



NEWSLETTER - SEPTEMBER, 2008 (23 pages)

1. INTRODUCING BANNG

Although you are a BANNG supporter, you may not be aware of how the group came into being. This first section of the Newsletter will, therefore, be given over to an explanation of the genesis of BANNG.

How BANNG Came About

On 11 March, 2008, there was a meeting in the MICA Centre of citizens concerned about the possibility of a new nuclear power station on the Bradwell site. The meeting was addressed by four experts: Professor Andy Blowers, (who arranged the meeting - please see his profile below); Professor David Elliot (Head of the Energy and Environment Group at the Open University); Dr. Ian Fairlie (former Secretary of the Government's Committee on Examining Radiation Risks of Internal Emitters - CERRIE); and Mr. Pete Wilkinson (member of the government's first Committee on Radioactive Waste Management - CoRWM - and spokesperson for Nuclear Waste Advisory Associates - NWAA) . As a result of the meeting, many people attending indicated their concern at the possible building of a new power station and their wish to know more about the implications.

A further meeting was held at the MICA Centre on 3 April. At this meeting, a Core Group of volunteers who would act as an executive was agreed to take things forward. On 28 April, BANNG was launched at a meeting in the Church Hall of St. Peter's and St. Paul's. At the Launch Meeting, the name, structure, aims and strategy of the group were agreed as well as a suggested donation of £5 to help with the costs of running the campaign. The Core Group and two Sub-Groups were also agreed.

Profile of Professor Andy Blowers, OBE, FRSA, Chair of BANNG and Acting Chair of the Strategy and Information Sub-Group

Most importantly for BANNG, Andy was a member of the Government Committees dealing with the management of radioactive waste: the Radioactive Waste Management Committee (RWMAC) and the first Committee on Radioactive Waste Management (CoRWM). In fact, it was the recommendations made by CoWRM on the disposal of nuclear waste that were accepted by the Government in July, 2006. Andy was responsible for writing substantial sections of the Final Report, including the Overview, as well as the Committee's Report on Implementation.

Andy has authored/edited 17 books, including *The International Politics of Nuclear Waste*, *Nuclear Power in Crisis* and *Planning for a Sustainable Environment*.

Andy was one of the 'pioneer' academics who helped to set up The Open University in 1970. He was Professor of Social Sciences and during his 35 years at the OU held the positions of Dean of the Faculty of Social Sciences and Pro-Vice Chancellor (Degree Studies). He chaired many courses, including *Patterns of Inequality*, *Environment and Environmental Politics in an International Context*. He also wrote about the Blackwater estuary and produced a DVD on the estuary for the *Environment* course.

For almost 30 years Andy was a Councillor on Bedfordshire County Council, where he was for a time Chair of the Environment Committee (Planning) and Leader of the Labour Group. It was during this time that he fronted the County Council's successful fight against the Nirex proposal for a low-level radioactive waste dump at Elstow (just outside Bedford).

Andy was for some time the Government-appointed non-executive director of Nirex, the company responsible for the management of the country's radioactive waste. He has also given evidence and acted as Expert Advisor to the House of Commons Environment, Food and Rural Affairs Committee.

He has visited many nuclear sites throughout Europe and the United States and participated in a number of international research projects and commissions focusing on the social, ethical and political aspects of radioactive wastes.

In 2000, Andy was awarded an OBE for Services to Environmental Protection. In 2004 he became a Fellow of the Royal Society of Arts and that year was awarded an Hon.DLitt. by De Montfort University.

Andy was born in Colchester and attended the Royal Grammar School. He went on to study Geography at Durham University where he also achieved a M.Litt. He has lived in Bedford for the past 38 years. He and his late wife, Gill, owned a beach hut on Mersea Island for many years. Andy and his wife, Varrie (see below) have been part-time residents of the Island for the past 13 years.

The structure of BANNG

BANNG Supporters' Group:

This comprises all BANNG supporters and is chaired by Andy Blowers.

Core Group (Executive):

The Core Group acts as the executive. The Co-ordinators of the Strategy and Information and Community Awareness Sub-Groups report to and are members of the Core Group. The Group is chaired by Andy Blowers.

Community Awareness Sub-Group:

This Sub-Group deals with publicity, consciousness-raising and fund-raising. Lesley Mullins is the Co-ordinator of this Sub-Group.

Strategy and Information Sub-Group:

This Sub-Group deals with gathering information and taking the arguments to decision-makers. Andy Blowers is the Acting Co-ordinator of this Sub-Group.

Meet the BANNG Core Group

You may know the members of the Core Group, but just in case you do not, here is some information about them.

Please see the Profile of the Chair, Andy Blowers, above.

Vice -Chair - Barry Turner

Having retired 5 years ago, Barry and his wife Stephanie, moved to West Mersea a year and a half ago.

Comment:

'I believe that Bradwell is not a suitable site for a much more powerful facility than previously and its additional need for long-term, safe storage of high-level waste. I worry about the population of Mersea Island being downwind of a new plant, about levels of exposure to radiation and the effects on both the valuable marine life of the estuary and people's livelihoods.'

Treasurer - Charles Clark

Charles is a semi-retired Chartered Surveyor and has lived in West Mersea with his family since 1974.

Comment:

'In principle, I am not necessarily against nuclear power. However, I subscribe to BANNNG's aims to raise public awareness of the issues and to promote these with the Government to ensure that there is greater public involvement and transparency in decision making over key issues around the future of the UK nuclear industry and, in particular, the future of Bradwell, in relation to which there are specified technical difficulties.

Given the lack of a coherent energy policy, I suspect the Government could be manipulated into accepting a 'supposedly easy' solution offered by the nuclear industry, with its vested, commercial interests. In accepting this route, it would appear that there could well be a legacy, with considerable cost, to be picked up by future Governments. I believe the Government should be prevented from this route without full consideration of all the options, which with the current oil situation, are becoming increasingly more viable.'

Co-ordinator of the Communities Awareness Sub-Group - Lesley Mullins

Lesley settled on Mersea Island with her husband just 2 years ago. This coincided with her retirement from full-time employment and has allowed her to become involved with Island life.

Comment:

'Before I joined BANNNG, I was aware of the existence of the old nuclear power station on the Bradwell site but was under the impression it was being decommissioned and returned to a greenfield site. Other than that, I was totally ignorant of its future.

I joined BANNNG to become more informed having heard rumours about Bradwell. Since joining BANNNG I have become aware of many disturbing facts about the proposed new nuclear build and the unsuitability of the site. I am now totally committed to passing on this knowledge to the residents of the Blackwater Estuary, so they can all make up their own minds based on true facts and not hearsay and ignorance.'

Secretary and Media Relations Officer - Varrie Blowers

Varrie worked at The Open University for 25 years, for the majority of the time as an Academic Project Manager in the Faculty of Social Sciences. She worked with the academic teams in the preparation of many of the Faculty's courses in the areas of Environment, Psychology, Geography and Economics. She took early retirement from

the University in 2005. For the past 13 years she and her husband, Andy (see above), have been part-time residents of Mersea.

Comment:

'I believe that Bradwell is a most unsuitable site for a new, mega nuclear power station given it is increasingly prone to flooding and storm surges. I am even more worried that high-level nuclear waste would have to be stored on this site indefinitely. More generally, given we do not know how to store current wastes, I think it is both unethical and immoral to create yet more which future generations will be left to deal with - especially when there are alternative ways of providing electricity. I think that the recent French nuclear accidents (which were hushed up) give the lie to the claim that nuclear is safe.

I am also concerned at the undemocratic nature of the new Planning Bill which will mean that local communities lose the right of representation on proposed major new infrastructure projects, such as nuclear power stations.'

Website Co-ordinator - Nolly Urquhart

Nolly is married to Dougal, the Park Ranger at Cudmore Grove. For 6 years she has been a West Mersea Town Councillor. Nolly has sailed the Mersea waters for the last 20 years. She wrote the Mersea Island book and ran the Seafood Festival for 2 years.

Comment:

'I am opposed to a new station at Bradwell because to invest our future energy production in a facility located on a low-lying, gradually sinking and progressively eroding site seems very short-sighted. I worry that the Government is giving the impression that new nuclear is the 'magic bullet' and, therefore, giving less focus on renewables. I wonder if all the effort given to promote and invest in nuclear actually is a way of diverting our attention from the very obvious security and safety issues.'

Imogen Gosling

Imogen is married to Andrew and is a Homeopath and has been in practice for 14 years. She is a Mersea resident. She has been a member of CND, Greenpeace and Friends of the Earth for at least 25 years and a passionate worrier about what we do to our environment both internally and externally.

Comment:

'I am reluctantly realistic enough to realise that we may need to include some nuclear in the energy mix in the next few years while other methods of low carbon energy production are developed because, as usual, it is all too little, too late. However, I do not

think, for geological and geographical reasons, that the Blackwater estuary is a good place to build a new nuclear power station.'

Norma Creighton (also a member of the Community Awareness Sub-Group)

Norma spent a major part of her life bringing up a family of five while at the same time working part-time in various occupations, mainly administration. She also helped her partner to develop and run a delicatessen and more recently owned a mobile fish and chip business.

Comment:

'At the age of 12, I paid a school visit to the newly-built, nuclear power station at Bradwell and I have been opposed to nuclear power every since. I was horrified to learn that the dangerous part of the waste, the plutonium, could not be disposed of and felt that it was completely unacceptable even to contemplate exposing the general population to the various risks involved should there be an accident - which, of course, can never be ruled out.'

BANNG'S Aims and Strategy:

BANNG's aims and strategy statement was agreed at the Launch Meeting on 28 April. Please see the full statement in Appendix 1 - attached.

2. ACTIVITIES UNDERTAKEN SINCE THE JUNE UPDATE

Although the summer months are not the easiest in which to carry out activities (are all BANNG supporters sailors?), quite a lot has been achieved.

Logo:

Designs for a logo were kindly submitted by Ed King, Stephen Blowers and Sara Warner-Mattley. It was agreed to use one of the designs by Ed King and this appears at the top of this Newsletter.

Posters:

A poster was produced thanks to the hard work of the Community Awareness Sub-Group. These were posted at 36 sites around Mersea.

****(If you would like a poster, please contact Lesley Mullins (07966.277198). Posters on boards for display in gardens, etc. are also available.)****

Leaflets:

Again, thanks to the hard work of the Community Awareness Sub-Group, a supporters' leaflet was produced. During the week of 5 July, members of the Core Group, the Community Awareness Sub-Group and other supporters hand-delivered a leaflet to every home on the Island. Leaflets were also handed out at the Lions' Carnival and the East Mersea Fete. Having refused permission this year, the Regatta Committee will consider whether or not to allow a BANNG stand at next year's Regatta.

Support:

The group continues to attract support, some of it from outside of Mersea.

****We do need as many supporters as we can get, so please spread the message.****

Presentation by BANNG to West Mersea Town Council:

22 July meeting:

On 22 July, Andy Blowers, Barry Turner, Lesley Mullins, David McMullen and Shirley Swan gave a presentation on BANNG to a Special Meeting of West Mersea Town Council. A statement by Charles Clark was read out and Nolly Urquhart, who is a Town Councillor, made a statement. Although it had originally been indicated that all 9 councillors would attend, in the event 4 were there and the Town Clerk. They were: Nolly Urquhart (also a Core Group member), Sylvia Wargent, Kim Kimberley and John May. The Councillors present agreed that a report on the Special Meeting should be given at the next Town Council meeting. At that meeting, Nolly was asked to make the report.

Nolly's report on the WMTC meeting on 14 August:

The aims and concerns of BANNG members were highlighted in regard to the proposition of a new nuclear power station at Bradwell.

It was pointed out that because of the changes in the planning law, taking place at the moment, the democratic rights of local people to representation on what was to be forced on them, would be eliminated.

It was further pointed out that one of the major reasons for choosing new nuclear power generation was to cut the UK's production of CO₂. It transpired that the "safe" supplies (i.e. those from friendly nations) of uranium were not of a high enough grade, therefore they would need to be processed to become usable. This process used a lot of carbon fuel - therefore eliminating one of the reasons for using nuclear in the first place. Most high-grade uranium came from nations that we do not consider reliable or friendly, therefore we could be held to ransom if we were to be reliant on them for our nuclear fuel supplies.

A number of Councillors were under the impression that Bradwell was not to be one of the proposed sites, as there had been no mention of it in the list reported in recent national newspapers. They were told that there was a definite intention for Bradwell to be considered, as a full Environmental Impact Assessment would be undertaken in the Autumn by the Environmental Department of Hull University.

Councillor Peter Clements stated that he could think of no resident of West Mersea who could be looking forward to the prospect of having a new nuclear power station on their doorstep.

Councillor William Kimberley said that he believed that in France residents within 5 miles of a power station got free electricity.

Councillor Sylvia Wargent said that she supported BANNNG's intention to highlight the problems of new nuclear for local residents.

County Councillor John Jowers pointed out that he had heard at the British Energy meeting in Maldon that the new power station would be piping in cooling water across the headland from the sea.

Borough Councillor John Boukley pointed out that it was important for Councillors to keep an open mind and not to prejudge an application that had not been formally proposed.

The following has been taken from the www.westmersea.org website of West Mersea Town Council

NEW NUCLEAR BUILD AT BRADWELL

As most people will be aware British Energy have recently made it clear that Bradwell may be one of the sites where (should the Government decide to go for nuclear energy) a new nuclear power station could be built. The recently formed local Group, BANNNG (Blackwater Against New Nuclear Group) - whose aim is to seek to protect the people and environment of the Blackwater estuary and its surroundings from the risks of radioactivity by preventing further development of nuclear activity in the estuary - had a special meeting with the Town Council concerning this subject. A report of that meeting was discussed at the last Council meeting. The Council have agreed to first hear all sides of this debate and to keep a watching brief! They will take a view once a planning application has been put forward.

Publicity:

Andy Blowers had an article ('We hope it won't happen but it might...') published in the July, 2008 edition of *Estuary Life*.

The front page, lead article ("Nuclear site 'a foregone conclusion'") in the weekend edition of the *East Anglian Daily Times* of 16 August was based on an article written by Andy. The full article appeared in the EADT's edition of 25 August as the *Greensoapbox* entry and in the *Courier* of 29 August. (The article is attached as Appendix 2.)

On Monday, 18 August, BBC Essex ran an interview with Andy, based on his article, on every news bulletin (at least until 5 p.m.).

In the *Courier* of 29 August, there was also a letter by Nolly, entitled *Why nuclear when so many alternatives?* and a letter by Ian Clark, entitled *Burying our heads in the sand?*

Letters from Varrie were published in the *Colchester Gazette* of 25 August under the (large) heading *Join with us to fight new nuclear threat* and in *The Essex County Standard* of 29 August under the heading *Stop N-plant proposals*. An article written by Varrie was published in the last edition of *Estuary Life*.

So the group is getting some publicity - especially with the EADT front page story. However, this is not always so. The *Maldon and Burnham Standard*, having already printed an article giving the views of British Energy on the strategic siting criteria, was less than keen to publish Andy's response. They did mention having a 'for and against' Bradwell debate but nothing more has been heard of this. The *M & B Standard's* sister paper, the *Colchester Evening Gazette*, did not think that the strategic siting criteria constituted news - this obstacle was overcome by sending a letter about the criteria which was published!

Meanwhile keep an eye on the Island's press as well as the local press for BANNG/Bradwell-related articles and letters.

****It is important that as many supporters as possible make their views known in the local press.****

3. COMBINED MEETING OF THE BANNG CORE GROUP AND STRATEGY AND INFORMATION SUB-GROUP, HELD ON 27 AUGUST, 2008

The meeting discussed two main items: the forthcoming public meeting of Colchester Borough Council's Strategic Overview and Scrutiny Panel; the consultation on the draft criteria for the Strategic Siting Assessment.

(a) CBC's Strategic Overview and Scrutiny Panel - Public Meeting to be held at 6 p.m. on 23 September, 2008 at the MICA Centre, West Mersea

At this public meeting, representatives of the nuclear industry and the regulators as well as experts on nuclear issues will answer questions from the Panel. These experts are: Andy

Blowers; Professor Robin Grimes (Imperial College); Dr. Bill Nuttall (Judge Business School, Cambridge); Professor Steven Thomas (University of Greenwich).

It was agreed that this meeting was important from BANNNG's and West Mersea's point of view. It was noted that the Council had wanted to discuss the nuclear issue in general but BANNNG has tried to make clear that it was the proposals for the Bradwell site that needed discussion. The Clerk to the Panel has said that he now realizes how complex the issues are and it may be necessary to have more than one meeting.

At the beginning of the meeting, 30 minutes will be allowed for the public to have their say in 3 minute slots after registering their wish to do so with the Clerk. Some Core Group members will be taking advantage of this as individual members of the public.

The Core Group and the Strategy and Information Sub-Group will meet again before the public meeting.

(b) Government's consultation on the draft criteria for the Strategic Siting Assessment:

(Please see Andy's article on the draft criteria - attached as Appendix 2)

It was agreed that some members of the Core Group and the Strategy and Information Sub-Group will prepare a draft response to the consultation which will be presented to another combined meeting towards the end of October.

4. PRESENTATION BY BRITISH ENERGY AT THE EAST ESSEX AREA FORUM ON 2 SEPTEMBER, 2008

At very short notice, Lesley Mullins, Varrie Blowers, Paula Whitney, Moyia and Charles Clark managed to attend the Forum meeting, which was held at the Greenstead Community Centre in Colchester (as one BANNNG member commented 'Conveniently out of the way?'). Varrie protested to the Clerk to the Forum prior to the meeting that British Energy were being given privileged access.

Investigations before the Forum uncovered that this was British Energy's fourth and final presentation to a County Council Forum. Presentations had already been made at two other well-known 'nuclear locations' - the West Essex Area Forum at the Hilton Hotel, Stansted Airport, and the South Essex Area Forum at the Stock Brook Country Club near Billericay. To be fair, the Mid Essex Area Forum presentation was made at Maldon Town Hall!

Thanks to questions asked by the BANNNG representatives, County Councillors and others are now aware of the group's existence.

5. DRAFT CRITERIA FOR THE STRATEGIC SITING ASSESSMENT

You will have noticed references to these criteria above and perhaps have read Andy's article (Appendix 2). These are the criteria that will be used to assess whether or not a site is suitable for new nuclear build. The Government has launched a consultation on its draft criteria for the Strategic Siting Assessment (SSA). The Assessment process identifies the generic criteria that will be employed in identifying locations for new nuclear plant. Draft criteria were published in July, 2008 (BERR, 2008). The criteria are divided into 'exclusionary' - those which would automatically rule out a site - and 'discretionary' - those which 'would highlight sites that it may be more appropriate to avoid where there are better alternatives' (DTI, 2007). The exclusionary criteria include: seismic risk; capable faulting; demographics; and proximity to military activities. Among the discretionary criteria are: flooding; tsunami, storm surge and coastal processes; proximity to hazardous industrial facilities and operations; proximity to civil aircraft movements; and internationally designated sites of ecological importance. In addition to the strategic criteria there are local criteria that will need to be applied at the specific siting stage.

It is proposed that BANNG will make a full response to the consultation. You will be advised of this in a future Newsletter and then supplied with the response. The consultation period ends on 11 November.

****If you wish to read the criteria in the White Paper, you can obtain copies, free of charge, from the Department of Business Enterprise and Regulatory Reforms. Address: Vanessa Singhateh, Consultation Coordinator, Department of Business, Enterprise and Regulatory Reform, Better Regulation Team, 1, Victoria Street, London SW1H 0ET. Email SSACriteria@berr.gsi.gov.uk Or download from website: www.berr.gsi.gov.uk/nuclear-whitepaper/consultations ****

6. COMMUNITIES AGAINST NUCLEAR EXPANSION (CANE)

The inaugural meeting of this citizens' based organisation, which is based in the Sizewell area, will be held in Leiston on 10 October, 2008.

7. SOME INFORMATION THAT MAY BE OF USE TO YOU

Supporters sometimes find themselves put on the spot by questions from non-supporters. One of the most often asked questions is, of course, 'What is the alternative to nuclear power?'

Reading the article by Tom Burke, *The future is not going to be nuclear*, is a good basis for answers to such questions (see Appendix 3 - attached). It is not only extremely interesting and forthright but a very good read.

8. COMMENTS FROM YOU

If you wish to make a comment on anything you have read in this Newsletter or to bring an issue to the attention of the BANNG Core or Supporters' Groups, please e-mail or 'phone Varrie Blowers, Secretary and Media Relations Officer, BANNG, as follows:

e-mail: varrieblowers@yahoo.com
Tel. No.: 07932.644482

APPENDICES/

APPENDIX 1

Blackwater Against New Nuclear Group (BANNG)

Aims and Strategy

Aims and Purpose

The purpose of the Group is to seek to protect the people and environment of the River Blackwater estuary and its surrounding area, now and in the future, from the risks and dangers of radioactivity by preventing the further development of nuclear activity in the estuary.

To this end the Group has five broad aims:

1. to raise public awareness among the Blackwater communities of the potential consequences for health, environment and safety of proposals for new nuclear development;
2. to identify key issues of concern and to gather credible and responsible research and information to pursue the case against nuclear development;
3. to challenge any proposals for future nuclear power at the Bradwell site by presenting robust evidence and arguments to local and national decision makers, regulatory bodies, the nuclear industry, non government organisations, the media and the general public;
4. to support the early and successful decommissioning and clean up of the existing Bradwell nuclear site as an integral element of the long-term protection and conservation of the Blackwater estuary;
5. to call for an open, transparent and deliberative decision making process in which local communities are afforded full access to all information and involvement in key decisions affecting them.

Strategy

In pursuit of these aims the Group will develop a strategy with the following components:

1. Information and research

Gathering all available relevant research and evidence on key issues and disseminating it throughout the local communities. This may involve developing a data bank and associated web site.

Liaison and communication with national expert groups (e. g. Nuclear Consultation Working Group, Nuclear Waste Advisory Associates) to ensure relevant expertise is readily available.

Identifying uncertainties and gaps in knowledge and initiating or urging further research.

Encouraging accessible and intelligible information on monitoring of air, water and soil quality in the Blackwater estuary.

2. Raising Public Awareness

Deepening awareness by reaching out to the whole community through leaflets, posters, local media and key local organisations.

Broadening awareness by reaching neighbouring communities around the Blackwater estuary and the surrounding areas including major centres such as Colchester, Maldon and Clacton.

Involving local people through public meetings, petitions, lobbying and other activities.

3. Decision Making

Communicating community concerns to decision makers at local and national levels, including, government ministers, local MPs, County, Borough and Town/Parish Councils.

Ensuring community concerns are fully considered at every stage in decision making, including, environmental appraisal, impact assessment, reactor design, waste management proposals, planning considerations and application.

Ensuring regulatory authorities fully consider those issues specifically relating to health and environmental impacts of a power station at the Bradwell site.

Urging the full implementation of all plans, policies, directives and other programmes that are aimed at the protection and enhancement of the Blackwater estuary.

Working in an open and transparent manner and encouraging other decision makers to act in the same way.

Organisation, Administration and Finance

The Group will be participative and democratic in principle and practice.

Key decisions on strategy will be taken by supporters at open meetings.

A small core group (executive) will be responsible for day-to-day organisation and decision making, referring key decisions to the open meeting.

Sub-groups will undertake specific tasks and functions.

There is a Chair, Secretary, Treasurer, Media Relations Officer, Community Awareness Co-ordinator and Strategy Co-ordinator.

Fund-raising will be undertaken.

APPENDIX 2/

APPENDIX 2

New Nuclear at Bradwell is not Inevitable: a look at the strategic siting criteria.

By Andrew Blowers

The publication of draft strategic siting criteria for new nuclear power stations has been portrayed as a green light for the go-ahead at Bradwell. It is being suggested by British Energy that no criterion applied to Bradwell would eliminate it as a potential site. It could equally be argued that, taken together, the criteria suggest that Bradwell would be an extremely poor choice for a power station and its associated wastes that are likely to remain on site for well over a hundred years.

A careful reading of the criteria strongly suggests that far from being developed on a strategic basis they have been drawn up with specific sites already in mind.

Take the so-called 'exclusionary' criteria, those which rule out a site altogether. Not surprisingly there aren't many of these, only four in fact. And Bradwell does not pass these with flying colours. 'Seismic risk' and 'capable faulting' are two of these criteria and Bradwell is within an area that was the epicentre of the country's biggest earthquake in 1884.

Another criterion is population density and within 4km of the site is West Mersea (8000 - doubling in summer) and not far away, in the path of prevailing winds, is Colchester itself with well over 100,000 people. It's hard to fathom how such a location would, as the government puts it in a recent consultation document, 'limit the radiological consequences in the unlikely event of a serious nuclear accident' (ref. 1).

Proximity to military activities is also an exclusionary criterion and it might well be thought that the Foulness bombing range, the Fingringhoe ranges and the garrison at Colchester are too close for comfort.

When we come to the 'Discretionary' criteria the case for a nuclear plant at Bradwell becomes extremely dubious. It's difficult to understand why 'flooding, tsunamis, storm damage and coastal processes' shouldn't automatically rule out a site. The government claims that 'marine civil engineering works and coastal management activities can limit the risks to an acceptable level'. What can that mean when evidence strongly suggests that sea level rise and storm surges on the level of the 1953 floods (before the first Bradwell was built) will be the inevitable consequences of climate change (and coastal sinking) during the next century? Who, in their right mind, would even consider building such a hazardous activity as a nuclear power station on the lowest lying of all the proposed sites where, one report states, 'direct inundation is a possibility' and which is 'vulnerable to subsidence, rising sea level and rollover of the Blackwater estuary' (ref. 2). Even if it proves possible at great expense to protect Bradwell, the resulting impacts on the surrounding coasts could be catastrophic.

Bradwell also fails to meet several other criteria. The site is next to the first power station which remains a 'site of hazardous industrial facilities and operations'. Bradwell also has 'proximity to civil aircraft movements'. It is on an estuary with both 'internationally and nationally designated sites of ecological importance'. Moreover, there is limited cooling water availability and limits on abstraction capacity and the site is poorly connected to the grid which will require upgrading.

It becomes increasingly clear that the strategic siting criteria are merely another stage in clearing the pathway for the imposition of new nuclear power stations on existing sites. Far from being the best, or even acceptable locations, these sites are the soft political option. They are in nuclear friendly ownership with British Energy and the Nuclear Decommissioning Authority desperate to sell them. They are in areas already blighted by nuclear activity with local communities allegedly longing for the jobs and investment new nuclear might bring.

So, having already chosen its sites, the government is now busily setting out criteria by which it hopes to justify its selection. A more detailed and critical examination will reveal just how preposterous it is to put new power stations and nuclear waste stores on sites on crumbling coastlines.

1. Dept. of Business Enterprise and Regulatory Reform, *Towards a Nuclear National Policy Statement: Consultation on Strategic site Assessment Process and Siting - Criteria for New Nuclear Power Stations in the UK*, July, 2008

2. Committee on Radioactive Waste Management (CoRWM) *Local Options - Potential Effects of Coastal Erosion and Seawater Inundation on Coastal Nuclear Sites*, Document 1625

14.08.08

APPENDIX 3/

The future will not be nuclear

by Tom Burke

The government is pinning its hopes on a nuclear renaissance to meet Britain's climate change goals. Planning procedures are being eased and hidden subsidies offered. But the policy is based on a misunderstanding of nuclear power's lousy economics, and will fail.

Tom Burke is environmental policy adviser to Rio Tinto. He is a fellow of the Energy Institute and co-founder of E3G. He is writing in a personal capacity.

Gordon Brown does not dither about nuclear power. His commitment to it is emphatic, advancing since the start of the year from a policy of simply replacing Britain's existing nuclear capacity to one of doubling it, and now to there being no upper limit to its share of electricity generation. Brown has undertaken a radical reform of the nuclear regulatory and planning processes, aimed at clearing the path for new reactors. It is therefore particularly poignant that this is a policy doomed to fail.

Energy prices are rising, the climate is changing and power stations are closing--so we need more nuclear power. So runs the overwhelming volume of argument in the media. But what is missing is any critical examination of the case that underpins these dire warnings from ministers and utility industry nabobs about the lights going out. The lights are not going to go out. The government's nuclear policy will fail. And all that will really matter is that we will have lost precious time in switching to a more climate-friendly method of electricity generation.

We live, these days, in what Eric Hobsbawm calls a "permanent present." Even recent history is quickly forgotten. Somewhere in my personal archive are the minutes of a cabinet meeting held in October 1979, which arrived on my desk at Friends of the Earth in a proverbial brown envelope. They recorded the decision of Margaret Thatcher's newly elected government to build ten nuclear reactors. The arguments were familiar. Oil prices were rising. An energy gap was imminent. Without a crash programme of nuclear reactors we would freeze in the dark. Sixteen years later, just one reactor had been built, at Sizewell in Suffolk. It cost more than double the original estimate. No one froze in the dark.

The story of British nuclear power

There is nothing in the history of nuclear power in Britain to inspire confidence. Most of our 19 reactors, which together have the capacity to generate 12,000 megawatts (MW), are of a design unique to Britain. These Advanced Gas-cooled Reactors (AGRs) were in 1974 described by Arthur Hawkins, chairman of the then-nationalised industry that placed the orders, as "a catastrophe." Today, four are not working, reducing from 20 to 15 per cent the share of electricity that is produced by nuclear.

A popular mythology has developed that blames the nuclear accidents at Three Mile Island in the US and Chernobyl in Ukraine for the demise of nuclear power in Britain. Lately, the planning system has been added to this mythology. In fact, the only obstacle in the way of nuclear power for the last 20 years has been the unwillingness of electricity generators to take the risk. By the time of Chernobyl, in 1986, no nuclear power station had been ordered in Britain for eight years and in the US for 12. And the public inquiry that considered the application to build Sizewell B began in 1983 and took two years--only six months longer than the government now expects its accelerated planning procedures to take. The government then took two further years to give the go-ahead. Sizewell B opened in 1995, having taken a further eight years to build.

What actually killed nuclear power in Britain was Thatcher's decision to privatise the Central Electricity Generating Board--the previously nationalised generation utility. The City took one look at the books and told the government that the nuclear power stations were unsellable. They were promptly withdrawn from sale. The later privatisation of most of Britain's nuclear power stations was only possible because the burden of the decommissioning and waste management costs--now standing at over £70bn--was transferred to the taxpayer. This was a good example of a practice that has been much in the news lately in relation to the banking industry: privatising profits and socialising losses. So much for market discipline. It is an irony that the government's preferred plan for a nuclear renaissance involves renationalising British Energy as a French state-controlled utility.

Thatcher was as convinced about nuclear power as Brown. She was defeated by the lousy economics. Nuclear power has few attractions for private sector investors, especially in a competitive electricity market. All long-term investment in future electricity generation involves risks and uncertainties (including the price that will be put on carbon emissions). But nuclear power's risk profile is the worst. To be economic, nuclear power stations need to be very large (at least 1,000MW) and built in a series, ideally four or six at a time, probably on the site of existing stations. They are very capital intensive at both the start and end of their lives and, because of the initial costs, much more sensitive to the cost of capital, which can add 40 per cent or more to construction costs. They take a long time to build, and, when built, have to run continuously into a market where the wholesale electricity price can change constantly. The operators have to make adequate provision for the (currently unquantifiable) costs of waste disposal.

Coal-fired stations take perhaps three to five years to build, cost a lot less per unit of generation capacity and have no back-end liabilities to speak of. They are economic to build singly and therefore each new one is less at risk of failing to sell the power it produces. Gas-fired stations can be built in smaller units much more quickly, and so are even easier to match to shifting demand. Wind turbines can be built in very small tranches, even faster than gas.

Very high, uncertain and rising capital costs on a project that will produce no revenues for a decade or more are not a compelling proposition at the best of times. Add a host of hard-to-quantify sociopolitical risks, and it is not difficult to see why nuclear power programmes have always relied on large and sustained public subsidies.

Why is nuclear power so expensive?

There are only two honest answers to the question of how much it costs to build a nuclear power station. These are "I don't know" and "I'll tell you when I've built it." Everything else is a guess. These may come in official volumes stuffed full of impressive-looking data, but they are still

guesses. Some numbers will illustrate the point. Between 1966 and 1967, reactor costs in the US exceeded estimates by an average 209 per cent. Between 1968 and 1969 they went up 294 per cent. Between 1970 and 1971 they went up 348 per cent. 1972 to 1973 was a good year, they only went up 318 per cent. But by 1974 to 1975 they were back up to 381 per cent. In 1976 they only went up 169 per cent. But by then the American utilities had given up. They have not ordered a nuclear reactor since 1974. We did little better. The cost of building Sizewell B went up "only" from £1.7bn to £3.7bn during construction.

The government's commitment to new nuclear power stations is based on just such guesses. The cost of a reactor is normally quantified by what it costs to build each kilowatt (kW) of its capacity to generate electricity. To find the cost, you multiply this by the reactor's size--measured in thousands of kW, or megawatts (MW). To this must be added the cost of financing the expenditure. In its January white paper on nuclear energy, the government's worst-case analysis assumed that the construction cost would be £1,625/kW, giving a total cost (based on a reactor size of 2,200MW) of £3.6bn. But in May, the German utility company E.ON estimated the cost at just over £3,000/kW, making the overall cost of a new reactor close to £6.7bn. Other recent guesses range from \$4,000/kW (£2,162) early in 2007 to \$10,000/kW in January 2008 (£5,000). This certainly looks like "I don't know" to me.

Nuclear enthusiasts argue that everything is different now. Lessons have been learned, designs have been standardised and new reactors can be built on time and to budget. But the fact that none of the three designs under consideration in Britain is operating anywhere in the world might give pause for thought.

Recent events in Finland provide further grounds for caution. There, French company Areva is building the first example of the reactor design most favoured for Britain, the so-called EPR. It has not been a success. The 1,200MW reactor is more than £1bn over its original £2.5bn budget and two years late just two years after construction began. If this is the best Finnish contractors can manage, the thought of what those who brought you the Scottish parliament or Wembley stadium might accomplish is chilling.

This is not just, or even mainly, about incompetence. Nuclear costs are rising disproportionately. This escalation--14 per cent a year after inflation, according to one estimate--has many causes. Nuclear power stations are intensive in metal and concrete, and their construction requires specialist skills. So they have been hit harder than other forms of power generation by the surge in engineering costs. The nuclear supply chain has atrophied in the quarter century since there were last large programmes in the OECD countries. In the US there are now only 80 nuclear-qualified suppliers of key components, compared to 400 a decade ago.

And there is only one global provider--the Japan Steel Works (JSW)--of the heavy forging capacity needed for reactor pressure vessels. JSW is already hard-pressed by demand for new refinery equipment and can only supply five new reactor vessels a year, although it wishes to double capacity to ten vessels. But the need to fund this investment is itself contributing to rising prices, which have increased by 12 per cent in six months, and JSW now requires a 30 per cent down payment on an order. It takes six years from the date of the order to get other key components, including reactor coolant pumps and control and instrumentation equipment

The human resources needed to resuscitate the nuclear industry are in even shorter supply. Before you can even apply for permission to build a nuclear power station, you need approval for the design you plan on using. This can take several years. Yet inspectors and engineers are leaving Britain's Nuclear Installations Inspectorate (NII), some to retirement and others to more lucrative

employment with contractors hoping to come to the nuclear party. The NII now has only 16 people to carry out the detailed safety approval of new reactors, a task estimated to need at least 40. What this means is that if you wanted to have a reactor up and running in Britain by 2020, you would need to have sought approval some time ago. Generous pay rises, relocation from Merseyside and a new management structure are all proposed to relieve this bottleneck. But these reforms will need time to become anchored if we are to avoid an unacceptable choice between speed and safety.

The government has pledged that there will be no subsidies for new nuclear construction. But this was never credible, and it is already possible to detect signs of retreat. In 2006 the government bravely promised to "make sure that the full costs of new nuclear waste are paid by the market." By 2008 this had mutated into the more nuanced: "The government will [set] a fixed unit price [for] waste disposal at the time when approvals for the station are given." This effectively caps the costs of nuclear waste disposal to the operator and transfers the risk of cost overruns on to the taxpayer. It is hard to argue that this is not a subsidy.

Furthermore, as Stephen Thomas from Greenwich University has pointed out, if you take E.ON's estimate of the cost of a new reactor of £3,000/kW, then the operating cost of that reactor is likely to be about £80 to generate a kW of electricity for an hour--a measurement known as a kilowatt hour (kWh). The current wholesale electricity price, which is causing ministers such headaches, is about £40/kWh. We already know what happens to nuclear operators when their operating costs exceed the price at which they can sell electricity. In 2002 British Energy lost money hand over fist and found itself technically insolvent. But the company did not go bust. In a prequel to Northern Rock, the government bailed it out to the tune of some £4bn, taking a large stake in the business. (British Energy is now profitable, thanks to rises in fossil fuel prices.)

This precedent helps to explain why utilities companies are looking at nuclear power. They know that once Britain has started down this road, there will be no going back, as other investment will be suppressed. The "no subsidies" rule will be a distant memory. The utilities companies will be in a strong position to extract from taxpayer and consumer alike what they need to keep going.

Closing the generation gap

The idea that the world is on the dawn of a new nuclear age is no less of a fantasy now than it was in the early 1970s. Even the nuclear-supporting International Energy Agency's projections have little more nuclear power in operation in 2030 than there is now. That is because most of our present reactor fleet was built in a rush in the 1970s. Even with extensions, these are coming to the end of their lives. Much is made of the 32 reactors now under construction around the world, mostly in Asia. But 11 of them have been under construction for more than 20 years. Just to maintain the current number of reactors by 2025, we would have to build 250 more reactors than are currently under construction--or 15 a year between now and 2025. The build rate since 2000, almost all in Asia, has been one a year. Increasing this is certainly possible, but to do so by 15 times despite shortages of materials and manpower--and during a credit crunch--seems fanciful.

Britain is a very long way from facing a choice of building more nuclear or freezing in the dark. There is a real problem--three problems to be precise--with energy security, but none can be solved by nuclear power. The most urgent is the threat of interruptions to our oil supply, which could bring Britain to a halt. But our oil for transport cannot be replaced by nuclear electricity. Preventing instability in the middle east and reducing oil dependence by more efficient transport and logistics are the solutions here.

Much has been made of the threat of becoming overdependent on imported gas, particularly from Russia. Leaving aside that Russia is more dependent on our revenues than we are on its gas, half of our gas is used for heating domestic space and water, and cannot be replaced without a big transformation of our infrastructure. More is used for industrial processes, leaving under a third for electricity generation. But much of that is used to generate electricity at peak times because gas turbines are easy to switch on and off to meet short-term demand spikes. Nuclear power stations must be run continuously to be economic.

Ministers now often invoke the "generation gap" that will emerge as some 22,000MW of existing coal and nuclear capacity is closed between now and 2020, much by 2015. If this is not replaced by new nuclear power, runs the argument, then carbon-intensive gas or coal will have to be used at the expense of the climate. The British head of EDF, Vincent de Rivas, promises that he can deliver new nuclear electricity to the grid by 2017. But the government's own nuclear consultation is more realistic. It assumes that were an order placed today under its accelerated regulatory procedures, it would still be eight years before construction started. For a wholly new design, construction would take a further five years, at least. The government has yet to explain how a power station that won't open before 2021 can meet a "generation gap" it expects to appear by 2015.

Of course, no government will let the lights go out. So this generation gap is more a rhetorical device than a genuine threat. The government is now committed to producing at least 35 per cent of our energy from renewable sources by 2020. That may fill some of the purported gap. Energy efficiency will fill more. If nuclear cannot fill the remainder--perhaps 2,500MW--then coal will do it.

Some doubt whether the renewables target is achievable. In fact, it is more likely to be met than Brown's hopes for nuclear. Last year the world added about 2,000MW of additional nuclear capacity through improving the performance of existing reactors. Photovoltaic solar energy alone, one of the least economically attractive of the renewables, added 2,300MW. Wind power, which on many estimates already delivers electricity more cheaply than nuclear, added eight times as much.

Nuclear power is a low-carbon source of electricity, and will therefore avoid whatever tax is levied on carbon emissions. But it won't help Britain meet its climate change targets. The goal is to keep the eventual rise in global average temperature to below 2 degrees Celsius--the threshold of dangerous climate change. This means that greenhouse gas emissions must peak before 2020 and then decline steeply. But if building the 15 reactors a year needed to replace the world's current capacity is going to be impossible--as it is--it is difficult to see how it could play a bigger role in reducing global carbon emissions.

The top climate priority is to very quickly make coal use carbon-neutral by deploying carbon capture and storage technologies. This is mainly for geopolitical reasons. The International Energy Agency forecasts 14,000MW of new coal-fired power stations by 2030. China is building new coal-fired plants at the rate of 2,000MW a week. It also has the world's most ambitious nuclear power programme, aiming to build 40 nuclear power stations by 2030. This latter effort would still provide only 4 per cent of China's electricity. Three quarters will come from coal. If this happens without the Chinese using carbon capture and storage, the government, and the world, will not achieve its climate change objectives. We will be saying hello to a four degree jump in temperatures and goodbye to prosperity and security for 60m Britons.

If we want others to make their coal burning carbon-neutral, we must do so ourselves. Actions speak louder than words. In the next three years, Britain will spend £2.8bn a year on cleaning up its nuclear legacy. We will spend nothing on deploying carbon capture and storage--the world's most important technology for ensuring climate security.

No one should doubt the good intentions of those who are arguing for a switch of scarce capital, materials and skills into nuclear power in Britain. It is not their intentions that are in question, but their analysis. We have been here before, with equally serious people arguing that there was no alternative to a nuclear future. In 1975 the UK Atomic Energy Authority told the royal commission on environmental pollution that by 2000 Britain would have 104 nuclear reactors. This did not happen not because the nuclear industry lacked support. Then, as now, government, business leaders, the unions and the media were all onside. It failed because economic reality intruded. It will do so again--but this time the consequence of going down the nuclear cul-de-sac will be much more serious.