these specific issues as examples:

1. domestic heating is largely serviced by gas in individual boilers, so the overall electricity mix has little impact in this sectors fuel consumption which means that nuclear power does not address the single biggest use of gas in the UK, limiting nuclear's ability to help with security of supply. Despite this, Government has made much of this issue of foreign gas supplies to justify their desire for new nuclear powers stations.

2. the proportion of energy used in different forms also needs to be considered. Nuclear power stations only produce electricity where as the bulk of our energy needs are for heat and transport – nuclear only marginally address our need for hot water and central heating and doesn't meet our needs for transport at all. Electricity only accounts for a third of our energy supply and of this, nuclear power contributes 19% and thus its role in tackling climate change is limited. As stated above, the Government's Sustainable Development Commission says that replacing our existing nuclear fleet could achieve only a 4% cut in CO2 emissions from 1990 levels and that it would take until at least 2024 to achieve it.

- "Although nuclear would only make a relatively small contribution by 2020, because the first power stations will only have just started to become operational, it could have a significant contribution to meeting our long-term C02 targets"

As well as failing to mention how many new nuclear power stations would need to be built to have a 'significant' contribution to meeting long-term CO2 reduction targets, it also ignores the fact that a replacement of all current nuclear power plants with a fleet of 10 new plants (the first starting in 2015 – a deadline already missed - and completed 2024) would, according to the SDC provide for a reduction in the UK's CO2 of just 4%. This also assumes that there will be a known total for overall energy use (and CO2 emissions) by the time the plants come on line.

The government's long term target is to reduce CO2 emissions by 60% by 2050. Scientists call for a 90% cut. Moreover, the contribution as well as the long term viability of nuclear power would be limited because stations could not be built fast enough. The government's own advisors (the SDC) state: "Assuming that we're talking primarily about gas-fired plants, then a replacement programme for our existing nuclear programme (at 10GW) would displace about 6.7 million tonnes of carbon (MtC) every year once *all* the plants were up and running.

http://www.sd-commission.org.uk/publications/downloads//SDC-NuclearPosition-2006.pdf
http://www.sd-commission.org.uk/publications/downloads/IsNuclearTheAnswer.pdf
http://www.guardian.co.uk/science/story/0,,1688034,00.html
http://www.oxfordresearchgroup.org.uk/publications/briefing_papers/toohottothandle.php

There is also a worrying absence of any independent sources referenced provided in this section.

- "Some methods of generating electricity (like nuclear) deliver a constant supply which can cover the normal continuous level of demand, or base-load; others (like some renewables) have a variable output that depends on factors outside our control"

In reference to this statement, there is a need to explain issues of variability and predictability, which are two different things and have significant bearing on the consideration of different generating options.

- "Nuclear power delivers a constant 'baseload' of electricity on a large scale, helping to provide predictability and security of UK electricity supplies. Others have a variable output (like renewables)."

This is not true. Nuclear power does not provide continuous baseload as reactors are often offline. Nuclear power can have unpredictable variability in output and requires huge backing power. This reality ignored by the framers of the materials. Equally, renewables are many technologies with different qualities: biomass can provide a baseload, as can tidal.

See:
http://news.bbc.co.uk/1/hi/business/6949026.stm,
http://news.bbc.co.uk/1/hi/england/somerset/6085258.stm,
http://news.bbc.co.uk/1/hi/england/bristol/6897062.stm

- **"Did you know?** Some methods of generating electricity contribute less to climate change than others. Power stations burning coal, gas and oil, for example, produce the vast majority of emissions coming from electricity generation. They produce far more CO2

emissions than renewable electricity generation and nuclear power. In the future it may be possible to capture and store some of these emissions, but the technology has not yet been demonstrated at full scale."

It is disappointing to note that although other methods of generating energy are mentioned, there is still no mention of energy efficiency at this stage. Although it's mentioned later, the initial view would be skewed for participants, particularly in a long session with complicated (and at times confusing) information being presented.

B2. Handout 2: Tackling climate change and implications for our energy supplies

- "We need to think about our energy because the amount we use and the way it is produced has a significant impact on climate change."

This is a conflation of energy and electricity which is misleading and inaccurate. Nuclear power stations only generate electricity (see above).

B3. Handout Four: Thinking about our energy mix

- "Why doesn't the Government focus on tackling the contribution that transport and heat makes to climate change? Don't they produce a lot of CO2 too? Why are we focusing on electricity?

  Ways of reducing CO2 emissions from transport and heating are set out in the Government's overall energy strategy set out in the White Paper. But we need to take action on all fronts so considering low-carbon electricity generating options, higher efficiency electricity generating options (like Combined Heat and Power), as well as how we reduce CO2 emissions from other energy sources, is important. Today's discussion is specifically about electricity.

  "Points to remember on the energy picture
  As a result of steady economic growth, our need for and usage of energy has increased dramatically.

  We use energy to heat our homes and offices, schools and hospitals in winter and (increasingly) to cool them in summer. Industry uses energy for manufacturing goods. Electricity is needed for a huge range of essentials and luxuries which we take for granted (lights, telephones, computers) at home and work. And we all rely on energy for transportation. All of these can create CO2 emissions.

  The Government has more chance of reducing CO2 emissions if we can increase the amount of electricity we get from low carbon sources."

In this summary of the point already discussed concerning energy they omit key points to such as 'higher efficiency electricity generating options (like Combined Heat and Power)'. These options can be in place much quicker than nuclear power stations and address heat as well as electricity

fuel use and emissions, and failure to mention them appears deliberately misleading by placing emphasis on nuclear power to meet the required reductions in CO2 emissions. The handout fails to reflect that nuclear power only contributes low carbon electricity and that this limits its overall impact on CO2 emissions. It also fails to mention that there are many low/zero carbon ways to meet our electricity needs including (a) more end use efficiency (possibly 25% more effective than nukes), (b) greater system efficiency (with combined heat and power) and scale, (c) many different renewable technologies. It gives no comparison of relative scales of impact, or long term significance (i.e. renewable energy will continue to grow where nuclear power will top out).

See: http://www.berr.gov.uk/files/file10719.pdf (page 10)

It also fails to address concerns over the conflict of support for nuclear and others.

http://www.sd-commission.org.uk/publications/downloads/NuclearQ&A%20.pdf

B4. Handout 5: Our electricity mix and low CO2 electricity options

- "Nuclear power currently produces nearly one -fifth (18%) of the electricity used in homes and workplaces, provided by 10 nuclear power plants.

This statement fails to put nuclear power into the context of overall energy contribution, which is approximately 3.6% (see above for reference). This provides another example where the participant could be led towards a particular answer.

- "CO2 emissions from nuclear power stations are about the same as those from wind power and substantially lower than those from fossil fuel power stations. (This information is based on research conducted by three separate independent organisations (Organisation for Economic Cooperation and Development) nuclear energy agencies, the European Atomic Forum and the IAEA (International Atomic Energy Agency) and backed up by a report from by the Sustainable Development Commission in 2006)."

Only mentions the SDC whenever it supports nuclear power – but no mention of the list of 5 major hurdles the SDC list against nuclear power made the Commission put this as the generation source of 'last resort.'
(http://www.sd-commission.org.uk/publications/downloads/NuclearQ&A%20.pdf).

- **"Do other countries have nuclear energy?**
  The United States produces the most nuclear energy, with nuclear power providing 20% of the electricity it consumes, while France produces the highest percentage of its electricity from nuclear reactors - 80% as of 2006. In the European Union as a whole, nuclear energy provides 30% of the electricity. Nuclear energy policy differs between European Union countries, and some, such as Austria and Ireland, have no nuclear power stations. Some countries have decided to build new nuclear power stations (for example, Finland and France) whilst others have decided not to (for example, Germany and Belgium)."

What this fails to mention is, firstly that countries such as Germany – which is phasing out nuclear power - is introducing alternative methods to reduce CO2, and that secondly, although Finland has adopted a policy to pursue nuclear power and neglected alternatives and with severe delays in construction (and massive cost-overruns on its first new reactor), the country has undermined it's ability to meet its emissions targets.

http://www.iht.com/articles/2007/07/03/business/nuke.php

Guardian 14th April 2006 http://politics.guardian.co.uk/green/story/0,,1753914,00.html

International Energy Agency (2004), Energy Policies of IEA Countries; Finland 2003 Review. http://www.iea.org/textbase/nppdf/free/2000/finland2003.pdf#

B5. Handout 6 – Managing Radioactive Waste

- "Low level nuclear waste also comes from hospitals and laboratories and the military, as well as nuclear power stations."

The amount of radioactive waste from civil activities, and its radioactivity levels, is so low as to be negligible, estimated to be around 0.001% of the total inventory of legacy waste (http://www.corwm.org.uk/content-1092 Page 24). However, this statement appears to be designed to coerce opinion towards complicity and making the overall issue of radioactive waste seem more benign than it actually is.

See: http://www.defra.gov.uk/environment/radioactivity/waste/pdf/hospitalspaper-llw.pdf.

- "These nuclear power stations already leave behind high, intermediate and low level nuclear waste. High and intermediate level waste is currently stored in secure interim storage, either at the relevant power station or at the Sellafield facility in West Cumbria."

The implication here is that because we already have waste, creating more doesn't really matter. In no way does this convey the complexity or enormity of the problem of dealing with current nuclear waste and nuclear materials. In fact it doesn't even really say what happens to the existing higher activity wastes which the Committee on Radioactive Waste Management (CORWM) was tasked to look and the handouts therefore neglects the responsibility to provide clear, full and accurate information.

Evidence of the complexity of the situation can be seen in CoRWM: Managing Radioactive Waste Safely. CoRWMs recommendations to Government (July 2006).

http://www.corwm.org.uk/pdf/FullReport.pdf

Extract: 'CoRWM's proposals for the long-term management of radioactive waste form a carefully articulated and integrated set of recommendations which are interdependent and which the Committee believes can only be successful if adopted as a package. In this sense CoRWM has gone beyond the narrow confines of its remit. It is not simply offering the best option or combination

of options in a narrow and technical sense. Rather, the proposals set out the constraints and uncertainties, technical and social,that will influence the achievement of the recommendations. In reaching its proposals, CoRWM has analysed and taken account of PSE, scientific and other inputs to show a future pathway. It presents a well-researched political and social analysis of the possibilities. The recommendations recognise that geological disposal is the right end-point for all, or almost all, the wastes in the CoRWM inventory but also recognise the significant role that must be played by storage both as an interim solution on the route to disposal as well as a contingency in the event of any interruption in the progress towards the endpoint. In carrying forward the recommendations, a staged process supervised by an independent Overseeing Body is recommended. Overall, CoRWM's proposals offer Government a way of getting from the present to the future that, if followed, is most likely to prove successful'.

None of the above is reflected in the handouts.

- "In 2003, the Government established the Committee on Radioactive Waste Management (CoRWM) to provide independent advice to Government on the long-term management of the UK's *existing* higher activity radioactive waste from our current nuclear power stations and other sources".

As the above emphasizes – the work of CORWM was about existing legacy wastes, not waste from new nuclear power plants. There are a huge amount of questions and concerns around new build waste not reflected in this document.

Some of these concerns are contained in the statement by CoRWM in response to the Judicial Review, of March 2007, Document No: 2162. www.corwm.org

Extract: It is important that CoRWM's position that its conclusions and recommendations can only apply to committed wastes is made clear beyond a peradventure. In no sense should CoRWM's position be read as providing any solution to the long-term management of any wastes arising from a new build programme. It is important that CoRWM's views are not taken out of context.'
http://comment.independent.co.uk/letters/article2180744.ece

Storage of nuclear waste
Independent letters, 24 January 2007
Sir: As chair of the Committee on Radioactive Waste Management, I reject any suggestion of political manipulation ("Blair accused of nuclear waste 'cover-up' ", 19 January).

CoRWM is an independent advisory body which has operated without preconceptions or undue influence from external bodies. All of our meetings have been held in public and our decisions subject to peer review and the widest possible scrutiny.

We delivered our recommendations to government in July 2006, following two and a half years of detailed work, which included rigorous scientific assessment as well as public consultation. We recommended that radioactive waste be buried deep underground, but that until appropriate repositories were available it be kept above ground in robust storage. The reference to our "failure to identify which sites can safely take the waste" implies that siting decisions were part of our remit, which they explicitly were not. This is something any former member should be aware of. In fact

one of the main thrusts of our report was that our recommendations would not be able to be implemented if sites were identified centrally rather than on the basis of a willingness to participate.

Members were declaring the interests you refer to at public meetings from early 2004. It is therefore somewhat surprising that two former members of the Committee only became aware of these interests through an article in your sister paper in May 2005.

Finally, when we reported to government, we specifically stated that our recommendations should not be seen as either a red or green light for new reactors.

GORDON MacKERRON
CHAIR, CoRWM LONDON SW1

http://comment.independent.co.uk/letters/article341879.ece

Waste body has no say on new reactors
Independent, letters, 30 January 2006
Sir: I would like to put in context the remarks I made in "Deal with disposal of nuclear waste first, warns advisers" (24 January) regarding the issue of nuclear waste and its bearing on building new nuclear reactors.

The Committee on Radio- active Waste Management (CoRWM) has been asked by the Government, as an independent body, to make recommendations - by July - of options for dealing with radioactive waste in the longer term. We have looked at whether the options on our shortlist could accommodate new-build wastes, and concluded that they could. However, as a committee, we have no position on the desirability of nuclear new-build. Our recommendations should not be seen as either a red or green light for new reactors.

It is not our place to set a timeframe for Government decisions on new-build, although we do believe they should be subject to their own assessment process, including the consideration of waste. This is because such decisions raise different political and ethical issues when compared with the consideration of wastes that already exist.

GORDON MACKERRON
CHAIR, CORWM, LONDON EC4

But that's exactly what the handout does. The handout continues:

- "Having considered the options, CoRWM advised that existing higher activity waste should be disposed of in a facility underground. This is known as a 'geological disposal facility'. CoRWM recommended that this should be preceded by safe and secure interim storage, and made a number of other recommendations on how a suitable site could be found and on what further research and development should be carried out."

What is implicit in the above is that it states that nuclear waste will go into a repository – even though the Government itself has not yet finished its first major consultation on how this might be

done – along with the expected 40-50 years storage required prior to disposal (or longer if disposal does not eventuate – a scenario also discussed by CoRWM but ignored in this consultation). The section on waste is woefully inadequate in conveying key information to participants on what is acknowledged to be one of the key public concerns around nuclear power.

See: http://www.guardian.co.uk/nuclear/article/0,,2166840,00.html

- "Of the countries elsewhere in the world that have taken a decision on how to deal with the radioactive waste, all have decided to adopt geological disposal. A few, including Sweden and Finland, have started investigating the geology at their chosen sites".

This statement fails to mention that both Finland and Sweden have yet to actually build a repository or dispose of any high level radioactive waste or spent fuel as yet and that currently, there is no operating facility for the disposal of long-lived ILW, HLW or spent nuclear fuel anywhere in the world. Indeed, the world's most progressed geological disposal site, the Yucca Mountain facility currently under construction, has been sited directly above an active fault line, which could lead to a further suspension of the project. Geological disposal remains an unproven method of managing ILW and HLW and thus this should be made clear.

http://www.klas-tv.com/Global/story.asp?S=7120584&nav=menu102_1

Waste Management in the Nuclear Fuel Cycle, World Nuclear Association, Information and Issue Brief, February 2006
See Underground Characterisation Facility or ONKALO, Posiva website. Overview: http://www.posiva.fi/englanti/tutkimus_esittely.html
http://www.enviros.com/vrepository/not_subscribed/country/finland/index.cfm
http://www.enviros.com/vrepository/not_subscribed/country/sweden/index.cfm
Platts Nuclear News Flashes 19th July 2006: Las Vegas Review-Journal 19th July 2006
http://www.reviewjournal.com/lvrj_home/2006/Jul-19-Wed-2006/news/8571904.html

- "The Government believes that new waste could be managed in the same way as outlined above for our existing or legacy waste".

This statement gives what the Government believes, not what CoRWM actually said and totally contradicts a statement made by CoRWM in response to the Judicial Review, of March 2007, Document No: 2162. www.corwm.org. See extract above. There should be a clear distinction made between finding a least worst option to manage an existing problem (not actually solving it) and creating a new problem by compounding/ increasing that problem.

B6. Handout 7: Nuclear Power and Waste

- "The Government and energy companies have both learned lessons about waste management, which have helped to shape and accelerate plans for dealing with waste in the future."

This is a subjective point presented as fact. Many environmentalists and indeed industry experts would contend although some lessons may have been learned there are still major outstanding technical issues remaining and that learning lessons is not the same as being able to actually implement a waste management or disposal programme. Certainly no 'solution' to the waste problem has been found. The statement above appears designed to mislead the public into thinking that a solution has been found when it has not. Quite apart from the array of unanswered questions – such as how to identify a willing community or suitable site for the long term management of radioactive waste, deep geological disposal (the preferred option adopted by the Government) remains technically, scientifically and ethically uncertain and questionable. There are currently no operating disposal facilities for higher activity wastes anywhere in the world. Moreover the government's own consultation on how to proceed with waste management and/or disposal has yet to be concluded and *agreed* by all relevant parties (for example, the Scottish Executive has refused to support part in the consultation on the basis it does not support disposal). How OLR can present such a firm position as if it were a reality is highly dubious.

Contradictory to the statement above, plans for accelerated decommissioning have not in fact been finalized and therefore the statement is misleading and inaccurate.

- "On one hand, new nuclear build would increase the legacy of waste for future generations. On the other hand, not allowing new nuclear power stations could lead to higher CO2 emissions which would contribute to climate change and this would also affect future generations."

This is a fundamentally misleading statement because it proposes a false dichotomy (we can only power the country with nuclear power or fossil fuels). In reality many other stakeholders including non-nuclear EU governments' the SDC, environment groups, academics and even the DTI (now DBERR) in the Energy White Paper in 2003 contend that not allowing nuclear power would free up billions of pounds (and political will) to develop renewables and decentralised energy generation that would slash emissions without creating a toxic waste legacy. This credible viewpoint is ignored in the statement. The respected Rocky Mountain Institute in Colorado concludes that for every pound spent on nuclear could save ten times more carbon if it is spent on efficiency and twice as much, if spent on CHP or renewables.

See: http://www.rmi.org/images/other/Energy/E05-08_NukePwrEcon.pdf

- "Environmental organisations, such as **Greenpeace**, point out that at the moment; there is no legally binding requirement on the energy companies who would build new nuclear power stations to cover the costs of managing nuclear waste. They fear that without a clear law, this cost would ultimately be picked up by the Government and the tax payer."

The views expressed by Greenpeace come from evidence submitted to the 2006 Energy Review and also in other documents to other consultations. What this section fails to report on is that the Government passed the Energy Act (2004) which was specifically designed to allow for the Government to pay for any waste liabilities for any future nuclear operator who could not meet their obligations on this matter. This formed the part of Greenpeace's concerns. Indeed, this legislation still exists and the Government has not given any indication that it will repeal the relevant section of

the Energy Act. In fact the Government has acknowledged that even if it enacts legislation to reduce the likelihood of the taxpayer picking up the bill for new build waste, that it will always remain the fallback for paying for liabilities. This is a crucial issue for the public and should have been fully explained.

Energy Act http://www.opsi.gov.uk/acts/acts2004/40020-be.htm
http://www.greenpeace.org.uk/media/reports/greenpeaces-submission-to-the-2006-energy-review - see nuclear issues section

- "The **Government** agrees that the cost of managing nuclear waste should not be picked up by the tax payer. Therefore, the Government has decided that if new nuclear power stations are built, energy companies will be made responsible for these costs. The Government would do this by introducing new laws which will require the energy companies to put aside money to cover the costs involved in a safe and secure way. The **potential operators** of any new nuclear power stations agree that they should be the ones to pay."

As above, this is totally misleading. Not only are there no published, detailed proposals for any new laws to facilitate this, but it ignores that that the Government is the last resort regardless of what legislation it enacts. It is bound by EU law that covers the liabilities for waste and decommissioning should there be inadequate private operator funds (i.e. it goes bust). In addition, the Government has refused to quantify what is has stated when referring to private companies paying for the 'full share' of liabilities, and therefore participants have very little to base their questions or concerns upon. In fact, contrary to the above statement, the Treasury has stated that in fact they will underwrite the costs of new nuclear power stations, with specific attention given to waste costs

See: http://news.bbc.co.uk/1/hi/uk_politics/5171800.stm

http://www.telegraph.co.uk/news/main.jhtml?xml=/news/2007/10/03/nbrown503.xml

Need to extract top lines from subsidies report to counter this.

B7. Handout 8: Managing security and safety risks

- "We are exposed to low level radiation in our daily lives (e.g. X-rays and natural radon gas from the ground). Natural background radiation makes up more than 80% of average annual doses. The average exposure to radioactivity from the whole UK nuclear power industry is one thousandth (0.015%) of an individual's annual dose from such radiation sources."

This is presenting a very a complex issue in a way that is neither accurate or objective in manner. It oversimplifies a crucial health and safety implication of nuclear power. For example, using exposures from unavoidable natural sources of radiation to justify avoidable exposures from human activities (e.g. nuclear industry) is questioned by many experts. X-rays are not a part of the vast majority of people's 'daily lives' - they are an exposure to known individuals under controlled

circumstances where a consenting person has had their position assessed by a medical expert and the benefits v. the risks of the exposure have been evaluated.

In addition, using the average annual dose across the whole UK population from nuclear power activities masks the higher doses which can be received by people living around nuclear power plants, or related installations (e.g. Sellafield reprocessing facility). It is also worth noting that the handout uses a comparison of the average dose received from nuclear power to the dose from natural/medical sources which is approximately 2milliSieverts (mSv) However, the maximum permissible legal limit from industrial activities is 1 milliSievert (mSV) – half of the unavoidable exposure. Risks are deemed to be unacceptable at doses above 1mSv.

Lower still is the recommendation from the Health Protection Agency which is a maximum of 0.3mSv from any single nuclear site/activity (one third of the legal maximum). In fact the latest Safety Assessment Principles form the Nuclear Installations Inspectorate (2007) advise that the industry should aim for 0.02mSv (dose to individuals) as the 'basic safety objective' for nuclear installations.
http://www.hse.gov.uk/nuclear/saps/

This underlines the complexity of this situation – but most importantly that using an average of exposures from nuclear power plants and comparing it to (unavoidable) exposures from natural/medical sources is extremely misleading.

- "The risk of terrorism and the proliferation of nuclear weapons is clearly a very serious issue. Because of this, nuclear power stations are designed to be robust against damage to their safety equipment and systems, whether the cause is accidental or deliberate."

Proliferation, a massive field for international research, diplomatic activity, the cause of wars – all dismissed in one trite paragraph which would not enable the participant to develop an informed and objective view on the seriousness and complexity of the issue to be considered. For example, controversy has raged over whether nuclear power stations can withstand aircraft impact and contradictory statements and research has been published.

See: http://www.largeassociates.com/3136%20LAAG/R3136-A1.pdf
http://www.largeassociates.com/3155%20Jersey/R3155-3.pdf
http://www.largeassociates.com/PapersReports.htm

See the SDC report on nuclear proliferation
http://www.sd-commission.org.uk/presslist.php?id=5

Also Oxford Research Group
http://www.oxfordresearchgroup.org.uk/publications/briefing_papers/npt16.php

- "The Office for Civil Nuclear Security is satisfied with arrangements to guard against terrorism and believes that allowing new nuclear power stations to be built would be unlikely to increase the risks of terrorist attack. Designs most likely to be used for new nuclear power stations make proliferation very unlikely because the fuel is not immediately

suitable to use for weapons, and it is difficult to access the fuel without shutting down the reactor."

This conflates terrorism – which can never be fully guarded against – with proliferation (involving nuclear materials and technology). The two issues are not synonymous – but quite distinct issues. However, we offer some examples of the concerns around protecting against terrorism and proliferation problems in the following reports.

On terrorism;
See: http://www.largeassociates.com/3155%20Jersey/R3155-3.pdf
http://www.largeassociates.com/ibc%20decommr/IBCpaperFINAL%2014%2011%2006.pdf
http://www.parliament.uk/documents/upload/POSTpr222.pdf

CORWM produced an expert group report on the security of plutonium and nuclear materials/wastes which raised serious concerns over security of existing materials

See:http://www.corwm.org.uk/pdf/1573%20%20Security%20criterion%20%20Catalyze%20report%20December%202005.pdf

For ease of reference, we quote the CoRWM report here. It noted:

"*The security Specialists appointed to the CORWM Specialist Security Workshop recognise that CoRWM is not responsible for the priority that is being given to the conditioning and mode of storage of nuclear waste forms prior to their transportation to the selected storage/disposal facility that may not occur for some decades into the future. However, it is our unanimous opinion that greater attention should be given to the current management of radioactive waste held in the UK, in the context of its vulnerability to potential terrorist attacks*."

Greenpeace are not aware of any UK Government programme that is addressing this issue with adequate detail or priority, and consider it unacceptable for some vulnerable waste forms, such as spent fuel, to remain in their current condition and mode of storage. We urge the Government to take the required action and to instruct the NDA, in cooperation with the regulators, to produce an implementation plan for categorising and reducing the vulnerability of the UK's inventory of radioactive waste to potential acts o terrorism, through conditioning and placement in storage options with an engineered capability specifically designed to resist a major terrorist attack."

Participants who signed up to the above caution included OCNS's then deputy director and BNFL's head of security.

- "According to the European Parliament, the risks associated with the transport of radioactive materials are low."

The pro-nuclear International Atomic Energy Agency identifies transport as the most vulnerable area of nuclear security. The IAEA is a recognised authority on nuclear threats, and the selected quoting of the European Parliament therefore misleads the public. Moreover, the European Parliament document to which reference is drawn is a Motion for Resolution, i.e. a political statement, not an independent researched and referenced report.

See:
http://www.greenpeace.org.uk/files/pdfs/migrated/MultimediaFiles/Live/FullReport/7487.pdf

- "The costs of waste and decommissioning aren't a very high proportion of total estimated nuclear generation costs"

The current costs of decommissioning existing civil nuclear installations, including reactors alone are estimated by the Nuclear Decommissioning Authority to stand at £72bn. This constitutes a high proportion of generation costs, although the true costs remain unknown.

However, some estimates have been given for what it might cost to dispose of waste from new reactors NIREX UK (The Gate Process: Preliminary analysis of radioactive waste implications associate with new build reactors) February 2007 document number 528386 put s the figure for waste disposal (not including decommissioning) at £2bn for waste from 10 AP-1000 reactors or £1.3 billion from 7 EPR power stations. Compare this with the estimated cost of around £8bn-£10bn for disposal of legacy wastes (NIREX Sept 2005, no 484432) and it is evident costs to the overall waste disposal programme could be significant. That these costs could fall on the taxpayer has, as mentioned earlier, been omitted from this debate.

See:
http://news.bbc.co.uk/1/hi/business/4859980.stm
http://www.nda.gov.uk/

- "Greenpeace, Friends of the Earth and the Green Alliance are also concerned about the risk of terrorism. They believe that building new nuclear power stations would increase the risk of terrorism and threaten national security. However, whilst some interested parties raise concerns, others, such as the Sustainable Development Commission, the Confederation of British Industry (CBI), British Energy and Trade Unionists for Safe Nuclear Energy, are all satisfied with the safety record of the nuclear industry in the UK. They highlight the rigorous safety and security regulatory regime that is in place. In fact the CBI and British Energy go as far as to say the safety record is exemplary. In addition, the International Atomic Energy Agency (IAEA) has also commented on the UK's mature and transparent regulatory system with highly trained, expert and experienced staff. These organisations also say that new designs and improved safety systems will make new nuclear power stations even safer, with fittings such as automatic shutdowns already being put in place."

We believe that the manner in which the above is frame is one-sided and misleading as it fails to provide sufficient information to form an informed and intelligent response to a complex issue. There have been a number of safety breaches and accidents affecting the industry which are not disclosed and thus 'exemplary' is not given in relative context.

http://www.guardian.co.uk/nuclear/article/0,2763,1479527,00.html

The SDC report: 'The role of nuclear power in a low carbon economy (Paper 6: Safety and security An evidence-based report by the Sustainable Development Commission, with contributions from Large & Associates and AMEC NNC, March 2006)' at p.3, summary, records "it remains difficult to fully account for future changes in the modus operandi of terrorist groups and their capacity to exploit weaknesses in the design, operation or security of nuclear power stations and associated infrastructure." This is not a description of a "rigorous safety and security regulatory regime," as claimed, and should give rise to ongoing security concerns that are not reflected in the citations of satisfaction that are included.

http://www.sd-commission.org.uk/publications/downloads/Nuclear-paper6-SafetyandSecurity.pdf

B8. Handout 9: Views on security and safety risks and nuclear energy

- **"Greenpeace**, **Friends of the Earth** and the **Green Alliance** say that, regardless of measures put in place, there are no guarantees that highly radioactive waste would never leak and cause a safety issue. They raise specific concerns about the potential for contamination by the transportation of nuclear fuel and waste."

Greenpeace has not just raised concerns over highly radioactive waste – but all aspects of the fuel cycle, in particular accidents at reactors, terrorist threats to transport, spent fuel storage, proliferation risks. Please contact us if you require specific examples. These groups are far from the only groups to show concern, which include the Nuclear Free Local Authorities, EU Governments and leading scientists.

- However, whilst some interested parties raise concerns, others, such as the **Sustainable Development Commission**, the **Confederation of British Industry (CBI)**, **British Energy** and **Trade Unionists for Safe Nuclear Energy**, are all satisfied with the safety record of the nuclear industry in the UK. They highlight the rigorous safety and security regulatory regime that is in place. In fact the CBI and British Energy go as far as to say the safety record is exemplary. In addition, the International Atomic Energy Authority (IAEA) has also commented on the UK's mature and transparent regulatory system with highly trained, expert and experienced staff. These organisation's also say that new designs and improved safety systems will make new nuclear power stations even safer, with fittings such as automatic shutdowns already being put in place."

Here again it appears that the SDC is only referenced in these materials when it supports a subjective view presented by the consultation. The materials do not even raise all of the 15 major concerns of the SDC, let alone highlight the five major concerns that SDC have over nuclear power, let alone identifying these Government body's doubts over nuclear power, which are clearly laid out in the report below. The SDC state that on balance, the disadvantages outweigh the advantages.

See: http://www.sd-commission.org.uk/publications/downloads/SDC-NuclearPosition-2006.pdf

- **"Greenpeace** and **Friends of the Earth** raise specific concerns about the vulnerability of coastal sites to rising sea level, flooding and erosion.

This statement is structured in a one-sided and leading way– and we believe that it contravenes the code. It is not just green NGOs that raise these concerns, but also the Met Office, the Environment Agency and even DBERR themselves, who point to the vulnerability of existing coastal nuclear power stations from sea level rises.

See:
http://www.berr.gov.uk/files/file39030.pdf
http://news.bbc.co.uk/1/hi/sci/tech/6292973.stm

More generally, it is in fact misleading to present safety as a closed issue as there is no guarantee on proposed untried and untested new reactor designs. The EPR and AP1000 (the latter a stripped down version of Sizewell B) – and it is not yet possible to assess whether they will be safe or not. None of these designs is operating anywhere in the world – they are at present untried and untested. At present, no one knows what the Nuclear Installations Inspectorate (NII) may demand or whether indeed they will sign off on them. The implication by OLR that there are no concerns over safety is very pre-emptive of the NII process – which has only recently started the phase step, of stage one of a four stage process of licensing reactors.
http://www.hse.gov.uk/nuclear/reactors/guidance.htm

B9. Handout 10: Nuclear power and CO2 emissions

- "The Government estimates that our current nuclear power stations save between 5 and 13% of the UK's total CO2 emissions each year (assuming that the electricity would otherwise be generated from a mix of gas and coal-fired power stations)."

The government's own official advisors at the SDC state: "Assuming that we're talking primarily about gas-fired plants, then a replacement programme for our existing nuclear programme (at 10GW) would displace about 6.7 million tonnes of carbon (MtC) every year once all the plants were up and running. That's equal to around a 4% cut in annual CO2 emissions from 1990 levels."

OLR provides no evidence for the claim that the figure is 5-13%. It assumes coal generation will not be phased out, when the SDC assumes it will. For OLR to make this assumption misleads the public. See:

http://www.sd-commission.org.uk/publications/downloads/IsNuclearTheAnswer.pdf (Page4)

Moreover, the original DTI Energy Review consultation document, issued in January 2006, states in Annex A on technologies "Nuclear power plants emit almost zero carbon, and could therefore contribute to the Government's goal of reducing emissions. *However the mining, refining and enriching of uranium, and plant construction and decommissioning, are carbon-intensive processes, especially when low quality uranium ore is being processed*." Our emphasis (page 64). No participant in the OLR was made aware of this crucial qualifier, tucked away in an Annex, but they should have been.

http://www.dti.gov.uk/files/file25079.pdf

C. Reference Materials were also used to conduct the polling. They can be seen here:

See: http://nuclearpower2007.direct.gov.uk/docs/Events_070908_ReferenceSheets.pdf

C1. Reference Sheet 1: Who provides the Energy?

- "Currently in the UK, the Government doesn't tell electricity companies how much electricity they should generate, or what method they should use to generate it. The Government's overall approach to meeting our energy challenge is to allow the private companies in the energy market to decide on the most cost effective energy mix. An important benefit has been greater competition between producers for customers' business which has spurred productivity and driven energy prices down."

We believe this is both immediately confusing and misleading.

C2. Reference Sheet 2: Information on renewables

- "There are 148 wind farms in the UK with a total of 1866 turbines. (Source: British Wind Energy Association).
- These wind farms (on and offshore) have a generating capacity of 2175.84MW. This is equivalent to the electricity supply to 1,206,154 homes or more than Birmingham, Sheffield and Leeds combined. (Source: BWEA)
- In 2005 wind supplied just under 1% of the UK's electricity supply.
- Onshore wind energy remains fastest growing technology with some 1872.84MW of installed capacity.
- UK Offshore wind farms have a generating capacity of just over 303MW.
- There is over 14,500MW of onshore and offshore wind capacity either consented or in the planning system which is more than enough to meet the 2020 renewables target.
- Construction has begun for a new 100MW hydroelectric power station at Glendoe in Scotland.
- Construction of E.ON UK's 44MW dedicated biomass power station, the largest UK plant of its kind, began in January 2006 and will help create over 300 jobs.
- Currently renewables generate around 8000 UK jobs. Theoretically up to a further 27,000 jobs could be generated from the investments required to reach our 20% renewables target by 2020."

We are concerned that there is no mention of the overall potential for renewables, just what's planned (mainly for wind) and what's in operation at present, which fails to acknowledge their possible role under amore ambitious policy regime. Government's own figures show renewables including wind, wave and tidal can deliver far more practically and economically in the same timeframe as the mooted nuclear replacement programme.

http://www.cabinetoffice.gov.uk/strategy/downloads/su/energy/TheEnergyReview.pdf

Also, no figures on energy efficiency and conservation, which again distorts the information for all energy options, as well as an absence of figures on CHP which has a target is being missed, despite Government's claims that it has the potential to deliver..

C3. Reference Sheet 3: The main benefits and disadvantages of the different electricity sources

Although this statement appears on the DBERR website, there are witness testimonies from participants at the deliberative events from 8th September that state that these were removed from consultation on the day.

"*Note that the 'reference sheets', which offer by far the most balanced information, were not made available to us during the consultation although I requested to see them at the end*". **Meg Ward, Cardiff**

http://www.greenpeace.org.uk/blog/climate/what-happened-at-the-governments-nuclear-consultation-the-inside-story-20071112

C3.1 Wind:

Disadvantages:

- "The wind is not always predictable – on some days the wind does not blow." –

There is no day in the UK when there is no wind. Wind is variable, but it is predictable and can be planned for. As the national grid transfers electricity across the UK when there are wind farms not producing electricity the grid will source power from another source (or the same) in another areas . A modern wind turbine produces electricity 70-85% of the time, but it generates different outputs depending on the wind speed. Over the course of a year, it will typically generate about 30% of the theoretical maximum output. This is known as its load factor. The load factor of conventional power stations is on average 50%. We believe that the above statement in the reference materials is deliberately misleading.

- "Some people feel that covering the landscape with these towers is unsightly."

However, this does not mention that recent surveys indicate that as many as 80% of people come to like them afterwards and that consistently the majority of people them in principle too.

See: http://www.bwea.com/ref/surveys.html

- "Can be noisy but aerodynamic designs have improved and modern wind farms are much quieter".

Again, this does not present the full facts. It would be more accurate to say that recent research indicates that wind turbine design has improved so much that wind turbines generate the same noise levels at 350 metres as a flowing stream at 100 metres, or the equivalent in decibels as a

reading room in a library. That means, except in very unusual circumstances and wind conditions, that turbines are quieter than most ambient background noise such as roads.
See:
http://www.britishwindenergy.co.uk/pdf/noise.pdf
http://www.sd-commission.org.uk/publications/downloads/Wind_Energy-NovRev2005.pdf

- "Often requires construction of expensive overhead/underground wires to transport electricity to rest of UK."

This is true for all major power plants. Not contained here is the reality that nuclear power already has ungainly transmission lines coming from its power stations – which will also need expensive upgrades if there is a new generation of plants. National Grid has estimated it could cost up to £1.4bn to upgrade Britain's electricity network if a new fleet of nuclear power stations is built and that most of this cost will fall on National Grid and consumer.
See: http://www.telegraph.co.uk/money/main.jhtml?xml=/money/2006/07/13/cnuke13.xml

C3.2 Solar:

- Advantages: Handy for low-power uses such as solar powered garden lights and battery chargers.

Even this positive point is dismissive and misleading statement designed to make people think that solar panels can only be used for relatively small electrical appliances – no explanation of how they can be used for heating, lighting etc in the home. This totally understates the role that solar can have in electricity generation. In Germany, 300 Megawatts of solar capacity has been installed and a typical house with a south facing sloping roof can meet a significant proportion of annual electricity needs from solar photovoltaics and annual hot water from solar thermal. There is nothing small about electricity from solar – it's the same electrons as any power source and could just as well be described as powering cars, fridges or air conditioning.

See:
http://www.berr.gov.uk/energy/sources/renewables/renewables-explained/solar-energy/current-use/page16374.html

- [Disadvantages of solar are]: "Can be unreliable unless you're in a very sunny climate."

We believe that this is totally inaccurate and misleading. Photovoltaic cells need light, not necessarily sunshine, and they will therefore generate electricity even on cloudy days just as reliably even if overall output is reduced. It also inaccurately suggests that solar is used as a sole power source – as if electric items will stop working if a cloud passes. In fact, solar is used as a way to reduce on site the amount of electricity imported from the grid and therefore is not relied upon for continuous power, but is valuable as a reductive factor on consumption and fossil fuels, burned elsewhere for grid electricity. Germany is a world leader in solar photovoltaics and has similar weather conditions to the UK.

See: http://www.solarcentury.co.uk/knowledge_base/faq/#1362

- [Disadvantages of solar are:] "At present solar cells cost a great deal compared to the amount of electricity they will produce".

Again, we believe this is misleading and inaccurate as it compares costs in a narrow and biased way. A solar installation adds as little as 4% to the build cost of an average three bedroom home, but over 10% to its final value when sold. It also helps 'future proof' a home against rising fuel prices making properties doubly attractive to price conscious house buyers; as fuel prices continue to rise, energy efficient renewably powered homes will continue to sell at a premium.

See: http://www.solarcentury.co.uk/knowledge_base/faq#1363

C3.4 Nuclear:

- [Advantages of nuclear are] **"**Produces huge amounts of energy from small amounts of fuel."

The amount of fuel used in a reactor may be physically small in volume but as with coal it leaves massive waste tailings as a result of fuel production – in fact uranium mining is the largest waste creating part of the nuclear fuel chain. The amount of usable Uranium-235 that is gathered from uranium mining is so small that basically every kilo mined is in effect a kilo of waste. 80% of the radioactivity in the mined ore is left in the waste. When mining impacts are accounted for, it's similar in impact to other fuel technologies, particularly when you consider of the waste creation at the beginning of the nuclear chain, and the impact of those regions the waste is left in, which is entirely missing from this document.

- [Advantages of nuclear are] "It is substantially cheaper than wind generation (particularly off-shore) and can be more cost effective than fossil-fuel generation when the costs of CO2 emissions are taken into account"

This is simply untrue and as above constitutes a flagrant breach of the code. The government's own Performance and Innovation Unit found that the cost of wind energy is in fact competitive with or cheaper than nuclear.

See: http://www.cabinetoffice.gov.uk/strategy/downloads/su/energy/TheEnergyReview.pdf

The government's own 2003 energy white paper concludes that nuclear power is more expensive than wind. From section 4.11 "Technologies such as onshore and offshore wind and biomass are potentially – after energy efficiency and alongside CHP – the most cost-effective ways of limiting carbon emissions in the longer term." This was not communicated to the public, which was therefore misleading. Moreover, no-one knows that costs of nuclear proposed since the designs to be used have never been built and operated anywhere in the world. The issue of waste costs is also ignored here. No assumptions on waste can reliably be made and it could add hugely to costs if fully internalised.
See: http://www.berr.gov.uk/files/file10719.pdf

- [Advantages of nuclear] It creates a 'base-load' energy supply i.e. a steady flow of power regardless of total power demand, with a limited number of sites.

This is not true in practice due to unplanned outages and problematic performance and is ignored by the framers in the consultation, especially when considering that all but one of British Energy's reactors were off line at one time last year (over winter).

See:
http://news.bbc.co.uk/1/hi/business/6949026.stm,
http://news.bbc.co.uk/1/hi/england/somerset/6085258.stm,
http://news.bbc.co.uk/1/hi/england/bristol/6897062.stm

This section also fails to include the advantages of energy efficiency and system efficiency through decentralised energy and CHP, which should have been included to provide all the options for existing and future energy scenarios to be consulted upon.

C4. Reference Sheet 4: Range of electricity generation costs for different technologies

- "Technology Cost per megawatt hour of electricity produced - Nuclear (this includes decommissioning costs) Between £31 and £44".

This figure does not include waste disposal costs, and is thus misleading and inaccurate. Energy Challenge Document put it at as much as £65.5 cost per megawatt. The true range of costs should have been presented.

Source: Department of Trade and Industry, 'Nuclear power generation cost benefit analysis' July 2006 http://www.dti.gov.uk/files/file31938.pdf

C5. Reference sheet 5: What is nuclear power and how is electricity produced through nuclear energy?

- "The other option is to simply store or dispose directly of the material in its entirety."

It is deliberately misleading to portray a massively complicated and hazardous issue in such a benign and complicit manner. There is currently no 'solution' to dealing with higher activity radioactive waste, and even the government's own advisory body CoRWM has stated that one may never be found. To the contrary, deep geological disposal (the preferred option adopted by the Government) remains technically, scientifically and ethically uncertain and questionable.

See:
http://www.guardian.co.uk/nuclear/article/0,,2166840,00.html

- "The radioactive waste or 'spent fuel' produced by nuclear generation can remain potentially hazardous for a considerable amount of time"

This is singularly misleading and does nothing to impart just how long radioactive waste remains hazardous to both the public and the environment. There is nothing 'potentially' hazardous about radioactive waste – it will remain actually harmful. The NDA gives 300,000 years before the radioactivity in spent fuel drops to the same level as uranium ore. But how radioactive it is in terms of heat emission or penetrating radiation is only part of it.

Some radioactive isotopes in spent fuel are very long lived e.g. Neptunium 237, which has a half of 2,144,000 years (see http://www.globalsecurity.org/wmd/intro/neptunium.htm) – although not extremely radioactive (e.g. hot) it is an alpha emitter and thus potentially hazardous to human health. It is expected that any repository will eventually leach radioactive contamination into the surrounding environment and these long lived isotopes could cause problems a long time into the future.

See: http://www.nda.gov.uk/documents/

- "There is a set of regulations in place in the UK which apply to existing facilities and would protect against risks arising from waste from any new nuclear power stations. These regulations are particularly strict around the waste that is most radioactive."

This is not true. The claim that regulations in the UK protect against risks arising from waste from any new nuclear plants is cannot be guaranteed – the form of spent fuel for disposal (how it will be packaged) is not even agreed, the repository design doesn't exist and currently the Environment Agency is grappling with how it can regulate/authorize the repository process as it doesn't have the legal powers to do this yet in a way which would allow the repository to be progressed on the inevitable stage by stage process.

Note for GRA workshop, 21 June 2007 – Staged Environmental Regulation of a Geological Repository – The Need for Legislative Change EA).

Reference sheet 7: How decisions about where to build any new nuclear power stations would be made

- "However, some see this as a conservative estimate. For example, one potential developer of new nuclear power in the UK has offered a more optimistic perspective and suggested that it would be possible to develop the first new nuclear power station by 2017."

This is at odds with the most recent statement by British Energy which is that they know they are going to miss the 'energy gap' and probably won't have the first of new build on line until 2020 – a review of their original date of 2017. So why has OLR included this piece of misinformation?

See: http://www.neimagazine.com/story.asp?storyCode=2040766

Section D: Concerns from participants and other stakeholders.

D1. The following is a link to Channel 4 news article concerning the public consultation and reaction from members of the public and senior research academics, such as Professor Paul Dorfman from Warwick University, who have condemned the inadequate, leading and inaccurate materials developed and distributed by OLR, and which supports our complaint against them for misconduct.

http://www.channel4.com/news/articles/society/environment/spinning+a+nuclear+consultation/821457

Extracts from witness statements from participants at national consultation meetings, September 8th 2007, which can be found at:

http://www.greenpeace.org.uk/blog/nuclear/the-consultation-stitch-up-20070920.

D2. Meg Ward attended the Cardiff Public Consultation on 8th September 2007

"It became quickly clear that the intention was to provide us with very limited, biased information in order to lead the participants to a predetermined conclusion. I was lucky to have some alternative information under my belt, but most people felt it was biased and even those who agreed with me believed nuclear power to be a foregone conclusion. The questions were very leading and I could almost see them forming a prime minster's pro-nuclear power speech.

"The question of whether the stations would be built in time to address the 'power gap' was carefully avoided.

"Alternatives to nuclear power were presented as: Coal and Gas (dirty CO2 emitters) and renewables in the form of wind and wave power (expensive - no mention of the expense of nuclear!). CHP was referred to in one line of one of many factsheets read to us, saying it was explained in a further reference sheet which we did not receive"

D3. Janet Toye attended London Public Consultation on 8th September 2007

"I was one of those who took part in Saturday's consultation from which green groups pulled out (7.9.07). 200 plus attended the meeting in London.

It was explicit throughout that the Government is already strongly persuaded in favour of nuclear power. The material provided came entirely from them.

While the material provided referred briefly to the views of those opposed to future nuclear development, we wanted information and arguments from those organisations in equivalent detail to what the Government had provided. The most surprising and disappointing omission was anything from the Sustainable Development Commission who, according to the notes, 'argue that it would be possible to develop a sustainable energy policy without nuclear'."

D4.Jessica Duncan attended the Edinburgh Public Consultation on 8th September 2007

"The day long event was not all a consultation, but merely a sleek marketing ploy in which the only energy option presented to the (rather gullible) public were fossil fuels or nuclear. Energy conservation and adapting our lifestyles to reduce our energy consumption was barely mentioned.

It would appear that very few participants at the Edinburgh event were willing or able (due to lack of information) to challenge the Government's limited choice of energy options.

The participants of "Talking Energy" were pushed against a wall so they had no choice but to support a new generation of nuclear power plants".

D5. From wanderer99, who attended the Public Consultation in Newcastle 8th September 2007

"I also had the great mispleasure (sic) of attending the Talking Energy public consultation. Many of the concerns were mirrored by myself and many others at the Newcastle event.

Going in with an open mind, I neither agreed or disagreed with the proposed expansion of nuclear energy in this country. I had expected to take part in a balanced debate, being given the opportunity to weigh up the pros and cons of not only nuclear power but other energy sources to formulate my own opinion.

Instead, I was presented with a biased/ heavily unbalanced argument. I felt like we (the 1000 people being "consulted" about this very important issue) were not contributing to this very important debate in the slightest; it felt like the decision had already been made. Questions such as "what reassurances would you like regarding nuclear power?" certainly suggested that the government were merely looking for a method of marketing this effectively to the public.

With the information presented, myself and others felt like we were being misled and manipulated. Satistics (sic) were used sparingly and distinctly vague statements were used to describe what was really being planned. The arguments presented were incredibly weak and one sided.

I left the event feeling bewildered and somewhat disgusted."

D6. Richard Wilson, Involve:
http://www.involve.org.uk/index.cfm?fuseaction=main.viewBlogEntry&intMTEntryID=3107

"It did however feel like a highly constrained discussion with a purpose ("In the context of tackling climate change and energy security what role should nuclear power have in the UK's energy mix?") that made uncomfortable reading for anyone who believes public participation should open-up, not close-down public debate. You could just as easily have written "in the context of the highly uncertain economic costs and personal health impacts of nuclear power what role should it have."

D7. Alistair Kelsey, Newcastle 8th September 2007

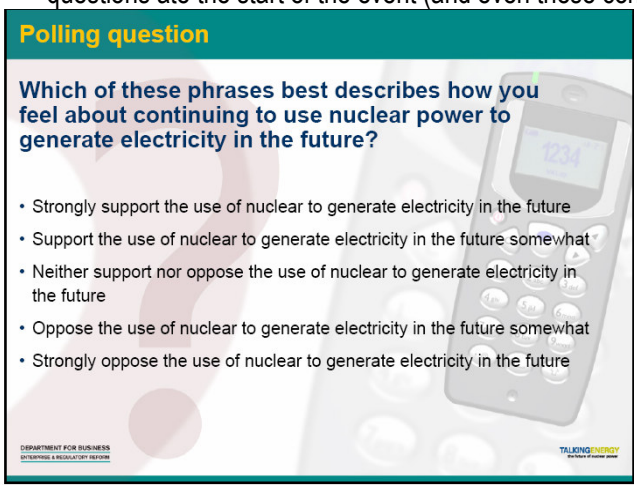
"I had expected to take part in a balanced debate… Alas, this did not occur. While the discussions that took place in the groups were very interesting and thought provoking, the videos and

information provided lacked depth and to a great extent made a mockery of the intelligence of people in the room. Stats were used sparingly and vague statements were commonplace. Overall, I felt rather bewildered leaving the event."

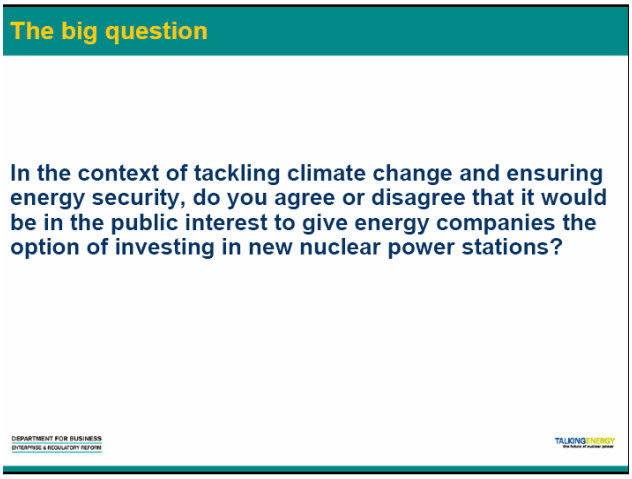
Appendix A

Use of questions and participant persuasion

- Opinion Leader did not follow MRS guidelines that **repeated questioning** is one of the four key issues that can negatively affect the quality of the results. At this event the attendees were asked a set of questions ate the start of the event (and even these contained some degree of repetition)

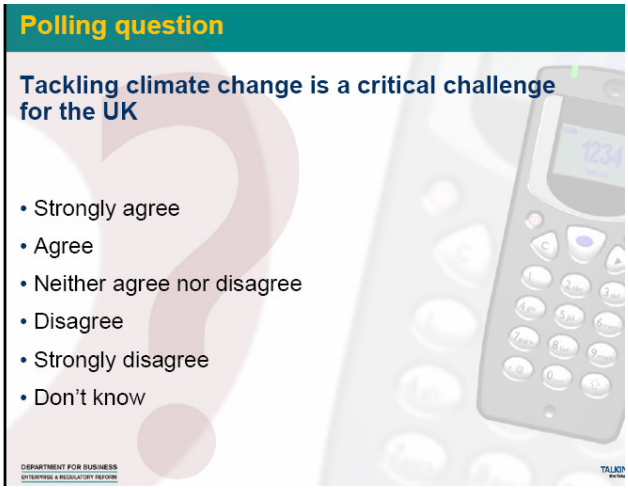


This was voted on at the beginning

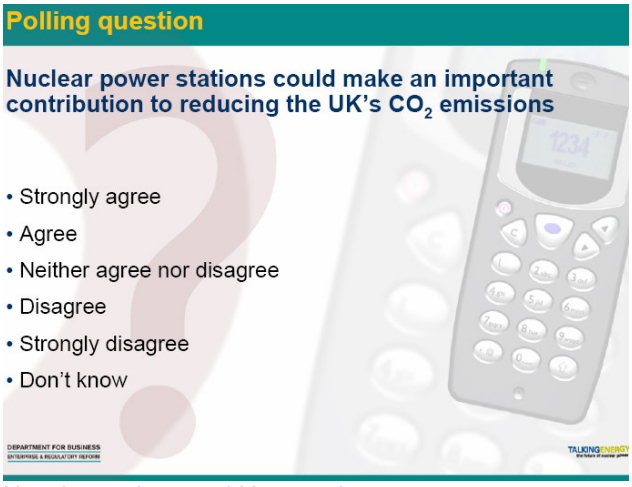


This was not voted on until the end

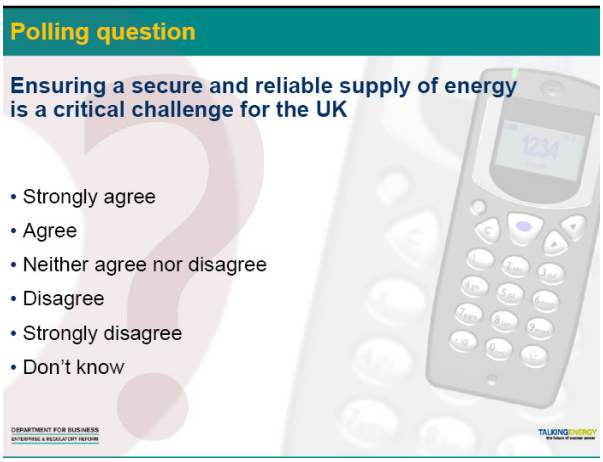
The rest of the questions (below) were all voted on at the beginning and at points later on in the research. The order below is the initial order of questioning, which also raises the potential that **the participants were led**



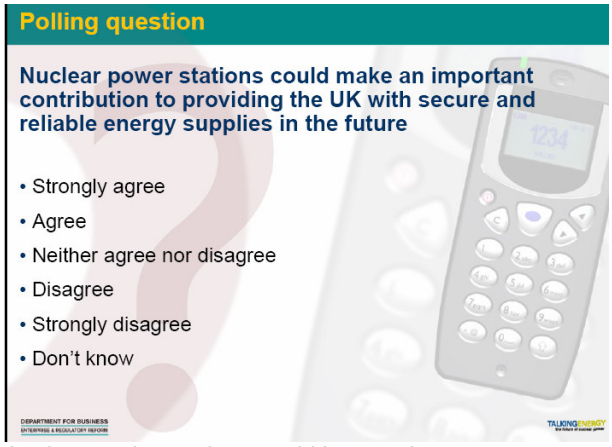
Leads directly onto



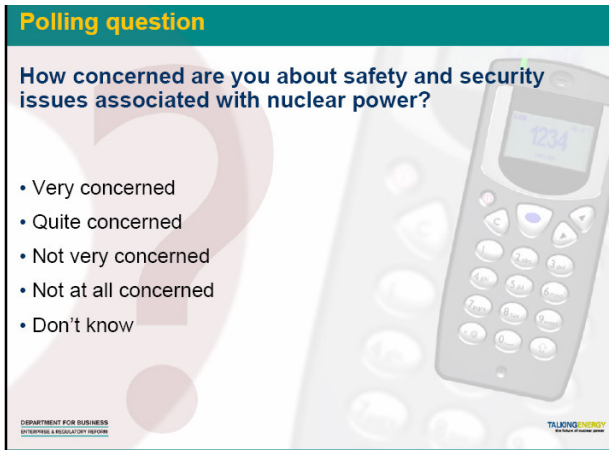
No other options could be voted on

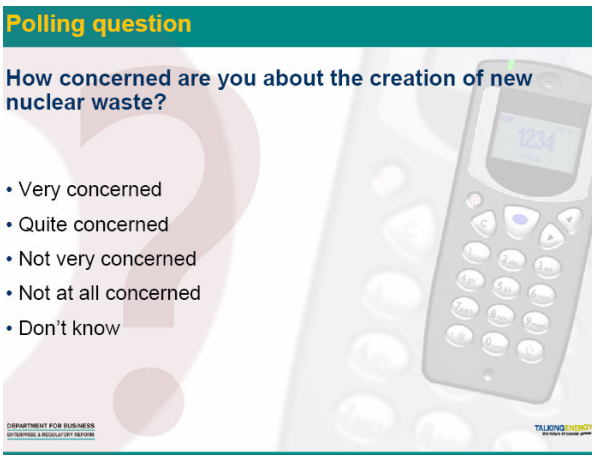


Leads directly onto



Again, no other options could be voted on





- Most of these questions are asked at least twice over the day. However there were six points across the day where attendees could vote on nuclear power, this does not include the fact that the main question was also asked at the beginning of the day (even though no voting actually happened then).

- One of the most concerning points in the research came when discussing waste and security. Tables were asked to raise their concerns and then think about what would reassure them. Re-voting on the issue of waste and security after this discussion is will not give a true reading as to whether the evidence presented (ignoring whether it was accurate or not) or the group discussion (which really may not have been an accurate) served to change views.

This was followed – directly – by a re-vote on waste and security issues

- Finally, the last question "On balance should the government give companies the option to build nuclear power stations" was asked in a very qualified way. The issue of conditionality "Yes, but" was tackled head on, in fact people were encouraged to say yes or no, and then air their conditions subsequently. This is not reflected in any of the quantifiable results. How many of the positive responses were conditional? Conditional on issues that are not reported on quantified at all.

[i] *The Queen on the application of Greenpeace Limited -v- Secretary of State for Trade and Industry*.
15th February 2007 http://www.greenpeace.org.uk/MultimediaFiles/Live/FullReport/ERJRSullivanJudgement.pdf