House of Commons

North West Regional Committee

The future of the nuclear industry in the North West

Oral and written evidence

Ordered by The House of Commons to be printed 9 March 2010

HC 361
Published on 31 March 2010
by authority of the House of Commons
London: The Stationery Office Limited
£0.00

North West Regional Committee

The North West Regional Committee is appointed by the House of Commons to examine regional strategies and the work of regional bodies.

Current membership

Mr David Crausby MP *(Labour, Bolton North East)* (Chair)
Rosie Cooper MP (*Labour, West Lancashire*)
Tony Lloyd MP (*Labour, Manchester Central*)
Mr Eric Martlew MP (*Labour, Carlisle*)
Geraldine Smith MP (*Labour, Morecambe and Lunesdale*)

Powers

The committee is one of the Regional Committees, the powers of which are set out in House of Commons Standing Orders, principally in SO No 152F. These are available on the Internet via www.parliament.uk.

Publication

The Reports and evidence of the Committee are published by The Stationery Office by Order of the House. All publications of the Committee (including press notices) are on the Internet at
http://www.parliament.uk/parliamentary_committees/nw.cfm

Committee staff

The current staff of the Committee are Gosia McBride (Clerk), Duma Langton (Inquiry Manager), Tamsin Wallwork (NAO Adviser), Emma Sawyer (Senior Committee Assistant), Ian Blair (Committee Assistant), Anna Browning (Committee Assistant) and Nick Davies (Media Officer).

Contacts

All correspondence should be addressed to the Clerk of the North West Regional Committee, House of Commons, 7 Millbank, London SW1P 3JA. The telephone number for general enquiries is 020 7219 0654; the Committee's email address is regionalcommittees@parliament.uk

Witnesses

Tuesday 23 February 2010 *Page*

Tuesday 9 March 2010

List of written evidence

Page

Oral evidence

Taken before the North West Regional Committee

on Tuesday 23 February 2010

Members present:

Mr David Crausby (Chairman)

Rosie Cooper
Tony Lloyd
Mr Eric Martlew

Witnesses: **Professor Colin Boxall**, University of Lancaster (on behalf of the North West Universities Association), **Julie Maykels**, North West Regional Manager, National Skills Academy for Nuclear and **Rupert Steele**, Director of Regulation, Scottish Power, gave evidence.

Q1 Chairman: Good afternoon, and welcome to this North West Regional Committee inquiry into nuclear power in the North West. I begin by asking you to introduce yourselves for the record.
Professor Boxall: I am Colin Boxall from Lancaster University, representing the North West Universities Association.
Rupert Steele: I am Rupert Steele, Director of Regulation for Scottish Power, representing Iberdrola, the parent company of Scottish Power.
Julie Maykels: I am Julie Maykels, North West Regional Manager for the National Skills Academy for Nuclear.

Q2 Chairman: Thank you. We understand that Mike Graham from Prospect is unable to attend, so if anyone wants to stand in for the unions, you are very welcome, but in the absence of that, the best thing is probably to ask whether Prospect wants to send us a written note. Perhaps we can deal with the matter in that way. I begin the questions by asking all of you the extent to which you anticipate a skills gap in the nuclear industry in future, and whether you have concerns about the age profile of the work force.
Julie Maykels: The National Skills Academy for Nuclear has been working with Cogent, the sector skills council, which recently published research called *Power People*. I don't know whether you have seen that. It is the most up-to-date research that we have and was published in January. It highlights some key areas for us to consider in terms of skills gaps, some of the critical issues of those skills gaps, some of the key drivers for the ageing work force of the nuclear sector, and the movement and different skills sets between different sub-sectors of the nuclear industry—for example, moving from operations to decommissioning, and then with new build having to move back to operations. Yes, there will be some skills gaps, and one critical area is the ageing work force. We understand that those issues need to be addressed. Nationally, with new build, to maintain the current generating capacity, it is estimated that the industry will need circa 1,000 new recruits throughout the United Kingdom *per annum*. Approximately 60% of the work force is based in the North West and we could potentially need circa 600 new recruits going forward. Within that, there will be some specific areas that we need to look at.
Rupert Steele: From our point of view, clearly, the building of a new reactor of the sort currently on the table is relatively new for UK workers, so inevitably some upgrading of skills will be required, and some new techniques and new thoughts will undeniably be necessary. We are also conscious that we will be competing in a labour market with EDF on one hand and with Horizon Nuclear Power on the other, so there will be a certain tension in the jobs market. Obviously, at the Sellafield site we will have the benefit of a work force on our doorstep, as it were, which may give us some competitive advantage in hiring people and working with them to get their skills in the right place.
Professor Boxall: I don't think that there is one report on the skills profile—the skills needs of the industry—published in the last five years that has not identified a skills gap. Julie cites the Cogent report, the NAMTEC report on the supply chain published last year that identified the skills gap. Rolls-Royce has identified skills gaps. It is taken as a given, almost.

Q3 Chairman: Is it money? Can you tell us what you are doing to deal with the problem?
Julie Maykels: The National Skills Academy for Nuclear was set up in 2008, so we have been in operation for two years. The key driver for that was creating, developing and promoting a world-class work force, with career pathways to benefit the UK nuclear industry. The remit and the goal was to ensure that we have the right people with the right skills. Over the past two years, a number of activities have started that we hope will help to minimise the impact of any skills gaps. We currently have enough time to ensure that we have the skills in place. We obviously need to know what the timeline is for the North West, and we need to do some more detailed research about any specifics. At the moment, we are seeing an increase in apprenticeships. In 2008 in the North West, we had 288 apprentices starting. In 2009, that increased to 380, so we have had a significant increase in apprenticeship uptake. That was in part due to a programme called the Community Apprenticeship Programme. We have some funding from the Nuclear Decommissioning Authority to help employers, particularly the smaller companies in the supply chain, to take on

young people. We are basically sharing the risk in terms of getting companies to take on young people, even if they haven't got the work, and helping them to support their salaries. It can take three and a half to four years to train an apprentice, and we need to make sure that we increase the number; year on year, we need to increase the apprenticeship uptake. Some of the other things that we have been involved in include working with schools, to make sure that we get young people interested in science, engineering technology and maths subjects. So we have worked with junior schools and with secondary schools. That is starting to have an impact now, with those young people going on to do A-levels and we hope going on to scientific degree programmes. Another key driver for us was to bridge the gap between technical and professional, and the development of foundation degrees has been critical over the last two years. Indeed, Sellafield are using foundation degrees to help recruit people who may have gone down a different career path with degrees not related to science, and bringing them into the arena by allowing them to do foundation degrees while working at the same time. There are various initiatives, and we have been working with employers to make sure that we do get that increase in uptake.

Q4 Mr Martlew: When did we last construct a nuclear power station in the United Kingdom?
Rupert Steele: The last one was Sizewell B, which was in the late 1980s through to the early 1990s.

Q5 Mr Martlew: The vast majority of people who worked on that have probably retired. Isn't the reality that, if we are to build more nuclear power stations, a lot of the work force will be international?
Rupert Steele: I think that the design work force will primarily be international at the early stages. Clearly, we and our consortium partners GDFSuez, and to a lesser extent Scottish and Southern Energy, will be following international developments in these new international designs. I don't see the physical construction work force—the bulk of the work—being international. Clearly, at Sellafield, around the 1990s we had the major project with THORP. Since that, a number of other facilities have been built on that site.

Q6 Mr Martlew: But not to the extent that you are talking about with the three nuclear power stations?
Rupert Steele: We envisage that we would need a bigger work force, indeed. But I don't see the bulk work force necessarily being brought in from Belgium, because they haven't built a nuclear power station there for quite a long time either. So I think the bulk work force will be home grown and we will be working closely with Julie and her organisation and others to achieve that.

Q7 Chairman: May I ask you specifically, Mr Steele, about the nuclear skills passport? Are you going to equip your workers with that?
Rupert Steele: We are at the early stages of our plans. Obviously, we have only recently acquired the land option and we're having to put together our organisation at the top level with our consortium partners at the current stage. So we don't have a detailed staffing system and plan in place. We will clearly look at the nuclear skills passport. It's a very welcome scheme and we will be looking to continue the discussion further on that.
Professor Boxall: We in the academic sector welcome the nuclear skills passport. One of the problems in terms of getting students experience of real on-site working in a nuclear installation is that often, it takes a long time to get them through the training and security checks necessary to allow them to work in facilities that are on a nuclear licensed site, let alone active facilities. I know that Manchester and ourselves are looking at the possibility of employing a nuclear skills passport within the context of student training going forward. But that is at a very early stage.

Q8 Chairman: May I ask a couple of questions, beginning with Mrs Maykels? The first one is effectively on funding. How much funding do you presently receive from the public sector?
Julie Maykels: Well, the National Skills Academy for Nuclear was set up through the Learning and Skills Council national skills academy network of funding. Between 2007 and 2010, we had a three-year contract with the Learning and Skills Council and three years of funding, which comes to an end at the end of this year. In terms of revenue, that was £2.5 million, which was to set up the infrastructure of the National Skills Academy across England and support the development of some of the new products and services, including the nuclear skills passport. It also included £6 million capital, which has gone into supporting energies in West Cumbria—for example, Springfields apprentice centre—as well as some other activities in the south of the country. That funding comes to an end at the end of this year—2010.

Q9 Chairman: In your submission, you indicated that some confusion had been caused by a profusion of new initiatives. Can you tell us something more about that? What problems have been caused?
Julie Maykels: I am not sure whether it is a problem or something of a challenge. With the nuclear renaissance and new build being talked about, everybody wants a piece of the action. Lots of organisations have suddenly added nuclear to their agenda or footprint. It is about trying to understand what the agenda is for those organisations, and then trying to ensure you've got the effective communications to make sure that we don't duplicate. That is part of our remit as a national skills academy. We need to make sure that we do not duplicate activity, that we are fully aware of what is happening and that we ensure streamlining of that activity. It is a challenge.

Q10 Chairman: Is there any danger of duplication?
Julie Maykels: I don't think there's any duplication at the moment in terms of what we're doing on things such as the skills passport and the introduction of new apprenticeships and foundation degrees. The duplication is more around who communicates with the employers and who gets them talking about this. We need to make sure that, through our employer membership, we lead as much as we can on the skills agenda.
Chairman: We want to move on to some questions on the role of universities.

Q11 Tony Lloyd: First, may I ask a general question of you all? We talked a little about the skills gap in the industry as a whole. At the postgraduate level, is there a skills gap in terms of numbers of graduates and postgraduates, and are universities providing those who go through the university system with the skills that are needed in the industry for the present and the future?
Professor Boxall: Taking the tail-end of the question first, looking at the number of postgrads who have gone through my research group over the last five or six years, you spend three or four years training them up to a certain level and you have a vision that you will take them on to some sort of postdoctoral work. At the end of that period, if the student has been sponsored or has been working in the industry in some way, you are then into a bidding war between yourselves, Sellafield and the national nuclear laboratory on taking the student further. It depends on what their career aspirations are. In terms of the skills profile that postgraduate and masters students are leaving with, certainly from our MEng degree at Lancaster, they are very well matched to the needs of the industry. The masters programmes in particular—the NTech masters programme and our decommissioning masters and safety masters programmes—were designed after a great deal of stakeholder and employer engagement. They are profiled against the needs of those particular industries. The safety MSc is not only on nuclear, but on rail and aerospace. I cannot remember what your first question was.

Q12 Chairman: That is the second part on the quality. The first part was really on the quantity that is coming through. I would be interested to come to the quality from your college as well.
Professor Boxall: At masters and PhD level, the numbers are restricted by the availability of bursaries.
Tony Lloyd: Overly restricted?
Professor Boxall: Define "overly".
Tony Lloyd: In terms of the researchers and practitioners in the field that we need, whether it be the new generation of nuclear stations or the existing nuclear facilities.
Professor Boxall: I'd say we aren't going far enough in terms of addressing that skills shortfall, no. In terms of whether or not there is an interest in taking up these degree programmes, we advertised two PhD studentships last year, which we won through the Nuclear Decommissioning Authority, and we got 30 applicants. If you look at the nuclear graduate scheme that is run by the NDA, which offers 45 places a year, the rumours we are getting is that there were 2,000 applicants. There is no shortage of people wanting to go on these programmes. The shortage is in terms of funds to support that.

Q13 Tony Lloyd: Mr Steele, from your perspective what is the quality and quantity of those coming through our universities?
Rupert Steele: Given that we are at the early formation stage of the business, we are not at the stage yet of recruiting people coming out of the universities. That will be happening shortly. We can really only follow the debate second hand at this stage.
Julie Maykels: In terms of the research we did at the beginning of our business planning stage with our employers, our employers are very keen to get good engineers, scientists and technologists coming through. They are happy with the standard in terms of the technical expertise. They are working with the universities to make sure that they have input from experts from industry, as far as is possible. It is a good example of that happening in this sector. We as employers are working with universities to do that, and that is a positive thing. We definitely want to encourage it. There is always a discussion about those commercial-type skills—the requirement for more commercial skills from graduates when they come out. To look at how we do that and how best to get that additional skill and knowledge base among the graduates, we are working with our employers and our network of universities to develop a certificate of Nuclear professionalism. That will be piloted in the North West from September. Our employers are looking at that as the first kind of continual professional development activity for new graduates coming in to work within the nuclear sector. There is a need to do something else. It is not necessarily for the universities to do that with all their engineering and physics graduates. However, employers want to see some activity, so we are working with the universities to develop something on that, which would then give those graduates some more commercial project management skills to go along with their technical knowledge and expertise.
Professor Boxall: May I follow up on that? It comes back to another point that you made, Mr Martlew—that a lot of the retirees from the industry are now being captured by universities and being used as curriculum providers on university courses. That knowledge isn't being lost. Eventually it will be lost, because those ladies and gentlemen will unfortunately pass from among us, but we're making every attempt we can at the moment to get them engaged with the provision of specialist nuclear engineering and nuclear technology courses within a university environment.

Q14 Tony Lloyd: In terms of your experience as an operator of nuclear installations elsewhere, what would be the likely proportion of graduates among the work force? Do you have a ballpark figure for the

levels of employment that we may be talking about generating, if the nuclear industry expands according to some of the forecasts put before us?
Rupert Steele: To extrapolate from our operations elsewhere, Iberdrola has a number of nuclear power stations in Spain. For example, in Cofrentes power station, about 40% of the permanent staff are graduates of one sort or another, so that gives a rough idea. Our guess at this early stage is that it would be similar in a UK plant. In terms of numbers of jobs, again extrapolating from Cofrentes and some of the other power stations that we are involved in running, we would guess that there would be around 500 operational jobs for the power station and perhaps 250 for each subsequent reactor on the same site. During an outage you would expect perhaps 1,000 people to be visiting the site to perform various functions, because you wouldn't necessarily keep the entire capability in your permanent work force. In respect of the construction phase, we've looked at the international experience of the constructions that are going on at the moment and it looks like people are in practice peaking at around 4,000, depending on the type of power station being constructed.

Q15 Tony Lloyd: Professor Boxall, you talked a little bit about the demand from would-be graduate students, would-be research workers. What about at the undergraduate level? Is the demand strong at that level as well?
Professor Boxall: There is a great deal of demand in general engineering; that is ramping up quite considerably. I think we've seen a 20% increase in the number that applied for our mechanical engineering course at Lancaster. In terms of the nuclear engineering course, which only came on stream about three or four years ago, it started out with small numbers and has doubled every year since. Undergraduates are starting to get a scent of this and are recognising that it will be one of these new industry, new jobs, or NINJ, areas—they are starting to turn their attention to it. Imperial College started its nuclear engineering undergraduate provision last October. What prompted it to do that was the running of an elective course on nuclear engineering, which was one sixth of a year of a degree. According to Robin Grimes, that attracted in the order of 250 students. There is no lack of interest in this area. It is gradually building.

Q16 Tony Lloyd: One of the problems that the universities in the North West face is that there is still a fair degree of uncertainty about how the industry will expand. How are you planning both at undergraduate and postgraduate level for both the numbers and the types of activities you are engaging in?
Professor Boxall: Planning wise, we are essentially restricted by the estate. At masters level, we do not have a room big enough to hold our current decommissioning safety people. We are looking at about 60 masters students per year, which is very large for a masters programme. In terms of undergraduate numbers, the money follows the numbers. As the nuclear engineering degree builds up significantly, greater resources from the university will be ploughed in, but they have to go quite some way to compete with the mechanical side of things. Having said that, mechanical engineers will obviously find employment within the nuclear sector. The big gap on the engineering side of things will probably be in high-voltage electrical. That seems to be falling through the gaps here. High-voltage electrical engineers are very thin on the ground in this country.

Q17 Tony Lloyd: That is a national problem?
Professor Boxall: Yes.

Q18 Tony Lloyd: Do the pinch points that apply to you in Lancaster apply pretty much across the UK?
Professor Boxall: Yes, I would say so.

Q19 Tony Lloyd: You will not be surprised to hear that I have been lobbied by the University of Manchester about the physics funding. I was told that the nuclear side of physics is protected, but that there is uncertainty around future funding within the university system. What sort of concerns would you have as we look ahead about the ability of you on the whole nuclear side of higher education to provide the different levels of undergraduate training, and post-graduate training and research?
Professor Boxall: The major concern is the lack of active facilities: nuclear laboratories and radiochemical laboratories—that kind of thing. During the past 20 years or so, radiochemistry courses have closed, and nuclear engineering provision has shrunk prior to the current nuclear renaissance. Those sorts of facilities have been refurbished, often as non-laboratory facilities. That is a problem but there are solutions. We are looking at engaging with the NNL through its Workington facility, where it has a number of simulant rigs put up. There are ways around this, but it takes quite a bit of effort. It would be a lot of easier if we had those facilities on our doorstep within the department.

Q20 Tony Lloyd: One final question to you, although the others might like to comment. Is the relationship between the public sector—as in universities—and the private sector healthy? Is the private sector now beginning to put in its own resources into research areas and, where appropriate, the skills training effort?
Professor Boxall: Again, taking the masters courses as an example, because those courses were built based on consultation with the tier 1, tier 2 and tier 3 organisations, they are supported by the private sector. Similarly, before being at Lancaster, I was at the University of Central Lancashire. A number of the foundation degrees there were designed hand in glove with the industry, and have been very well supported by industry. It was very much following the philosophy of Leitch. At that level, we found that the private sector was always very willing to get involved in advising us and, in some instances, assisting us in terms of curriculum delivery.

Tony Lloyd: Do you have any comments to make, Mr Steele?
Rupert Steele: No.
Julie Maykels: Can I just say that I think that engagement between the public and private sector is exceptionally strong in the nuclear sector? I know that we have had a few examples, but others would be Westinghouse supporting a chair at the Dalton Nuclear Institute, and all the universities with a number of employers progressing the North West science strategy through a nuclear sub-group, so the relationship is very strong, and we need to build on that.

Q21 Mr Martlew: The thing that is obvious but hasn't been said is the fact that you can recruit so well. Is it not the case that it is a very well-paid industry?
Rupert Steele: We have not set our pay conditions for our work force, but it is a highly skilled industry and we would expect remuneration to reflect that.

Q22 Mr Martlew: You are saying that there is no skills shortage because people want to work in an industry that is well-paid?
Rupert Steele: There is a lot of work to be done to get the skills in place.
Mr Martlew: That is a politician's answer, Mr Steele.
Rupert Steele: I shall take that as a high compliment. Clearly, it is a well-skilled industry that will pay appropriate wages for the level of skill. We have a lot of work to do with the age profile. The image of the industry might have discouraged people from joining it in years gone by, but that is changing now. People do not see it as a sunset industry, but as something that is important and worth participating in. We look forward to being a good employer that our staff will value.

Q23 Rosie Cooper: Understandably, the nuclear industry will require very high standards from its construction work force. Do you have any thoughts about how we can ensure that local and regional organisations and construction firms are well placed to take advantage of that, and also about whether that would be any issue should there be more than one power station built in the North West?
Rupert Steele: In terms of the local supply chain, clearly there are a number of extremely skilled companies that are organised around the Sellafield area, supporting the existing site. Westlake science park plays host to many of those organisations, and there are others in different locations. The availability of that local supply chain is one of the things that attracted us to that site, because clearly there will be people whom we can draw on. At the same time, other aspects of these power stations will require a great deal of specialism and there will be, perhaps, only a small number of places in which those particular skills or facilities can be sought. For the heavy forgings, there are only a limited number of places in the world where that can be done. There is some very exciting news about Sheffield Forgemasters developing some capability, and we will be following that as it goes forward. We will have to have the resources that are appropriate to the task in hand. We think that we are very fortunate in having some very good resources on our doorstep.

Q24 Rosie Cooper: Do you have any concerns about the supply chain's ability to respond to new construction work?
Rupert Steele: Clearly, there is an issue if there is to be a worldwide nuclear renaissance, as there will be bottlenecks in some of the most specialist parts of the supply chain, and that is why it is important to develop those supply chain areas and improve their capability.

Q25 Rosie Cooper: What about the capacity of the local supply chain?
Rupert Steele: In some senses, that is a bit easier, because if the local supply chain is full, we can obviously look at other supply chains elsewhere in the UK or possibly internationally. We would envisage, as we get closer to the construction date of 2015 that we have been talking about, really getting to know the supply chain well and getting a feeling of what we can do with them and where it makes more sense to go a little bit further afield for the right balance of skills, resource and so on.

Q26 Tony Lloyd: Obviously there will be highly specialised people involved in the construction of new stations, but there will be an awful lot of routine construction jobs. They will be skilled, but transferable from other parts of the construction industry. One concern is that we will see, particularly in the North West, a sudden blip in the price of everyone from bricklayers to electricians to whoever. Are you satisfied that those in the conventional construction industry are planning properly for that type of future so that you can have a supply of labour that you want and so that the rest of us can have the supply of labour that we need elsewhere?
Rupert Steele: Clearly, it will be important for us to address that issue. We probably have a little time before we do, given the time frame we have indicated. It will be very important for us to talk to all the stakeholders about how we manage the peak of the construction activity, and to ensure that it works both for the community and companies concerned, and for those building the reactor.
Julie Maykels: May I add to that? We have seen some keen interest from a number of organisation, mainly construction companies based in the North West, that are keen to get involved in the nuclear industry, even if they do not have contracts. They are looking to upskill and reskill their work force, take on new apprentices and use some of the programmes we have implemented—the Award for Nuclear Industry Awareness is one—so that some of their work force already have some of the knowledge and nuclear-speak in readiness for looking at any contracts. There are some very keen construction companies out there that have signed up to working with the skills academy, and that is of real value going forward. The other key point is that we are working very closely with the Construction Industry Training Board and the Engineering Construction

Industry Training Board on the standards required for the nuclear sector, and we are looking to align that with the nuclear skills passport. That is a critical area of development and something that we will be working on closely over the next six to 12 months to make sure that we have that in place, that all those bodies are talking to each other, that we have standards agreed and that construction companies can then access the qualifications and do some upskilling before they need to look at contracts and procurement.

Q27 Mr Martlew: The industry is a traditional one. We are seeing demands for higher skills. How do you think you are addressing the gender gap?
Julie Maykels: There is an issue with the gender gap. You can look at the figures: I think that about 75% of the people working in the nuclear sector at the moment are male. Traditionally, it has been dominated in that way, but a few things are coming forward now that are of real interest and are positive moves. We have a young generation network of under 34-year-olds. The make-up of that group is a 50:50 male-female split, so that is a really positive move. We have some really positive role models coming through. We've just had our awards ceremony for apprentice of the year and foundation degree student of the year, and in the North West our apprentice of the year was a female electrical craftsperson and our foundation degree student of the year was female. It's good to have those role models coming through. We can use them in all the work that we do with schools and universities on the opportunities for females within the nuclear sector. It is a challenge, but there are some positive steps in the right direction that we need to build on.

Q28 Mr Martlew: I'm sure you would say that but, Mr Steele, what's your organisation doing about this?
Rupert Steele: Clearly, the attractiveness of science and engineering careers to females is an issue that affects us across the whole of our business—not just this project but the other parts of our electrical business. We've been conscious of this and the importance of addressing it through the education system to try to dispel the stereotype that this is not work that should be attractive to women. We see no reason why it shouldn't be and we're keen to see a gender balance.

Q29 Mr Martlew: Are you taking positive steps or are you just waiting for it to happen?
Rupert Steele: I will have to get back to you on precisely what ScottishPower is doing, but I'm confident that we are doing what we can.

Q30 Mr Martlew: I want to come back to an earlier point that I made when I asked whether it was a well-paid industry. The answer is yes, it is. Perhaps it's none of your business, but how will you ensure that you don't denude other industries in the area of the skills that they need?
Rupert Steele: I guess I would answer that in economist-speak, which is to say that there's a market for workers and if workers can add more value working for us than working for somebody else, that's the market operating as it should. Clearly, we're not going to go round riding roughshod over our neighbours, because it's very important in this business to be a good neighbour and to work well with other people, but if you have attractive, well-paid careers to offer, you might get a better choice than if you don't.

Q31 Mr Martlew: I understand that from your point of view. I say this because I represent a constituency that is 40 miles away from Sellafield and its major industry is food processing, which can't afford to pay the money that you pay in the nuclear industry. Perhaps it doesn't get the Government support that the nuclear industry gets. Ms Maykels, how are you going to tackle this? How will we tackle the issue of the skills that, due to the market forces that have been described, will disappear from the food processing industry, for example, into the nuclear industry?
Julie Maykels: I don't think we're going to tackle that. There is a National Skills Academy for Food and Drink Manufacturing. I think that was set up at about the same time as the National Skills Academy for Nuclear. I know from meeting its regional manager that it's involved in an awful lot of activity in terms of recruiting and restructuring the work force and upskilling and reskilling. From the skills academy point of view, we would be looking to support other skills academies in the network and to pass on good practice and so on to help them to achieve what they need to achieve for their sector, but ultimately our role is very much about the nuclear sector and world-class skills for that sector.

Q32 Mr Martlew: I understand that you are probably not the right people to ask, but this is probably the only soap box I am going to have. With a place such as Cumbria, the food industry has moved to another part of the country. Therefore, it could well happen that we will not get any extra jobs whatsoever from you coming, unless we can meet the skills gap on a wider basis. Perhaps we need to take that up with the Learning and Skills Council.
Julie Maykels: From my personal knowledge of speaking at the National Skills Academy for Food and Drink Manufacturing, I would say that I think that it might be that some of the skills they are looking to attract are not at the same level. Frequently, they have been looking to take on apprentices, but maybe only up to level 2 or 3, and not necessarily to take them through that, because of the work requirements. I suppose that is something that might be a consideration, but that is just from personal knowledge.
Professor Boxall: The big issue in west Cumbria has been the reskilling of the process workers at Sellafield. If reprocessing stops, then from 2012 to 2019, there is a projected decrease in employment rates at Sellafield of 66% from 12,000 down to 4,000.

Getting that work force reskilled is the big thing to deal with first, rather than poaching from other areas.

Q33 Mr Martlew: I am glad that you have brought that figure up, because there is the issue of reprocessing. In fact, one, two or three nuclear power stations on the west coast will not actually balance that out, will it?
Professor Boxall: I think the numbers that Rupert mentioned suggested that the post-construction operation needed about 3,000 people to actually run the stations. Divide that by 10 across the UK, and that is about 300 people a station, although he will correct me if I'm wrong. So probably not, no. The reprocessing argument is an argument that is yet to be had.

Q34 Mr Martlew: There is an argument over the issue of the nuclear waste as well.
Professor Boxall: Yes, there is that as well. There is also the deep geological repository, and the work at CORWM.

Q35 Rosie Cooper: What kind of opportunities would there be for school leavers and others without higher educational qualifications in the industry? Also, how many apprentice positions would you create if you were to build a new reactor at Sellafield?
Rupert Steele: I am sorry to repeat this point, but clearly we are at a fairly early stage of putting our enterprise together, so I cannot give you a precise number on this. In terms of apprentices, we are talking about a very long-term investment operating for 40 to 60 years generating electricity, plus construction beforehand and decommissioning afterwards. It is the sort of business that would naturally want to consider, within the regulatory framework, growing its own talent locally through apprenticeships. We are obviously conscious that in an environment such as west Cumbria the children of existing workers in the nuclear industry may want to move into the industry in due course. I think we would be expected by our stakeholders to facilitate that and find ways to make that work. There are clearly a lot of roles in a nuclear power station that do not require the very highest level of technical skill. As regards those people who do not need to be graduates, we will be looking for roles that they can properly perform.

Q36 Rosie Cooper: In any of the organisations that you currently have, how many jobs would not be jobs that require higher qualifications? What sort of balance?
Rupert Steele: We said that at Cofrentes we have about 40% graduates, so that is a guideline that we can start with. Obviously, Cofrentes is a slightly earlier design of power plant than the kind that we are talking about now, but it is a similar sort of capacity—1,100 MW.

Q37 Rosie Cooper: Do you have any apprenticeships in other places? What is the proportion?
Rupert Steele: ScottishPower runs an apprenticeship scheme. I don't have the precise figures to hand.

Q38 Rosie Cooper: Will you let us know roughly what that percentage is, please, and if you have any idea whether you intend to keep it the same or increase it?
Rupert Steele: Yes, we'll get you details of our apprentice scheme.

Q39 Chairman: Just a couple of final questions from me. First, to all of you, a question about the region's infrastructure: what is needed as far as the region is concerned to improve the infrastructure to support the expansion of the nuclear industry? And, most importantly, who should pay for it?
Rupert Steele: I'll have a go.
Chairman: You'll pay?
Rupert Steele: Not necessarily on the latter question. The most important piece of infrastructure for the proposed power station at Sellafield is to get the electricity away. At the moment, there is not an adequate grid connection in west Cumbria to enable the electricity to be generated. The basic plan is to upgrade the line that goes round the coast of Cumbria from 132,000 V to 400,000 V, which would provide adequate export capacity to enable a power station to be built. It would also enable other energy infrastructure in the area to be developed. That will be a very important piece of work and we need to talk in great detail with National Grid, Ofgem, the local authorities and the Lake District national park to find a solution that meets everybody's requirements. I see it as being very much a team effort to deliver that infrastructure. We believe that because it's infrastructure that will be supporting the generality of generation in west Cumbria, it will effectively become part of electricity transmission charges and that is how the costs will be covered. That is perhaps No. 1 on my infrastructure list. We are also well aware that people in west Cumbria are interested in the road infrastructure. We think that it will be very important at a early stage to do a transportation study so that we understand both how we are going to get everything to the site during the construction phase—people and materials—and how we are going to get the work force on and off the site during the operational phase. That is a really important study. In the light of that study, when it is done, and working with stakeholders, we will need to understand what improvements, if any, are needed and how they should be progressed.
Chairman: Are there any other comments on infrastructure?

Q40 Mr Martlew: Something we haven't touched on is that not everywhere wants nuclear facilities, because of the perception of the potential consequences. How do you think that the communities that take these facilities should be rewarded? What sort of infrastructure improvements should there be for that? If you look at the French example, you can see that they do very well out of it, don't they? All we talk about are better roads and some way of getting the electricity out.

Rupert Steele: I think that, judging from the reaction in west Cumbria when we made the announcement about purchasing the land adjacent to Sellafield, the general view and feedback is very positive. Obviously, you will be speaking to a representative from Copeland later and they will speak for themselves, but my understanding is that there was a high degree of welcome for our proposal. I also think the economic benefits to the area will be of great importance to our neighbours and stakeholders. It is absolutely right that we study transportation and issues like it. Whether there should be some further rewards for the communities that host these things is a matter for political debate. The economics of nuclear power is not such that it can support significant flows of this kind, so in effect, if there were going to be further rewards for people in the locality of power stations, that would need to be paid for by an extra charge on consumers. I think that is a matter upon which there can be a debate. We will follow whatever conclusion it reaches.

Q41 Tony Lloyd: We have not had answers to strategic questions on a couple of occasions. Mr Martlew asked about planning for the labour market and the impact of the nuclear industry sucking in labour from other industries. That is a real issue, but maybe not for you here. There are questions about transportation, who bears the costs and gets the benefits of any pressures on the transportation system, and how we improve the transportation system. I suppose a more general question is: are we going to maximise the benefits if we see this increase in the size of the nuclear industry? This is a general question to all: have we got the strategic oversight of this change to iron out the problems and examine the costs and the benefits, particularly in terms of knowing who will pay the costs and how we will ameliorate them? Moreover, will we as a nation be able to get the benefits, whether in terms of research capacity or other areas, from any change in the nuclear industry? From what you have all been saying, I cannot see that, but maybe I am being unkind. You can be unkind about other people, of course.

Professor Boxall: Certainly in the 21st century, the nuclear industry has very much got its house in order in a whole range of areas, particularly on the issue of transparency.

Tony Lloyd: I may not be asking whether it should be the nuclear industry that does the strategic planning. That may be for central Government or local authorities. I am just asking you to give the guide as to whether you think it is there.

Professor Boxall: Within the nuclear sector, there is a proliferation of bodies that take a strategic overview, so that information is available and those thoughts are being had. In terms of the way in which nuclear articulates with other business sectors, the whole "energy coast" idea in west Cumbria has been building for the past four or five years. Again, that is nuclear talking to the energy sector as opposed to the food processing sector or the farming sector and so on. One would have hoped that the Office for Nuclear Development within the Department of Energy and Climate Change was starting to have a dialogue on policy articulation with other sectors in areas where there are high concentrations of nuclear assets and facilities. I am not certain whether that is happening.

Rupert Steele: I was going to mention the Government's role through the Office for Nuclear Development. I think that it is very focused on the whole process of relaunching the nuclear industry and is working very hard, in my experience, to make sure that all the various aspects are thought through and connected together. I know that it is closely in touch with the local authorities in Cumbria in many formal and informal ways, and I am sure that local authorities will be happy to explain their role in co-ordinating everything that needs to be done. I think that we have probably got the building blocks in place for this, with central Government together with local government and, in our case, an industry that is certainly very focused on the importance of being a good neighbour and working well with our stakeholders. Whether we have all the solutions out on the table at this relatively early stage is a different question.

Q42 Chairman: One final question to ScottishPower and you, Mr Steele, on accommodation. Who is going to house the thousands of construction workers who will be coming on a temporary basis to these sites? In some ways, it is related to the question that Eric Martlew asked about wages. It would be very unsettling to the housing market if it is not dealt with responsibly.

Rupert Steele: That is clearly an important issue that we must work through. We have talked to one or two local stakeholders already about the experience with the building of THORP, where I think it is generally thought that perhaps there wasn't as much planning and forethought about how to handle the work force for construction as would have been ideal. We certainly intend to build on and learn from that experience and do it better. Precisely what the solution is—I don't want to invent something in front of you today. It will involve our doing a detailed study, working with the local authorities and with people who have had experience in large projects of this kind, to find something that works for the locals, works for the community, works for us as the people who are going to be writing the cheques, and works environmentally. That is something very important that we need to do.

Chairman: Thank you very much for your evidence. We are very grateful for the contribution that you have made. We are now going to move on to the second group of witnesses. Thank you very much.

Witnesses: **David Hayes**, Energy Consultant, Britain's Energy Coast—West Cumbria (previously West Cumbria Vision), **Richard Leafe,** Chief Executive, Lake District National Park Authority, and **Fergus McMorrow**, Chief Executive, Copeland Borough Council, gave evidence.

Q43 Chairman: Good afternoon and welcome. The best thing to do is to allow you to introduce yourselves and then we will get going.
Fergus McMorrow: I am Fergus McMorrow, Chief Executive at Copeland Borough Council.
David Hayes: I am David Hayes, energy consultant at Britain's Energy Coast—West Cumbria.
Richard Leafe: I am Richard Leafe. I am the Chief Executive of the Lake District National Park Authority.
Chairman: Thank you. We are going to start with a question from Eric Martlew on new builds and the economy.

Q44 Mr Martlew: You mentioned in your evidence, Mr McMorrow, that there has been a decline in the traditional industries, which has been going on for as long as I can remember, but there is also likely to be a significant decline in the numbers at Sellafield. What will the effect be on your area of not getting nuclear power stations?
Fergus McMorrow: The projections we are working to, although slightly out of date, are that over the next few years—I won't put a date on it—the expectation is that the number of jobs on Sellafield site will decline from about 12,000 to about 4,000. A significant trigger for change is the ending of the reprocessing contracts at Sellafield. Obviously, it is a major issue when you consider that about 50% of all Copeland's jobs are on the site at Sellafield and the vast majority of the rest are local services. There really aren't many other significant employers that are not local services in the area. So it is a very dominant industry in the area and it is absolutely vital for the economy.

Q45 Mr Martlew: We have heard that if you get three stations, that in itself would not take up the slack from the loss at Sellafield. Is that the case?
Fergus McMorrow: Absolutely. Our expectation is that if three stations happened it would be a part in a jigsaw of a future plan for the area. Where it could provide significant benefits for us is if you had three stations developed in a phased programme over a long period of time. Then the number of construction jobs created could do a lot to offset the decline in the Sellafield site, and if nothing else, would buy us a significant amount of time, diversifying the economy and introducing other employment initiatives.

Q46 Mr Martlew: You mentioned it was a jigsaw. What is the other major part of the jigsaw?
Fergus McMorrow: There are various plans in terms of trying to move the nuclear industry in Copeland from a site-based industry, based on the Sellafield site, to a centre of excellence in nuclear, providing and selling services to the new nuclear renaissance which is becoming worldwide. There is a lot of expertise in the area. Obviously there is the National Nuclear Laboratory. There is higher education investment taking place in the area. So the plan in the future is to develop the nuclear industry, but not reliant on one site, but to diversify within the sector and then use the expertise there to diversify into other sectors. In addition to that there are sectors like the tourism sector and other sectors that we would want to develop.

Q47 Mr Martlew: You haven't mentioned the storage of nuclear waste.
Fergus McMorrow: We currently store nuclear waste and that is part of the employment of our area—storage, conditioning and packaging. There is an issue in terms of the long-term deposition of nuclear waste on depository which the community will need to take a view on in the future. We are involved in a process of discussion on that, but there are no decisions at the moment.

Q48 Mr Martlew: May I turn to you, Mr Leafe? We've got this great enthusiasm for nuclear developments on the west coast. How do you think that impacts on the tourist industry within the national park?
Richard Leafe: There are a couple of issues there. The first thing to say is that the park authority is not enthusiastic for three new nuclear sites in west Cumbria. We fully understand and support the need for maintaining the nuclear industry. We understand that that is an essential component of achieving sustainable development on the west coast, but we feel that two of the sites, at Braystones and Kirksanton, have unacceptable impacts on the national park, both alone and, particularly, in combination with two others.

Q49 Mr Martlew: Are any of these sites in the national park?
Richard Leafe: None of them are in the park.
Mr Martlew: I didn't think they were.
Richard Leafe: The Kirksanton site is right up against the boundary of the park, and all of them are pretty close. I think the furthest is about 1.5 km away; that would be the Sellafield site. But when you are considering views from the park out on to that magnificent open space—
Mr Martlew: If you're standing on the fells and looking towards the Isle of Man.
Richard Leafe: Yes. The notion of three large nuclear facilities there, we think, would have a cumulative impact that would be detrimental. You asked about the tourist industry. The tourist industry within the park, on the western fringes, is a fairly fragile beast at the best of times. It rightly has potential to grow, and ideas about expansion. I think there are risks to that growth if there is a strong perception that that part of Cumbria and the coast is given up to the nuclear industry. There are some risks around the growth of tourism in that area. That is the way I would put it.

Q50 Mr Martlew: I realise that the planning board isn't really the tourist board, but in fact, that argument has been put for the last 50 years, that I can remember. The west coast has never really benefited from the tourist industry, has it?
Richard Leafe: No, I think that's absolutely right. We're not the tourist board, but we share the aspirations of the tourist industry. We think there is great potential for growth. The western part of the national park has some of the most fantastic mountainous and lake scenery that we've got in this country and some of the best bits of the park. Certainly, we're supportive of the aspirations to increase that. I think the transport infrastructure is a critical element of that. You questioned the previous speakers about what key infrastructure is needed to support the growth of the nuclear industry. From a tourism perspective—and indeed from a low-carbon, climate change perspective—looking at the rail infrastructure of west Cumbria would be a very important thing to do. That may bring benefits for the communities in allowing for the first time—this always staggers me—people to make journeys into the south-west side of the national park on a Sunday, which you currently can't do. There are real opportunities for the tourist industry if we get that infrastructure.

Q51 Mr Martlew: You sound like you're advocating going from Windermere to Keswick by rail. Is that the case?
Richard Leafe: From Windermere to Keswick? That would be quite a challenge.

Q52 Mr Martlew: Can we come to a general question? Do you think the Government are doing enough to develop the nuclear industry in the North West?
David Hayes: They're doing a large amount on the national stage. Obviously, the national policy statement is in the right direction. We believe that the process of the Infrastructure Planning Commission is very much in the right direction. Clearly, the Government will need to send the right signals to the industry for the further development of nuclear power. That may be around the modification of electricity markets and carbon prices or carbon taxes to provide the right climate so that industry is confident to invest in the nuclear industry, but we're certainly very pleased with the direction in which Government are moving, and we get a large amount of help from the Northwest Regional Development Agency at the regional level in terms of helping along the nuclear industry there.

Q53 Mr Martlew: That's good, if you could perhaps develop on it, but what you are really saying is that the private sector will not develop the nuclear industry unless the Government have the commitment. There's the commitment, and money's going to have to go in. Isn't that the case, Mr Hayes?
David Hayes: In the current climate, that's got to be an issue.

Q54 Mr Martlew: But even without the current climate, the issue of the market is that nuclear could well be long-term, but there isn't a lot of money in just going and building a power station privately at the moment, is there?
David Hayes: I think what you have at the moment is three significant consortiums—the Iberdrola consortium, RWE and E.ON joined together as Horizon and EDF—who have all given a public commitment to develop new nuclear power in England and Wales by 2025. So the first signs are there, but clearly they will be looking for something from the Government, I guess, in order to convince them that the economic conditions are right. That could be around the market. The Government have made it clear that they won't subsidise new nuclear power, quite rightly—we believe that the cost of it should be borne by the private sector—but there is obviously a debate to be had between the industry and the Government on what exactly the conditions are going forward.

Q55 Mr Martlew: You mentioned the supportive role that the Northwest Development Agency has played. There is a proposal, of course, by one political party to do away with that. Do you think that would hamper the progress of the nuclear industry in west Cumbria?
David Hayes: That is obviously for any future Government. One party has—
Mr Martlew: But you've said they've been very supportive.
David Hayes: Exactly, yes. It is part of one party's political programme to abolish such bodies, but certainly we have found the NWDA very supportive in terms of encouraging the manufacture of nuclear components in the North West and encouraging the supply chain by providing funding as seedcorn to promote development. They are playing a very helpful role in establishing the North West as the Government's low-carbon economic area and the seedlings of a North West nuclear industry cluster.

Q56 Mr Martlew: So basically they did help in the regional supply chain?
David Hayes: Yes, indeed so.

Q57 Mr Martlew: Can we come back to you, Mr McMorrow? It is suggested that there will be 5,000 construction jobs. How do we come to that figure?
Fergus McMorrow: We have not done any original research on that. I think we are basically using the 4,000 figure that has been used by various parties and that comes from experience elsewhere, and we are making the assumption that there will be other indirect jobs as a result of that, given the long construction period. So we see the potential of 5,000 jobs on that basis.

Q58 Mr Martlew: Just as a supplementary to that, you perhaps heard the earlier question about infrastructure and what the community should gain—other than jobs—from having the nuclear industry. Has Copeland got an agenda on that?

Fergus McMorrow: Our view is that the transport infrastructure in Copeland needs upgrading significantly, as a priority. The existing transport infrastructure is not sufficient even for our existing sites, and certainly not for additional investment. So we would be looking to ensure that the appropriate long-term investments are made in transport infrastructure. Some of that would be linked to the development of a new nuclear power station, to whatever was required from a planning point of view to make that effective. That would not be all of it, but it would be part of a jigsaw in terms of a longer-term upgrading of the infrastructure.

Q59 Mr Martlew: One final point. Health care is always a problem in Cumbria because we have two district general hospitals. Do you think that the nuclear industry should ensure that there is a good district general hospital in west Cumbria?
Fergus McMorrow: I'm not entirely sure that it is the nuclear industry's task to do that, but I think it's important that the Government do that as they look at the bigger picture in terms of growth and investment in west Cumbria and the need to provide appropriate health services to support that investment and growth, and the nation's economic development.

Q60 Chairman: I'm going to ask some questions on infrastructure. May I begin with David Hayes from Cumbria Vision? Can you tell us something about the need to construct the Cumbria ring?
David Hayes: The construction of a new electricity grid infrastructure is absolutely fundamental to the new build project; without a new Cumbria ring it simply won't happen. We have been talking informally to National Grid and to a range of stakeholders, including Richard Leafe and his colleagues and some of the local planners, for about a year now. The grid has done a preliminary study on the issues and has offered the Nuclear Decommissioning Authority a so-called grid connection agreement that would enable Sellafield to be connected up to the national grid as part of a new grid ring system by 2023 or 2025. But to cut to the chase, a new electricity grid, a 400 kV line going around the Cumbrian ring, is a prerequisite for new nuclear build, so we have recognised that as almost the key early issue. We have been working hard with National Grid to prepare the ground before that, and we have been talking to Richard Leafe and his colleagues about the impacts on the national park and so on.

Q61 Chairman: How does the Lake District national park feel about that? How do you, Mr Leafe, think that that should be implemented?
Richard Leafe: As David Hayes has said, we have had a year's worth of quite detailed discussions about how the ring might operate. We accept that there is a need for a ring if there is going to be a need to get power from the new station and any other renewable facilities on the west coast. Our preference would be to take it offshore and not to have the large pylons running through or close to the national park. However, our approach is one that attempts to reconcile this route with the special qualities of the park. So we have been looking in a lot of detail at which sections of the ring we would like to see undergrounded, to avoid the greatest impact on the national park.

Q62 Chairman: What about other improvements to the infrastructure? Eric Martlew has already asked about the question of the health service. What about the question of accommodation, with all those temporary workers coming in, and the effect that that will have?
Fergus McMorrow: That is obviously a major issue for us and it is very difficult at this point in time to understand exactly the scale of that issue, because we are potentially talking about three sites. We don't know whether there will be three, or what the timing will be. If they all happen together, that will be totally different from how it would be if there were a sequential programme. So we are really working in a vacuum, in that sense, at the moment. As a planning authority, what we are looking at is how we would go about integrating that kind of infrastructure into the community. We will need to make assumptions about the number of local people who will be employed and the number of additional contractors who will be brought in. Again, it will all depend on the scenario that is actually implemented at the end of the day. Where temporary accommodation is required, we are looking at the options for integrating that temporary accommodation into existing communities and at its legacy use. For example, could you end up with accommodation that could be used for students or for leisure use in the long term? We will need to take into account all these kinds of issues, in a kind of holistic approach to dealing with this. However, the issue for us at the moment is that there is not enough information. We do not know exactly what will go forward. It is hard to produce real information on impacts. We believe that there is an enormous amount of work to do on the local impacts of a range of scenarios that could happen in Cumbria, before any real decisions or any real strategy about how to deal with those scenarios can be identified.

Q63 Chairman: What about emergency planning resources? You must have extensive experience of that. However, in the event of something being developed away from Sellafield, would the resources be there?
Fergus McMorrow: Yes, I think so. I think that one of the advantages of having Sellafield as a huge resident is that there is quite a lot of capacity in terms of emergency planning and there are regular emergency planning exercises and quite a lot of expertise about emergency planning in the area. Of course, emergency planning applies to all kinds of facilities in the area and not just to the Sellafield site, although the Sellafield site obviously dwarves other sites. I think that the capacity is there. It is just about

ensuring that alternative sites are managed and that the right kind of plans are put in place. But I think that, compared with most areas, that capacity and expertise does exist in the area.

Q64 Chairman: Okay. What about the impact of large numbers of male temporary workers coming in? What kind of impact will they have on the region? I was once in Portsmouth on a Saturday night when the fleet came in, and it was not a pretty sight. I just wonder how that would impact on the region as a whole and how people would respond to it.
Fergus McMorrow: You are absolutely right. That is potentially a major social issue for us. I know that we have had workshops on what the impact of that issue might be. The police would say that there is potentially an issue there. It is thought that if development took place, there would be a lot of males in the area during the week looking for something to do in the evening. There would be more pressure on town centre life, if you like. Our task is really to plan very well for what is happening, to try to ensure, as far as we can, that local people get access to the employment, ideally by encouraging the proper phasing of the developments against change in employment at Sellafield and making sure that we have the proper retraining in place, as well as by ensuring that we are integrating temporary accommodation with the community rather than having great encampments of contractors. So we need quite an integrated planning approach. That will take quite a lot of resource, effort and time and I think that that is an issue for us. If we are going to do it effectively—if it's going to work—we need to engage as a local authority in all these issues and work in tandem with the developer and the Infrastructure Planning Commission to make sure that we're addressing them properly. At the end of the day, success will depend on what effort goes into proper local planning of the facilities and the impacts.
Richard Leafe: We'll have to find a way of getting the temporary workers to release some of their adrenaline in the Lake District national park at the weekends.

Q65 Chairman: You have a particular concern about the whole of the national park. There must be an impact with all those temporary workers and all that additional money.
Richard Leafe: I think that's largely for the communities in which they're based, but I'm saying there may be a safety valve here in physical recreation—outdoor recreation—in the park. That might help.

Q66 Rosie Cooper: Mr Hayes, in your evidence you advocate reprocessing spent fuel. Where should that reprocessing take place? Also, should the positioning of the repository be linked to the decision about where any new power plants should be?
David Hayes: We clearly believe that there is a lot of potential for further reprocessing business, whether that's UK business or international business. That may require a change of approach or of policy by the Government, but certainly we believe there is a lot of business potential for new reprocessing business at Sellafield. I don't believe that that decision should be linked in any way to the decision on the repository or that there should be a link between the repository decision and new nuclear power. The repository process is very much a separate one. Fergus McMorrow is part of the partnership on that and may want to add to that, but I think the repository process is very much a separate process and should remain that way.
Fergus McMorrow: The key issue for the repository is, first, that the final location is safe and secure. That has to be the top issue. The second issue from our point of view is that the community has to support and accept it. I think that in practical terms, the nuclear new build will be spread around the country and will be a very, very small proportion of what will go into repository. So I don't think that the issue of the location of repository impacts significantly on nuclear new build siting.

Q67 Rosie Cooper: Did I miss this? Where would the reprocessing take place?
David Hayes: At Sellafield—on the Sellafield site.

Q68 Rosie Cooper: Sorry; I missed that. Mr McMorrow, the decision about where to put the repository will no doubt need the support of the local community. What is your view regarding the local community at the moment?
Fergus McMorrow: At this stage, the local community's view on siting the repository has not been properly tested. What has happened at this stage is that the local community's view on the process that we're engaged in and the partnership we've set up, its awareness of the repository and general feelings about it, have been tested recently, although we haven't had the final results back. We can't really gauge local feelings until we have investigated the issues as a partnership, communicated on this properly to the community, made sure they understand the issues and got feedback, but that's a long way off for us. I wouldn't want to prejudge what the community would say, but in terms of the process that we've adopted so far, the initial indications we're getting back from our community engagement work are that there is good support for what we're doing.

Q69 Rosie Cooper: So the general feeling is that it would be supportive?
Fergus McMorrow: There is support for where we are in the process at the moment, but it's an early stage in the process.
Rosie Cooper: But you indicated that you had a general feeling. How would you describe that general feeling?
Fergus McMorrow: The general feeling at this stage is a positive feeling, but that's without detailed knowledge of all the implications yet.

Q70 Rosie Cooper: What is the timeline? How will you start to engage local communities?
Fergus McMorrow: We've already started engaging local communities.
Rosie Cooper: In the detail?
Fergus McMorrow: It's hard to say. I think the expectation is that over the next 18 months, there will be a recommendation from the partnership to local authorities on whether to take forward the next stage, which is the formal decision to participate in the process. That would start to look more closely at potential geographic locations for a repository. It will take many years to go through the process and understand properly the implications of those potential locations, and that presumes that there will be a positive decision to go to the next stage, which is undetermined at the moment. There is still a lot of water to go under the bridge, but so far, the process is going very well.
David Hayes: May I clarify my earlier answer? I didn't want to give the impression that there is no link between new nuclear power and waste management or the repository in that sense. Clearly, there is a desire by the public in general to have confidence that there is a long-term solution to the waste issue, which obviously relates to the nuclear power issue. I wanted to make the point that I think the decision-making process on where the repository is sited is separate from decisions on the siting of nuclear power stations.

Q71 Chairman: I'd like to ask some questions on engagement. I know that a series of public meetings have been organised in the region, but are you content that the local community is effectively engaged and involved in the consultation process?
Fergus McMorrow: I am content that it has been, yes. I haven't seen too many issues raised about the opportunity to engage or express views. I think that those opportunities have been available to local people and have certainly been taken.
David Hayes: Looking at nuclear power, we were very impressed by the Government's handling of the local consultations around the Sellafield, Braystones and Kirksanton sites, all of which were well publicised by Government and attracted a lot of interest. Personally, I think that the DECC officials who came to those consultations answered questions very fully and openly and gave a good account of themselves.
Richard Leafe: I think that it is slightly more difficult for the communities of the national park and wider Cumbria to feel as though they are really engaged in a consultation on this. There are still quite a lot of people who simply don't know what is going on, what is proposed or how they get involved and make their voice heard. Certainly the worst-case scenario, if you like, of three nuclear power stations has an impact on Cumbria beyond the immediate area of the west coast.

Q72 Chairman: As many as three nuclear power stations will involve quite a lot of planning resources. It really is a huge change in the present infrastructure to deliver a proper planning regime. Are you satisfied that the planning resources are there or will be there?
Fergus McMorrow: I am not, and I think that they need to be there. I have to say that my authority has made representations on this. We are concerned, as I mentioned before, that the success of the development will hinge on how well it is delivered locally and whether the impacts are dealt with properly. I have concerns that local authorities, representing their communities, need to be fully resourced to engage in that detailed process, to do the right kind of studies—the right kind of work—and to feed into the IPC. I do not see that the resources are there at the moment. I know that there are proposals, in terms of private sector operators engaging in planning performance agreements to help fund the process. That is voluntary at the moment, and it is only going up to a certain point in the process, when decisions are taken, but monitoring the implementation of those decisions is important, too. It doesn't necessarily deal with the much wider issues of the kind of strategic reviews necessary to ensure that we have the right context available. It is much more project-focused. I think that in your last discussion there were a lot of strategic issues raised about the impacts of development. There is a lot of work to do if we are going to get it right locally, and I think that local authorities need to be resourced to do that. At the moment, I cannot see where that resource is coming from.
David Hayes: We have raised this issue with Ministers through the so-called West Cumbria Strategic Forum, and we believe that the Department for Communities and Local Government must give more focus to this. In their evidence to the House of Commons Select Committee on Energy and Climate Change, both the IPC and the Local Government Association requested that Government provide more resources on this. We believe it is a new and important process that will require more consultation, particularly with local communities, in the pre-application phase. We believe that the Government are scoring an own goal by not providing the right resources, because they want to deliver these projects and want timely decisions on them. It seems to us that by not equipping local authorities with the right resources to handle those proposals, they are shooting themselves in the foot.

Q73 Mr Martlew: Mr Leafe made a comment about the wider implications of having three nuclear power stations on the west coast. I am old enough to remember the Windscale fire, and I worked in the food industry during Chernobyl. To be honest, gentlemen, as I just said, my major industry is food processing, and if there's anything like a minor incident at Sellafield or the new nuclear power stations, the food industry in my constituency will come to a standstill. Don't you think that we should be consulted on a wider area than just yourselves, as it will have that impact? It will have a major impact

on the agriculture industry, because nobody will buy. As we know, there are still parts of the fells on the west coast where you can't bring your sheep down and sell them because of Chernobyl. Don't you think you're being a bit narrow in your views about this?
David Hayes: I think you're right that the cumulative impact of the development of three new nuclear power stations in the same time frame is an issue that needs serious consideration. The Government have said that as part of their work on the national policy statements they would need to give that consideration. It's obviously an issue not just in terms of health and safety, but in terms of whether the infrastructure is sufficient.

Q74 Mr Martlew: But I am mainly concerned about health and safety.
David Hayes: The view we've taken generally now is that we believe only the Sellafield site is fully capable of deployment by 2025, now that RW has given up its grid connection agreement for Kirksanton and Braystones. We believe that is probably the only one of the three Cumbria sites now likely to be developed by 2025. As Fergus was saying earlier, we believe that through the co-operation of the Sellafield site with the existing emergency planning arrangements, and the co-operation between that site and the Iberdrola consortium, sufficient health and safety standards will be put in place through the regulatory standards.
Fergus McMorrow: Can I just make a clarification? It's not Copeland Borough Council's view that the three sites shouldn't remain in the national policy statement, and it's not the borough council's view that they couldn't be developed within the time period. Our view is that we support all three sites remaining in. We think that the Sellafield site is the best site, but we think that there is not sufficient information to allow the sites at this point in time, because there's a lot of work to be done on deliverability and on the impacts. It's very important to the community that there is new nuclear power development in the area. At this point, the borough council would certainly want to keep those options open until there's more clarity about the details of how the sites would be developed.

Q75 Mr Martlew: I'm confused, and it's probably my own fault, because I probably haven't been following. Will the planning process for this be a matter for the Infrastructure Planning Commission, the county council or yourselves?
Fergus McMorrow: It will be the Infrastructure Planning Commission that makes the decision, but the expectation will be that a lot of the detailed planning work will be resolved between the developer and the local authority before the application—

Q76 Mr Martlew: Which local authority?
Fergus McMorrow: Copeland Borough Council.

Q77 Mr Martlew: Will it be the county, or Copeland?
Fergus McMorrow: We will work with Cumbria County Council. We're working together on this already because the implications are wide. We are involving other local authorities in discussions, but at this stage there isn't much real, hard information to get to grips with. But we recognise that there are wide implications and we need to involve a wide range of local authorities in the issues as we move forward and as things unfold.

Q78 Chairman: Thank you. One final question from me: the economic benefits to the region are obvious, but what about the argument that it would be preferable if the region didn't depend so much on nuclear, and that this proliferates it? Expansion of the nuclear industry just makes it worse, and puts off the evil day when the region will have to find something else to do.
Fergus McMorrow: I think Copeland borough council would say that we prefer not to depend so much on the nuclear industry, but given the very heavy dependence and the rapid changes in front of the area, the greatest opportunity for offsetting some of those job losses will be in the nuclear industry. We want to develop other sectors as well, including other renewables sectors, tourism and so on, but we recognise that the base we are working from and the contribution that those sectors will be able to make to offset the impacts we face are very small compared with the potential contribution that the proposed developments can make.
David Hayes: What we would like to do is to develop a genuine low-carbon economy. It is absolutely right that the nuclear industry will provide the basis for that, and there are huge opportunities to diversify within nuclear, but we would also like to diversify away from nuclear. A range of projects is being pursued at the moment, including a number of offshore wind farms, such as those off the Solway firth and at Walney island near Barrow. Last week, there was an announcement of a brand new £600 million investment in gas storage facilities off the Barrow coast, and there is the major British Aerospace submarine facility down at Barrow. We are not entirely locked into the nuclear industry, but it will provide the basis, and we would like to diversify away from that.
Fergus McMorrow: I just want to make the point that the investment that could come on the back of the nuclear industry could facilitate other sectors. For example, investment in infrastructure will improve access for tourism, and grid infrastructure will create capacity for renewables, so having a spine of nuclear development will allow further diversification in future potential.
Richard Leafe: I reinforce the points about tourism, which is a £1.3 billion annual business in Cumbria and the national park, with some 35,000 jobs dependent on it, so it is significant economically. Renewable energy is, for me, the Yin to the Yang of the nuclear side of things, and Cumbria has huge

opportunities. We certainly have an ambition for the national park to be a low-carbon exemplar of how society can exist, do business, and look after visitors, and we want to move people around the park in a low-carbon way. Facilitating this development, as well as some other larger-scale renewable initiatives in Cumbria, is also an important part for us of diversifying that economic base.

Q79 Mr Martlew: I am a bit surprised. You are not suggesting that we put wind turbines in the national park, are you?
Richard Leafe: I am, but small ones.

Q80 Mr Martlew: To be honest, I find the idea of you objecting to looking out from the fells to the nuclear power station but having rows and rows of wind turbines on some of the fells difficult to accept.
Richard Leafe: I wouldn't go as far as to say that there should be rows and rows of commercial-scale wind farms on the fells. I am thinking of small-scale, almost farm-scale.
Mr Martlew: Ones that don't contribute a lot to the grid.
Richard Leafe: No, but ones that do contribute to making those communities in the remoter areas of the national parks that are already off-grid more sustainable in the future. Then they would not be dependent on oil, which will run out or go up at some point in the future.

Q81 Mr Martlew: The majority of my constituents would not be at ease with the idea of putting wind turbines in the national park, to be honest.
Richard Leafe: I think there is a difference between large-scale industrial wind farms, and small-scale micro-renewable, which is appropriate in terms of size in the national park.

Q82 Mr Martlew: Is this the policy of the board?
Richard Leafe: It is indeed, yes. Of course, there is an existing special planning document on wind for Cumbria as a whole that recommends for larger schemes that protected landscapes—the national parks and the areas of outstanding natural beauty—are avoided, as well as the immediate views within and without. However, Cumbria has a large proportion of the wind resource, and we need renewable energy, so we have to take a few risks around the boundaries of those protected areas with that kind of infrastructure to get the carbon benefits that we seek.
Chairman: Thank you for that. Thanks again for the evidence that you've given and the contribution that you've made. We're most grateful. I'm not sure that we will have the time to include this in our report if the election comes too early, but we will do our very best.
Richard Leafe: Thank you.

Witnesses: **Martin Forwood**, CORE (Cumbrians Opposed to a Radioactive Environment) and **Councillor Ralph Pryke**, Nuclear Free Local Authorities England Forum, gave evidence.

Q83 Chairman: Good afternoon and welcome. May I begin by asking you to introduce yourselves?
Martin Forwood: My name is Martin Forwood and I am the campaign co-ordinator for Cumbrians Opposed to a Radioactive Environment, a local environmental pressure group in Cumbria.
Ralph Pryke: My name is Ralph Pryke. I am a councillor at Leeds City Council and the chairman of the English forum of Nuclear Free Local Authorities, which covers England, Wales, Scotland and Ireland.

Q84 Chairman: I am going to begin by asking some questions about jobs. Other witnesses have suggested that, unless the Government make a clear commitment to nuclear power, the nuclear industry will simply move elsewhere, other facilities at Sellafield will slowly but surely close down and the area will lose further employment. What can you say about that as far as jobs are concerned? I know it is not the only issue, but it is certainly an important one.
Martin Forwood: It is indeed. We are the odd people out, I suppose, in that we object to nuclear power generally across the UK—and worldwide for that matter—for a whole range of well known reasons, one of which is that it is a very dangerous distraction from what actually needs to be done in terms of meeting energy security, abating carbon emissions and so on. We do not see it as the right way to go. Sellafield is an entirely different matter; that clearly has a finite life. It has to be said that there is a very long way ahead in terms of all the decommissioning work that has to be done, but that is a separate issue from nuclear power as we see it.
Ralph Pryke: We would regard the reprocessing that is going on, or that has been tried, as uneconomic but likely to be pursued by the Government in any case, and it could provide employment in Sellafield. Certainly, the storage of waste and the decommissioning of existing power stations would provide employment within the UK even if we stopped nuclear development tomorrow. We very much question some of the projections on jobs from new nuclear build, as you will have seen from our submission. We have also put in our submission to you that nuclear produces around 75 jobs per year per terawatt-hour of power produced, whereas renewables produce between 900 and 2,400 per year per terawatt-hour. So we very much favour renewable energy over nuclear in terms of job production. That would apply to the North West and to Cumbria in particular.

Q85 Chairman: Am I right in assuming that Copeland is not a member of Nuclear Free Local Authorities?

Ralph Pryke: No, it isn't.

Q86 Chairman: I didn't expect that it would be. So do you not believe that that should be a decision for them to make from the local authority point of view?
Ralph Pryke: No, because the new nuclear build decision is something for the whole country, particularly, from our aspect, for the Irish local authorities that are our members. There are members of Nuclear Free Local Authorities in the North West region in any case, but the Irish authorities are particularly concerned about the past history of Sellafield, which you will be aware of, and the potential for future leaks and threats to their environment from our nuclear activities in this country.

Q87 Chairman: Okay. What about alternative jobs? Mr Forwood, do you think that tourism and agriculture will cope in Cumbria?
Martin Forwood: There is huge potential for tourism, as we heard from one of the previous panellists. I don't think agriculture can expand much more than it already has. We take the view that, job-wise, the way forward for west Cumbria in particular is that you do not saturate it in nuclear power stations and nuclear facilities. Instead of that, you have a two-pronged attack. The first is to implement the very large potential for renewables. In fact, Cumbria Vision produced a scoping report in 2008, I think, which showed that if you implemented the renewables—this is across the range of offshore, onshore and so on—by 2020 you could create up to 5,000 jobs. We're hearing about job losses of up to 8,000 from the reprocessing section of Sellafield. Reprocessing is probably going to go on until 2020, and certainly with THORP that is how long it will take it to finish its existing contracts, so you are not into those job losses from Sellafield for another 10 years. Therefore, we have 10 years in which to, first, launch this renewables programme and, secondly, make a much more concerted effort to attract non-nuclear investment into the area. I suspect that you would do that if potential investors did not see the west coast of Cumbria as being simply the UK's nuclear stage. It is not exactly enticing them to move maybe food production or any other industry into the area. That is not going to happen.

Q88 Chairman: I have raised that question with the previous witnesses. You may have heard the question about how reliant Cumbria should become. Is it not the case that it would take a considerable amount of time to wean this part of the world off the nuclear industry?
Martin Forwood: Absolutely. I certainly agree that there would be some lean years ahead, but at least we would be going in the right direction for once. Historically, it is very clear that this dependence on and domination by the nuclear industry for the past 60 years has not produced very much. We are being told now that we need to re-kick the local economy and re-start this, that and the other, so you have to ask a question. If the industry has been so good, why are we in the position of having to kick-start it all again? There would certainly be hard times ahead if you were to follow our path, which is renewables and non-nuclear investment.

Q89 Chairman: So do you see any new sources of employment? Do you have any new suggestions?
Martin Forwood: I haven't. I wouldn't like to try to name either companies or business sectors, but when you look around other parts of the UK that have not been dominated by one nuclear industry, you see that they don't seem to have had that much difficulty in attracting non-nuclear investment, whether that's the motor industry or whatever.
Ralph Pryke: Certainly other local authorities around England and Wales have considerable experience in attracting and developing relatively new industries. I think of the North East of England, in particular, shifting emphasis from shipbuilding to wind turbine building. The engineering expertise transferred very well to that industry. The mining industry in south Yorkshire has largely gone, but the region has survived by diversifying.
Chairman: But huge amounts of resources went in to do that, and, I suppose, that is what is required. I am going to ask Tony Lloyd to ask some questions on reprocessing and waste.

Q90 Tony Lloyd: My apologies to you, Mr Forwood and Councillor Pryke, for missing your earlier observations. Obviously, Cumbria already has a significant legacy from the nuclear industry. As we look to the debate around new nuclear facilities, do you feel that the debate about what we do with waste is inextricably bound up with the location of new nuclear facilities?
Martin Forwood: Not particularly, I don't, no. The deep geological facility that is being sought is at this moment specifically for legacy waste—waste that we have already produced. A lot of people are having some difficulty now in reconciling that point with the Government's statement that waste from new build will go down the same big hole as the legacy waste. In fact, I understand that the Infrastructure Planning Commission is not even going to have to consider waste because the Government believe that there will be effective arrangements already in place. There are two different things: the legacy waste and the waste from new build.

Q91 Tony Lloyd: Can you just expand a little and tell us why it is not common sense that we should treat the two the same?
Martin Forwood: As I understand it, the most recent advice, given by the Government's Committee on Radioactive Waste Management, says explicitly that the disposal of waste from a new phase of reactors needs a process separate from the one that we are now travelling down to manage radioactive waste safely. That requires research, but the research hasn't been started or undertaken. In CORWM's eyes, legacy wastes and new-build wastes are still two separate issues.
Ralph Pryke: In addition, Martin is talking about high-level and medium-level waste, which is being stored at the moment and might be buried and not

quite forgotten about. Low-level radioactive waste is also a mounting problem because it does not come from just nuclear power generation, but from nuclear medicine as well. The amounts are growing significantly, and some of the Government's proposals have been met with more than scepticism by local authorities; for example, the proposal to parcel it up around all the incinerators in the country and let the residual radioactivity be dispersed through ash and particulates in the air, falling on all the communities that are downwind of the incinerators. When local communities discover that that is a possibility for their local incinerator, they are not wildly enthusiastic about it.

Q92 Tony Lloyd: But almost exactly in that context, is part of the concern that the two of you have that Cumbria is the designated location for our nuclear waste, come what may—that there is an expectation that Cumbria will suffice?
Ralph Pryke: That seems to be the Government's position, but it's not the local authority's preference.
Martin Forwood: Certainly, in that only west Cumbrian local authorities have expressed an interest in it so far. I don't think that any other local authority in the UK has, which I think says something about the type of business this will be.

Q93 Tony Lloyd: Historically, it has been the taxpayer who has picked up the tab for the disposal of nuclear waste. As we look to the future, who should take responsibility?
Martin Forwood: Well, if we are talking about a new-build programme, the Government's view is that all costs, including the costs of waste disposal, should be borne by the developer.

Q94 Tony Lloyd: I suppose I'm really asking at this point whether you want to put forward a different proposal. That is not meant in a hostile way. We can ask the Government why they feel that way, but what do you feel yourself?
Martin Forwood: I feel that the industry should pay the full costs for waste disposal. There should be no taxpayer help or subsidy at all.
Ralph Pryke: It would also help if people knew just how much nuclear costs. There is, in effect, a nuclear levy on electricity bills at the moment. If that were enunciated a little more widely, people might stop and think about the alternatives more readily.

Q95 Tony Lloyd: So the allocation of cost to the nuclear industry would be about transparency of accounting?
Ralph Pryke: Indeed.

Q96 Rosie Cooper: I spoke earlier with Mr McMorrow about community engagement. Could I ask you both whether you believe that local communities have been given an adequate opportunity so far to engage with the process. How do you see that moving on in the future?
Martin Forwood: From a local perspective, it has been pretty poor, quite honestly, particularly in respect of two of the three west Cumbrian sites, Kirksanton and Braystones. The public were invited to comment initially on the developer's plans at very, very short notice. The public meetings that were held by the developers were very poorly arranged. Just one example: the developers helpfully had on their notepaper a 24-hour helpline that was never, ever answered. That was the kind of difficulty that the public had. Of course, that is now swamped by the huge and complex concentration of public consultations on the national policy statements for the sites and also on the justification for nuclear power. That finished yesterday, I think. The public are bewildered and everyone is suffering from consultation fatigue. A lot of people simply do not know where they are with the whole long-running programme. This has been going on now for several years, with one consultation after another, all more or less on the same thing.
Ralph Pryke: We were just getting over CORWM 1 when CORWM 2 came along, and then we were into justifications and the national policy statement itself. As Martin says, it is not quite death by consultation, but the documents presented by the Government have been fairly technical. For example, the questions asked for the consultation were equally technical and not very straightforward for members of the public to engage with at all. I suspect that there has been more and better consultation in the areas of proposed new nuclear power stations than elsewhere, because there has been very little in the national media about these things, which is where most people get their information and what they engage with. Unless the man in the street checks the website and downloads the response documents, he will not engage with it, because the industry has not gone out to Leeds, for example, to ask people there what they think about it. The consultation has not been entirely brilliant.
Martin Forwood: May I make a distinction? We have had one public consultation meeting per site by DECC. Those were infinitely better than the ones organised by the potential developers but even they had their shortcomings. Some of the events were not as long as they could be. There were many people who never got their questions in, let alone answered. DECC was certainly more open with people than the developers were in the earlier public meetings.
Ralph Pryke: In addition, local authorities are not at all keen on the Infrastructure Planning Commission, because they see it as taking powers away from local authorities and elected representatives, who are answerable to their electors. I read in a newspaper today that local authorities around the proposed developments at Bradwell and Oldbury are opposed to the sites for various reasons and have made them known in the consultation that ended yesterday. I realise that your findings will come a bit further down the line, but I very much hope that the Government will be able to take your view into account when making those decisions.

Q97 Rosie Cooper: Mr Forwood, I was going to ask you to give us more examples of poor arrangements. Is there anything else you would like to say about the consultation?

Martin Forwood: Can we please have no more of them—I'm tired of them. They just need better organisation. The information given to the public needs to be in a very simple form for all of us, not just people who are involved in this every day of their lives. There was a huge number of people at one public meeting I went to on the Kirksanton site who were quite bewildered by what was being presented to them. It all needs to be simplified in some way. Some people find the websites very difficult to use, in terms of consultation exercises and documents. As a small example, at the Kirksanton site the developers sent out in advance of their meeting a handful of letters—37 or 67, I don't remember—to a population of several hundred. It was just not done properly.

Q98 Mr Martlew: Gentlemen, I respect your views and understand that you are anti-nuclear, so it doesn't really matter what the consultation is going to be, because you will be opposed to it, as that is what you believe. I don't think there's anything wrong with that. You are also against the building of nuclear submarines in Barrow, aren't you? I used to be on the county council, so I know the organisation CORE very well. You are against the building of nuclear power stations.
Martin Forwood: I think CORE would certainly be against nuclear submarines, but that has never been part of our campaign as such.

Q99 Mr Martlew: What I'm saying is that we have two gentlemen who oppose new nuclear power, and both of you oppose THORP.
Martin Forwood: Yes.

Q100 Mr Martlew: I understand that. So what we're really talking about is a policy that would depopulate west Cumbria and would certainly create deprivation that would probably kill more people than nuclear power ever has. That is the reality of what you're about.
Ralph Pryke: Mr Martlew, I am sure your memory goes back to the '80s, when the Lucas Aerospace workers produced a very credible alternative to the British military nuclear option and said that we didn't have to have nuclear weapons in this country. If we are serious—particularly this year, when the nuclear non-proliferation treaty is being renegotiated—about non-proliferation, we should not be renewing our nukes.

Q101 Mr Martlew: I am not disputing your beliefs at all. What I am saying is that the consequences of the policies you are pursuing will bring depopulation and deprivation to west Cumbria. If you look at the area, the highest-paid district council area in the county is Copeland and the second is Barrow. The poorest is the one that relies on tourism. That would be the effect of getting rid of nuclear power on the west coast, would it not?
Martin Forwood: I wouldn't agree at all. I cannot see where this depopulation is going to come from simply by not having a programme of new reactors in west Cumbria.

Q102 Mr Martlew: You wouldn't build nuclear submarines in Barrow, you wouldn't build the new nuclear power station and you oppose THORP, so where would the work be?
Martin Forwood: The work is at Sellafield. It is already going on with THORP, which should never have gone ahead in the first place. We know those jobs are probably safe until almost 2020, and perhaps even up to 2020, given how the plant is operating at the moment. Even with no new build, you have Sellafield operations going on, rightly or wrongly, until 2020. That will not affect the population and there will not be a massive exodus. Where's that going to come from, particularly if you implement now, in the time you have available, all these renewable technologies and attract non-nuclear investment? The only way to attract non-nuclear investment is to show that you are not expanding the nuclear industry, which is a put-off.

Q103 Mr Martlew: Can we go back? Sorry, Chair, but I have listened for a long time. The reason why the nuclear industry is in west Cumbria is that it was a military establishment. It was there because it was remote. It is still remote and it will not get the industries that the North East will get. I don't accept that people will move in with other industries if you take the nuclear industry out.
Martin Forwood: I still don't accept that. I think back to the evidence given to the Nirex inquiry in 1996 by a Copeland council planning officer who cited evidence of would-be non-nuclear investors being turned off coming to west Cumbria because of Sellafield's presence. There are people out there who would probably quite like to come. I suspect they would almost certainly come because of all the benefits that Cumbria would have to offer if the industry was not seen to be in the ascendency and in an expansionary mode. As it is, that is not going to happen.
Ralph Pryke: Submarines are not my field of expertise, I admit, but I believe that Barrow is in competition with Plymouth at the moment for the decommissioning of nuclear submarines. I cannot guess how that will be sorted out by Government, but we have to get rid of these things as well and that will take time and expertise.

Q104 Chairman: Thank you. We've got a few more minutes. Do you have anything you would particularly like to say that we haven't raised with you?
Ralph Pryke: I came in part-way through the last-but-one session and am not quite sure what else you heard today. We are particularly concerned about the exaggeration of potential employment from new nuclear build. I heard Copeland borough council say 5,000 jobs, and thought I heard it say local jobs. We would very much question whether they would be local jobs, because the experience of nuclear new build—in Finland in particular, but also in respect of power station and refinery construction at, say, Staythorpe in Nottinghamshire and North Killingholme in Humberside—indicates that the contracting companies have to go through the

Official Journal of the European Union to secure the contracts for employment. They look for sources and skilled labour all around the EU. In Newark in particular, RWE, which, of course, is also engaged in nuclear activities, has brought in largely non-British skilled workers to work there. You will be aware of the quasi-industrial dispute in North Killingholme last year and this year at the Total refinery, where Italians and Portuguese have most of the construction jobs. In Finland, I understand that many of the less skilled jobs have gone to Lithuanians and Poles who fly in on a Sunday night and fly out on a Friday night, and that not many jobs have gone to Finns. Last Sunday, I heard the parliamentary candidate for Ynys Môn claim that we must have Wylfa because it will give us 5,000 local construction jobs. There has been a lot of exaggeration of the potential for job creation in the construction of new nuclear power in this country.

Martin Forwood: Could I just add a couple of points, one of which is a follow-up to that? The developer of two of the west Cumbrian sites—the German company RWE—is on record as saying that one third of construction workers would be from German sources. The other point I would like to make is that you asked Copeland, I think, about what kind of support there had been at these meetings for the new build programme. I did not attend it, but I am absolutely sure that the one relating to the land adjacent to Sellafield was, I believe, very supportive. The two other sites—Kirksanton and Braystones—are greenfield sites, and the opposition hugely outnumbered any support that there was for new build on the two sites.

Q105 Chairman: What kind of attendance was there at these meetings?

Martin Forwood: I would think we are probably talking 300 or something like that. We don't have huge facilities in some of those places, but the huge majority were absolutely opposed to it. A lot of these people are not anti-nuclear. They would like to see a power station at Sellafield—I differ with them on that—but they simply see it as a highly unsuitable greenfield site that is not currently licensed, is a long way away from where the electricity is needed and does not have the necessary transmission infrastructure currently in place.

Q106 Tony Lloyd: But that was site-specific opposition?

Martin Forwood: Yes, indeed.

Ralph Pryke: You may have seen from our submission that the former Minister, John Hutton, who has more than a local connection to Cumbria, had estimated to a Unite conference in March 2008 that new nuclear would provide 100,000 new skilled jobs. That would need a new nuclear industry twice as big as the Government are proposing at the moment. Experience from the reactor being built in Finland at the moment is that it is giving only between 200 and 3,000 jobs at very peak times during the construction of that reactor. So it does look as if some of the exaggerations are wildly out of phase with reality.

Q107 Chairman: Okay. You made that point in your written submission, didn't you?

Ralph Pryke: It is in ours, yes.

Chairman: Well, thank you very much for your evidence, the contributions you have made and the effort you have taken in coming today.

Tuesday 9 March 2010

Members present:

Mr David Crausby (Chair)

Rosie Cooper
Tony Lloyd
Mr Eric Martlew

Witnesses: **Dr Ian Hudson**, Programme Director, Sellafield, Nuclear Decommissioning Agency and **Dr Joe McHugh**, Head of Radioactive Substances Regulation, Environment Agency, gave evidence.

Q108 Chair: Good afternoon and welcome. Thank you for coming and giving evidence to the North West Regional Committee. Could I ask you to begin by introducing yourselves?

Dr McHugh: My name is Joe McHugh. I am head of radioactive substances regulation in the Environment Agency. The Environment Agency's role covers a wide range of topics. We are a regional organisation and we have a significant presence in the North West. In relation to nuclear, we have an office in Penrith, which regulates most of the nuclear sites in the North West. That is my particular role. I head our responsibilities for nuclear regulation.

Dr Hudson: I am Ian Hudson. I am the Nuclear Decommissioning Authority programme director for Sellafield. The NDA is a non-departmental public body. It is a strategic delivery organisation. Our scope covers clean-up and decommissioning, site restoration, transport service and restructuring some of the industry that we have inherited. We have a regional presence, clearly in west Cumbria, but we have a number of other sites across the North West including Springfields and Capenhurst.

Q109 Chair: I shall begin with some questions on jobs and skills. May I ask you, Dr Hudson, how many job losses you expect as a result of decommissioning? Do you think that new nuclear power stations will make up the loss?

Dr Hudson: Some of the figures that we talked around in previous evidence sessions were based on reports that were probably generated in the mid to late '90s. If you look at some of the specific areas across the North West, let us start with Springfields and Capenhurst. NDA's strategy with respect to Springfields and Capenhurst is about getting the asset into the supply chain, where it might actually give some benefit back to UK taxpayers but also link into the new build agenda, so we have a different approach for Springfields and Capenhurst. If you go to Sellafield, the figures people have talked around are based on programmes where they envisaged reprocessing will last out to 2012. It was also envisaged that the decommissioning programme was not quite as extensive as it is today. If you look at the changes from 2004–05, the turnover at Sellafield was about £0.9 billion. The turnover closing out at the end of this financial year will be something like £1.45 billion. So the basis of planning has changed. NDA has competed the management of the Sellafield site, and we're looking to get safe and efficient operations by bringing in a new contractor. The proposals through that competition need validating against the existing circumstances at Sellafield. It is very hard to put an actual number against the potential reduction in numbers against Sellafield because we are still validating those plans, and we expect those plans to come to fruition at the end of June. In relation to new build, if I could just pick some numbers, NDA Sellafield is looking at construction projects of the order of £400 million per year for the next five or eight years. That is significant construction activity. On the numbers for new build—I've seen them, but I'm not familiar with the detail—people talk about construction job numbers peaking at 5,000, with operating numbers of around 400 to 500. It's very hard to match that on to the numbers because we haven't got the details mapped out over the next five years. I am not sure how well the match will be going forward.

Q110 Chair: I will direct my next question to both of you—perhaps starting with Dr McHugh. To what extent are you concerned about the skills gap in the nuclear industry, particularly in the North West? Is enough being done to address the problem?

Dr McHugh: The problem has been recognised and is being addressed through the National Skills Academy for Nuclear and through bodies such as Cogent. I'd say that we are particularly concerned about environmental skills coming into the industry, particularly for decommissioning and clean-up. There will need to be some innovation to achieve the clean-up goals and the decommissioning, particularly at sites like Sellafield, which are very complex. That will mean developing some new skills to address those particular problems. The new contractor that Ian Hudson referred to is a consortium of companies from the UK, France and the US. There is a degree of reach-back into the UK and other countries to train the workers at Sellafield so that they have the skills and can address the particularly difficult challenges there are to achieve the clean-up goals. To address the question on skills, there are also the demographics—an ageing work force. Some newer and younger blood needs to come into the work force to achieve the long-term programmes in the industry.

Dr Hudson: I agree with Joe. The major issues facing the industry are demographics and issues to do with flexibility of the work force. People are going to move from operations into decommissioning, and potentially back into operations in the future. There are also issues around the supply chain. If you think about some of the things that NDA has done, we are very closely linked to the National Skills Academy

for Nuclear. The work that Cogent has done in terms of identifying key skills over forthcoming years is good. My summary back to you is that the issues are quite well understood. In terms of the things that NDA has done, we have a national graduate scheme. We had a cohort of around 10 per year and about 20 companies linked into it, such as BAE Systems. We had more than 1,300 people apply for that 10 cohort, so the interest is quite significant. In terms of graduates at Sellafield, in the last five years, we have taken on something like 146 graduates and our out-turn over the next year is about 30 per year. We have also increased the number of apprentices at Sellafield. Our target is around 89 apprentices a year going forward, whereas about three or four years ago we were at about 48 or 49. The issues are well understood, and there is a good infrastructure. There are some programmes that will actually address some of the issues.

Q111 Chair: Thank you, Dr Hudson. My final question in this batch is to the Environment Agency. Dr McHugh, in your submission to the Committee, you commented that decommissioning all sites at Sellafield will require the development of new techniques and the transfer of skills. Where will these new techniques and skills come from? Will it involve importing expertise from outside the United Kingdom?

Dr McHugh: Some of the expertise can be gained from inside the United Kingdom. It is pleasing to see the involvement of universities, particularly those in the North West, in developing the new techniques. To an extent, we can transfer some of those skills from other sectors that are involved in clean-up and decommissioning. Some of the skills will be available in other countries that have had to deal with the types of problem there are at Sellafield, particularly in some US facilities where there have been some highly contaminated sites as a result of previous defence programmes. We have some of that, as a result of the UK's defence activities in the past, of which Sellafield was part. There is some learning to be done from the UK, and there are opportunities for UK researchers to develop novel techniques. There is also a degree of reach-back into learning from what has been done overseas.

Q112 Chair: What kind of proportions? Do you mean 50:50?

Dr McHugh: I wouldn't like to say whether it is 50:50, but there are certainly opportunities in the North West for the Dalton Institute, for example, to show how it can develop the new techniques that will be needed. There is also a need to train the work force in the new techniques. Most of the work force who have been involved in using the methods will be in the North West already.

Chair: We now have some questions on infrastructure.

Q113 Mr Martlew: Dr Hudson, can I take you back to one of the questions put by the Chair. You were saying that the employment numbers were based on 15-year-old figures. We were talking about Sellafield, and that seemed to indicate that the figure of 12,000 would be going down to 8,000. You said that you would be coming out with some newer figures in June. Are they likely to be more than 8,000?

Dr Hudson: I think that the numbers in the Committee report talked about a reduction of 8,000. We agreed through Energy Coast to do an additional study, and we agreed with its board this week to do analysis of the numbers from Sellafield as the new plans come out. We will also do analysis of the potential future of some of the Energy Coast initiatives. You asked me about the total numbers. I would rather wait until I have seen the details—

Q114 Mr Martlew: No, I asked if you expected them to go up or go down. I did not ask you for the total numbers.

Dr Hudson: My gut feeling is that an 8,000 reduction against a total number of 12,000 seems more; it just depends on the overall time scales. A reduction of 8,000 seems a bit too much.

Q115 Mr Martlew: You are suggesting that there aren't likely to be so many job losses at Sellafield.

Dr Hudson: I think so, but we have to wait and see.

Q116 Mr Martlew: I accept that. Let me come to infrastructure. I presume we are talking mainly about new power stations, so we are talking mainly about the west coast of Cumbria. I know it very well. The roads are poor, and the railways no better. In the middle of it, we have the national park. How will you improve the infrastructure to the area?

Dr Hudson: There are two elements. A number of things are addressed by the Energy Coast master plan, which talks about rail, roads and things like that, so there are a number of initiatives in that area. As for issues to do with Sellafield, I shall offer you some views right now. Given the time that it takes to get into Sellafield, due to flooding and bridges being lost, I still think that it will be quite an issue to get an integrated solution in terms of transport. Transport into Sellafield is very dependent on singleton routes, so when there are issues to do with weather—ice and snow and things like that—we can end up with quite a backing up of traffic. There is a need for an integrated approach to travel. The Sellafield site has started a transport group under the infrastructure part of Sellafield. It is involved with some local councils at looking into whether rail and road transport into Sellafield can be addressed. There is an immediate question about Sellafield, as well as the future question for new build.

Q117 Mr Martlew: What you're saying is that you know the problem and you have set up a group to look at it, but there's no real obvious solution, is there?

Dr Hudson: I think it takes long-term investment from Government to get to the solution in terms of infrastructure. It's not singularly the NDA's responsibility to do that, but I think in terms of Energy Coast, making those things visible through Energy Coast and linking into Government is the route that people have been taking.

Q118 Mr Martlew: Obviously, the Environment Agency—perhaps not your part of it, Dr McHugh—would be interested in that. What is the Environment Agency's take on all this?
Dr McHugh: We are fully engaged with the Northwest Development Agency in terms of its regional strategy, its work on its climate change action plan and energy council and its regional strategy for 2010. Specifically in relation to the coast in Cumbria and looking to see what's happening elsewhere in the country over new nuclear build, it's quite clear that a lot of infrastructure will need to be upgraded and enhanced. Ian Hudson has talked about road and rail. I would also add marine facilities for some of the larger structures that might need to be brought to the site, in terms of temporary ports, for example.

Q119 Mr Martlew: When you talk about marine structures, are you talking about a new port?
Dr McHugh: Certainly temporary infrastructure so that large items could be brought to the site by sea. It may not be there for the long-term, but it would need to be available, to avoid the need for overland transport, where there are some limitations. The Environment Agency would also say that the infrastructure needs to be protected against flooding—I'm sure you don't need me to say that. As part of that, we would need to look at the impact on natural resources and—on water abstraction and waste water discharges.

Q120 Mr Martlew: Do you see any of this impacting on the national park in an adverse way?
Dr McHugh: It would need to be very carefully planned to avoid significant impacts on the national park.

Q121 Tony Lloyd: Can I turn to the question of reprocessing, and the management and disposal of waste? Dr McHugh, in the Environment Agency's evidence to the Committee, you said that more needs to be done to maintain the current systems for handling waste and any future deep geological facility. You referred specifically to that. In the evidence you have given us today, you also talked about the possible skills gap, and the need to learn from the United States. What I would like to ask you is this. When the Committee on Radioactive Waste Management reported, they were talking about deep facilities being essential for the existing legacy waste, so the question, really, is what we need to be doing now. Who should be doing this? Who will be picking up the bill for this if we are to see a new generation of nuclear stations and, obviously, the consequent decommissioning and disposal of waste?
Dr McHugh: Could I put the question slightly differently? Who would pay for the work in relation to waste arising from new nuclear build?

Q122 Tony Lloyd: Yes. At the moment, the taxpayer picks up the cost of the existing waste, I think, but obviously there is a question into the future. There's also what needs to be done—
Dr McHugh What needs to be done in relation to the research and development for wastes? Who should pay? The Government policy is that the developer should pay its fair share of the costs of a future radioactive waste repository in relation to the radioactive wastes that would be disposed of. Work is under way within the Department of Energy and Climate Change on working out what its fair share means.
Tony Lloyd: I am glad you said that, because I was going to ask you.
Dr McHugh: Okay. In terms of having, for example, a unit cost for the waste that would be disposed of in a repository, and probably an element of a risk premium associated with that to make sure that we don't make the mistakes of the past and there is enough money at the end of the day to pay for it. Before any new nuclear build is allowed to go ahead and constructed, the Secretary of State needs to be satisfied and to approve a funded decommissioning plan, which will include the details of how the station would be decommissioned and how that would be paid for. That will be the subject of the Secretary of State's approval before they start. If I can move on to the research and development that needs to be done, and picking up the point about CORWM, the research and development needs to be partly generic—on the geological disposal systems and the way waste is treated and packaged so as to contain it in the long term—and some of it needs to be site-specific. Once a site has been found for geological disposal, there will need to be an extensive programme characterising that particular site—its geology and hydrogeology—and how the geological formations and the water flows are expected to behave over very long time periods in the future. Once a site is located, there needs to be an extensive programme of waste research and geological research. The next steps in the managing radioactive waste safely programme are for the British Geological Survey to characterise the areas of Copeland and Allerdale with a view to screening them for their suitability, and excluding any areas that are unsuitable for a future repository.

Q123 Tony Lloyd: Are there any lessons from Sweden and Finland about the environmental handling of this process, given that they have also opted for deep geological facilities? In particular, they were very conscious of trying to generate local support, so can you comment on handing public opinion as a necessary part of the process?
Dr McHugh: Absolutely. That is the lesson that we should learn from them—you don't make very much progress unless you are fully engaged with and have the support of local communities in taking this forward. It is very important to maintain that level of engagement, and indeed fund it, so that there is an openness and a dialogue between the potential developers and the local community.

Q124 Tony Lloyd: Dr Hudson, in response to Eric Martlew I think you talked about the infrastructure gap that obviously exists in Cumbria. In your

written evidence, you told us that the deep geological disposal facility was a key enabler for any nuclear new build, so if there is this infrastructure gap, is Cumbria the right place for that facility? In any case, is the deep facility the necessary precondition for Cumbria to see new nuclear power station build?

Dr Hudson: From where I am sitting, I am not sure that the two are related. The process that the Government are engaged in with the local community, which Dr McHugh mentioned, has quite a long-term opt-out situation, and that is one of the lessons learned from Sweden. It is an issue for the local community as to how they see that consultation with Government going, in terms of what they would expect regarding either infrastructure or other kinds of things associated with it. But, as I say, there is still quite a long-term opt-out for local communities, depending on how that goes with the Government. From my perspective, you have to wait and see how that consultation goes, and how the community responds to it.

Q125 Tony Lloyd: In terms of the infrastructure gap and its impact on your existing facilities, what does that mean for future waste management?

Dr Hudson: Whichever site you chose, or you agreed with the local community to pick, you would have to think about the infrastructure for getting material to the repository. A lot of the material is already at Sellafield, so that is about 70% of the volume of the material. You would have to think about rail infrastructure, because that is the way you usually move things around, and you would have to think about the other kinds of infrastructure for getting workers to and from the repository, and all the things associated with its normal day-to-day operations, but that would be true wherever you chose, or wherever you could gain agreement with the local community, to site a repository.

Q126 Mr Martlew: On the siting, there are two things in west Cumbria's favour, aren't there? One is that the majority of the waste is there, and the second is that if you are going to build a repository anywhere in the country, the population would accept it there. But isn't the real option the third one, the geology of the area? Didn't Nirex find problems in west Cumbria when they looked at it? It's all right wishing, but the geology is surely better somewhere else in the country—you are just not looking anywhere.

Dr Hudson: The stuff that Dr McHugh talked about would be covered by the assessment by the British Geological Survey, which is a prerequisite for any particular site, no matter what you do in terms of the community.

Q127 Mr Martlew: But you are looking only at Sellafield, are you?

Dr Hudson: NDA is not looking at Sellafield; it is the Government who are in consultation with the local community. Once the Government have come to some sort of conclusion as to the location, NDA would be one of the people who would lead the implementation.

Dr McHugh: As you have indicated, there needs to be both the geology and the support of the local community to achieve success. There are areas in the UK that have different geological properties from the areas around Sellafield. As you say, the inquiry into the Nirex rock characterisation facility found that the geology around Sellafield was technically complex, so it was difficult to make a clear safety case for the facilities there. That was at one particular site close to Sellafield, but a wider area is potentially available to be surveyed, so we will need to wait and see what BGS comes up with.

Q128 Rosie Cooper: Dr McHugh, are you satisfied that you have been consulted in good time by the Department of Energy and Climate Change and the developers so that your views can be fully taken account of?

Dr McHugh: In relation to new nuclear build? We have been engaged with the Department of Energy and Climate Change. About two years ago, it undertook a strategic siting assessment for potential new nuclear build sites and sought our views on particular aspects of the siting, particularly in relation to flood risks, as you would expect, and the availability of cooling water and some other environmental matters. We have also been very engaged with the Department as it has worked up its national policy statements. We have been working with it on its Appraisal of Sustainability. We feel that we have been involved in so far as our remit covers the environmental aspects of the Department's plans. We have certainly been quick to point out areas where there are environmental limitations to those proposals. Those issues have been reflected by and large in the national policy statements.

Q129 Rosie Cooper: That's good. On strategic oversight of potential nuclear new builds in the region, can I ask you both whether there has been enough strategic oversight, and whose role it would be? Is it the role of the NWDA, the Government office, the Department of Energy and Climate Change or somebody else? Who would have the overall strategic role?

Dr McHugh: Strategic oversight of the overall programme? I would say, in relation to the North West specifically, that a large part of it rests with the Secretary of State and the Department of Energy and Climate Change, working with the development agency and the Government Office for the North West. But I have a feeling I probably have not quite understood your question.

Q130 Rosie Cooper: I understand about strategic oversight for the plan, but in the region who would really have their hands on the levers?

Dr McHugh: In relation to whether oversight happens or not? There are things that the Government can do and that the region can do to

make it attractive for development. In terms of the oversight, the Government see themselves as a facilitator rather than a driver. They expect that if they put the conditions in place, developers will respond and make proposals.

Dr Hudson: It is difficult to get away from the fact that it is a national programme. Even if you take in isolation some of the activities at Sellafield, such as magnox reprocessing, it is co-ordinating flask moves across the UK to move material to Sellafield, so it is very hard to get away from the fact that it is a national programme. We have worked well in the past with places such as the Government Office for the North West, the Northwest Development Agency, the Energy Coast vision board and local and county councils on issues such as jobs, the economic impact of some their activities and the skills agenda. For instance, in the Energus facility in west Cumbria, there is joint investment between NDA and NWDA and a number of private sector companies as well. There are places where you clearly work on a regional basis where we have a common interest, but it is very hard to get away from the fact that it is quite a national programme.

Chair: That brings us to the end of this part of the session. Thank you very much, Dr Hudson and Dr McHugh, for the evidence that you have given us today. It has been most useful.

Witnesses: **Joe Flanagan**, Head of Energy, and **Stewart Swift**, Partnership Manager, Cumbria, Northwest Regional Development Agency, gave evidence.

Q131 Chair: Now for the Northwest Development Agency. Good afternoon and welcome. May I ask you first of all to introduce yourselves?

Joe Flanagan: I am Joe Flanagan. I am in the economic development directorate of NWDA and head up the energy and environmental technologies sector.

Stewart Swift: I am Stewart Swift and I am head of strategic partnerships and initiatives for the NWDA, with a particular role in Cumbria.

Q132 Chair: I will begin the questions. I do not aim this question at either one of you in particular; you can both choose to answer if you like. How important is the nuclear industry to your strategy for economic growth in the North West?

Stewart Swift: From a regional point of view, the North West has a particular strength in the nuclear sector. That applies across the region, from Cheshire to Cumbria. On Cumbria specifically, if you look at the Cumbria economic plan, which has been put together by Cumbria Vision and has been widely consulted upon, you will see that it has two key priority objectives. The first is destinations—tourism and business tourism—and the other is energy, both nuclear and renewable. It is very well reflected in both sub-regional and regional strategies that this is a key sector for the North West.

Joe Flanagan: We have a unique set of assets in the region in terms of covering the whole of the fuel cycle. We have half of the civil nuclear work force of the UK in the region. It is a very productive sector. If you look at the gross value added per employee in the nuclear sector, you will see that it is £63,000 per employee compared with the North West average of 30-odd thousand. It is very productive, and clearly one would want to build on it. It is the sort of industry that is knowledge-based and has high-value and high-skilled jobs, so we see it as a priority.

Q133 Chair: What percentage of your annual spend goes on supporting the nuclear industry?

Joe Flanagan: It would be worth while to reflect on the nuclear industry. It is a very capital-intensive industry and is not like some of the other areas that we are involved in, such as digital and creative. The sorts of sums of money we are going to spend will be quite small in comparison to what the industry spends. We are about filling gaps and addressing market failures. To date, the biggest headline project we have done has been the Energus facility—we put £6 million into that. Moving forward, we are looking to support the Nuclear Advanced Manufacturing Research Centre at Manchester university with £4 million, and we have another £4 million going into Manchester to support other things around nuclear research. Moving forward, it is probably £3 million or £4 million a year so, with our budget for next year at about £400 million, it is a fairly small percentage.

Stewart Swift: I am sure we shall move on to things around infrastructure, but in terms of the NWDA's annual budget, it would be unrealistic to think that we could devote anything of significance to the infrastructure grants that might come out of the nuclear requirement in the North West. The £400 million annual budget is declining, and it is likely that that will be severely reduced from year one plus.

Q134 Chair: In your submission to the Committee, you referred to the need to de-risk private sector investment. Does that simply mean transferring the risk of investment in nuclear to the taxpayer?

Joe Flanagan: I think what we are referring to there is, in particular, investment in the region and how we are trying to address some of the risks around planning perhaps. The local planning issues are going to be quite significant. With stakeholder engagement, we have been doing quite a lot of working with the potential developers in west Cumbria, to try and smooth the path. We cannot de-risk in terms of financial guarantees or anything like that—that is a national question—so we have been addressing the risk for the developers.

Q135 Chair: Some observers see a conflict between your statutory purpose of contributing to sustainable development and your support for the nuclear industry. They question how sustainable it

would be in the longer term, particularly the issue of the dependence of the region on nuclear. How would you answer that criticism?

Stewart Swift: We would see the economy of the North West as a very complex issue and we would want—as we do—to support both sustainable development and where we have, as mentioned earlier, distinct sectoral advantage. We do not see this as an either/or question. Basically, we would also look to support sustainable consumption and renewable energy initiatives regionally, but we come back to the point that the nuclear sector for the North West can provide significant, highly skilled, highly paid jobs and expertise that we can export and use around the rest of the UK and overseas.

Joe Flanagan: Our support for nuclear is part of a portfolio. We have other sectors in which we have international strengths—digital and creative, or biomedical—and we are putting a lot of support into such areas. We are not exclusively supporting nuclear at the expense of anything else. Where it does become an issue is, clearly, west Cumbria, which is very dependent on the nuclear industry.

Q136 Chair: You have a joint responsibility with 4NW for developing the regional strategy. Do you think there will be any conflict between the NWDA and 4NW in supporting the nuclear industry? Do you think that 4NW will be as enthusiastic about supporting the nuclear industry as you might be?

Stewart Swift: The regional strategy is at present just going through the consultation phase. We have part 1 of RSS 2010—the regional strategy—now published. Within that, and certainly throughout the strategy, there are many references to a low-carbon economy. There are also specific references in the spatial sections of that part 1 document supporting nuclear new build, not only in Cumbria but as a regional initiative. That document has been co-prepared and produced by 4 North West and the NWDA. Although they are not here today, I suggest that because we have jointly produced that document, and they have been fully in line with it, we don't see any issues of conflict over that issue.

Q137 Chair: You as an organisation propose the introduction of a new nuclear cluster organisation in the region. Can you tell us something about that? What would it be responsible for delivering and how would it work? How will it affect the other nuclear-related organisations in the region? Most important of all, I guess, how much will it cost and who is going to pay for it?

Joe Flanagan: If you go back 10 years or so, the nuclear industry is really the BNFL, and it was based in the North West. So there was a single corporate body there responsible for championing the industry on a national basis. Over the past few years we've seen fragmentation, we've seen a lot of it privatised, and we've now got perhaps 300 companies in the region that are in the nuclear industry. Although there is a national body, the Nuclear Industry Association, which represents many of these companies, it is quite a small body and its primary role is in lobbying for the nuclear industry. We can see a particular need to develop an organisation that will be a voice for the industry on a regional basis, pulling together all the different elements that we have. It's not all about Sellafield; we've got assets in other parts of the region. We see a need to bring those things together. There are already local sorts of cluster bodies around Warrington and west Cumbria, and we would like to join those up. In terms of who would lead and pay for it, we would like to take responsibility for leading that. It would not be a big organisation. We've got plans at the moment—an internal staff of perhaps two or three people to do that job. It is primarily a co-ordination role. That is our view. We are conscious that we should not overlap or duplicate, and we are consulting with the industry at the moment to make sure that it is fully bought into it.

Q138 Mr Martlew: In 20 years as an MP I have asked my fair share of daft questions, but I'm going to ask another one. The issue is that west Cumbrians are comfortable with Sellafield, or Calder Hall or whatever, as it has been there a long time, and we accept that other parts of the country are not comfortable with it. Really, we are talking about what is in it for west Cumbria. You can say, "We will build a new hospital, build a new school," or this, that and the other, but the thing that is in it for west Cumbria is jobs. Is there not a conflict between that statement and running a plant like Sellafield as efficiently as you can? Copeland, for example, is talking about losing a third of its work force, yet it is the only part of the country that will take this.

Joe Flanagan: We've got a situation in Sellafield where, as the previous witness explained, there will be job losses as the plant moves from operation to decommissioning. That is inevitable. Decommissioning is about removing things and taking them away, but I think there are great prospects for west Cumbria. In the work we have done, a lot of the companies involved with decommissioning only work in the UK, and there is a huge international market out there. There are great opportunities for companies to be a bit more international-looking. If we come to new build, it is not just about the jobs created during the construction and operation of the power plant, it is about companies being involved with the supply chain and building the components for those plants so that they can supply new-build programmes internationally. That sort of thing creates more sustainable long-term jobs, rather than just the blip you get over the construction of a new nuclear plant.

Stewart Swift: I think there's a real conundrum here because on the one hand, as you say, we're potentially looking at how a place like Copeland would replace several thousand jobs lost. On the other hand, other questions that we will encounter, include how the nuclear industry will recruit the number of people it needs to develop a new facility and all the issues around importing labour and the problems that that will bring with it. The reality is that the whole process is very long term; nuclear decommissioning is a long-term process. The task for public bodies, whether NWDA or local

authorities, is to work in planning terms to make sure wherever possible that we can help whichever eventuality we are trying to cover, whether that is reskilling the work force to take up new employment in nuclear new build, as we are doing currently, or providing the infrastructure and the services to accommodate and integrate properly within the community an influx of labour from elsewhere. It's a very fine balancing arrangement that we have to try and support.

Q139 Mr Martlew: Diversification, gentlemen. Copeland's eggs are really in one basket, are they not, along with many from Allerdale and some from my constituency in Carlisle? How realistically can you hope to diversify the economy of west Cumbria? If people say that it can develop tourism, they should bear it in mind that the difference between tourism and Sellafield is probably about £15,000 or £20,000 a year per employee.
Stewart Swift: Again, it is not an either/or. We need to be able to support, promote and enable diversification, and also exploit the nuclear sector. As for diversification in a Cumbria-wide context, most of the business in Cumbria is very small scale. It's one to 10 employees. At the other extreme, you've got the huge employers like Sellafield and BAE Systems in Barrow. But ultimately I think we have to try wherever we can, as the public sector, to support entrepreneurship, diversification and skills. But diversification is not an either/or. We need to do both and support both.

Q140 Mr Martlew: The reality is that we've failed, haven't we—in the past?
Stewart Swift: The reality is that if you go back into Cumbrian history it has been about base industries like iron, steel, coal, shipbuilding, nuclear shipbuilding and now nuclear as the bedrock for the economy.
Joe Flanagan: West Cumbria has been dominated by Sellafield, which has been in public ownership for a long time. That has created a culture that does not really encourage entrepreneurship. One of our challenges is to encourage entrepreneurship. The National Nuclear Laboratory recently had a new management team take over the contract. They are very much behind this idea that people should be more entrepreneurial, supporting spin-outs. It might still be in the nuclear business, but that's no bad thing. It's a very stable industry; it will be around for a long time. Energy demand throughout the world is growing, so it's not a bad industry to be in.

Q141 Mr Martlew: But the worry about the private sector—the main concern is safety. That's why it's always been in the public sector, until now. If you get some entrepreneur who cuts a few corners, we've all got a problem.
Joe Flanagan: Safety is paramount, even if you go to the private sector companies. There's nothing worse than incidents in this industry, and everyone is acutely aware of that.

Q142 Mr Martlew: On the issue of construction, we're all looking forward to the new nuclear power station being built. There will be a demand for construction workers. You mentioned 4,000. How many will be met from local sources?
Joe Flanagan: "I don't know" is the honest answer. We are already engaging with the potential developers around Sellafield. So far they've been very receptive and have wanted to employ as much local labour as possible, because it's all part of their stakeholder engagement. If they're employing local people, the local community will be much better disposed towards them, so it's all part of their corporate social responsibility. To date, they have been very willing to talk to us and see how we can work together to ensure that we have a high local content.
Stewart Swift: We are working with Lakes College, the FE college in west Cumbria, around its curriculum for construction skills, and with Furness college in Barrow, around engineering skills. We have to make what use we can of the local ability of people to get the skills that they need to compete for those jobs.

Q143 Mr Martlew: I am disappointed that you aren't looking a little further afield, Mr Swift—to my constituency, for example. You are not going to get 4,000 workers from west Cumbria. You need to look towards other parts of the North West.
Stewart Swift: Absolutely. Looking again at your constituency, there is the support we have made available in the past few months to Carlisle college—not specifically for construction skills, but in terms of the skills agenda.

Q144 Mr Martlew: The other issue will be managing 4,000 temporary workers. It is a big influx into relatively small communities. Whose responsibility will that be?
Stewart Swift: If you look at how the planning approval will be made through the Infrastructure Planning Committee, one responsibility in considering applications is to look at the socio-economic implications of the development. Clearly, as you say, those communities in west Cumbria in particular are very small scale. However, there will be opportunities for local businesses—house builders, retail and leisure. The market will have to pick up some of that, but equally we would hope to work with the local planning authorities to address, perhaps, temporary requirements for accommodation. Until we know definitely where the planning for the new stations is going to be, it is difficult to engage in much detail with the planning authority.

Q145 Tony Lloyd: Can I continue this theme? Mr Flanagan, you talked about highly skilled and paid jobs and, Mr Swift, you talked about reskilling and support for skills. In fact, there will be a dramatic and fast increase in the need for skilled labour, both in the construction and implementation phases, if these new plans go ahead. I was a little bemused, as I think Mr Martlew was, when you said that you were

looking in the Barrow-in-Furness area in terms of upskilling. The demand for labour is going to be much bigger than can possibly be afforded in that small part of Cumbria. Do you have any concepts of manpower planning—or "person power", as we might say these days—for the way in which the industry will potentially suck in labour? If not, are we not simply going to see the Polish plumber rather than the Cumbrian or Lancastrian plumber employed in these new facilities?

Stewart Swift: I think the references to Lakes College and Furness College were specifically about construction skills. Again, the demand will not just come from the North West. If national policy rolls out new-build power stations in other places and overseas, there will be demand for those skills from elsewhere. Our strength in the North West, in addition to the colleges that I referred to, is a significant number of HE/university facilities where nuclear energy is a real strength. We would look to those bodies to step up their game to make some inroad into the skills needs of the industry.

Q146 Tony Lloyd: Can I pursue that? Even if we just talk narrowly about construction, if we're talking about 4,000 new construction jobs arising in that phase of development, that's a lot of skilled workers. Quite frankly, even from my rather distant part of the North West, in Manchester, I don't want to see skills shortages appearing in the construction industry, because those will almost certainly be well-paid jobs. Unless we have some process for planning for the skills base for the North West, then either we'll lose that work, for the people who need the work, or we'll see the price of labour driven up and skills shortages elsewhere. Frankly, we've seen that before in construction. What I've described for construction will also apply to other parts of the industry later on, unless there is a conscious effort to plan around this. I know it's difficult because there are degrees of uncertainty, but I'm not quite sure whether you're telling me that the planning process is taking place.

Joe Flanagan: Yes; I think it's important to realise, as well, that if we have a new build in the region it's probably not going to start till 2015, so we have got some time on our side here. We are very aware of the issues you raise. But at the moment, there's so much uncertainty about whether there will be a new build and which design of reactor the company will choose—because that will have an implication; one particular reactor design is very modular, built off-site and shipped in. There are all sorts of unknowns at the moment, but I would say that we are aware of these issues and are working with local partners, particular in west Cumbria, and the would-be developers. They are on our agenda.

Q147 Tony Lloyd: In a similar vein, you referred to the whole supply chain process and the opportunity this gave for us to upskill in human terms, including in terms of the intellectual and cultural capital, through this process. What practical steps are we taking, now, to make sure that we do get the benefits of this process—that it is local companies in the region, British companies, that get the advantage of this, rather than employment simply being created elsewhere?

Joe Flanagan: Some work was done by the Nuclear Industry Association about a year ago. It looked at the ability of the UK supply chain to build new nuclear plants in the UK. We've got pretty well all the capability around the construction site—the concrete and whatever. The big gap we have is around the plant and the equipment—in particular the nuclear island, the reactor and some of the high-value parts. The recent announcement by Government to establish the advanced nuclear manufacturing research centre is part of the solution there. That's really to bring UK companies up to speed in terms of accreditation in techniques of welding and machining or whatever, so they can compete on an international basis. We've not built a nuclear power station in the UK since Sizewell B in the mid-1990s, so a lot of companies have lost that ability. The advanced manufacturing research centre is very important in terms of making UK supply companies match-fit to compete. So that's one big initiative. Another initiative is that the manufacturing advisory service has recently launched a nuclear-specific theme, so it is switched on to this issue. So I think between those things we're providing quite a lot of support for the UK supply chain.

Q148 Rosie Cooper: Do you believe any opportunities are being missed to generate jobs in the North West in the reprocessing and storage of nuclear waste. If you do, what can we do about it?

Joe Flanagan: I don't think there are any opportunities being missed. Long-term policy for reprocessing needs to be decided. Clearly, if we did go down the road of reprocessing there would be job opportunities. There is also the possibility that provision has to be made for the waste at the new nuclear power stations to be stored on site. There's been talk of having a central repository somewhere, perhaps in Sellafield. So there are opportunities, but clearly it's a fairly emotive area—waste, and transporting waste around the country. However, I think we're aware of all the opportunities. Many of them depend on Government policy, to be honest.

Q149 Rosie Cooper: Does Cumbria have to accept the deep geological repository to get the new-build nuclear power stations?

Joe Flanagan: I have seen no evidence to suggest that those two things are linked.

Q150 Rosie Cooper: You don't think that they are linked at all? The legacy package has been described as a bribe for local authorities to take on the nuclear waste. Has the nuclear industry got broad public support in the area?

Joe Flanagan: I would say that west Cumbria is probably the most pro-nuclear area in the UK, because it has had the industry there for 40 or 50

years. It knows it and understands it and clearly the industry is a big contributor to the local economy. There is tremendous support for the industry in west Cumbria.

Q151 Rosie Cooper: Do you think that there is a need for a legacy benefits package?
Joe Flanagan: We are talking about something different. You are asking the particular regions to take the whole of the UK's waste. Clearly, it is a big civil engineering project; you are dealing with a hazardous material. In my opinion, it is fair to talk about what those communities might get in return for hosting that UK facility.

Q152 Rosie Cooper: In that case, what do you think the legacy package would include?
Joe Flanagan: I have no idea. That is really a question for the local communities to negotiate with Government. It obviously should be something that is sustainable and long term; it cannot be about some one-off thing. It has probably got to be something that touches on diversification and creates a sustainable economy rather than a new road or something. As I say, it is a question for the local communities. We are not involved in those discussions. The issue is for the local communities.

Q153 Rosie Cooper: Have you any idea how the local communities—if it is they that decide—would ensure that the benefits for the region were actually delivered?
Joe Flanagan: Again, we are on ground that I am not very sure of. It depends on the agreement reached between local communities and Government. We will support local communities as much as we can in terms of evaluating what packages are on offer and what kinds of benefits will flow out of them. I guess we have a role in monitoring and ensuring that Government provide their side of the bargain.
Stewart Swift: You could surmise that because Cumbria is a sparsely populated large land mass, the demographics do not always add up against measurements that Government use to decide on where they will spend their money in terms of what they will support, and their initiatives and activity. I am talking about road schemes, hospitals, schools and that sort of infrastructure. One could surmise that Cumbria would look to move around some of those demographics in terms of a legacy. Congestion is one example. Cumbria does not hit transport targets for new roads, new highways and bypasses.

Q154 Rosie Cooper: So you think that that is where we should go?
Stewart Swift: That is one avenue that they may wish to pursue.

Q155 Tony Lloyd: This is almost allied to what you have just been describing. One of the previous witnesses said that there is an infrastructure gap in any case, even in terms of developing the potential new facilities. In terms of defining what that infrastructure gap is, what is your role as the development agency? We talked a bit about the uncertainties there. Obviously, we can have anything between zero—in which case there is no problem—and four new stations being built. What infrastructure gaps do we face, and what is your role in ensuring that we fill those?
Stewart Swift: One significant infrastructure gap that is very rarely picked up is related to IT infrastructure, broadband speed and broadband accessibility. In terms of next-generation access, which is something that the NWDA is looking to promote, Cumbria and the whole of the North West need to exploit better broadband speed and higher broadband accessibility. In terms of more traditional infrastructure, as Mr Flanagan said, our budget for next year is unlikely to be able to see us directly intervening in the provision of infrastructure. Having said that, we have provided several million pounds of support to upgrading infrastructure at the port of Workington, for example. Where we can help is in aiding through things like the West Cumbria strategic forum to get the issues on the Government radar. So as a forum for debating those issues, chaired by the Secretary of State, it is an opportunity for those things to be put on the agenda of Government Departments directly.

Q156 Tony Lloyd: You make the point that you have a role in galvanising Government thinking on this, presumably through the Government Office for the North West and then down to the central Government down here. But who in the end is responsible for the processes of negotiating this infrastructure gap problem? It clearly cannot be allowed to continue or we will be failing either to maximise the benefits or get the benefits full stop. What needs to be done beyond the process you have just described? What is the role of the private sector in this? There is a big issue about who should pay for broadband; who should pay for roads is perhaps more straightforward. But who should pay for the second round infrastructure gaps that will emerge in Cumbria? Mr Martlew's constituents are in a different part of Cumbria. If they find parts of Cumbria's infrastructure are under pressure, he will want somebody to pay for that, whether it is the Government or the private sector. Are you saying that you haven't got the money?
Stewart Swift: The Carlisle northern development route is an example of where a private sector finance initiative has now enabled that very needed piece of infrastructure to get under way. There have to be all sorts of models, including principally the developer. The utility company that is looking to develop, whether it is Sellafield or AN Other site, should be expected to be a major contributor to some key infrastructure.

Q157 Tony Lloyd: But is that extant now? You are right: clearly, somebody has to cough up the money, but it is not obvious from any of the witnesses we have heard from that that process has been followed through to its conclusion.

Stewart Swift: There are some serious negotiations to be held nationally because the national agenda is to have a programme of new-build nuclear power stations. With that comes a requirement for improvements to infrastructure, wherever that may be. So a negotiation at a national level with utility companies is to be held.

Q158 Mr Martlew: I am very conscious that we are likely to have an announcement on Thursday about the new high-speed line. We have the nuclear industry in Cumbria. We accept it. But there are suspicions that the proposals will mean that the high-speed line will not stop in Cumbria—you'll build a line 70 miles across it, but don't stop. Is that the sort of thing you would imagine the negotiations on the legacy would be about?
Stewart Swift: Certainly in terms of the high-speed line, discussions have been going on and at the end of the day we have made representations, along with many regional partners, to lobby for the line and for appropriate stopping points throughout the North West. So on that point we have joined the lobby to try to secure stops.

Q159 Mr Martlew: Can I push you a little more on that one? We were saying that because Cumbria is prepared to take the nuclear industry, and nobody else is, it should be given some preference. It is all right for you to lobby for the train to stop at Preston, Warrington and Wigan—I understand that that is your job—but I am saying that if we take two nuclear power stations and the deep repository, part of the payoff must be something like the Government saying, "All right, we'll stop the train in Cumbria." Doesn't that sound reasonable?
Stewart Swift: That may well be a very reasoned argument. We also pointed out that the train should stop at Penrith and Carlisle.
Chair: We are opening up a whole new inquiry. We have come to the end of our time, so I thank the witnesses for the evidence they have given today. It has been most useful and we are very grateful. Thank you very much.

Witnesses: **Michael Contaldo**, Head of Economic Development, and **David Higham**, Deputy Director for Economy, Environment and Regional Issues, Government Office for the North West; and **Mr Phil Woolas MP**, Minister for the North West, gave evidence.

Q160 Chair: We are sorry for running over time slightly with the previous witnesses—we were in danger of opening up a whole new inquiry on rail infrastructure. Thank you very much, Minister, for taking the time to give evidence to the Committee today. Perhaps I should give you the opportunity to introduce your team and make an opening statement.
Mr Woolas: Thank you, Chair. I am very pleased to be here discussing what is a priority for our region and an exciting strategy for it in many different respects. I am joined on my left by David Higham, the deputy regional director of economic, environmental and regional policy at the Government Office for the North West, and on my right by Michael Contaldo, the head of economic development at the same Government office. We have as our basis the draft national policy statement for nuclear power generation—EN 6. We believe that the North West of England is in a position to benefit hugely from that strategy, in terms of investment in science and technology, in jobs and in terms of energy and our low-carbon ambitions. We are very pleased that the Committee has decided to investigate the issue and we look forward to its findings.

Q161 Chair: As the Regional Minister, do you think we should be lobbying for four new power stations? What would you consider to be a successful outcome for the North West region?
Mr Woolas: The power generation itself is the catalyst. We have identified four potential sites in the region, as you have noted, which is obviously 40% of the identified potential capacity nationally. We have not commented on whether we think all four should go ahead. There are planning considerations and we are dependent on private sector-led investment to put forward proposals for those sites. In addition to power generation, there are a number of very significant supply chain benefits, not least research and development for both nuclear and manufacturing, the education and training elements of the strategy, the fuel manufacture and fuel processing, and the waste disposal. In all of those spokes of that strategy, the North West is the leader in the UK. We believe that whatever the outcome of one, two, three or four, the region will benefit. We have some very strong strategies in that area.

Q162 Chair: We have had a number of different figures. Clearly, there is a difference of opinion on the number of jobs that will be created during both the construction and operational phase, depending, I guess, on where you come from. For the record, can you tell us what figures the Government are using for their planning purposes?
Mr Woolas: May I ask David to help me with that?
David Higham: As the previous witnesses have said, there is a great deal of uncertainty in this area because of the different designs of the reactors. Generally speaking, we are working on the basis of about 5,000 jobs for the construction phase, and then anything between 700 and 1,000 jobs for the ongoing operation. A lot of this depends on how many reactors you actually put on a site, because you can put more than one reactor on a site. The sort of numbers you have been told previously seem to be in the right ballpark.

Q163 Chair: What about the mix of construction workers? We must know, from large construction schemes elsewhere, what the mix will be between

local, regional, national and international employees. What is the estimate of the number of people who will pick up jobs in the region?

Mr Woolas: Again, the answer is that it is not known. What we would attempt to ensure, of course, is that the whole skills strategy would be beneficial to our region and the job creation. We have Cogent, the sector training organisation, to oversee the whole planning of that. We have the Office for Nuclear Development in the Department of Energy and Climate Change in Whitehall as the lead national body for planning the supply. We have the Northwest Development Agency in our region, and in Cumbria we have the partnership Energy Coast. We are attempting to ensure that at each stage we are planning skills training and skills upgrading, so that the jobs within the industry can benefit our region, and in particular, the siting of the National Skills Academy for Nuclear in west Cumbria. May I pay tribute to the hon. Member for Copeland for the work that he has been doing in this area as the deputy Regional Minister, as well as the local MP? He has been lobbying me very hard on this point to ensure that this is sustainable. We have, of course, the research and development function going right back down the chain to the Dalton Institute at the university of Manchester, through to the nuclear directorate of health and safety in Bootle, as well as the central laboratory at Sellafield—the so-called National Nuclear Laboratory. In the actual production of energy and in the processes of building the plants, providing the fuel and so on to the plants, and of course disposing of the waste, the skills training is within our region. On the jobs themselves, experience shows that in the Cumbria area there is an excess of demand over supply, so there is a need to bring in sub-regional and regional labour. The answer to the question is that, of course, we would gear up the construction sector to that, but we do not know, not least because of the point David makes—we do not know how many of the four sites will, and on what timetable, go ahead. Our procurement policies can influence that. It would be our goal that the jobs should be for local and regional people, but I cannot give you specific guarantees on that at this stage in the process.

Q164 Tony Lloyd: What is really important is that we don't see—as we have seen particularly in construction over the years—the bizarre scenario where in boom people are chasing skilled workers all round the region and the country, and in bust we have unemployed skilled people deskilling before our eyes. Is there within the planning framework a proper time line that says we can maximise the benefits of the process to construction, in order that in the meantime we upskill the regional work force, so that we get the benefit from that? Because it has not been obvious in any of the evidence inquiries that that kind of planning really is taking place. People have told us about the aspiration, but not how it is to be done.

Mr Woolas: The figures that we have, Chair, show that there are an estimated 23,000 jobs in the North West region in the nuclear industry, around 1.5% of total employment, so that is significant already. The nuclear sector in west Cumbria accounts for 25% of local employment, obviously with Sellafield employing the biggest chunk of that, with 12,000 people. There are also significant concentrations of employment in central and west Lancashire. The sequencing of construction projects that require large numbers of relatively short bursts are what we have to plan for, and we do that with the trade unions and the skills sector. Of course, it depends on what other big jobs are going on. The advantage in this area is that the time scales are significant; this is over a number of years and you can peak and trough the planning. The advice I have is that we are confident we can do that. What I can't show you at this stage is a diagram showing how many and where, not least because we don't know how many of the four sites will go ahead. The big sites agreement is important in that regard.

Q165 Chair: There has been some concern expressed about the impact of several thousand construction jobs on the area, and how that will affect the local construction scheme. Has any thinking gone into what impact it would have on local costs, wages and competition?

David Higham: I shall pick up the previous question and then move on to yours, Chair. As previous witnesses have said, a large number of people are already employed in the nuclear industry in west Cumbria, so it is a familiar industry. I recognise that a lot of the skills are not the skills that will be needed, but the point is that there is a body of labour there, which needs to be retrained. It is not necessarily a question of bringing people in from outside to provide the skills. The impact on the local community is an important point. It is primarily an issue for the local authorities to consider how best to manage. They will need to look at things such as the extent of temporary accommodation. Clearly, we will want to talk to them about how they respond to those challenges.

Mr Woolas: I have some specifics, Chair, if it helps the Committee, relating to the proposals at Hinkley Point in the South West, which are more developed than ours. EDF, the private sector developer there, anticipates that 50% of construction workers will come from a surrounding 90-minute radius by car, and 50% from further afield. It expects around 35% of workers to live in purpose-built campuses and 27% in surrounding hotels and bed and breakfast. The Office for Nuclear Development, located within DECC, has a work programme with Cogent, the sector skills strategy, to develop a plan to go forward for the various skills involved in engineering, construction, decommissioning, existing operation and, indeed, the military. That assumes that the national plan will be in place by 2018. It intends to publish that report shortly, alongside a low-carbon skills strategy consultation because in its work those areas are alongside each other. We are also working with the office to undertake the skills planning exercise on specific nuclear skills, and a report was published in September on that—it is not the construction point that you are making. In so far as

it is possible—DECC is in the lead on this—there is a plan in place, but I urge caution to commentators, because it does depend on what other projects are in place. For example, the electrification of the line, the Atlantic Gateway and the Manchester-Liverpool connectivity proposals all take construction workers. But what we are able to do—just to repeat myself—is to work with the trade unions to try to mix and match.

Q166 Chair: What about the problems that will be associated with several thousand temporary workers, who will no doubt mainly be young men with all the problems that sometimes come with them? Who will be responsible for that? Will the burden simply be placed on the local authorities?

Mr Woolas: No. In the overarching national policy statement, there is the requirement that there should be an analysis of national, regional and local benefits in environmental, social and economic areas, and that includes the point that you make about the need for and the impact of temporary workers, something of which the Government now have some good experience. The policy in the national policy statement is that during the construction stage as many employees as possible are locally sourced. It is accepted that there will be some temporary in-country migration, as has happened in previous phases of new build, but the thrust is towards the local. That will also, of course, require upgrading of housing and transport infrastructure in those areas, which itself creates job demand, and which has to be factored into the planning. We have a work stream that is looking at the Olympic games construction to see how that is working through in terms of the peaks and troughs of temporary workers, and indeed the locality of them. Of course, wearing my other hat, I am very familiar with the impact of that issue.

Q167 Chair: What would you say to those who claim that Cumbria is already too reliant on the nuclear industry? Is there not something of a conflict between this investment and diversifying effectively in Cumbria?

Mr Woolas: Perhaps I could ask Michael, who is the absolute expert in this area. We have the Energy Coast strategy as part of the west Cumbria regeneration, and this is really where Jamie and Tony have been campaigning—along with the local authorities, to be fair. We have lost capacity at Sellafield, as Calder Hall and Windscale have been closed down and are being decommissioned. One of the best bits of the strategy is the local placement of the research and training. The Dalton Institute at the university of Manchester will have a campus in west Cumbria and, as I mentioned before, we have the training at the National Nuclear Laboratory and in other places. Will west Cumbria become over-dependent? They don't think so. Of course, we have to look at the supply chains. There is, in addition, the point that Michael has been pointing out to me on the need to upgrade the national grid, which I think is something you are also looking at. Through you Chair, may I ask Michael to answer?

Michael Contaldo: The North West is very important for the nuclear sector nationally, with 53% of employment based in the North West. In terms of regional employment, nuclear accounts for about 1.5% of total employment, but that rises to around 25% in west Cumbria, so there really is a disproportionate impact on the west Cumbrian community. That is why the Government have been working with west Cumbrian partners, in particular Cumbria Vision and the Energy Coast master plan, to look at how we diversify the economy. Not only are we looking at the opportunities from nuclear, but we are looking more widely at low carbon and the contribution from renewable energy. Also, one of the objectives in Cumbria Vision's economic strategy is to look at destination Cumbria, in terms of west Cumbria being a good place to invest, live and work in. That is wider than the low-carbon sector.

David Higham: It is worth emphasising that, as you heard Joe Flanagan say earlier on, energy is not a bad sector to be in these days. We know the demand for energy will rise. We also know that the assets that make Cumbria unique—both its nuclear assets and its renewable assets of wind and tidal power—are not going to go anywhere else. There is an enormous opportunity for Cumbria. Clearly, we do not want Cumbria just to be dependent on low-carbon energy, but it is not a bad industry to be in if you are looking to long-term success.

Q168 Chair: Finally from me, what can you say about the competition that will occur between different employers within the region, with various developers looking for labour at the same time over a short period? How will the Government ensure that will operate in the long-term interests of the region?

Mr Woolas: The Infrastructure Planning Commission was created by Parliament last year. One of the advantages of the IPC is that we believe—the proof of the pudding is in the eating, of course—that you get better planning in terms of supply and demand of labour, and the procurement policies that follow from that. However, I suppose, Chair, that our view is that it is a nice problem that we will have difficulties in that regard, particularly for the North West, where we have, as you know better than I, areas of deprivation and areas of higher than average unemployment. We think that this is a terrific opportunity and one that we can plan for, particularly because we have the eight-year or 10-year time scale. However, the honest answer to your question is we don't know.

Q169 Mr Martlew: To some extent, the skills issue has been covered, but I will come to it. The history of nuclear on the west coast is that when it was first put there, they did not ask the people, did they? Sellafield, or Windscale as it was, was the most secret site in Britain, because it was developing plutonium for the nuclear bomb. It was not a case of going around the country and saying, "Which is the best site?" It was chosen, and that is the reality. I am a

survivor, with probably nearly 100% of the rest of Cumbrians, of the Windscale fire in the 1950s. But there has never been any acknowledgement—perhaps there is a little now—by any Government of the fact that Sellafield and the west coast of Cumbria is the only area that would really accept this particular industry, as such. I hear plans about what else are we going to do, but why isn't there some sort of agreement, other than the jobs? We are talking about education. The University of Cumbria is struggling at the moment, because of lack of resources—I think it is partly their own problem, but some of it is the Government. Why has there never been that acknowledgement by Government that there should be something special because this area has taken something special? And will there be an acknowledgement in the future?

Mr Woolas: I accept the point that you make, Mr Martlew, regarding the history, because we live in a different world now. I do not accept the implication—not yours, but the one that some draw—that the Government, particularly this Government, have not recognised through financial investment in that area the contribution that it makes. The arguments regarding the depository, of course, exactly meet the point that you're making. The Department for Energy and Climate Change has a process to invite bids from communities, including local authorities, to identify the geological suitability or otherwise for deep depository, and then to enter into discussions with the local area and local authorities. We recognise that it is a two-tier, local authority area. We think it has the potential to carry public consent on that side of the process and at that stage of it, which of course is required in any event, irrespective of the building of the PWR energy plants. In terms of public representation in the area, there is strong support for the nuclear industry, which of course is a result of the process that you described. What we have tried to do in the Government Office for the North West and the NWDA, which I think is recognised across Government—certainly in BIS and the Treasury—is to ensure that the benefits should be sustainable; hence the concentration on transport routes—the Carlisle northern development route, which is the A road from your constituency to Workington. The 669?

Michael Contaldo: The A595.

Mr Woolas: The transport infrastructure is crucial, as is higher education, and I would throw in health development in west Cumbria. We have also benefited from European money, but we start from where we are. There is strong public support. Certainly, the Members of Parliament and local authorities in the area are strongly behind this.

Michael Contaldo: The Government have set up the West Cumbria ministerial strategic forum, which is unique in Government terms. It is currently chaired by the Secretary of State for Energy but it brings together Ministers from across Government with Cumbrian partners to work with them to deliver the aspiration set out in the Energy Coast master plan. It involves not just the energy aspects, but the wider infrastructure—health, education and enterprise investment. It is a much more cohesive and comprehensive strategy. That is fairly unique in terms of how Governments operate.

Q170Mr Martlew: Basically, Minister, to some extent you accept my argument about what has happened, but you say that things will change.

Mr Woolas: I accept your argument, because it is historical fact, but we live in a different world. Where we are now is that there is public consent for the industry. I would not say that it is unanimous of course, but the economy and the sustainability of that economy is dependent on this industry. I think also that BNFL, the NDA and the other bodies involved have recognised the need for environmental sustainability. Of course, no one is arguing that Seascale is a pretty site, but our strategies are very sensitive to the national park, on which we also have a good record. There is an issue with the grid, and the need to protect the national park is important. I just think the situation has changed from what it was in the 1950s.

Mr Martlew: It first started in the late '40s.

Q171 Tony Lloyd: Minister, may I return to the theme of infrastructure? Obviously, one difficulty that various witnesses have pointed out to us is that the planning horizons go from—presumably—no new build all the way through to four plants in operation. I take it for granted that you are working on assumptions from none to four. In that case, what are the infrastructure gaps that we need to plug, and who is responsible for plugging them? That, frankly, has not come through from previous witnesses.

Mr Woolas: Perhaps I should ask my colleagues to help me on this one. The IPC, of course, will be the lead planning body. On the infrastructure of the potential four sites, we need to upgrade the national grid, because if you're looking at the 3.5 GW—the Sellafield one—you need to upgrade that. Then, on each of the other three sites—less so at Sellafield—there are transport infrastructure needs and potentially housing needs. So this is a big job. David or Michael, have you got more detail?

David Higham: The No.1 infrastructure issue is grid connectivity, because to get the power out of Sellafield, we can't use the existing grid. That is the No.1 infrastructure issue and discussions about that are already well advanced. You're then looking at issues around roads, as previous witnesses have said. There you are effectively talking about the A66 and the A595, which, north of Sellafield, is part of the strategic road network and therefore is the responsibility of the DFT. Some of the other roads are the responsibility of Cumbria county council. On rail, of course, you have DRS headquarters in your constituency, and as a previous witness has said, ports are also an issue. The port of Workington could potentially be very significant in the development of the nuclear industry in west Cumbria. Clearly, there will be consequential issues about road access. If you are looking at the Sellafield site, one possibility is to go for some form of

temporary port and simply take the materials across the railway line from a temporary port. There are a number of issues, but again, it depends on which sites are developed and how they're developed. But I think we can scope out what the issues are likely to be.

Q172 Tony Lloyd: "Can scope" or "have scoped"?
David Higham: Well, as part of the Energy Coast master plan, the west Cumbrians have actually scoped out the infrastructure consequences of the construction of a new nuclear power station at Sellafield. They've looked at the requirements in terms of bringing materials in—both construction materials and the components of a reactor. Importantly, and often overlooked, they have looked at the requirements of taking construction waste out, because we are talking about major construction activity and major excavations. A considerable amount of material needs to be transported from the site and taken elsewhere. The west Cumbrians have done that as part of their planning for Energy Coast, but that is on the assumption that there is a development at Sellafield, rather than at some of the other sites.

Q173 Tony Lloyd: There is an inherent uncertainty, which I think we all have to accept, in the process at the moment, but even within that, we need to know that there is a planning framework around which this can be made to work. I suppose that, in a sense, is what I am trying to understand through the questions I am asking. First, if we are talking about roads, yes, of course, they are the responsibility of Cumbria county council as the road developer. However, I am sure that Cumbria county council will say to Cumbrian MPs, "This can only be done if the budget recognises the increased demand and pressures on Cumbria." Also, I must say that, as part of the North West, I do not want to see the roads programme in my own part of the region suffer because of the needs there. There is still a question of the framework within which this is going to be paid for. One of the previous witnesses mentioned to us, for example, the need for broadband investment. Some of the development might be in areas like increased demand for health services. Mr Higham, you mentioned housing. There are a huge range of things. Some clearly are central Government and some may be local authority, but it's an additional cost that this will place on local authorities. Some things may relate to the private sector. Is it clear at the moment that there is a framework for allocation of these costs?
Mr Woolas: Yes.
Tony Lloyd: That's a good answer.
Mr Woolas: The answer is yes. It is clear. The Planning Act 2008 created the national significant infrastructure projects under the auspices of the Infrastructure Planning Commission and it requires that authority to look at the holistic issues that you have mentioned. They include mitigating the impacts of the infrastructure projects and compensating for them in terms of environment, habitat, flood defences, flood mitigation, replacement land, creation or replacement of open space and common land, creation of compensatory habitats, nature conservation and habitat creation, landscaping works, including boundary fencing works—they even have to look at that detail—the transport infrastructure necessary to build, maintain and operate—and obviously the access roads while that is going on—connections for national networks, including electricity, water, waste water, fuel and pipeline work and other associated infrastructure projects. With the roads there is work already under way on the Carlisle northern development routes, which is £158 million, funded by the Department for Transport. The Highways Agency has completed the bypass schemes on the A595 between Parton and Lillyhall. That is further up towards the Sellafield site. As we know, there have been upgrades to the west coast main line. There will be investigative work to assess other rail investment and there are similar schemes for the other potential site. There is, of course, under the new framework, the private developer contribution to that infrastructure, precisely to meet the point that Mr Lloyd is making. It is not a case of robbing Peter to pay Paul. If, for example, there were detrimental effects under the regional funding allocation on transport, it is not something that we would be able to carry consent with for the North West—it would be the Northwest Development Agency that would have a problem. So we will be able to work that out. At the moment, we do not have the financial information that is behind your question because we don't yet know whether the private sector developers will pitch in and at what speed.
David Higham: May I add two points to what the Minister has said? First, to take up the point about the regional funding allocation and to take your point, Mr Lloyd, about funds moving from Manchester, we would see this very much as a national rather than a regional issue. In terms of the practicalities of how we take forward this wide range of planning requirements, the process will be that the developer needs to engage with the local authority and needs to demonstrate that to the Infrastructure Planning Commission and demonstrate that the local authority is satisfied that these issues are being taken forward. The mechanism for doing that will be the local development framework, which, if we are talking about Sellafield or the other two sites in Cumbria, would be the responsibility of Copeland borough council. There is a framework there. We haven't yet gone through the process to test the framework, but it is there and there is the potential for securing a contribution from the developer through the planning policy frameworks as well.

Q174 Tony Lloyd: Will it be clear as contracts are being negotiated what the allocation of that responsibility is? What you have told us is that in a schematic way the developers know that they will have to, in crude terms, put something into the pot. At the end, the developers will say to us that nuclear energy does not make enormous profits. They have already told us this—that there isn't a huge surplus

there and that if we want something added, someone else will have to pay. So clearly they are in negotiating mode etcetera, etcetera. But we need to know that the public good is protected; I don't mean the public purse, but that the public gets out of this what we want to get out of this.
David Higham: These are fair points. It is a matter for negotiation.

Q175 Tony Lloyd: Can I ask some other questions about infrastructure as well? In a sense, Minister, you answered about the middle band. That's absolutely right and proper, the way that the present framework and forces would be developed to operate. However, there are things that fall off the end in different directions. One is, for example—quite genuinely—that if there were an increase in the population living locally, there would be extra pressures on different types of public services such as the health service, education services and whatever. I don't really see that, necessarily, they would fall to the developer, because they would be part of the overall fabric of our society, but there would be a reallocation from people who would be moving from Carlisle—or, for that matter, from Croydon—to west Cumbria. At the other end, there would be things like development—one of the previous witnesses actually mentioned broadband. Now, you could say, "Yes, it should be the private sector who sees the opportunity in this," but clearly, if that's a necessary part of the infrastructure investment, somebody needs to be negotiating with the broadband providers, and that isn't going to be the developer. Are the plans in place—not necessarily to have achieved this, because it's premature—but to take those things forward at the appropriate time?
Mr Woolas: Three points. On the overall funding point, of course, the capital funding of health from local government would answer the point in the medium to long term; there would be a difficulty with the short term. The work that the Department for Communities and Local Government is doing with the Office for National Statistics looks at how one can better get that population and that flexibility, but I am not naive enough to say that there wouldn't be problems. Special arrangements may have to be made. The area cost adjustments, of course, could be impacted by the average wage levels in the area. That would be another factor. But we wouldn't try to solve those problems from the developer's funding in total. They would be mainly infrastructure. The second point is that the Energy Coast master plan—I love these phrases—does look at those health, powers and skills and other investments. The Homes and Communities Agency, for example, is engaged in that partnership, as of course is the local and regional NHS. My third point has slipped my mind.

Q176 Tony Lloyd: I am not sure that this was your third point, but I was asking specifically about negotiations with the private sector for the provision of things like broadband.
Mr Woolas: Sorry—broadband, of course.
Tony Lloyd: But it could be other facilities. Broadband was an example.
Mr Woolas: We then have the Government Office for the North West and NWDA connectivity plan for broadband, which is extremely exciting and ambitious. Indeed, the Joint Economic Commission for the North West, at its last-but-one meeting in Crewe, looked at this issue. The specific point is that we want to achieve 100% connectivity—possibly we won't get it, of course, but that is our goal. That Cumbria coast, because of the geography of it, is part of that. We would be doing that in any event, but clearly there are opportunities to talk to the private-sector developers about potential contributions as part of the negotiations that David mentioned.

Q177 Tony Lloyd: Can I turn to a specific? Both you, Minister, and Mr Contaldo talked about the overriding need to upgrade the Cumbria ring. One or the other of you made reference to the national park. One submission that the national park made to us was that there could be a process of burying the Cumbria ring underground—obviously, a necessary part of protecting the park. Is that on the cards?
Mr Woolas: Or under the sea.
David Higham: Upgrading the national grid ring through Cumbria is particularly sensitive in the southern section, because the southern section goes through the national park. Basically, the debate is about how we minimise the impact of upgrading the grid on the environment. I must say the national park has been very supportive of the nuclear agenda in west Cumbria. There are two options. One is you bury it, or alternatively you look at the possibility of some sub-sea connector across Morecambe Bay. These issues are being discussed at the moment.

Q178 Tony Lloyd: Tricky question—who would pay?
David Higham: That is a matter for discussion between the National Grid and the developer. The developer wants the connectivity; the National Grid is supplying the connectivity; there is a cost to providing that connectivity.
Mr Woolas: There is a negotiation there. Surprising though it seems, the Chair asked the same question, and the answer was that the proportion of costs for the National Grid part is not significant in terms of the overall costs. That made a few of us fall off our stools, but that was the answer.

Q179 Rosie Cooper: Minister, to what extent is reprocessing fuel and handling waste in the region linked to the nuclear build? Do you believe that Cumbria has to accept the deep geological repository to get at least one nuclear power station?
Mr Woolas: No, and no—no, it isn't linked, and no, it doesn't have to have it.

Q180 Rosie Cooper: Following on from the issues of geological storage and Nirex in the 1990s, do you believe that there is broad support for nuclear expansion in the region? We've taken evidence and heard a broad range of opinion. One view was that the consultation was poor and that meetings were

held at short notice and were not very good, so I was wondering whether you'd actually visited any of the sites or talked to any of the communities?
Mr Woolas: On the repository?
Rosie Cooper: On nuclear expansion as well, but on the repository mainly.
Mr Woolas: Wearing different ministerial hats, yes. I don't accept the charge that the consultation hasn't been comprehensive. Some people argue that it has been too comprehensive—a process that has been going on for several years. Having said that, in the nature of these things, it should do.

Q181 Rosie Cooper: That was included in that broad range. It went from "We're over-consulting" to "not very good".
Mr Woolas: My personal view is that there is a broad consent for the nuclear industry in the area. There is, of course, a much greater knowledge about the science of the industry among the local population. Some of the myth-busting that's taken place has informed the debate. There is, of course, low-level waste already there, or will be for some time to come. On the power generation side, the actual planning process has yet to be gone through. Even if we get the development proposals, under the Planning Act 2008 the IPC then has to go through the process. If colleagues remember the debate on the Floor of the House, the then Minister with responsibility for planning was at pains to point out that there is consultation built into the process. It is not a bypass of that, as some have alleged. On the repository, I cannot think of an example of public consultation in the United Kingdom that has been more comprehensive. I think that's a good thing.

Q182 Rosie Cooper: What about your having visited—?
Mr Woolas: I have visited on a number of occasions. I know the area very well indeed.

Q183 Mr Martlew: On the repository, where else in the United Kingdom are you looking for sites?
David Higham: The position on the repository is that the Government have made it clear that new nuclear build will not proceed unless there is a solution to the waste disposal question, or there is a process in place for a solution to the waste disposal question. The only three communities that have volunteered to be considered for waste repository are Allerdale, Copeland and Cumbria county council. The Government have held open the invitation to volunteer and we will see what happens. Formally, there is no requirement that those communities take the waste in exchange for a new nuclear power station.

Q184 Mr Martlew: That is not my question, although I accept that totally. What I get from you, Minister, is that if the repository is located in Cumbria—there is a serious issue with the geology—moneys will flow to the community for taking it. Until that point, Cumbria will not be treated as a special case. Am I right?
Mr Woolas: In terms of the repository, it wouldn't be treated as a special case. As David said, going ahead with the power station would be dependent on a solution on the waste. We would be able to move ahead on some of the related issues: the research at Sellafield and the academy in west Cumbria. For the region as a whole, the partnership with South Yorkshire and the University of Manchester, and the spin-offs from it, are terrifically exciting. That is the situation. It is a policy that I held the portfolio for in 2007–08. We predicted this situation.

Q185 Chair: I have one final question on the skills gap. A previous witness explained to us that the skills gap was an absolute given. What would you like to say on the skills gap? Can you say something about opportunities for apprenticeships? Will we ensure that we pick up the opportunity to deliver apprenticeships on the back of all this investment?
Mr Woolas: Perhaps I will ask Michael to help me out again on this. It is terrifically exciting for us in the whole region. We have the universities centrally involved. Clearly, we have the Dalton Nuclear Institute and the Centre for Nuclear Energy Technology at the University of Manchester, and the partnership with the South Yorkshire advanced manufacturing research, on which I understand there will soon be announcements. The Higher Education Funding Council is involved in the strategy as well. The National Skills Academy for Nuclear, based in Cockermouth, was formally launched in January 2008 to address the key skills and recruitment challenges. The CAS, which started in 2008, is supporting 37 apprenticeships already, benefiting 21 supply-chain companies. Do you want to take us through the figures on apprenticeships, Michael?
Michael Contaldo: The Minister mentioned that the National Skills Academy for Nuclear is running a community apprenticeship scheme that is focused on enabling supply-chain companies to access funding. At the moment, it is supporting about 37 apprenticeships and benefiting 21 supply-chain companies in the region. In addition, I think the Minister also mentioned Energus, which was opened in Lillyhall last year, and which has the potential to support up to 250 apprentices in training and skills development.
Chair: That is all of our questions for today. I thank the Minister and his team very much for the evidence they have presented to us. We are most grateful.

Written evidence

Memorandum from HM Government (NWN 01)

Introduction

— Nuclear power needs to be part of the energy mix alongside renewable energy and coal with carbon capture storage if the UK is to meet its objectives on climate change and become a low carbon economy.

— The North West is a world pioneer in nuclear energy and home to one of the world's largest concentrations of nuclear facilities and expertise. Over 25,000 skilled professionals are employed in 300 companies across the region, resulting in a combined turnover of approximately £3 billion each year.

— Four sites within the North West have been put forward as potentially suitable for new nuclear build. The region is also well placed to maximise opportunities more widely from the national and international nuclear renaissance.

National Framework

1. If the UK is to meet its objectives on climate change and become a low carbon economy, it needs its electricity supply to be almost "decarbonised" by 2050. To achieve this, nuclear power needs to be part of the UK's energy mix alongside renewable energy and coal with carbon capture storage.[1]

2. Through the establishment of the Office of Nuclear Development (OND) in June 2008, the Government has sought to enable investment in the UK on new nuclear build. It has followed through on its commitments by publishing a draft nuclear National Policy Statement on 9 November. It has also legislated to ensure developers put money aside from day one for eventual clean-up.

3. There are currently around 440 commercial nuclear reactors operating in 30 countries and, between them, they supply 15% of the world's electricity. It is widely accepted that an expansion of nuclear power capacity globally is required to meet increasing demand for safe, clean and economically competitive electricity.

4. Over 40 new reactors are currently under construction in 11 countries and in all over 100 new reactors are planned and a further 250 proposed.[2] The global civil nuclear market is worth £30 billion annually, with a forecast increase to £50 billion by 2023.[3] As the first European country to plan construction of a fleet of new nuclear power stations the UK is an important market in the global new build programme.

Regional Assets and Opportunities

5. The North West is home to one of the world's largest concentrations of nuclear facilities with a renowned skills base and world class expertise in nuclear technology research and development. As a whole it accounts for around 50% of the UK's civil nuclear capability. It is uniquely well placed to benefit from the national and international renaissance in new nuclear.

6. The industry supports an estimated 23,000 jobs in the region—about 1.5% of total regional employment. The nuclear sector is particularly important to west Cumbria where it accounts for around 25% of local employment with the biggest concentration at Sellafield which employs around 12,000. There are also significant concentrations of employment in central and west Lancashire.

Regional Assets:

7. Existing strengths in the region include:

Nuclear Decommissioning Authority

8. The Nuclear Decommissioning Authority (NDA) is a non-departmental public body responsible for the decommissioning and clean-up of the UK's civil public sector nuclear sites. Headquartered in Whitehaven, Cumbria, its annual expenditure is around £2.5 billion: with two thirds of this targeted at sites within the North West.

---

1 HM Government, "*Meeting the Energy Challenge*" White Paper, January 2008
2 World Nuclear Association www.world-nuclear.org/info/inf17.html (September 2009)
3 NAMTEC (2009) The Supply Chain for a UK Nuclear New Build Programme, http://www.berr.gov.uk/files/file47664.pdf

Sellafield

9. Sellafield accounts for around 60% of the NDA Annual budget. It is one of the most complex and compact nuclear sites with activities focused on remediation and decommissioning. The site is managed on behalf of the NDA by Nuclear Management Partners—a consortium of Washington International Holdings of the US, AMEC of Britain and AREVA of France. Over the next decade job levels are expected to fall significantly as the site is decommissioned.

Springfields Fuels

10. The Westinghouse site at Springfield, Lancashire, manufactures nuclear fuel products for nuclear power stations with Westinghouse-designed reactors, both for use in the UK and around the globe. It currently employs around 1,400 personnel. In May 2008 it was named as an accredited engineering training facility for the National Skills Academy Nuclear (NSAN). This helps deliver engineering training for the North West, to meet a changing nuclear industry including any nuclear build programme.

Urenco

11. Urenco Ltd is located in Capenhurst near Chester, and operates three plants producing enriched uranium to enable nuclear power stations around the world to generate electricity. The site employs over 300 people and provides the local community with long-term employment in a technical environment, as well as opportunities for young people to pursue engineering and scientific careers.

National Skills Academy for Nuclear/Energus

12. Based in Cockermouth, the National Skills Academy for Nuclear (NSAN) was formally launched in January 2008 to address the key skills, training and recruitment challenges facing the nuclear industry. The Skills Academy will ensure the sector has a workforce that can operate safely and effectively, and respond to the future demands of this rapidly changing industry.

13. Energus, based in Lillyhall, opened in 2009 and is a £21 million world class cehttp://www.energus.co.uk/page/about-us/whos-who/ntre for the provision of vocational skills excellence in nuclear, carbon-free and environmental restoration industries. It provides up to 250 apprentices with a range of training, education and business support services geared to providing and enhancing skills within both the local and national workforce.

National Nuclear Laboratory

14. The National Nuclear Laboratory (NNL) demonstrates the Government's commitment to protect and grow the UK's national nuclear technology capability. NNL holds an unrivalled breadth of technology expertise, including many skills unique to the UK. It is managed by a consortium containing Battelle, University of Manchester and Serco. NNL's Central Laboratory at Sellafield is the flagship nuclear R&D facility in the UK supporting new reactor build, reactor operation, fuel processing plants and decommissioning and clean-up. Some 500 staff at the £250 million purpose built facility run a wide range of radioactive and non-radioactive experimental programmes as well as offering a wide range of analytical services.

Nuclear Directorate of the Health and Safety Executive

15. The Nuclear Directorate of the Health and Safety Executive in Liverpool is responsible for licensing all of the UK's nuclear facilities and for authorising reactor designs for deployment in the UK.

Dalton Institute

16. The Dalton Nuclear Institute in Manchester undertakes high quality research across the nuclear fields. In February 2008 it was announced that the Centre for Nuclear Energy Technology would form a new £25 million extension to the Dalton Institute in Manchester, and will be an important focus post-graduate students into the design and management of nuclear power stations.

17. As part of the UK's new Nuclear Advanced Manufacturing Research Centre, a major research institute backed by the Universities of Sheffield and Manchester and supported by engineering giant Rolls-Royce, the Government announced in December 2009 that it is providing a further £8 million to upgrade the Dalton Nuclear Institute's nuclear laboratories.

Heysham Power Station

18. Heysham 1 & 2 have a generating capacity of 2400 MW, and generate about 44% of the North West's electricity: this is equivalent to around 22% of the total UK energy generation from nuclear. Currently Heysham 1 and 2 collectively employ around 900 staff and hundreds of other contractors. Heysham 1 is due to be decommissioned in 2014 and Heysham 2 in 2023.

Siting New Nuclear Power Stations

19. The Government has undertaken a Strategic Siting Assessment to establish which sites are potentially suitable for new nuclear power stations by the end of 2025. Ten of the eleven sites nominated by industry in March have been assessed as potentially suitable for new nuclear deployment by the end of 2025, including four from within the North West: Braystones, Heysham, Kirksanton and Sellafield.

20. The sites in the North West are identified in the draft Nuclear National Policy Statement (NPS), which was published for consultation on Monday 9th November. This evidence does not reproduce the assessments made within the draft Nuclear NPS, but gives background and indicates which parts of the draft Nuclear NPS and accompanying documents may be most relevant to the Committee.

21. The draft Nuclear National Policy Statement includes amongst other things:

— Need for new nuclear power stations and their impacts;

— Assessment of sites;

— Management and disposal of waste; and

— Appraisal of Sustainability and Habitats Regulations Assessment.

22. The site summaries in Part 5 of the Draft NPS[4] identify both why the Government has reached the preliminary conclusion that the sites are potentially suitable, and any concerns or issues that the Government believes the IPC should consider further.

23. The Consultation Document[5] also sets out that although the Government has reached the preliminary conclusion that Braystones and Kirksanton are potentially suitable, given the challenges inherent in developing greenfield sites, the Government has considerable reservations about the practicability of their deployment by the end of 2025 and would be particularly interested in hearing evidence over the consultation period on its assessment in respect of these sites.

24. The assessment used exclusionary and discretionary criteria, a Habitats Directive assessment and an Appraisal of Sustainability, and took on board advice from the Regulators[6] and other specialists, and inputs from the public. The Government is now consulting on its preliminary conclusions on potential suitability of the sites.

25. All the sites on the draft NPS have, at this stage, been judged to be potentially suitable and the draft Nuclear National Policy Statement does not rank the sites on the NPS. This recognises that it is for developers to bring forward proposals for new nuclear power stations and there can be no certainty that development consent on all sites listed in the NPS will be granted as issues may emerge once they are analysed in detail by the Infrastructure Planning Committee (IPC).

26. The assessment also incorporated the outputs of the Habitats Regulations Assessment and Appraisals of Sustainability (AoS). The Habitats Regulations Assessment tests whether a plan or project could have an adverse effect on the integrity of European sites of nature conservation importance. A Habitats Regulations Assessment was carried out on each site.

27. The purpose of an AoS is to consider the social, economic and environmental impacts of the policy and to suggest possibilities for improving the sustainability of the NPS. An AoS was carried out for each site. This includes a consideration of factors such as the economy, health and the environment, amongst other things.

28. The key findings of the AoS for each site are reflected in Part 5 of the Nuclear National Policy Statement. The individual site reports have more detail and are available on the DECC website:

https://www.energynpsconsultation.decc.gov.uk/nuclear/aos/main/

29. The AoS for Braystones, Kirksanton, Sellafield and Heysham note that there is the potential for positive and negative cumulative effects to arise if more than one power station were developed in this region. They include effects on biodiversity and ecosystems, on population, employment and viability, on supporting infrastructure, and on landscape and visual impact. These impacts are highlighted at the end of each site summary in Part 5 of the draft Nuclear NPS.

30. A site being listed in the Nuclear NPS is the first step in the process: energy companies will then need to apply to the IPC for permission to build on that site. The draft Overarching[7] and Nuclear NPSs give guidance to the IPC on how to assess the potential impacts of new nuclear power stations should an application for development consent come forward.

31. Also published on 9 November was the draft National Policy Statement for the Electricity Networks Infrastructure. Which recognises the need for a fit for purpose and robust electricity network, that is able to support a more complex system of supply and demand, if the UK is to move to a low carbon economy.

[4] http://data.energynpsconsultation.decc.gov.uk/documents/npss/EN-6.pdf
[5] http://data.energynpsconsultation.decc.gov.uk/documents/condoc.pdf
[6] Health and Safety Executive (Nuclear Installations Inspectorate and Office of Civil Nuclear Security), Environment Agency
[7] http://data.energynpsconsultation.decc.gov.uk/documents/npss/EN-1.pdf

32. The IPC was set up under the Government's 2008 Planning Act, to make the application process for nationally significant infrastructure projects faster, fairer and easier for people to get involved in. It is an independent body which makes decisions on applications for large-scale facilities that support the economy and vital public services. This includes railways, large wind farms, power stations, reservoirs, harbours, airports and sewage treatment works. Decisions are made in accordance the National Policy Statements. The IPC must also take into account the local impact of proposed projects.

Nuclear Low Carbon Economic Area (LCEA)

33. On 3 December the Secretary of State for Business and the Chancellor of the Exchequer announced that the North West alongside Yorkshire & Humber has been designated as the UK's third low carbon economic area (LCEA), based on the region's unique assets and capabilities within the field of nuclear energy.

34. As part of the UK's Low Carbon Industrial Strategy, the LCEA will be led by NWDA to bring together knowledge, skills and investment within the sector, delivering benefits for the economy. Working in partnership with Sheffield University, the University of Manchester's Dalton Nuclear Institute will play a significant role in the Nuclear Advanced Manufacturing Research Centre (AMRC) in South Yorkshire. The NWDA will also lead the Manufacturing Advisory Service (MAS) for nuclear, offering support and advice to RDAs and UK manufacturers.

Skills

35. The region's higher and further education institutions are working to ensure there is a skilled workforce that can deliver safe and effective operations in fuel cycle, waste management, defence and decommissioning, as well as the future challenges and opportunities of new nuclear build.

36. NSAN is focused on addressing the acute gap in technical and vocational skills. This includes developing transferability and common standards through both the Nuclear Skills Passport and National Occupational Standards, and establishing a High Quality Provider network to deliver Skills Academy programmes across the UK.

37. The Learning and Skills Council is supporting the Sector Skills Council Cogent with a £50 million Compact funded through the Train to gain programme specially aimed at improving intermediate skills of the existing national workforce.

38. Many of the region's universities are expanding their teaching programmes to provide additional focus on the nuclear sector. In addition to the Dalton Institute, other universities within the region with nuclear related specialisms include the Universities of Liverpool and Lancaster. The latter co-ordinates the NDA funded Nuclear Graduate Programme, which is backed by more than 20 leading companies and aims to plug a nationwide skills gap in decommissioning.

39. Finally, the Nuclear Technology Education Consortium (NTEC) consortium, coordinated by the Dalton Nuclear Institute, delivers training to meet the UK's projected nuclear skills requirements in decommissioning and clean-up, reactor technology, fusion and nuclear medicine.

Business Support

40. The Regional Development Agencies have carried out an assessment of the costs and benefits of new nuclear build. Construction of a new 3.5GW nuclear power station would cost at least £7 billion with significant opportunities for local companies.

41. Each 3.5GW power station would involve annual income of around £1 billion and would create around 4,000 construction workers over a five year build period and create around 700 permanent jobs operating the facility throughout its 60 year life. The North West region already has over 300 companies who are well established suppliers to the nuclear sector. Many more NW companies are exploring the opportunities to re-enter or diversify into the nuclear sector linked to the new nuclear build programme.

42. Moreover, the global nuclear renaissance will bring considerable opportunities to UK business. NW business with a long and internationally recognised capability in the sector is well placed to benefit.

43. The Nuclear Industry Association is leading a programme of national nuclear supply chain activities, with events taking place at locations around the country with the aim of raising awareness of the opportunities that exist in the nuclear sector and strengthening and promoting the capability of the UK supply chain. Key supply chain companies in the North West include:

— Westinghouse UK Ltd which is pursuing commercial nuclear power business throughout the UK and is one of only two companies to progress their reactor, the AP1000, through the design approval process enabling it to be built and operated in the UK; and

— BAE Systems Submarine Solutions in Barrow which maintains the UK's capability to design, construct and commission nuclear submarines, and which is exploring diversification into the civil nuclear sector.

Partnership arrangements

44. The West Cumbria Strategic Forum is a unique body which was set up in November 2004 in response to the decommissioning of Sellafield, to ensure a common understanding across all the key national, regional and local stakeholders of the socio economic issues, opportunities and threats in West Cumbria. Chaired by the Secretary of State for Energy and Climate Change, it brings together Ministers from the Departments most involved in the nuclear agenda. It has helped agree a long term strategy and action plan under the theme of "Energy Coast" to create a sustainable economy for West Cumbria that matches or exceeds the average economic performance in the North West region. The NWDA has provided funding to support the case for nuclear new build in the sub-region, and expects to invest around £50 million over the next three to four years in Energy Coast-related projects.

4 January 2010

Memorandum from North West Regional Development Agency (NWDA) (NWN 02)

1. *Executive Summary*

— The North West of England is home to one of the world's largest concentrations of nuclear facilities and contains over half of the UK's highly skilled nuclear workers, and world class expertise in nuclear technology research & development.

— The UK is one of only a few countries to close the nuclear fuel cycle and the North West region contains the UK's full fuel cycle capability—uranium conversion, uranium enrichment, fuel manufacturing, two nuclear power stations, spent fuel reprocessing, nuclear waste management and decommissioning redundant facilities.

— Nuclear renaissance, both in the UK and overseas, offers significant potential for the North West economy. Annual turnover for the sector in the region is currently around £3 billion and the industry's growth offers the potential for associated regional increases.

— Nuclear energy is a well established low-carbon technology and is essential as part of the future energy mix if the UK is to achieve targets for reducing carbon emissions and meeting demand for safe, clean, secure and economically competitive energy.

— The North West of England and Yorkshire has been established as the UK Nuclear Low Carbon Economic Areas (LCEA), to be led by NWDA in collaboration with Yorkshire Forward. It has been established with the core objective of ensuring UK business is equipped to maximise the economic opportunities and minimise the costs of transition to a low carbon economy.

— Central Government, industry and public sector partners must work effectively and collaboratively to maintain "on target" delivery of the nuclear new build programme, and associated infrastructure developments, to ensure the UK remains an attractive market of choice for investors.

— The UK was an early world leader in nuclear technology, a position that has been weakened through lack of investment during the 1980's and 90's and recent divestment of UK ownership of fuel cycle capability. The North West, however, retains significant internationally recognised capability and unique expertise in the sector and is well placed to lead a UK revival in the global market.

— A cohesive long-term strategy for the full nuclear fuel cycle is vital to enable long term planning and implementation of the civil nuclear programme, and re-establish the UK at the forefront internationally of nuclear technology. It is considered that the UK should initially target investment in areas of nuclear technology where it maintains significant capability and a unique market offering.

— NWDA recognises the importance of the nuclear sector and will continue to support development of the sector, working with central government, other regions and sub-regional partners, to provide support where it is considered maximum value can be added. In September 2009 the NWDA Board approved its Nuclear Build policy which supports the principle of commissioning new nuclear power stations and confirms that NWDA will work with partners to maximise the economic benefits of nuclear power development.

— The North West of England, with its outstanding heritage and sustained capability in the nuclear sector, is the best placed UK region to provide the drive and leadership to deliver the maximum benefit to the UK economy associated with the global nuclear renaissance. The region contains the UK's full nuclear fuel cycle capability, the main centres of nuclear technology research & development, the focus for delivering the future skills programme for the sector, a well established supply chain and infrastructure and the demonstrated capability to construct and operate three nuclear power stations.

2. *Introduction:*

2.1 The North West has been at the heart of the nuclear programme for over 60 years. The region contains over half of the UK's 45,000 highly skilled workers, several major nuclear sites supported by the relevant well established supply chain, the main UK centres for nuclear research and the infrastructure necessary to support the industry.

2.2 The main centres of nuclear capability in the region are:

— Sellafield—The largest and most complex nuclear site in the UK employing around 10,000. Operations on site include spent fuel reprocessing, fuel manufacture, management of nuclear waste and decommissioning redundant facilities.

— Heysham 1 & 2 Nuclear Power Stations—The UK's largest nuclear generation site, with a total capacity of 2,400MW and around 1,000 employees.

— Springfields Fuels Limited—Employs 1,400 people manufacturing nuclear fuel, intermediate uranium products and uranium hexafluoride. Westinghouse Electric Company, who currently manages the site, is at an advanced stage in negotiations with the Nuclear Decommissioning Authority (NDA) to secure a long term lease of the site and assume ownership of Springfield Fuels Ltd. It is anticipated this agreement will facilitate long-term private sector investment in the site to develop fuel manufacturing capability for the Westinghouse AP1000 reactor for provision to the international market.

— Urenco UK Ltd (Capenhurst)—A leading global provider of enriched uranium and associated technologies, employing 350.

— Low Level Waste Repository—The UK's national Low Level Waste facility.

— Central Laboratory—Situated on the Sellafield site is the flagship nuclear Research & Development facility in the UK, managed by the National Nuclear Laboratory (NNL). Employing around 500 technical staff, it maintains the main UK expert capability in nuclear technology.

— University of Manchester's Dalton Nuclear Institute—A world leading centre of nuclear research and education. The Centre for Nuclear Energy Technology (C-NET), established with NWDA support, is the UK reactor technology centre for academic research. The university is a partner in managing the Nuclear Advanced Manufacturing Research Centre (NAMRC), with the University of Sheffield, and also the NNL, with Serco and Battelle.

— Nuclear Directorate of the Health & Safety Executive—The UK nuclear regulator responsible for the licensing of all the UK's nuclear facilities, authorising reactor designs for deployment in the UK and ensuring the security of the nation's nuclear facilities.

— Nuclear Decommissioning Authority (NDA)—A non-departmental public body headquartered in the North West and established to be responsible for the decommissioning and clean-up of the UK's civil public sector nuclear sites. The estimated cost of the programme is around £70 billion with around two thirds of its annual budget, currently worth £2.8 billion, targeted at sites in the region.

— National Skills Academy for Nuclear (NSA Nuclear)—Headquartered in the region and established through NWDA support, are the UK body for providing an employer led programme to deliver the skilled workers necessary for the UK nuclear programme. Energus, delivered with NWDA support, is the new £21 million flagship centre for NSA Nuclear and is designed to be a world class centre for the provision of skills excellence.

— BAE Systems Submarine Solutions—Employs 5,000 and retains the UK capability to design, construct and commission nuclear submarines.

3. *The effect of expanding the Nuclear Industry on the North West, including the impact on the Economy, Jobs, Skills, Local and Regional Business and the Environment*

Background:

3.1 The region has been at the heart of the UK's nuclear programme for over 60 years and is home to one of the world's largest concentrations of nuclear facilities. The nuclear facilities are supported by a well established supply chain in the region, comprising over 300 companies. The nuclear sector currently contributes around £2 billion to the region's annual gross value added (GVA). NWDA recognises the sector as a priority area in developing the Regional Strategy (RS2010), and we are committed to build on the inherent world renowned capability in the North West's nuclear sector to drive further economic growth across the region.

3.2 It is understood socio-economic studies carried out by Site Licence Companies indicate an approximate 1:4 relationship from nuclear sites to associated economic benefits in the local communities.

Impact from expansion of the industry:

3.3 Economy—There are currently plans by utility companies to construct 16,000 MW of new nuclear capacity in the UK by 2025, at an estimated cost of around £30 billion. Therefore, construction of a new 3,500MW nuclear power station in the region would cost around £7 billion with significant associated opportunities for local companies. The region has four sites in the recently published draft National Policy Statement for Nuclear Power Generation, which identifies a total of 10 sites in the UK that Government considers to be strategically suitable for constructing new nuclear power stations.

3.4 At sub-regional level the economy of West Cumbria is extremely reliant on the nuclear sector, providing around 40% of the area's GVA and 12,000 direct jobs. Britain's Energy Coast Masterplan provides a blueprint for regenerating the area's economy, building on the assets and capability provided by the inherent strength in the nuclear sector. The vision is for the area to become the main UK centre for provision of low-carbon energy technologies and the Masterplan details an interlinked £2 billion programme of projects, designed to create up to 16,000 jobs and boost the area's economic performance by up to £800 million each year.

3.5 Securing at least one new nuclear power station in West Cumbria is essential to Britain's Energy Coast programme and will facilitate major upgrade to the electricity transmission network, which is also an enabler for increasing UK renewable energy capacity.

3.6 Jobs—Estimates provided by EDF Energy for its planned construction of a twin reactor power station at Hinkley Point, in Somerset, indicate that each new nuclear power station would create around 4,000 construction jobs over a five year build period and create around 700 permanent jobs operating the facility throughout its 60 year life.

3.7 New nuclear power creates significant additional opportunities for the region as it is the base for UK fuel cycle operations. Development will be required to facilitate and sustain the new build programme, both in the UK and overseas. NW capability includes; uranium enrichment by Urenco UK Ltd at Capenhurst near Chester, uranium conversion and fuel manufacture by Westinghouse Electric Company at Springfields near Preston, spent fuel reprocessing, fuel manufacture, decommissioning and nuclear waste management by Sellafield Ltd in West Cumbria. This established skills and operational base will provide the potential for new jobs associated with fuel cycle operations required to support the nuclear renaissance.

3.8 Cogent, the sector skills council for science based industries, recently published a report forecasting future civil nuclear workforce requirements, concluding that there will be an industry requirement of around 1,000 new recruits each year throughout the period from 2009 to 2025, mainly as new apprentices and graduates,. The report also confirmed that the NW region retains 53% of the UK civil nuclear workforce overall.

3.9 With the potential for the growth of the established nuclear sector in the region, together with the educational infrastructure delivering nuclear related higher education and apprenticeships, the region will continue to play the major UK role in delivering the future skills requirements and operational activities for the sector.

3.10 Skills—The North West houses the headquarters of the National Skills Academy for Nuclear (NSA Nuclear), the national body established to develop a standardised and coordinated approach to education, training and skills in the nuclear sector.

3.11 In addition, our universities are expanding their teaching programmes to provide even greater focus on the nuclear sector. Examples include the Nuclear Energy Technology Consortium (NTEC) led by University of Manchester's Dalton Nuclear Institute and development of the High Level Skills Partnership, operated by the North West Universities Association (NWUA) and supported by NWDA, which funds foundation and postgraduate degree course development in nuclear topics. NWUA and NSA Nuclear are also providing funding to develop a postgraduate Certificate of Nuclear Professionalism.

3.12 One of the key challenges Cogent identified is that, on average, the nuclear workforce is older than the general workforce, largely due to a lack of investment and recruitment in the sector through the 1980's and 90's. This provides a significant opportunity to attract new talent into the sector in order to meet future demand.

3.13 Business—The region features over 300 companies which are well established suppliers to the nuclear sector. Many more NW companies are exploring the opportunities to re-enter or diversify into the nuclear sector linked to the global nuclear renaissance, providing significant growth opportunities in the region. With an established infrastructure and nuclear supply chain the region's businesses are well placed to capitalise on the opportunities available.

3.14 The region features either the headquarters or regional offices of many major Tier1 and/or Tier 2 nuclear businesses including; Sellafield Ltd, Urenco, Westinghouse EC UK Ltd, EDF Energy/British Energy, Areva, URS Washington, Fluor, VT Nuclear Services, Serco, UKAEA, Battelle, Doosan Babcock Energy, Rolls-Royce, BAE Systems, AMEC, Nuvia Ltd, Low Level Waste Repository Ltd, Energy Solutions, Jacobs Engineering, Studsvik UK Ltd etc.

3.15 Many of these companies are foreign owned which also provides significant opportunity for "reach back" into overseas expertise/capability and potential associated inward investment into the region. Many overseas investors linked to the nuclear sector have already established the region as their UK base.

3.16 Environment—Nuclear energy is a well established, safe and economically competitive method of producing large quantities of low carbon electricity. New nuclear power stations in the UK will also enhance the security of supplies to consumers.

3.17 NWDA is lead Regional Development Agency for the Department for Energy and Climate Change, providing opportunities to promote the work of the RDA network in this area and support the development of national Government policy.

3.18 Three local authorities in West Cumbria (Allerdale and Copeland District Councils and Cumbria County Council) are, to date, the only communities to express an interest to Government in potentially housing a new national deep geological repository for disposal of higher level radioactive waste material. It is expected investment of around £20 billion would be required to construct and operate the facility, with several hundred high value jobs created. Finland and Sweden have identified sites for their own planned deep geological repositories and securing community support has been essential in that process being successful.

3.19 It is anticipated the "legacy benefits package" proposed by Government will also be a key factor in securing local support.

4. *The role of Regional Universities and Education Bodies in supporting the Nuclear Industry in the Region;*

4.1 Many of the regions higher educational facilities are further developing their syllabuses to expand their offer of nuclear related education and nuclear research which is already at the forefront of UK capability, examples include:

- University of Manchester—Has the UK's largest concentration of nuclear research, training and educational activities. Nuclear has been identified as one of its major growth disciplines and in 2005 the university established the Dalton Nuclear Institute to drive forward its ambitions. The university is one of the consortium members (along with Battelle and Serco) selected by Government as the management organisation for the National Nuclear Laboratory, which is based in the region. The Centre for Nuclear Energy Technology, established with NWDA support, provides the focus for research on nuclear reactor systems. The Dalton Cumbria Facility will be a new £20 million facility to focus research and teaching in the field of materials damage from radiation. The university coordinates the Nuclear Technology Education Consortium (NTEC) which delivers training designed to meet the UK's projected nuclear skills requirements and represents over 90% of the UK's nuclear postgraduate training expertise. The university has attracted £8 million of investment, from NWDA and central government, to provide the research facilities needed to operate the Nuclear Advanced Manufacturing Research Centre in partnership with the University of Sheffield.
- University of Cumbria—Energus is the new £21 million flagship centre for NSA Nuclear and provides Quality Assured training for up to 250 apprentices (via Gen II) and works with the University of Cumbria to deliver programmes to around 200 undergraduates and postgraduates.
- University of Liverpool—International reputation in the fields of condensed matter physics, nuclear physics, particle physics and accelerator science.
- Lancaster University—Engineering research on instrumentation and control. Co-ordinates the NDA funded Nuclear Graduate Programme.
- Cockcroft Institute, Daresbury, Cheshire—Incorporates academia, national laboratories and industry in researching, designing and developing particle accelerators.
- UCLan—John Tyndall Institute for nuclear research.
- University of Salford—Joule Physics Laboratory carries out research into nuclear collisions.
- University of Bolton's Centre for Materials Research & Innovation.

4.2 The region's universities also are involved with consortia in delivering national research programmes, including:

- DIAMOND (Decommissioning, Immobilisation and Management of Nuclear waste for Disposal) is a university research consortium focussed on Nuclear Waste Management and Decommissioning.
- Nuclear Engineering Doctorate Programme—Led by the Dalton Nuclear Institute, provides nuclear Research Engineers with industry training.
- KNOO (Keeping the nuclear option open) is a four-year initiative set-up to address the challenges related to increasing the safety, reliability and sustainability of nuclear power and development of skills.

— SPRing (Sustainability Assessment of Nuclear Power: An Integrated Approach) is a university consortium project developing a decision-support framework to assess the sustainability of nuclear power relative to other energy options

5. *Support needed to Maximise the Potential Benefits for Businesses in the Region;*

5.1 It is essential that targeted and coordinated support is provided to de-risk private sector investment and enable companies to maximise the potential benefits associated with the nuclear renaissance. With this aim NWDA is engaged in a series of activities to help enable businesses to effectively compete for work in the nuclear sector, including:

— Funding the NW Supply Chain project which provides targeted technical and business support to companies seeking to engage with the nuclear sector. This project has exceeded its targets in creating or securing new jobs and increasing the turnover of the sector in the region.

— Membership of the steering group of SC@nuclear, the national nuclear supply chain development programme led by the Nuclear Industry Association (NIA).

— Leading development of a Northern Way project to deliver nuclear supply chain development support for companies across the North of England.

— Leading the Nuclear Low Carbon Economic Area which will feature supply chain development and business support as one of its main functions.

— Incorporating nuclear as a priority sector and maintaining key accounts and providing targeted support to nuclear sector companies.

— Working closely with UKTI and the NIA to support overseas and inward investment missions to benefit the UK economy by capitalising on the region's position as the "gateway" to the UK civil nuclear market.

5.2 To capitalise on the extensive nuclear sector capability in the region and maximise economic benefit it is proposed to establish, early in 2010, a NW nuclear cluster organisation to facilitate collaboration between industry, academia and the public sector in areas of mutual benefit such as skills, supply chain development and associated infrastructure development. The cluster, working collaboratively with key stakeholders, will seek to:

— Represent the interests of regional companies (especially SMEs) and provide a means for influencing regional and national policy.

— Develop regional nuclear strategy.

— Provide networking and collaboration opportunities.

— Act as a gateway for NWDA (and other) business support products and market intelligence.

6. *What improvements to the Regional Infrastructure will be needed, including during the Construction Phase;*

6.1 It is a vital prerequisite for new nuclear power stations in the region for a major upgrade of the region's electricity networks infrastructure to be undertaken. The construction and operation of new nuclear power stations would also require targeted upgrading of the housing and transportation infrastructure. Targeted infrastructure upgrades will also be necessary to enable supply chain development and expansion of fuel cycle capability/capacity.

6.2 There are significant socio economic opportunities to create long term benefits for communities associated with the nuclear renaissance. These include the use of expertise in the sector to drive cross sector growth through enterprise and innovation and linked investment in housing, transport, education and healthcare.

6.3 NWDA has joint responsibility with 4NW to prepare the single Regional Strategy for the Northwest, known as RS2010, which will incorporate the Northwest Regional Economic Strategy, the Regional Spatial Strategy and the Regional Housing Strategy.

6.4 The Strategy will bring together environmental, social and economic priorities and reflect the Northwest's long-term commitment to sustainable growth. The draft Part 1 of the document is now out for consultation and proposes that for the region to make progress towards sustainable economic growth, it must take forward nuclear and renewable energy opportunities.

7. *What are the Arguments For and Against each of the Proposed Four Sites announced on Monday 9 November 2009*

7.1 NWDA is non-biased about site selection in the region. Government has followed a detailed site assessment process to incorporate sites into the draft National Policy Statement on Nuclear Power Generation. Selection of sites for new nuclear power stations will be the responsibility of developers, following the statutory processes identified in the Planning Act 2008.

7.2 We welcome the opportunity to continue working with developers and local communities to maximise the benefits associated with siting new nuclear power stations in the region, whilst taking account of the wider emerging aims and objectives of RS2010.

7.3 At this stage we believe that all four NW sites listed in the draft National Policy Statement (NPS) should progress to the final NPS on merit. However, we accept the consultation process is ongoing and that unforeseen issues may yet arise.

8. *What Lessons can be Learnt from Earlier Commissioning Experiences;*

8.1 Significant opportunities exist to apply learning from experience associated with recent major construction projects, or construction projects that will happen in advance of new nuclear power stations in the UK, such as the project delivery structure, procurement, short term infrastructure and socio economic impact, and collaborative working. These include the construction of;

— Sizewell B, in Suffolk, commissioned in 1995. This is the only Pressurised Water Reactor to be constructed in the UK and was the last civil nuclear reactor. (Oxford Brookes University has conducted research into the socio economic impact associated with the construction of Sizewell B).

— The THORP complex at Sellafield. This was a relatively recent major construction of a nuclear facility in the region on the same scale as a new nuclear power station and in West Cumbria, which has three sites nominated in the draft National Policy Statement for Nuclear Power Generation.

— New nuclear power stations overseas—Areva EPR in France, Finland and China. Westinghouse AP1000 in China and the US.

— That associated with the 2012 Olympics. (The Olympic Delivery Authority can provide key recent learning in terms of collaborative working from companies and approaches to sustainable major developments).

9. *The role of Regional Bodies, and Partnership Arrangements between such Bodies, in Maximising the Potential Benefits and Minimising the Negative Impacts of expanding the Nuclear Industry in the North West.*

9.1 There exists a wide range of interactions which will need to be coordinated or developed in order to maximise the economic benefits associated with the nuclear programme, including;

9.2 Nuclear Energy Low Carbon Economic Area covering NW and Yorkshire. At national level NWDA will lead, in collaboration with Yorkshire Forward, the Nuclear Low Carbon Economic Area (LCEA) launched as a component of the UK Low Carbon Industrial Strategy to *"accelerate low carbon economic activity in areas where existing geographic and industrial assets give clear strengths"*.

9.3 The NW Nuclear LCEA will:

— Be primarily driven by the need to ensure that UK companies gain the maximum opportunities from the new build, and future, programmes.

— Be a platform for inter-regional cooperation and joint working for supply chain support.

— Provide a communication route from business/RDAs to BIS/DECC on nuclear issues, giving a route for policy input for the Government's low carbon agenda.

— Position the NW as the UK gateway for inward investment and overseas trade and focusing limited Government support where it can add most value.

9.4 NWDA will also provide the lead for national Manufacturing Advisory Service capability in supporting nuclear programme.

9.5 The Nuclear LCEA for the UK will build on existing strength in the NW. Planned developments in both the NW and Yorkshire will firmly establish the North of England as a vibrant, internationally recognised centre of excellence for the nuclear industry in the 21st century. The extensive range of world class expertise and capability on offer covers the full range of activities incorporating full nuclear fuel cycle operations, manufacturing, construction and operation of new power stations, a well established supply chain, skills development and research and development.

9.6 NW Nuclear Cluster Organisation—Discussed earlier in this document.

9.7 NW Science Council—Northwest Science encourages the commercial exploitation of technology and science across sectors and helps business realise the benefits associated with investment in R&D. Nuclear has been identified as a priority sector where a strong industry cluster converges with a strong science base. The council, supported by NWDA, targets support to academia and industry in the nuclear sector to provide the maximum benefit to business and encourage and develop collaboration with research and development capability.

9.8 Membership on Regional and National Forums—NWDA retains existing membership or is facilitating new membership on the following fora and will be ideally placed to influence national and regional nuclear strategy through:

— Chairing the Nuclear LCEA Steering Group.

— Membership of the NW Nuclear Cluster Organisation.

— Membership of the NSA Nuclear NW/NE Employer Steering Group.

— Membership of numerous NIA Steering Groups—Legal Affairs, Nuclear Export Group, New Nuclear Build, Supply Chain Development and Decommissioning.

— Proposed membership (probably through Nuclear LCEA leadership) on the Office for Nuclear Development's Nuclear Development Forum (NDF), chaired by the Secretary of State for Energy & Climate Change.

— Membership of the North West Science Council—Nuclear Sub-Committee.

9.9 Nuclear Centre of Excellence (NCE)—The NCE maintains a close relation with the Nuclear LCEA in collaboratively considering economic development, research activities associated with developing proliferation resistant advanced fuel cycle and promoting access to nuclear technology for peaceful use. NWDA have contributed to the draft business plan for establishing and sustaining the NCE.

9.10 The NWDA Board has approved a regional Nuclear Policy Statement outlining support to the sector. NWDA also chairs or supplies membership to the region's key economic development forums including; the Joint Economic Commission, the Regional Economic Forum and the Regional Economic Forecasting Panel.

9.11 NWDA/Sub-Regional Partners—NWDA works closely with all sub-regional partners to help them develop their business plans, ensuring a coherent and collaborative approach to economic development. All five sub-regions are well positioned to benefit from nuclear renaissance:

— Cumbria—UK's largest concentration of nuclear facilities and capability in West Cumbria.

— Lancashire—Heysham 1 & 2 nuclear powers stations, Springfields Fuels Ltd and the headquarters of Westinghouse UK Ltd.

— Cheshire-Warrington—UK's largest concentration of nuclear supply chain capability around Warrington, Urenco (Capenhurst) near Chester.

— Greater Manchester—University of Manchester and supply chain capability.

— Merseyside—Nuclear Directorate and supply chain capability.

9.12 Northwest Energy Council is a high level strategic advisory body which develops policy and strategy for NWDA interventions in the energy sector and highlights the need for funding allocation to energy projects.

9.13 The West Cumbria Strategic Forum, chaired by the Secretary of State for Energy and Climate Change, provides common understanding of the key national, regional and local stakeholders of the socio economic issues associated with West Cumbria.

4 January 2010

Memorandum from North West TUC (NWN 03)

Introduction

1. This submission is made by the North West Regional Council of the TUC[i] following consultation particularly with unions that have most experience of working with employers in this sector,[ii] but it also reflects our wider view of the need for a balanced energy policy and of the significance of good quality science based jobs to sustainable development in the region.

Summary

2. The main points of our submission are:

— Nuclear has provided, and will continue to provide, long term sustainable jobs.

— The North West supports the whole nuclear cycle.

— We have concerns over the age profile of the current workforce.

— Collaboration between all stakeholders is essential for success.

Future Growth

3. Any future growth in the North West economy will largely be dependent upon the private sector. With the nuclear renaissance we have the ideal opportunity to build on and grow what is already a key sector for our Region. Nuclear has provided, and will continue to provide, long term sustainable jobs which support a diverse skills base ranging from support and operator roles to those at a higher degree level.

4. The nuclear industry is one of the good employers. They are very highly unionised, we have stable industrial relations. The employers train and develop staff to a high level, and the employers focus on safety and the environment. These are the sort of employers that the North West welcomes.

Significance of the North West to the Nuclear Sector

5. We have the expertise, and a skills and knowledge base, that is the ideal springboard for attracting worldwide investment and growth to a world leader status. The North West supports the whole nuclear cycle:

- Conversion (Springfields, Preston).
- Enrichment (Urenco, Wirral).
- Fuel fabrication (Springfields).
- Generation (Heysham).
- Reprocessing (Sellafield).

We also have all the other key elements in the nuclear chain:

- Waste storage (LLWR, Drigg).
- Clean up and decommissioning (Springfields, Capenhurst, Sellafield).
- Engineering support (Risley, Birchwood, Chorley, West Cumbria).
- Contractors and the supply chain) as above, and the rest of the North West region).
- Regulators (NII, EA, NDA).
- R&D (Westlakes Scientific Consulting, National Nuclear Laboratory in West Cumbria, Preston and Risley).
- Skills and Training (GEN II, University of Manchester, UCLan, University of Cumbria).

6. The total civil nuclear workforce in the UK is presently 44,000 of which just over 52% are in the North West. Of these, 95% are regarded as skilled, technician, professional and managers. The economic importance of these jobs, and their spending power in local communities, must not be underestimated.

Working Together

7. Of concern is the age profile of the current workforce and the inter-related issue of a limited labour market. A recent COGENT report stated: "The retirement projections are most severe for the more experienced personnel …. it is evidence of the need for longer term commitment to manpower and training to attract and retain the industry's suitably qualified and experienced personnel." Over half the workforce, many at a higher skill level which the industry demands, will be lost by 2020–25 which is a period key to new build and nuclear cycle support activities.

8. Looking at the above, the need for collaboration between employers, the HE and FE sectors are vital. We want to see continued public sector financial support for the National Skills Academy Nuclear; private sector support is already in place. We also need to highlight engineering skills and opportunities in schools and encourage more women in particular into the industry.

9. Collaboration between investment agencies is also essential. The Northern Way is a good example, but this collaboration is also required at sub-regional level to ensure that the wider supply chain opportunities for the North West are maximised.

23 December 2009

References

[i] The NW TUC represents some 50 individual affiliated trades unions in the North West with a combined membership of around 800,000. Trade union density in the North West is higher than the national average and trade union agreements directly cover more that half the workforce.

[ii] Prospect is a trade union representing 102,000 scientific, technical, managerial and specialist staff in the Civil Service and related bodies and major companies. In the energy sector we represent scientists, engineers and other professional and specialist staff, including 15,000 members in the nuclear and radioactive waste management industries. Unite is the UK's largest trade union with two million members across the private and public sectors. The union's members work in a range of industries including manufacturing, financial services, print, media, construction, transport, local government, education, the health service and not for profit sectors. GMB is the UK's third largest trade union with 600,000 members employed in virtually every

sector of the economy. GMB is the largest trade union in the energy sector with membership employed throughout the UK in the nuclear, coal, electricity, gas, oil and renewables industries, undertaking activities ranging from production and distribution to retail and service. Regardless of where they are employed, our members are also all energy consumers. GMB represents over 3,000 members employed on nuclear reprocessing, recycling and decommissioning at Sellafield and has strong links with both the nuclear industry and the community in West Cumbria that have developed over some 50 years.

Memorandum from the Nuclear Decommissioning Authority (NWN 04)

1. Introduction to The Nuclear Decommissioning Authority

The Nuclear Decommissioning Authority (NDA) is a non-departmental public body which was established by the Energy Act 2004 and became operational in April 2005. Our sponsoring department is the Department for Energy and Climate Change and for some aspects of our functions in Scotland we are also responsible to Scottish Ministers. We remain accountable to Parliament for our operations through the Secretary of State.

We are responsible for and legally own the 19 former UK Atomic Energy Authority and BNFL sites in Great Britain. As a strategic authority we set the overall approach and, through working with others, we focus on the objectives set out in our Business Plan. We are working closely with our stakeholders to produce our second strategy document which we will consult on later this year, prior to its publication by March 2011.

We were established in order to deliver the Government's commitment to dealing effectively with the nuclear legacy and are responsible for driving substantial change to improve delivery and cost efficiency in a large and complex industry. Our mission is to:

> *Deliver safe, sustainable and publicly acceptable solutions to the challenge of nuclear clean up and waste management. This means never compromising on safety or security, taking full account of our social and environmental responsibilities, always seeking value for money with the taxpayer and actively engaging with stakeholders.*

In simple terms, our job is to decommission the nuclear facilities that the country has created over the past fifty years or so, and to develop a waste management infrastructure to reduce the risks to this and future generations. In carrying out this vital and complex task, safety, security, environmental responsibility and value for taxpayer's money are our top priorities. In practice, our core activities fall into five primary work streams:

— *Site restoration:*
Characterising, retrieving and making passively safe highly radioactive and hazardous material; decommissioning and cleaning-up redundant nuclear facilities across the civil nuclear estate.

— *Spent fuel management:*
Transporting, storing and, in some cases, reprocessing spent fuel from the UK's first and second generations of nuclear power stations (Magnox and British Energy's fleet) and, in doing so, safeguarding 20% of the UK's electricity supply.

— *Nuclear materials:*
Developing sustainable solutions to deal with the UK's stockpile of plutonium and uranium resulting from the fuel cycle. We have worked with our stakeholders to develop a range of potential strategies to manage the UK civil stockpiles of these materials to support the development of Government policy in this area.

— *Integrated waste management:*
Packaging, storing and ultimately disposing of low, intermediate and high level radioactive waste including development of the geological disposal facility (GDF). This is also a key enabler for nuclear new build.

— *Business optimisation:*
Maximising the value of assets under our control in order to contribute to meeting the costs of the NDA programme. Without in any way compromising safety, the NDA continues to control costs, drive efficiency and deliver value for taxpayers' money. In our first four years of operation the NDA has made cumulative efficiency savings of £625 million, with £5.9 billion of income secured from our commercial assets.

We have a number of other areas of activity which we describe as critical enablers in the delivery of our mission:

— through competition introducing international companies to the UK nuclear decommissioning supply chain to improve performance and bring innovation;

— investing in nuclear skills and R&D;

— learning from and sharing international best practice with other nuclear countries; and

— working with communities to address the socio-economic impacts of the decommissioning programme.

In order to deliver this programme of work our spending requirements during the current Comprehensive Spending Round (CSR07) period amounted to £8.4 billion. This comprised approximately £5.1 billion from Government grant-in-aid and £3.3 billion from commercial income.

2. The NDA Estate in the North West

The UK's civil nuclear industry is rooted in the North West both in terms of workforce expertise and through a number of sites within the ownership of the NDA, as such it makes a significant contribution to the region's economy.

The North West, and Sellafield in particular, dominates our estate in terms of expenditure. Of our total planned expenditure in 2009–10 of £2.8 billion, our sites in the North West account for over £1.6 billion. This is broken down as follows:

Sellafield (including Calder Hall and Windscale)	£1,225 million
Capenhurst	£19 million
LLWR	£37 million
Springfields Fuels	£328 million

Headquarters

The NDA's national HQ is based in West Cumbria and employs around 250 people directly. When first established approximately half of that workforce were recruited locally with the remainder relocating to the area from various parts of the country.

The NDA sites are managed by Site Licence Companies with small teams of NDA staff working directly with SLC management teams. The NDA has a team based on the Sellafield site, with a separate office in Warrington that in the main provides the links to other northern, Welsh and Scottish sites (except Dounreay).

Sellafield

Sellafield, located in West Cumbria is large, complex site that has supported the nuclear power programme since the 1940s. Current operations include both commercial and decommissioning activities. They include the reprocessing of fuels removed from nuclear power stations, Mixed Oxide fuel fabrication and the storage of nuclear materials and radioactive wastes.

The site also encompasses the world's first commercial nuclear power station, Calder Hall, which ceased generation in 2003, and Windscale, which comprises three redundant reactors. Both Calder Hall and Windscale are currently being decommissioned.

The site employs around 12,000 people and supports an active local supply chain. With expenditure on site of approximately £1.2 billion as both an employer and business the site is a major driver of the West Cumbrian economy.

At present an updated Lifetime Plan of operational activity across the site is being developed and should be finalised during the Spring 2010. This will provide updated workforce profiles that will be used to help inform further socio economic studies of the impact of site activity on the local economy.

The SLC, supported by its parent body (Nuclear Management Partners), hopes that by developing a world class site and workforce that successfully delivers the NDA mission, Sellafield will become a "site of choice" for future nuclear missions. Nevertheless, Sellafield, like our other sites, needs to improve its efficiency and effectiveness and has been targeted to reduce the proportion of its spend on overhead and support costs in order to release funds to deliver decommissioning.

Capenhurst

Capenhurst is located near Ellesmere Port in Cheshire, adjacent to Urenco (the Uranium Enrichment Company). It was home to a uranium enrichment plant and associated facilities that ceased operation in 1982. Now in decommissioning, the site forms part of the Sellafield Ltd SLC and employs around 200 individuals. Work is underway to investigate how it can maximise its assets—land, uranic materials and people—to accelerate overall hazard reduction, generate greater value for the UK taxpayer and potentially grow new business.

Engineering Centre at Risley

Around 1,300 individuals are employed at an Engineering Centre in Hinton House at Risley near Warrington, which too forms part of the Sellafield SLC. In the main Hinton House hosts the specialist engineering design capability to support major development projects for Sellafield Ltd.

Springfields Fuels

Springfields is located near Preston and manufactures nuclear fuel and fuel products for the UK's nuclear power stations and for international customers, currently employing around 1,000 individuals. Fuel manufacture is scheduled to continue until 2023, and Springfields is also undertaking decommissioning activities. Springfields Fuels Ltd is the SLC and is owned by Westinghouse Electric UK Ltd, part of the Toshiba group.

The NDA is required to maximise the value of its commercial assets and the global nuclear renaissance has enabled the NDA to explore possibilities for extracting greater value from Springfields than was previously envisaged. The NDA is now in advanced discussions with Westinghouse over a deal that would provide excellent value for money for the taxpayer whilst also providing Westinghouse and the Springfields' workforce with the opportunity to develop future business opportunities.

Low Level Waste Repository

West Cumbria is also home to the country's only Low Level Waste Repository, some seven miles south of the Sellafield site. A separate SLC, LLWR Ltd, operates the site, its Parent Body is UK Waste Management Ltd. The SLC is also working closely with the NDA on the development of a long term national strategy for the future disposal of low level waste.

This could well see the introduction of commercial waste operators to the marketplace particularly in the area of Very Low Level Waste management (VLLW). The enhanced use of recycling and reuse to mitigate the amount of material finally disposed of, could see the significant extensions to the potential life of this site.

Direct Rail Services Ltd (DRS) & International Nuclear Services Ltd (INS)

These two companies, subsidiaries of the NDA, both have their HQs in the North West in Carlisle & Risley respectively.

DRS have responsibility for the transport of nuclear waste and materials across the UK rail network.

INS manage the international aspects of commercial contracts, including transport. They use DRS as a contractor, and for international maritime transport contract with Pacific Nuclear Transport Ltd (PNTL) and have access to a NDA owned vessel. PNTL are partially owned by the NDA.

3. Skills and Socio—Economic Support

The NDA has been active in securing a robust infrastructure to support the development of a sustainable skilled workforce to deliver its mission. Over a five year period some £35 million will have been invested in a range of initiatives, this investment has leveraged significant additional funds from other sources to support infrastructure development.

A true partnership approach has been adopted within the nuclear industry and with strategic education and skills-based organisations, such as Universities, local colleges and training providers, including of course the National Skills Academy for Nuclear which has its HQ in West Cumbria. Partnership approaches at both an operational and strategic level are essential to the successful implementation of the overall NDA Skills and Capability strategy, which was published in November 2008. A previous appearance before the IUSS Select Committee suggested that the approach adopted by the NDA for its mission could be a model for new nuclear, with many of the skills being transferable.

We are also actively developing an industry-wide People Plan to meet the wider human resource implications of recruitment, retention and developing a world class workforce.

Energus

Energus is a £20 million development (including a £5 million contribution each from NDA and Sellafield Ltd) that has delivered an iconic education, training and management centre for the nuclear industry in West Cumbria at Lillyhall Industrial Estate. Opened in June last year, the centre is the NW flagship for the delivery of NSAN courses. Its engineering workshops are used to train Sellafield and other nuclear related apprentices and its lecture theatre and other facilities have been used to host major conferences. The centre itself will have a key role to play in supporting the education and training needs for the future of the industry.

University of Cumbria

The NDA has invested £10 million in supporting the development of a University of Cumbria presence in West Cumbria. This is currently based in Energus and through a Learning Gateway provides access to UOC courses for West Cumbria students. New courses particularly in the fields of engineering etc are likely to be developed and delivered in West Cumbria.

Dalton Cumbria Facility

To be based at Westlakes Science and Technology Park this is a £20 million joint investment project between the NDA and the University of Manchester's Dalton Institute.

The facility will be an academic centre of postgraduate study in the fields of Decommissioning Engineering and Radiation Sciences. Construction should begin in the Spring of this year. Lead professors have been recruited and when fully operational some 40 post graduate students will study at the centre on a rolling programme of activity. The resulting research outcomes will be highly important for the development of future technologies for the industry.

Britain's Energy Coast Campus

To date the NDA has led on the coordination of this skills infrastructure within the overall context of the Energy Coast vision. The aim is to create a network of provision to support the needs of the industry going forward under an overarching banner of Britain's Energy Coast Campus.

Work is ongoing on a strategic approach to maximise the use of business development sites such as Westlakes & Lillyhall, develop the relationships between the initiatives referred to above and programmes such as the National Nuclear Laboratory and other educational offerings by the universities of Central Lancashire (UCLAN) and Lancaster.

The NDA has a role to work with local, regional and national partners to mitigate the impact of its work on local communities close to our sites. A national Socio-economic policy has been approved by Government, and West Cumbria, given the dominance of the industry, has been adopted as one of four priority areas for action.

In delivering that responsibility the NDA is fully committed to supporting the aspirations of the Energy Coast initiative. In partnership with Sellafield ltd and Nuclear Management Partners we will target resources to projects identified through the Energy Coast programme. Each organisation has a seat on the West Cumbria Britain Energy Coast Board and also provides additional professional expertise and support.

4. Other Possible Opportunities

Strategy Development

The initial NDA Strategy was approved by Government in April 2006, in accordance with legislative requirements a new Strategy is due to be approved by April 2011. The NDA is already involved in ongoing consultation on arrange of topics before a final consultation is launched later this year. Potential strategic decisions on key issues such as the future use of Plutonium, Nuclear Materials and Spent Fuel Management could have significant implications for the area.

New Nuclear Build

The NDA recently sold land adjacent to Sellafield to a potential new nuclear developer. The sale will result in an upfront payment of £19.5 million for the NDA, followed by a further payment of at least £50.5 million in the next six years. The sale is part of the NDA's programme of asset disposals, all raising funds which the NDA can put towards its core mission of decommissioning.

This land, as well as two other sites in West Cumbria, has been nominated onto the list of 10 proposed sites for new nuclear power stations in the Government's consultation process.

Geological Disposal Facility

Government policy for the long term management of higher activity wastes is geological disposal coupled with safe and secure interim storage and ongoing research and development to support its optimised implementation. This was arrived at following extensive public consultation and is consistent with the approach adopted by the majority of other countries facing similar challenges.

The Government set out a framework to implement the geological disposal policy in the *Managing Radioactive Waste Safely (MRWS) White Paper* published in June 2008.

This includes a flexible site selection process based on voluntarism and partnership. Experience around the world in developing geological disposal facilities demonstrates that this approach is likely to be the most successful way to develop a safe, secure, and environmentally acceptable facility that secures public confidence.

The MRWS White Paper sets out a step-by-step site selection process. The various stages are as follows:

— Stage 1: Expression of interest, corresponding to the period up to the point where a community decides to open up without commitment discussions with Government.

— Stage 2: Initial screening out of unsuitable areas.

— Stage 3: Community consideration leading to Decision to Participate.

— Stage 4: Desk-based studies in participating areas.

— Stage 5: Surface investigations to identify a preferred site.

— Stage 6: Underground operations.

Formal "expressions of interest" by communities about potential involvement, which is the first step in the process, have already been received by the Government. A West Cumbria MRWS Partnership has been established as an advisory body which aims to:

> *"make recommendations to Allerdale Borough Council, Copeland Borough Council and Cumbria County Council on whether they should participate or not in the geological disposal facility siting process, without commitment to eventually host a facility".*

As set out in the MRWS White Paper, one of the requirements will be for Government to provide a benefits package to a host community. Construction and operation of a geological disposal facility will be a multi-billion pound project that will provide skilled employment for hundreds of people over many decades. It will contribute greatly to the local economy and wider socio-economic framework. There could be spin-off industry benefits, infrastructure benefits, benefits to local educational or academic resources, and positive impacts on local service industries that support the facility and its workforce. It is also likely to involve major investments in local transport facilities and other infrastructure, which would remain after the facility had been closed. In addition there may be other benefits which may be commensurate with developing the social and economic wellbeing of a community that has decided to fulfil such an essential service to the nation.

5. Conclusion

The existing and potential future activities of the NDA and its broader estate have significant impacts on the regional economy. We would be happy to provide further detail or oral evidence on any of the issues covered in this submission.

11 January 2010

Memorandum from the National Skills Academy for Nuclear (NWN 05)

1. Introduction

The strength of the nuclear industry in the North West with the largest concentration of nuclear facilities in the UK with over 45,000 employees is reflected in the strength and expertise of the skills base.

The region has strengths in higher education, further education and amongst its training provider base. The National Skills Academy Nuclear has its head office in the region.

This recognised strength was reflected in the recent Government announcement for wide-ranging plans to bolster the UK's nuclear industry through the creation of a nuclear manufacturing hub in the North West and Yorkshire, designed to ensure that British firms benefit from the proposed rollout of a new fleet of nuclear reactors.

Sheffield will host the UK's new Nuclear Advanced Manufacturing Research Centre, a major research institute backed by the Universities of Sheffield and Manchester and supported by engineering giant Rolls-Royce with close links to the National Skills Academy for Nuclear.

In addition to the new centre, which is backed by £15 million in government funding and £10 million from the Yorkshire Forward development agency as well as funding from a number of industrial partners a further £8 million would be provided to upgrade the nuclear laboratories at Manchester University's Dalton Nuclear Institute.

Yorkshire and the North West have also been designated as the UK's third low carbon economic area. As part of its new LCEA status, manufacturing companies operating in the region will be offered advice and support from the North West Development Agency and Yorkshire Forward to help them access the nuclear energy market.

This feedback focuses predominantly on skills, training and education.

2. Key Strengths and Assets in the NW for Skills, Education and Training

2.1 *National Skills Academy for Nuclear*

The employer led National Skills Academy for Nuclear is a Private Ltd by Guarantee Company which is a wholly owned subsidiary of Cogent Sector Skills Council; it was formally launched by Ministers on 31 January 2008. It has been established by employers to address the key skills, training and recruitment challenges facing the nuclear industry to ensure it has a skilled workforce that can operate safely and

effectively to address the current challenges of operations, fuel cycle, waste management, defence and decommissioning and the future challenges and opportunities of New Nuclear Build and Deep Geological Disposal. It is an exciting time for the nuclear industry and the Skills Academy is working to support the industry to realise its full potential by addressing these workforce challenges. The NSA Nuclear has its head office in Cockermouth in Cumbria.

2.2 *What will Skills Academy do?*

The Skills Academy, currently in its second year of operation is playing and will continue to play a transformational role for the sector. The changing skills mix required by the nuclear sector, demands increased flexibility and mobility. As the transition from operating, to decommissioning, through to new build takes place, a flow of matching skills are required. The National Skills Academy for Nuclear is addressing these needs by:

— Developing a portfolio of solutions and products focusing primarily on addressing the acute gap in technical and vocational skills.

— Developing transferability and common standards through the Nuclear Skills Passport and the National Occupational Standards. This standardisation will enable a portability of employment between SLC sites, which will help to address the peaks and troughs of work/demand across the industry.

— The Nuclear Skills Passport will also be used to drive up skills and standards across the sector by creating a bar level of entry for all working with and in the industry including the breadth of the Supply Chain.

— Increase the return on training investment by employers by co-ordinating and quality assuring the provision on offer.

— Establishing a High Quality Provider network to deliver the employer required Skills Academy programmes across the UK.

— Develop and deliver innovative employer demanded courses and programmes such as the Award for Nuclear Industry Awareness, which will provide all new entrants to the sector with a sound knowledge of the industry and key considerations for working in the sector.

— Encouraging the continuing delivery of Foundation Degrees and supporting the development of a scheme to convert Foundation Degrees to Honours Degrees.

— Working with schools via the Energy Foresight Programme and other partners to increase the number of young people studying STEM subjects.

— Working with Cogent SSC on the Career Pathways, the Trade Unions Aim Higher project (to help colleagues know more about opportunities in further and higher education) and the Nuclear Industry Training Framework (NITF). This will create a clear pathway visible to employees within the Nuclear Industry and potential employees outside of the industry can see how their futures may be structured.

Working with University partners (through a lead Higher Education Institution) to develop new Higher Level provision to enable onward progression. Including the development of a Post Graduate "Certificate of Nuclear Professionalism", to ensure that graduates have the right skills, attitudes and behaviours to work safely and professionally across the sector.

2.3 *North West NSA Nuclear High Quality Provider Network: Key Programme Developments*

2.3.1 Award for Nuclear Industry Awareness Launched Online

The National Skills Academy for Nuclear has recently introduced the Award for Nuclear Industry Awareness. The Award has been designed with industry involvement to provide people who are embarking on a career in the nuclear sector including, apprentices, graduates, people transferring to the nuclear sector and non nuclear personnel, with a foundation level of understanding of the industry and its specific requirements. The Award will also be of benefit to those in the industry who wish to have a broader awareness and wish to gain recognition of their knowledge of the Nuclear Sector.

As a level 2 qualification, the study time for the Award is around 70 hours. Final assessment is via a two hour examination at one of the Skills Academy selected exam centres approved by the Awarding Body PAA\VQ-SET. The exam centres are based throughout the UK and upon enrolment candidates will have a choice of examination venue and date. The Award for Nuclear Industry Awareness will also be available as a classroom based course via the Skills Academy's Quality Assured Training Providers from 2010. The award is now on the Learning Aims Database and is fundable by the LSC.

2.3.2 Community Apprenticeship

The NDA (Nuclear Decommissioning Authority) funded Community Apprenticeship scheme has been introduced to enable supply chain companies working within the nuclear sector to take advantage of additional funding to take on Apprentices for the first time or grow additional Apprentice skills for their business, enabling continued and better resource capability to support the Nuclear Site Licence companies to achieve their delivery objectives safely to time and cost. In the north of England the providers are: Provider GEN II, Training 2000 & TTE Ltd—(Northwest/Northeast)

In addition the NSA working with providers and awarding bodies has also developed the following vocational programmes:

— NVQ Level 2 in Nuclear Decommissioning provider GEN II (Northwest/Northeast).

— NVQ level 2 in Radiation Protection Providers: Bridgwater College (Southwest).

— NVQ Level 3 in Nuclear Decommissioning GEN II (Northwest/Northeast.

Providers on intermediate skills in the North West include: GEN II, Training 2000 & TTE Ltd.

2.4 *Provider Network*

2.4.1 TTE Ltd (Training Tomorrows Engineers)

Established at Ellesmere Port, Cheshire in 1990, TTE Training Limited provides training predominantly for companies in the Chemical, Process, Power, Engineering, Paper, Pharmaceutical and Food industries. The business has developed to become one of the UK's leading providers of engineering apprenticeship programmes and other related training to industry.

2.4.2 Springfields Engineering Apprentice Centre

Springfields Fuels Ltd (SFL) is committed to its engineering training programmes, and in particular the training of apprentices. It sees the apprenticeship scheme as an investment for the future of the organisation's maintenance and engineering teams. SFL has been a workbased learning provider since 1997 and is able to offer a number of external apprentice placements for SME's within the local area. Springfields is capable of adapting its programme to accommodate specific skills/activities requested by clients. The engineering training group provides a variety of courses through an adult engineering training programme.

Springfields has expanded its Apprenticeship programme in recent years and the LSC has recently approved (November 2009) a capital application submitted via the NSA to refurbish the Apprenticeship training facility at Springfields.

2.4.3 Gen II

Cumbria based GENII's vision is to be a major force for improving the UK's engineering & technological skills base, by providing uncompromising excellence & expertise in vocational education and training. The company was predominately formed as an apprentice engineering and technology training provider to deliver high quality apprentice training to both the partners and to the wider community. Since its formation GEN II has developed a wide range of services in engineering and technology training for employers as well as maintaining its apprenticeship core business. Working closely with the Learning Skills Council (LSC), GEN II achieved CoVE status which covers the Nuclear Engineering and Technology sector. GEN II are currently training over 500 Apprentices.

2.4.4 Blackpool and The Fylde College

Blackpool and The Fylde College facilities are among the best in the Fylde area and indeed the whole of the UK. The key area of activity with the industry is in engineering and they are engaged with a number of key supply chain companies.

2.4.5 Lakes College

Lakes College is based in West Cumbria their mission is to work in partnership to deliver high quality education and training, and to be the lead provider, contributing to the local economy and community developmentAt Lakes College West Cumbria students are taught everything from basic skills through to post graduate level subjects on a full or part-time basis, either in college, at centres near to where they live, in their workplace or even at home.

2.4.6 Training 2000

Training 2000 is the North West's largest and most successful independent work based learning provider of training courses. They have particular strengths in engineering and are working closely with a large number of key nuclear supply chain organisations. Training 2000, established over 40 years ago, is a charitable trust set up by a consortium of Lancashire businesses. They have built an enviable portfolio of clients throughout the UK and Internationally by creating high quality solutions through the application of training.

2.4.7 National Nuclear Laboratory

The National Nuclear Laboratory (NNL) demonstrates Government commitment to protect and grow the UK's national nuclear technology capability. NNL holds an unrivalled breadth of technology expertise, including many skills unique to the UK. NNL, headquartered in the Northwest of England, is managed by a consortium containing Battelle, University of Manchester and Serco. NNL's Central Laboratory at Sellafield is the flagship nuclear R&D facility in the UK supporting new reactor build, reactor operation, fuel processing plants and decommissioning and clean-up. Some 500 staff at the £250 million purpose built facility run a wide range of radioactive and non-radioactive experimental programmes as well as offering a wide range of analytical services. NNL continues to build relationships with academia and strengthen the quality of nuclear related skills coming into the industry via their University Research Alliances (URAs).

2.4.8 Higher Education in the North West

The Nuclear Technology Education Consortium (NTEC) consortium, coordinated by the Dalton Nuclear Institute, delivers training designed to meet the UK's projected nuclear skills requirements in decommissioning and clean-up, reactor technology, fusion and nuclear medicine. NTEC comprises the universities of Birmingham, Lancaster, Leeds, Liverpool, Manchester, Sheffield, City University, London, HMS Sultan, Imperial College London, UHI Millennium Institute & Westlakes Research Institute. Together NTEC represents over 90% of the UK's nuclear postgraduate teaching expertise.

The Higher Level Skills Partnership, operated by NWUA, supported by HEFCE and NWDA, funds foundation and postgraduate degree course development at the UCLan and is funding, with NSAN, the Open University to develop a postgraduate Certificate of Nuclear Professionalism.

Programmes specifically developed by the NSA nuclear in conjunction with HEIs include:

— Foundation Degree Nuclear Decommissioning.

— Foundation Degree in HVAC Energy Engineering/Foundation degree in Construction and Civil Engineering.

— Foundation degree in Nuclear Related technology.

— Foundation Degree in Nuclear Related Technology (Instrumentation & Control).

— Foundation Degree in Nuclear Related Technology (Commissioning & Maintenance).

— Foundation Degree in Nuclear Related Technology (Science & Process).

3. Academic Research Expertise

The University of Manchester has ambitious plans to become one of the world's leading academic institutions and nuclear research has been identified by the university as one of its major growth disciplines. The university already has the UK's largest concentration of nuclear research, training and educational activities and, in 2005, formed the Dalton Nuclear Institute to drive forward its ambitions. The portfolio of nuclear research educational activity has ramped up significantly and now stands at around £100 million involving 200 researchers. The University of Manchester, via the Dalton Nuclear Institute, is undertaking a joint £20 million investment to establish a world class teaching and education facility in West Cumbria, linked with access to NNL's Central Laboratory. The facility will be equipped with state of the art equipment predominantly in the field of radiation sciences and the study of radiation damage of materials.

The Centre for Nuclear Energy Technology, established with NWDA support, provides the University of Manchester with a reactor technology centre that will bring together a number of capabilities required to support academic and industrial interests in nuclear reactor systems. In addition to the University of Manchester a number of other academic institutes in the region maintain research capability in nuclear science and engineering including;

— University of Liverpool has an international reputation in the fields of Condensed Matter Physics, Nuclear Physics, Particle Physics and Accelerator Science.

— Cockcroft Institute incorporates academia, national laboratories, industry and the local economy in researching, designing and developing particle accelerators.

— University of Central Lancashire's John Tyndall Institute for Nuclear Research develops work in the areas of nuclear, science, technology and engineering.

— Lancaster University maintains a multidisciplinary team of engineering researchers working on the combination of instrumentation and generic control. Lancaster co-ordinates the NDA funded Nuclear Graduate Programme, which is backed by more than 20 leading companies and aims to plug a nationwide skills gap in decommissioning.

— University of Salford's Joule Physics Laboratory carries out research into atomic collisions and ion-beam physics.

- University of Bolton's Centre for Materials Research and Innovation is a multi-disciplinary centre designed to cultivate research and innovation activities in collaboration with industry and other academic institutions The region's universities also are involved with consortia in delivering national research programmes, including:
  - DIAMOND (Decommissioning, Immobilisation and Management of Nuclear waste for Disposal) is a university research consortium focussed on Nuclear Waste Management and Decommissioning.
  - Nuclear Engineering Doctorate Programme—Led by the Dalton Nuclear Institute, provides nuclear Research Engineers with industry training.
  - KNOO(Keeping the nuclear option open) is a four-year initiative set-up to address the challenges related to increasing the safety, reliability and sustainability of nuclear power and development of skills.
  - SPRing (Sustainability Assessment of Nuclear Power: An Integrated Approach) is a university consortium project developing a decision-support framework to assess the sustainability of nuclear power relative to other energy options.

4. Specific Responses to Issues Raised:

4.1 *Impact on economy, jobs, skills and the environment:*

New nuclear build in the NW of England would have a very positive on all of the above in the following ways:

- Maintaining the current level of high value jobs in the sector.
- Allowing transition from current aspects of decommissioning and fuel cycle work to new build, ensuring career progression and development.
- There is a high concentration of nuclear supply chain companies in the region, their work could be further strengthened and developed supporting the new build agenda. This would have very positive impact on the economy of the region.
- Creation of quality jobs in remote areas often subject to high unemployment. As the nuclear sites are decommissioned there will be resultant job losses without new build.
- The highest concentration of Skills Academy Quality Assured Providers is based in the NW, these could be fully utilised in supporting the skills development needed for new build.
- Significant impact in helping the region to achieve its CO^2 reduction targets.

4.2 *Role of Universities and regional bodies:*

Fully detailed above.

4.3 *Support needed to maximise the benefits*

- Establishment of a NW Nuclear Cluster as part of the Skills Academy remit to further help support and develop businesses in the region.
- Continuation of the NWDA lead role in the nuclear agenda.
- Funding support to develop nuclear skills and capability of the workforce so appropriate staff can undertake the Award for Nuclear Industry Awareness and have a Nuclear Skills Passport, ensuring that supply chain companies have the skills and expertise required to work safely and effectively in the nuclear industry.

4.4 *Regional Infrastructure*

- An effective rail link is needed as a matter of priority from Penrith to West Cumbria via Cockermouth.
- The A66 from Penrith out to West Cumbria needs substantial improvements with additional stretches of dual carriageway.
- The roads along the West coast of Cumbria all need substantial up grade and widening.

4.5 *Proposed Sites and Lessons learnt*

No specific comments on individual sites or lessons learnt.

4.6 *Role of Regional Bodies*

There is a need for simplification to ensure clarity and effective delivery for nuclear employers. The Skills Academy is now well established with 56 employer members, the Skills Academy should therefore remain as the lead organisation for the coordination of all skills, training and education development for the sector and to ensure alignment on further business support for the sector in the region.

There should now be a period of calm with no new initiatives or developments announced as the current profusion of new initiatives is causing confusion eg NAMRC and NEC on top of the existing NNL, Skills Academy etc. It is important to let all these organisations bed down and ensure they work effectively together rather than investing in anything further.

5. Conclusion

The Skills Academy fully supports new nuclear build in the NW and is keen to play a major role in supporting this new build agenda.

29 December 2009

Memorandum Submitted by Scottish Power Limited on Behalf of Iberdrola (NWN 06)

This Memorandum is submitted by Scottish Power on behalf of its parent company Iberdrola. Iberdrola and its two consortium partners, GDFSuez and Scottish and Southern Energy, purchased an option on land adjacent to the Sellafield nuclear complex on 28 October 2009 and plan to develop up to 3.6GW of nuclear generation on the site.

The Consortium Company is in the early stages of getting established and is at the very start of the process for development of the project. In order to meet the timescales of the Committee's Inquiry, this memorandum accordingly provides evidence on behalf of Iberdrola. If further information becomes available during the course of the Inquiry at the Consortium level, as establishment of the joint business proceeds, then we would be happy to provide supplementary evidence.

Summary

— the new build site adjacent to Sellafield has the advantage of being large enough to host a number of new reactors, whilst the visual impact of the new build is likely to be seen in the context of the existing extensive nuclear complex;

— each new nuclear reactor in the area is likely to require a peak workforce of up to c.4,000 staff during construction with staff numbers at each operational power station likely to be of the order of 500;

— some re-skilling will be required to provide for a transition from the existing activities at the Sellafield complex into the construction/operational activities at the new power station;

— local and regional benefits will depend on the manner in which the development is delivered and extensive engagement with stakeholders will be undertaken during the optioneering phase of project development;

— lessons learned from the two EPR new build projects underway in Europe and the three AP1000 new build projects underway in China include the need to follow the approved regulatory design to the letter if unnecessary delays are to be avoided; and

— local environmental impacts will be carefully studied and appropriate mitigations implemented; the long-term benefit of substantially carbon free electricity generation for 40–60 years will significantly outweigh the carbon emission increases during the construction phase of the development.

The effect of expanding the nuclear industry on the North West, including the impact on: the economy, jobs, skills, local and regional business and the environment.

The economy

1. The benefits to the local economy will include direct jobs associated with the construction and operation of the power station, indirect jobs, wider infrastructure improvements, increased spend locally and regionally. The economy may benefit in other ways depending on details of the power station development, which will only be determined following detailed stakeholder engagement eg travel solutions may include improved public transportation for the benefit of all locally or there may be a dedicated solution for station workers to minimise the local impact.

Jobs

2. The site adjacent to Sellafield is large enough to accommodate a number of reactors. Detailed site investigations will determine how many reactors can be accommodated and the most appropriate positions for the reactors. The Consortium is likely to build at least two reactors at the site and construction of the first reactor is expected to require c.4,000 staff at its peak. Staff numbers at the operational power station are likely to be c.500 per reactor, increasing during maintenance outages. The numbers provided are only estimates, as the final numbers will vary due to several factors including technology choice, construction schedule, size of fleet *etc*.

Skills

3. It is recognised that there is an abundance of nuclear skills in the Sellafield area and this is a key advantage of the Sellafield location from a new build perspective. Given the somewhat different nature of the activities, some re-skilling will nevertheless be required for many of those transferring to the new build power station project.

4. The requirement for staff at the Sellafield new build project is likely to coincide with the expected downturn in employment at the existing Sellafield complex as some of the existing reprocessing activities at the site come to an end. The new build project will help to mitigate the impact of this in the immediate vicinity of the Sellafield complex and to some extent help to mitigate the knock on effects for suppliers in the surrounding industry. The likely availability of employees with nuclear experience at the Sellafield site is an advantage of this location but the same cannot be said for the UK nuclear industry as a whole.

5. From the UK-wide perspective, 2015 is an issue for the nuclear industry. According to COGENT's recent work[8] on the skills situation for the UK nuclear industry; "*The year 2015 appears to be a watershed year for skills. At this point many of the drivers of skills converge. By 2015, the retirement profile of the workforce begins to diverge significantly from that of the UK workforce; by 2015, the decommissioning of the old fleet will have taken hold; and, by 2015, recruitment and training for the new fleet must begin if the first are to commence operations from 2017.*"

6. These three competing factors combine to result in a pinch point at around 2015 for the UK nuclear industry as a whole. It is clear that there will be no shortage of demand for a skilled workforce to help deliver on decommissioning at the same time as delivering on new build. It will therefore be essential to drive forward the skills agenda so as to put the UK in the best possible position to meet the requirements of both aspects.

Local & regional businesses

7. The construction and operation of a new nuclear power station will require significant staff numbers as outlined above and there will be a requirement to feed and accommodate a large number of additional people in the local area. This will inevitably provide opportunities for local and regional businesses and, in relation to the proposed development around Sellafield, we expect that the Consortium will take account of input from its stakeholders including the local community in formulating the most appropriate approach.

8. Local and regional suppliers may also benefit from construction and operations related work provided they have the capability to work to the quality standards required by the nuclear industry. The new build projects in the North West are also likely to act as magnets and attract new suppliers to the region, increasing the depth and breadth of services provided in the region and bringing new jobs and other economic benefits to the area.

Environment

9. A new build nuclear project is a significant undertaking and will have a number of impacts on the environment. As with any major project, a detailed Environmental Statement (ES) will be prepared with substantial input from statutory stakeholders, local stakeholders and affected parties. The ES will consider a number of different impacts including radioactivity, noise, landscape & visual, infrastructure, coastal erosion, climate change *etc*. The purpose of the ES will be to identify all significant environmental impacts and to propose appropriate mitigating measures, where necessary, with substantial input from stakeholders.

10. Among the issues addressed in the ES will be those associated with flood risk. Our initial work suggests that the land the Consortium has bought adjacent to the Sellafield site is at low risk of flooding, unlike the areas in Cumbria that were so badly hit last November. However, all aspects of flooding including the impact of climate change on the site will be carefully considered during the preparation of the ES.

11. Due to construction activity (materials & equipment) and construction staff (commuting) there will be a short-term increase in emissions. This can be mitigated to some extent by the use of green travel plans (to maximise occupancy rates for commuting staff) and the use of alternative transport measures for materials and equipment eg trains and sea. However, overall emissions of CO^2 and pollutants such as sulphur and nitrogen oxides will be significantly reduced over the 40–60 year life of the plant compared to generation of the equivalent quantity of electricity from fossil fuels and this will significantly outweigh the construction-related emissions.

[8] http://www.cogent-ssc.com/research/Publications/NuclearReportPowerPeople.pdf

The role of regional universities and education bodies in supporting the nuclear industry in the region

12. Regional universities have a number of roles in this area. In relation to Cumbria, there is a role for regional universities in providing courses that allow re-skilling of existing employees at the Sellafield complex; more widely, there is also a role for bringing new graduates into the nuclear industry.

13. Not all graduates need to be experts in nuclear physics and that there is a need for graduates in other disciplines such as business, finance, engineering and related subjects. The universities and education bodies have a role in making school-leavers aware of the range of opportunities available and encouraging a career in a subject that can be utilised within the power construction and generation industry.

14. COGENT's recent work[9] established that there is a wide range of job contexts required for nuclear new build and all these different job contexts need to be filled in order to have the right mix of people in the team needed to deliver new nuclear power generation:

- Commissioning.
- Energy Production Operations.
- Decommissioning Operations.
- Process Operations.
- Maintenance Operations.
- Safety & Security.
- Radiation Protection.
- Project Management.
- Engineering Design.
- Scientific & Technical Support.
- Business.
- Construction.
- Waste & Repository Operations.

The support needed to maximise the potential benefits for businesses in the region.

15. It will be important to consider the views and experiences of businesses in the region when considering what is needed in order to maximise the potential benefits for them.

16. As a developer that is keen to maximise the UK supply chain, including the regional supply chain, we will develop a facility for suppliers to contact us with their services and will publicise any contracts that are available to let on a competitive basis. As an international developer of new nuclear power stations we already have centres of nuclear engineering excellence in Spain (through Iberdrola) and in Belgium (through GDFSuez) and have established supply chains for some aspects of our international nuclear activities. We are committed to augmenting these existing skills and supply chains with those in the UK, including those located in the North West region.

17. Local and regional suppliers that hope to benefit from construction and operations related work need to be aware of the quality requirements of working in the nuclear industry and should not under-estimate the increased requirements placed on a supplier to the nuclear industry compared to other industries and even to other types of new power generation. Obviously, a number of the firms in West Cumbria will be well aware of this from working at the existing Sellafield facility.

The improvements to the regional infrastructure that will be needed, including during the construction phase.

18. As the developer of a new nuclear power station, there are several options available to the Consortium for the delivery of bulk material and equipment to the site at Sellafield and careful consideration will be undertaken, in association with stakeholders, in order to determine the most appropriate options. No decisions have yet been taken on these options, but it is expected that during the construction phase some regional infrastructure improvements are likely to be needed although it is not clear where these will be at this stage.

19. It is likely that very large bulk items will be brought to site via sea and this is likely to require the construction of a marine off-loading facility at the development site or negotiating the use of a marine offloading facility nearby. There is a rail connection to the existing Sellafield site that could be utilised for some items (assuming agreement with the existing parties can be reached).

20. However, it is likely that not all materials will be brought to the site by sea and/or rail and some road movements will still be required. If materials are to be brought to site by road from the South, significant road improvements would be required on the route from Barrow-in Furness to Sellafield. Existing road routes from the North are more suitable but may also require some improvement.

[9] http://www.cogent-ssc.com/research/Publications/NuclearReportPowerPeople.pdf

21. There are a number of options that need to be considered for accommodating development and construction staff and these will be considered in detail with input from stakeholders. Occupancy levels at local hotels/B&Bs are not expected to be able to accommodate the peak numbers of development and construction staff outlined above, and possible solutions include increasing this capacity or creating a temporary village to house many of the construction staff and contractors.

22. Additional public transport options will also be considered as part of the green travel plan for moving staff/contractors to and from the site both during and after construction. Possible solutions may involve improvements to local public transport or a dedicated solution for the new power station development that operates during development and construction only. The formation of the green travel plan will be undertaken in association with stakeholders to understand local concerns and desires.

The arguments for and against each of the proposed four sites announced on Monday 9 November.

Braystones

23. For—Of the four sites listed in the North West, Braystones is the most remote from sites of international and national importance eg most remote from SSSIs and the Lake District National Park.

24. Against—Braystones is completely separate from any other significant industrial activity and is very much a greenfield site in that respect. It has no suitable access routes to site and development at this site was not supported well locally during consultation on the nomination stage of the Government's Strategic Siting Assessment.

Kirksanton

25. For—The area of land nominated could accommodate three, possibly four, reactors.

26. Against—Kirksanton is completely separate from any other significant industrial activity and is very much a greenfield site in that respect. It has no suitable access routes to site and was not supported well locally during consultation on the nomination stage of the Government's Strategic Siting Assessment. The nominated land shares a boundary with the Lake District National Park and shares a costal boundary with an internationally designated marine habitat with direct impact likely (this would need to be analysed and mitigated). The nominated land already hosts a windfarm development on a portion of the land.

Sellafield

27. The Sellafield new build site is adjacent to the existing Sellafield complex and a land option was purchased on 28 October 2009 by a consortium of Iberdrola, GDFSuez and Scottish & Southern Energy.

28. For—Adjacent to the existing Sellafield nuclear complex and will blend into the background with sympathetic siting. Is expected to utilise much of the existing access infrastructure of the Sellafield complex. Is not in direct contact with any internationally designated areas. Keeps all nuclear related activities in one area, where they are already located. Proximity to existing nuclear site allows for the sharing of common services (eg emergency planning, ambulance and fire services etc).

29. Against—Site boundary contains Church Moss SSSI (but can be avoided through sympathetic siting and mitigation measures). May have indirect impact on international marine designations (this will need to be analysed and mitigated).

Heysham

30. For—Adjacent to a port and has reasonable road access. Proximity to existing nuclear power station allows for the sharing of common services (eg emergency planning, ambulance and fire services *etc*).

31. Against—Cooling water currently sourced from harbour but this cannot accommodate an additional new reactor. The remaining cooling water options include sourcing water from an internationally designated marine area or using cooling towers. The draft Nuclear National Policy Statement excludes some of the nominated land for nuclear activities due to proximity to populous areas.

The lessons that can be learnt from earlier commissioning experiences.

32. The Consortium is keeping abreast of what is happening on new build nuclear projects across the globe: in Finland at the new EPR project at Olkilouto, in France at the new EPR project at Flamanville and in China at the new AP1000 projects at Sanmen and Haiyang. One of the key lessons learned from these projects is the need to follow the approved regulatory design to the letter in order to avoid lengthy delays. A better or quicker way of undertaking a certain aspect of the build may emerge during construction but if that varies from what has been approved by the regulator, that change cannot be implemented without first achieving regulatory approval. Contractors must be educated and fully aware of the adherence to the nuclear safety regime when working on nuclear construction projects.

33. The nuclear regulators have a key role to play in ensuring that nuclear activities are undertaken in a safe manner and to give the public confidence in the safety of the industry; accordingly, it is right that they have a strong influence over new nuclear build.

34. Looking back to previous nuclear build in the UK, the experience of operating a fleet of unique reactors where each problem required a unique solution has not been happy. This has led to the adoption of Generic Design Assessment (GDA) process whereby standardised designs can be deployed with the minimum of adaptation. GDA will ensure that international experience and designs can be more effectively utilised so that economies of scale can lead to benefits across the life-time of the plants including during construction, operation and decommissioning.

The role of regional bodies, and partnership arrangements between such bodies, in maximising the potential benefits and minimising the negative impacts of expanding the nuclear industry in the North West.

35. It will be important to consider the views and experiences of the regional bodies in considering how their role can maximise the benefits and minimise the negative impacts of expanding the nuclear industry in the North West. The Consortium plans to have regular engagement with the regional and local bodies in the North West to ensure that the development moves forward in an open and transparent manner. Conditions will be fostered to encourage issues to be raised early in the process and considered in the optioneering activities that will take place as the design is developed and the project moves forward.

36. Significant stakeholder engagement will be undertaken in order to achieve planning consent for the Consortium's new build project. The Consortium hopes to have close working relationships with the regional bodies and for the regional bodies and the Consortium to work together cooperatively to ensure the process of preparation, submission and consideration of the planning application runs as smoothly as possible.

37. Nuclear generation is part of the solution for meeting the Government's climate change and security of supply agenda but there also remains an important role for renewable generation and flexible fossil fuelled plant in creating a power generation fleet that will meet the demands of the UK in the future.

30 December 2009

Memorandum from Chris Reed (NWN 07)

CASE AGAINST KIRKSANTON NUCLEAR POWER STATION

1. Summary

1.1 Towards the end of the 1987 movie Wall Street the character Gordon Gecko (representing the unacceptable face of capitalism) is having a discussion with his protégé Bud Fox (who is having serious doubts about Gecko's methods). At one point Gecko says to Fox: "you're not naive enough to believe we're living in a democracy are you?"

1.2 I think these sentiments resonate with the way the Government is attempting to use the Planning Act 2008 to ride roughshod over the environment, local communities and UK, European and International law.

1.3 I am strongly opposed to the proposal to build a nuclear power station at Kirksanton. My main concerns are as follows:

(a) There would be a severe detrimental impact on a wild and remarkably beautiful landscape.

(b) It would have a severe detrimental impact on England's most beautiful and best-loved National Park, the Lake District, which is protected by the 1995 Environment Act.

(c) It would have a severe detrimental impact on wildlife and plant habitat currently protected by UK, European and International law.

(d) It would be a greenfield development in a rural area and it would irrevocably change the character, quality and tranquility of the landscape for the local community and for visitors to the area.

(e) It would severely damage the tourist industry in the immediate area and it would alter the perception of the Lake District National Park as a tourist destination.

(f) The Government's planning process is severely flawed and it is un-democratic and un-British.

(g) The Government's documents are unfairly biased in the way that information is presented.

(h) There is sufficient evidence to suggest that the Kirksanton site would not be deployable by 2025 which is one of the Government's main requirements for development.

1.4 The proposed build of a Nuclear Power Station at Kirksanton is causing considerable stress and upset to a lot of people. I do not believe the Kirksanton site is viable and it should be removed from the Government's list of potential sites. This should be done as soon as possible to prevent further unnecessary upset to people.

2. Destruction of Landscape

2.1 *North West Regional Select Committee Visit*

2.1.1 I feel that the North West Regional Select Committee need to see first-hand the landscape that the Government are proposing to destroy. It is important to visit on a nice clear day when the surrounding Lake District mountain tops are visible. The best place to get an appreciation of the landscape would be from Kirby Moor with the fell road between Kirby and Ulverston being a convenient viewpoint.

2.2 *The Proposed Site*

2.2.1 The site would occupy an area of 131 hectares which is approximately 180 football fields. The reactor height would be approximately 200 feet. Sea defences would consist of a wall of between 13' and 20' high—this has been referred to as akin to the Berlin Wall.

2.3 *The Effect on the Lake District Landscape*

2.3.1 The proposed Kirksanton site would result in a severe detrimental visual impact on a large part of the south west area of the Lake District National Park.

2.3.2 The views from Black Combe, White Combe and Great Burney looking out from the Lake District National Park over the Duddon Estuary are truly exceptional views. They would be spoilt by a Nuclear Power Station at Kirksanton.

2.3.3 Possibly the best view in the whole of England is the view from the fells above Kirby to the east of the Duddon Estuary looking over the estuary to Kirksanton, the Irish Sea, the Isle of Man, Black Combe and all the way round to the highest mountains in England. It is a little known view and would be spoilt by a Nuclear Power Station at Kirksanton.

2.4 *The Effect on Silecroft Beach*

2.4.1 Silecroft beach is an extremely beautiful and unspoilt beach that borders the full western boundary of the proposed site. The beach extends for approximately six miles from Haverigg Point to beyond Gutterby (four miles of the beach lies within the Lake District National Park).

2.4.2 A Nuclear Power Station would be visible from the full six mile length of this unspoilt beach. The proposed wave protection defence of between 13' and 20' in height would also have a severe detrimental visual impact on the beach.

2.5 *The Effect on the Duddon Estuary Landscape*

2.5.1 The Duddon Estuary basin is unique within England. There is nowhere else in England where mountains as high as the Lake District's Black Combe are so close to the sea. There is nowhere else in England where a magnificent estuary and wetland is surrounded on all sides by such high mountains. This landscape would be spoilt by a Nuclear Power Station at Kirksanton.

3. Impact on Wildlife and Plant Habitat

3.1 The Duddon Estuary adjacent to the proposed Kirksanton site is a European Special Protection Area (SPA), and International Ramsar site. It also contains a European Special Area of Conservation (SAC) at Duddon Mosses as well as UK Sites of Special Scientific Interest (SSSI).

3.2 Morecambe Bay adjacent to the proposed Kirksanton site is a European Special Area of Conservation and it also contains the Morecambe Bay Special Protection Area and Ramsar site.

3.3 The Duddon Estuary contains some special wildlife and plant habitat in a magnificent and unique landscape. This is a fragile and precious environment, which is why the area is protected by UK, European and International law. A Nuclear Power Station at Kirksanton would not only affect the animals and plants of the Duddon Estuary it would also spoil the enjoyment for the people who enjoy this area for its wild beauty.

3.4 If we can't protect these areas what message does it send to our children? How can we hope to persuade other countries to protect their wild areas if we fail to protect our own? What sort of world do we want to leave for our children and future generations?

3.5 We are only temporary custodians of the world we live in. Certainly our energy needs are important. But if we are clever enough to be able to split the atom surely we can find other ways to meet our energy needs without destroying the environment.

4. Impact on Local Communities

4.1 *Effect on a Quiet Rural Area*

4.1.1 The proposed Kirksanton site would be a greenfield development. This in itself goes against a stated aim in the Government's own Appraisal of Sustainability objectives which is "to avoid the use of greenfield land and encourage the re-use of brownfield sites."

4.1.2 The area surrounding the proposed Kirksanton site is a quiet, rural area. The villages of Kirksanton, Silecroft and Haverigg could be described as "sleepy" villages which is the very reason that most of the locals choose to live in the area.

4.1.3 Building a Nuclear Power Station at Kirksanton would have a devastating impact on the lives of the people who live in the area. The noise and disruption of the build phase would last for at least six years. When operational the peace and tranquility of the area would be lost forever.

4.2 *Opposition is Not NIMBY-ism*

4.2.1 The proposed Kirksanton site is in the backyard of the Lake District National Park which, as the word "National" indicates, belongs to the people of this country.

4.2.2 It is in the backyard of the Duddon Estuary which is a unique and extremely beautiful landscape and wildlife habitat. It has some magnificent views of the Lake District National Park. These views rank amongst the best in the country.

4.2.3 It is in the backyard of Silecroft Beach which is a truly exceptional beach stretching for six miles from Haverigg Point to beyond Gutterby.

4.2.4 The Lake District National Park, Duddon Estuary, and Silecroft Beach are free and can be enjoyed by all of society—rich & poor, young & old, black & white—the scenery doesn't discriminate.

4.3 *The Need for Jobs*

4.3.1 One of the arguments put forward by supporters of the Kirksanton site is that it would bring jobs to the area. I would agree that jobs are important. However, any developments must be in keeping with the character of the area. It is also worth noting that there are only approximately 130 people currently unemployed in Millom. Given the will and investment it should not be difficult to find alternative employment for these people. For example, the development of the Marina at Barrow-in-Furness will require many local people.

4.3.2 If a Nuclear Power Station is built at Kirksanton there is a strong possibility that Haverigg Prison would have to close. This is because the Prison is adjacent to the proposed site and it would not be possible to evacuate the inmates if there was an emergency. Closing the Prison would result in the loss of 300+ local jobs.

4.4 *Sustainable Future*

4.4.1 The Planning Act 2008 requires any significant new developments to be sustainable. The lifetime of a nuclear power station is 60 years—then what do the local people do for jobs?

4.4.2 The Copeland economy is already too heavily dependent on the nuclear industry. It seems at times that we are being bullied into accepting more nuclear with the threat that "if you don't accept nuclear then West Cumbria will die."

4.4.3 We need jobs and investment that are sustainable and more in fitting with our environment.

5. Impact on Tourism

5.1 *Effect on Tourism in Millom*

5.1.1 Over the last few years Millom (two miles east of proposed site) has been working to develop the local tourist industry. A quote from the Millom website reads: "Millom today provides access to unspoilt golden sands with unrivalled panoramic views of the nearby Lakeland hills and fells. It boasts the facilities of a town and the opportunities of the unspoilt countryside." This proud claim would no longer be true if a Nuclear Power Station was built at Kirksanton.

5.1.2 Many local jobs depend on tourism. There are caravan parks at Silecroft at the north end of the proposed site and at Haverigg at the south end. There are a number of B&Bs in the area. Local shops get a boost from tourism particularly in the summer months.

5.1.3 The area provides a cheap holiday for many young families and less "well-off" families who can't afford expensive holidays abroad. Who wants to bring their children to play on a beach next to a Nuclear Power Station? Is it right that we deny access to a beautiful area to the less "well-off" members of society?

5.1.4 The Millom tourist industry would be destroyed if a Nuclear Power Station was built at Kirksanton.

5.2 *Effect on Tourism Further Afield*

5.2.1 A Nuclear Power Station at Kirksanton would damage the perception of Copeland, the Furness Peninsula and the Lake District as a tourist destination both in this country and abroad. It would also adversely affect other developments such as the proposed Marina at Barrow-in-Furness.

5.2.2 The Western Lakes contain some beautiful mountain and coastal scenery yet tourist numbers are much less than the central lakes. This is probably due to the proximity of Sellafield. Whilst I am not arguing the pros and cons of Sellafield here I would suggest that building a Nuclear Power Station at Kirksanton would further damage the perception of the area.

6. The Government's Planning Process is Deeply Flawed

6.1 *Timescale is Too Short*

6.1.1 The timescale for local communities and other groups to consider a proposal such as a Power Station at Kirksanton is far too short. The volume of Government documentation to be read, assimilated and a response provided is overwhelming in the time available.

6.1.2 The documents people opposed to the Kirksanton site need to read include: EN-1 (93 pages); EN-6 (94 pages); Appraisal of Sustainability Main Report (136 pages); Appraisal of Sustainability for Kirksanton (64 pages); Habitats Regulations Assessment for Kirksanton (47 pages). To argue a case against the Government people also need familiarity with such things as: the Planning Act 2008; the Environment Act 1995; alternatives to nuclear; concerns over radioactive waste storage *etcetera*.

6.1.3 Yet the time between the Draft National Policy Statements for Nuclear Power being published on 9 November 2009 and the deadline for comments being submitted to the North West Regional Select Committee is only eight weeks. It is only 15 weeks from the date the draft policy statements were published to the Government's deadline on 22 February 2010 for comments on the Nuclear National Policy Statements.

6.2 *Cost of Legal Challenge*

6.2.1 The Government is riding roughshod over UK, European, and International environmental law. However, local communities opposed to the Government's planning proposals do not possess the financial means to challenge the Government in the courts.

6.3 *Government Riding Roughshod over the Environment Act*

6.3.1 The Government state in their National Policy Statement for the Kirksanton site that "Fully effective mitigation of adverse visual effects during the construction and operational phases is highly unlikely" [EN-6 para. 5.11.88]

6.3.2 The Environment Act 1995 states that the purpose of National parks is to (a) to conserve and enhance the natural beauty, wildlife and cultural heritage; (b) to promote opportunities for the public understanding and enjoyment of the special qualities of those areas by the public.

6.3.3 Plain common sense together with the Government's own assessment of the Kirksanton site indicate that effective mitigation is not possible (even assuming cooling towers are not constructed). To build a nuclear power station at Kirksanton would be a clear violation of the Environment Act.

6.3.4 The Environment Act was created for the benefit of the public and to protect the environment from developers. However, the biggest danger to the environment turns out to be our own Government.

6.3.5 If an Act of Parliament is to have any meaning then the proposed development at Kirksanton should be rejected immediately. Failure to do so will only cause the general public to lose more confidence in how the country is run.

6.4 *Violation of UK, European and International Law*

6.4.1 The Habitats Directive and Birds Directive are European laws that have been created to protect important European wildlife and plant habitat. These European directives have led to the Duddon Estuary being classified as a Special Protection Area (SPA) and Special Area of Conservation (SAC). The Duddon Estuary is also a Ramsar site which is an international law aimed at protecting wetlands of international importance. The Duddon Estuary also contains UK designated Sites of Special Scientific Interest (SSSI).

6.4.2 Morecambe Bay is also a SAC, SPA and Ramsar site.

6.4.3 If these laws are to have any meaning then the Kirksanton site should be rejected.

6.5 *Invoking IROPI is Illegitimate*

6.5.1 The Government is quoting "Imperative Reasons of Overriding Public Interest" in order to get its own way. The legality of this is at best dubious and quite possibly illegal. If allowed to go unchallenged it sets a dangerous precedent.

6.5.2 The Government uses as justification for IROPI that there is a lack of alternatives [EN-6 para. 5.11.66]. However this is not true. Energy demand could be reduced by energy saving measures (which the Government seem reluctant to adopt) and there are other alternative means of energy supply.

6.5.3 It could be equally well argued that it is in the national interest to protect our National Parks and to conserve our wildlife and plant habitat.

6.5.4 It could also be strongly argued that it is the Government's negligence that has created the concerns over future energy supply. The Government has known for a long time that existing nuclear power stations were reaching the end of their life. If it was in the national interest to secure our future energy supply why have they left it so late to act?

6.6 *Lack of National Debate on Nuclear Policy*

6.6.1 There appears to have been very little national debate on (a) whether or not the public want nuclear, (b) the alternatives to nuclear, and (c) if we do want/need nuclear then where as a nation are we willing to site new nuclear power stations.

6.7 *The National Policy Statements are Unfairly Biased*

6.7.1 There are many examples of misleading, biased and erroneous statements in the Government's National Policy Statements. The following example is taken from [EN-6 para. 5.11.83] and refers to the proposed Kirksanton site.

6.7.2 The Government state that "there could be opportunity for the development to sit within a strong new landscape framework with the creation of tree belts, lakes and replacement public rights of way." This is biased in that it creates the impression that the current landscape can be significantly improved when in fact the reverse is true—the current landscape will be spoilt forever. It could equally have been written along the lines of "the development will result in a severely detrimental and irrevocable change to the character, quality and tranquility of the landscape."

6.7.3 There are many other examples of biased and misleading statements in the National Policy Statements.

7. Not Deployable by 2025

7.1 There is little or no evidence presented by RWE or the Government to suggest that the Kirksanton site could be operational by the Government's own target date of 2025.

7.2 In the time frame both the energy utilities and reactor suppliers are unable to simultaneously build nuclear power stations in the UK, Europe and worldwide due to financial risk exposure, availability of skilled workforce and qualified sub-contractors, and bottlenecks with supply of certain materials (eg Japan Steel Works are the sole maker of certain reactor parts).

7.3 The Kirksanton site is the least favoured site of RWE which recently announced the Wylfa and Oldbury sites as the sites they will develop. Braystones is another proposed site. What are RWE's outline financial and project plans for developing all of these sites by 2025?

3 January 2010

Memorandum from Cumbria Wildlife Trust (NWN 08)

Cumbria Wildlife Trust is the only voluntary organisation devoted solely to the conservation of the wildlife and wildplaces of Cumbria. The Trust stands up for wildlife, creates wildlife havens and seeks to raise environmental awareness.

Formed in 1962 and supported by over 15,000 members, the Trust cares for over 40 nature reserves, campaigns for the protection of endangered habitats and species such as limestone pavements and red squirrels, and works with adults and children to discover the importance of the natural world.

Cumbria Wildlife Trust is part of a partnership of 47 local Wildlife Trusts across the UK. With 670,000 members and 2,200 nature reserves, we are the largest UK voluntary organisation dedicated to conserving the full range of the UK's habitats and species.

Summary

Cumbria Wildlife Trust has grave concerns regarding the allocation of the proposed site and associated infrastructure for a nuclear power station at Kirksanton in Cumbria due to the following:

— Loss of or damage to internationally protected habitats and species.

— Loss of or damage to nationally protected habitats and species.

— Loss of a County Wildlife Site.

— Loss of UK Biodiversity Action Plan habitats and species.

— Damage to marine life through direct and cumulative impact.

— Coastal and inland flooding risks leading to damaging flood defences infrastructure and site raising.

— Cumbria Wildlife Trust considers that the site at Kirksanton should be removed from the list of proposed sites in the Nuclear National Policy Statement EN-6 due to its ecological sensitivity and proximity to the Lake District National Park.

— Cumbria Wildlife Trust is concerned that the inclusion of a site within the NPS is a presumption in favour of development that would be used to outweigh all other considerations when an application is made to the Infrastructure Planning Commission.

— Cumbria Wildlife Trust is concerned about the lack of consultation with local communities (among which we include ourselves as we represent members in the communities affected by the proposed nuclear development) which the Credible Nuclear Power Operators are required to engage in.[10] This has not taken place, and Cumbria Wildlife Trust has not been consulted by the proposers of any of the Cumbrian sites.

— Cumbria Wildlife Trust also has further comments on those questions raised in the call for evidence. These can be found after the evidence relating to the allocation of the site at Kirksanton.

What are the arguments for and against each of the proposed four sites announced on Monday 9 November

Arguments against the proposed Kirksanton site

1. The proposed RWE site for the Kirksanton nuclear power station lies at the mouth of the Duddon Estuary. This part of Cumbria is physically isolated from much of the rest of the county by topography, including mountains, bays and estuaries. The road system comprises narrow, single carriageway roads, and apart from the small town of Millom, there is not a great deal of heavy industry or large scale settlement along this part of the Cumbrian Coast. The Kirksanton site comprises low lying land, at risk of flooding from both freshwater[11] and coastal sources.

2. This isolation and low levels of existing development are precisely the reasons why the area around Kirksanton is of such great significance for its natural environment including habitats, species and landscapes of international value.

3. The development of a nuclear power station at this location will necessitate a complex and sizable infrastructure to facilitate the building and operation of a nuclear complex. The consultation documents indicate that this is likely to include a marine loading facility, new road infrastructure possibly including a bridge across the Duddon Estuary, grid connections and pipelines for the abstraction and discharge of sea water required for cooling.

4. The nuclear power station and associated infrastructure will have a highly detrimental effect on the internationally designated sites, habitats and species of the Duddon Estuary and the surrounding natural environment. It is very unlikely that any developer, even with unlimited resources could compensate for the loss of these internationally important habitats, as it is inconceivable that a new estuary site could be found

[10] Page 9 of Consultation on the Strategic Siting Assessment Process and Siting Criteria for New Nuclear Power Stations in the UK http://www.berr.gov.uk/files/file47136.pdf

[11] Environment Agency "What's in your backyard" http://tiny.cc/TVd50 (URL shortened for convenience)http://tiny.cc/TVd50http://tiny.cc/TVd50http://tiny.cc/TVd50

to replace the loss of the Duddon Estuary habitats, so ensuring the integrity of the Natura 2000 suite of Sites of Community Importance as designated and protected by the European Habitats Directive 1992 as enacted into UK law as the Conservation (Natural Habitats, &c.) Regulations 1994 (Habitats Regulations).

Designations

5. The coastline directly adjacent to the proposed Kirksanton site is designated as the Morecambe Bay Special Area of Conservation (SAC),[12] and the Duddon Estuary Special Protection Area (SPA)[13] and Ramsar[14] wetland site. These designations mean that the sites are of international significance for their habitats and species and are protected by the European Habitats Directive. These sites form part of the suite of Natura 2000 sites found across Europe.

6. The Habitats Regulations make it clear that no damage to internationally protected sites will be countenanced unless there are Imperative Reasons of Overriding Public Importance (IROPI) as described in Article 6(4) of the Habitats Directive 92/43/EEC.[15] However, even in the case of IROPI, the Habitats Regulations indicate that any damage or loss of part of an internationally protected site must be compensated by creation of new habitat of the same type, quality and extent as that lost to ensure the integrity of the Natura 2000 suite of sites. In EN-6[16] the DECC make it clear that they consider the case for nuclear power stations comes under IROPI. However, it is not clear that loss of or damage to a large area of the habitats of the Duddon Estuary SPA/Ramsar and part of the Morecambe Bay SAC can be compensated for elsewhere, and if this cannot be done, the Habitats Directive cannot be complied with.

Sources of damage to Natura 2000 sites

7. As an example of potential sources of damage, Paragraph 5.17 of the Appraisal of Sustainability (AoS) for Kirksanton[17] states:

> "*Locating the marine loading facility (if required) within the Duddon Estuary will require extensive dredging prior to construction and during operation to meet the required depths necessary to facilitate marine vessels. Dredging a channel will not only destroy habitats but will seriously degrade the amount of natural sediment available to sustain the estuarine morphodynamics and coastline to the south of the Duddon Estuary. Structures will directly interfere with the sediment transport pathways within the estuarine system, causing loss of habitat and interference to the protected species of birds and plants indigenous to the Duddon Estuary*".

This paragraph of the AoS anticipates the damage that will take place if the natural processes of the estuary are affected by infrastructure. It shows that much of the SPA/Ramsar site would be damaged or adversely affected. Other infrastructure having a similar effect would be a road bridge or tidal barrage[18] across the Duddon Estuary, which although not mentioned in the AoS have been discussed as essential for the implementation of this site. In particular, the coastal dune habitats, mudflats, reefs, shingle banks and estuary habitats which make this area so rich in biological diversity would be damaged or lost.

8. Despite paragraph 5.20 of the Kirksanton AoS asserting that "*There is, however, potential for mitigation or compensation of biodiversity effects, including the creation of replacement habitat for UK designated sites*", there is no explanation of how this would be done. Furthermore, there is no mention of creation of replacement habitat for loss of the internationally designated sites. It is, in fact inconceivable that the extent of loss of habitat within the Duddon could be compensated for elsewhere as all sites of similar calibre to the Duddon have already been designated, and it would be impossible to create an estuary from scratch with the same habitats that would be lost as a consequence of the development.

Damage to the marine environment

9. The reports for Kirksanton give no indication of the amount of sea water that will be needed for cooling the reactor(s) at the site or how much would be discharged or at what temperature. However, the stated preferred option is for sea water cooling, and indeed, there is unlikely to be a source of fresh water which could be used for cooling the reactor. As there is no information available regarding abstraction/discharge at the Kirksanton site, information regarding sea water abstraction and discharge for the proposed reactor at Bradwell is used as a proxy. A report commissioned by British Energy (2008)[19] estimated that the new generation reactor would need 72000 litres per second of cooling water. By way of comparison this is slightly more than the average flow of the River Thames at Teddington Lock.[20]

---

[12] http://www.jncc.gov.uk/ProtectedSites/SACselection/n2kforms/UK0013027.pdf
[13] http://www.jncc.gov.uk/pdf/SPA/UK9005031.pdf
[14] http://www.jncc.gov.uk/pdf/RIS/UK11022.pdf
[15] http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/guidance_art6_4_en.pdf
[16] http://data.energynpsconsultation.decc.gov.uk/documents/npss/EN-6.pdf
[17] http://data.energynpsconsultation.decc.gov.uk/documents/aos/kirksanton/report.pdf
[18] Cumbria Vision "The Scope for Renewable Energy in Cumbria" 2009
[19] British Energy (2008), Proposed Nuclear Development at Bradwell: Environmental Scoping Report, Royal Haskoning UK, November
[20] This is the point at which the Thames becomes tidal

10. Cooling water intake and outflow at such large volume and the raised temperatures near the site of release will affect the behaviour and distribution of marine species including Key UK Priority Habitats such as blue mussel beds, *Sabelleria* reefs, tideswept channels and mud and sand flats. It is also likely that chlorine would be used as a "biocide" to prevent marine life sticking to inlet and outflow pipes. The bleaching effects on marine life of chlorination will depend on volumes, rate of decay and complex chemical reactions. The chlorination process would cause harm to the ecosystem of the Duddon Estuary SPA/Ramsar and Morecambe Bay SAC. This is an area where information is lacking in the Habitats Regulations Assessment document for Kirksanton[21] and research is required into possible impacts from an operating power station in future. It is likely however, that if the chlorinated water discharged into the marine environment has a detrimental effect on the organisms at the bottom of the food chain, species higher up the food chain which depend on these marine species would suffer.

11. A second issue is the impact of water abstraction on marine species which will result in larvae and eggs being removed from the marine environment into the cooling system. Thirdly, the discharge of large volumes of warm water in to the Duddon Estuary would inevitably have ecological effects, possibly including the creation of conditions favourable to invasive species not native to the Cumbrian coast.

12. Many of the species dependant on marine sources of food are designated as interest features of the Natura 2000 sites, for example birds such as Sandwich Tern, Northern Pintail, Red Knot and Common Redshank and these species come under the same European legislation protection as the habitats themselves.

Impacts on species protected under the Habitats Directive

13. The interest features of these internationally protected sites include mobile species which move off the sites and onto the land which is proposed for the development of the nuclear power station. One of the species most at risk is the natterjack toad for which the Duddon Estuary is the most important site in the UK, supporting between 18–24% of the British population[22] which is over 50% of the population in Cumbria. Development along the coast, including erection of sea defences, land raising, marine facilities and road and bridge infrastructure would damage and fragment much of the natterjack toad habitat leading to a sharp decline in the population. The natterjack toads are cited as one of the reasons for the designation of the Ramsar site and so are protected as part of this Natura 2000 site.

14. Along with the natterjack toads, the bird assemblages for which the Natura 2000 sites are designated will suffer from ongoing disturbance during both the construction and operational stages of the nuclear facility and associated infrastructure. It is unlikely that mitigation measures can be put in place to protect these species from the disturbance by construction and operation of the site.

Impacts on Nationally Protected Sites and Species, Local Sites and Priority Habitats and Species

15. The Duddon Estuary SSSI shares boundaries with the SPA and Ramsar. In addition to the importance of the site for its bird and natterjack toad populations, the site is of importance for its geomorphological interest. Any disturbance to the sediment regime of the estuary by power station infrastructure will lead to damage to the geomorphological interest of the SSSI which includes extensive sand dunes. This will have further detrimental effects on habitats in the area.

16. The site boundary at Kirksanton includes the Kirksanton Moss County Wildlife Site. This Wildlife Site of county importance would be lost due to direct land take, land raising and changes to drainage.

17. Much of the habitat just inland of the coastal strip is Priority Habitat as selected under Section 41 of the NERC 2006 Act[23] which imposes a duty on all public bodies to conserve, restore and enhance biodiversity. These habitats have been chosen by the UK government as being of Priority importance.[24] The proposed site of the Kirksanton power will directly affect two of these habitats, Coastal and Floodplain Grazing Marsh and Coastal Habitats Above High Water. The implementation of the development and associated infrastructure would damage these habitats and prevent them from performing their function which is to allow corridors for movement of plant and animal species.

18. There are a number of additional protected or priority species which use the sites including:

— European protected species: bats (four species), great crested newts, otters.

— Wildlife and Countryside Act species: common lizard, adder, slow worm and many species of nesting bird.

[21] http://data.energynpsconsultation.decc.gov.uk/documents/hra/kirksanton/report.pdf
[22] JNCC Ramsar Information Sheet UK11022
[23] http://www.opsi.gov.uk/acts/acts2006/ukpga_20060016_en_4#pt3-pb1-l1g41
[24] http://www.ukbap.org.uk/library/BRIG/SHRW/SpeciesandHabitatReviewReport2007andAnnexes1-3.pdf Page 80. Reasons for selection of Priority Habitats include: Habitats for which the UK has international obligations, habitats at risk, habitats which are important for assemblages of key species and habitats which are restricted to isolated locations which are threatened with extinction.

Conclusions regarding the allocation of Kirksanton

19. Cumbria Wildlife Trust considers that the Kirksanton site should be withdrawn from the Nuclear NPS (EN-6) on the basis that it is too ecologically sensitive to be considered for this type of infrastructure, and that the developer will not be able to compensate for the damage that will occur to the Natura 2000 sites. It will simply prove impossible to find suitable existing habitat or to create new habitat on a large enough scale to compensate for the loss of and damage to the biodiversity of the Duddon Estuary and Morecambe Bay Natura 2000 sites. The proposed development will therefore be contrary to the requirements of the Habitats Directive/Habitats Regulations despite IROPI, on the basis that without adequate compensation for loss of habitat, the development simply cannot proceed.

Brief comments on the other questions raised by the North West Regional Select Committee

The effect of expanding the nuclear industry on the environment in the North West

20. This will obviously depend on what is built where. Currently there is the possibility of four power stations along a 60km stretch of coast with three new nuclear power stations in West Cumbria (of which the one at Kirksanton is likely to have a severe adverse effect on biodiversity, and should not proceed for the reasons described above) and a fourth at Heysham. Each site will need to be scrutinised with a view to mitigation of adverse impacts. Besides the direct impact of construction all power stations need cooling water and how this is sourced and then returned to the environment is critical.

21. The cumulative impact of four nuclear power stations along a short stretch of coast, most of which is under some form of ecological protection has not been investigated sufficiently to establish that there would be no adverse effect on the biodiversity of Morecambe Bay and surrounding coastline.

22. It is not just a matter of new power stations. It is evident that the current grid infrastructure is inadequate to link three or even two new stations to the national supply network, and there are plans for an enhanced main grid line along the west Cumbrian coast from Annan/Carlisle round to Barrow and Heysham. This could be combined with new road/rail crossings and even possible tidal barrages in the Solway, Duddon and Morecambe Bay.[25] All such proposals will need extremely careful scrutiny for their potential impact on internationally and nationally designated environments. Only limited mitigation would be possible for such large scale infrastructure.

Support to maximise benefits for businesses in the county

23. It has been suggested that building modules for new nuclear power stations would aid the Cumbrian economy as they could be built at Barrow, using surplus capability in the shipyards, and taken up the coast by barge. However, there should be no firm assumptions made that these contracts would actually go to Cumbrian or North West companies. Certainly a strengthening of the manufacturing base in the county would bring economic benefits but there would also be potential for environmental impact that would need careful appraisal. For example the transport of construction components from factory to the sites of the power stations could have impact that will also need assessment (the current road system being totally unsuited to the transport of very large modules and therefore needing improvement).

Improvement in regional infrastructure

24. This raises environmental questions. It is evident that the grid line will need augmenting and this will be needed also for the planned growth in offshore wind farms as well as for any major coastal barrages. If the grid link along the west coast were associated with new road/rail corridors incorporating new crossings of Solway, Duddon and Morecambe Bay the environmental impact on sites of national and international importance could be substantially greater than the impacts of three nuclear power stations alone.

Lessons from past experience

25. There are important lessons to be learned. It is quite clear that the UK nuclear industry was originally expanded in a mood of over-confidence amounting to euphoria. The social concerns over the possible effects of radioactivity were ignored or played down. The handling of radioactive wastes was deplorable in the early years and the investigation of the optimal location, geological containment, hydrology, design and security for High Level Waste disposal has lagged far behind need and has still not been adequately addressed. The lesson is that the power stations, their infrastructure, their linkage to local communities and local employment, the handling of waste arisings, security and decommissioning have to be planned as an integrated whole.

5 January 2010

[25] See Cumbria Vision "The Scope for Renewable Energy in Cumbria" 2009

North West Universities Association (NWN 09)

SUMMARY

— North West Universities have a truly world-class offering in terms of both research and teaching provision for the nuclear sector.

— The aim of this submission is to illustrate the current role of the region's higher education institutions and the future role they will be able to play to underpin the growth of this sector in terms of:

  — Research.

  — Skills.

  — Collaboration with partners and working with business.

— The submission shows that the University sector in the North West is well positioned to support the nuclear industry in the region, and would welcome any incentives or assistance that could be provided in this endeavour.

INTRODUCTION

1. The North West of England has the strongest higher education sector in England outside of London and the South East, comprising 14 higher education institutions and the Open University in the North West. The North West has a truly world-class offering in terms of both research and teaching provision for the nuclear sector. The aim of this submission is to illustrate the current role of the region's higher education institutions and the future role they will be able to play to underpin the growth of this sector, in particular response to the second bullet point "the role of regional universities and education bodies in supporting the nuclear industry in the region". The submission considers university strengths in relation to research, skills and collaboration with partners, including working with business.

2. Inevitably, a document of this nature cannot be fully comprehensive, given the sheer size and complexity of the higher education sector in the North West and that fact that many activities outside of the "core nuclear offer" have an existing and potential benefit for the nuclear industry. NWUA would be happy to amplify any aspects of this submission should this be required.

RESEARCH

3. University of Manchester—Home to the Dalton Nuclear Institute with key expertise in: materials performance, radiochemistry, engineering and sustainability. The portfolio of nuclear research educational activity stands at around £100 million involving 200 researchers. The University of Manchester, via the Dalton Nuclear Institute, is undertaking a joint £20 million investment to establish a world class teaching and education facility in West Cumbria, linked with access to NNL's Central Laboratory. The facility will be equipped with state of the art equipment predominantly in the field of radiation sciences and the study of radiation damage of materials. The Centre for Nuclear Energy Technology, established with NWDA support, provides the University of Manchester with a reactor technology centre that will bring together a number of capabilities required to support academic and industrial interests in nuclear reactor systems. The University of Manchester's Materials Performance Centre brings together world-class interdisciplinary centre for training and research in nuclear materials science and engineering.

4. The University of Liverpool has an international reputation in the fields of Condensed Matter Physics, Nuclear Physics, Particle Physics and Accelerator Science. The University also has a radiometrics research group specialising in instrumentation and modelling.

5. The University of Salford's Joule Physics Laboratory carries out research into atomic collisions and ion-beam physics.

6. The John Tyndall Institute for Nuclear Research, based at UCLan, is focused on nuclear science, engineering and decommissioning, waste management, control and sensors analysis and monitoring, specifically relating to the nuclear environment. It is based at two sites—the Preston Campus and also the West Cumbria Campus located on the Westlakes Science and Technology Park. Research interests of relevance to the nuclear industry include; Waste Management and Control (eg surface contamination in form of radioactive metals or metal oxide deposits), Hazards and Safety Equipment for mechanical systems, Impact of radionuclide releases on ecosystems, Sustainable Development Research (through the Centre for Sustainable Development) Applied Policy Sciences, Epidemiology and Genetics (including cytogenetics, molecular genetics, statistical analysis of epidemiological data, internal dosimetry and data management).

7. The University of Bolton's Centre for Materials Research and Innovation has key strengths in the modelling, design and development of advanced materials of relevance to the Nuclear Industry as well as in methods for the detection of radiolytic products in foods and human body fluids.

8. The Cockcroft Institute at Daresbury incorporates academia, national laboratories, industry and the local economy in researching, designing and developing particle accelerators. The institute is a joint venture between the Universities of Lancaster, Liverpool and Manchester, the Science and Technology Facilities Council (STFC at the Daresbury and Rutherford Appleton Laboratories) and the North West Development

Agency (NWDA). The Institute is located in a purpose-built building on the Daresbury Science and Innovation Campus adjacent to the Daresbury Laboratory and the Daresbury Innovation Centre, and has established satellite centres in each of the participating universities.

9. Lancaster University maintains a multidisciplinary team of engineering researchers working on the combination of instrumentation and generic control.

10. The University of Manchester is involved in a number of consortia in delivering national research programmes including:

9.1 Membership of the DIAMOND (Decommissioning, Immobilisation and Management of Nuclear waste for Disposal) university research consortium focused on Nuclear Waste Management and Decommissioning.

9.2 The Dalton Nuclear Institute leads the Nuclear Engineering Doctorate Programme providing nuclear Research Engineers with industry training.

9.3 Membership of the KNOO (Keeping the nuclear option open) consortium, a four-year initiative set-up to address the challenges related to increasing the safety, reliability and sustainability of nuclear power and development of skills.

9.4 Leading the SPRing (Sustainability Assessment of Nuclear Power: An Integrated Approach) university consortium project developing a decision-support framework to assess the sustainability of nuclear power relative to other energy options.

Skills

11. The higher education sector in the North West has a strong base in which to continue to provide relevant and appropriate skills provision for new graduates as well as those looking to up-skill or re-skill. Please see Appendix 1 for examples of relevant nuclear courses in the North West.

12. An important element of this provision is the number of short courses and continuing professional development courses that are expanding to offer employers appropriate provision in relevant topics eg CPD in Science and Technology of Nuclear Waste Management, CPD in Safety Case and Pg Cert in Radioactive Waste Monitoring and Decommissioning.

13. Lancaster University is home to the Lloyd's Register Educational Trust Chair in Nuclear Engineering and Decommissioning and runs highly-successful, industry-based Masters programmes in Nuclear Safety and Decommissioning.

14. The Nuclear Technology Education Consortium (NTEC) is a new concept in postgraduate-level training for the nuclear sector, developed by a strong consortium of UK universities and HE institutions, including the University of Liverpool, Lancaster University, the University of Manchester and the Westlakes Research Institute. The breadth and format of the training is designed to meet the UK's projected nuclear skills requirements in decommissioning and clean-up, reactor technology, fusion and nuclear medicine. Together the members represent more than 90% of the nuclear postgraduate teaching expertise residing in the UK's universities and research institutes. NTEC provides a one-stop shop for a range of postgraduate training in Nuclear Science & Technology which is unparalleled in the UK. The structure and content of the programme, which leads to qualifications up to Master's level in Nuclear Science & Technology, was established following extensive consultations with the UK nuclear sector, including industry, regulators, MoD, NDA, Government Departments and the Cogent Sector Skills Council.

15. The University of Salford's Energy Centre is looking to develop CPD to support the region's nuclear industry and will include nuclear safety modules.

16. UCLan offer a number of Foundation Degrees, many delivered in W. Cumbria which have been created for the nuclear industry (eg Nuclear Related Technologies, Nuclear Decommissioning).

17. The Open University in the North West, the University of Liverpool and the University of Central Lancashire are all University Associate Members of the National Skills Academy Nuclear (comprising three of only four HEIs engaged nationally).

18. Specifically for the nuclear sector, the Nuclear-graduate Programme is co-ordinated by Lancaster University and funded by the Nuclear Decommissioning Authority. It is backed by more than 20 leading companies including Rolls-Royce, UKAEA, and Sellafield.

19. The University of Cumbria has made advances in its infrastructure that would support the nuclear economy by the establishment of a School of Sustainable Engineering. In addition, The University of Cumbria is exploring the development of modules for the Civil Nuclear Constabulary and the use of University facilities to deliver some of their Basic Training (in conjunction with Cumbria Constabulary).

Collaboration with Partners and Working with Business

20. The University of Cumbria is keenly aware of the opportunities that flow from the nuclear industry in terms of skills and training requirements and is already working in partnership with the Nuclear Decommissioning Authority which has invested in the development of an Energy Coast Campus in west Cumbria (near Workington). This facility, which is a shared teaching and learning space among a number

of partners, was originally developed with the aim of supporting west Cumbria in diversifying from a nuclear sector, which at that point was in decline, into other areas of low carbon energy solutions. The renaissance of the nuclear option as an acceptable low carbon option is clearly changing that proposition and the campus is ideally located and equipped to contribute to delivery of programmes that would support this economy. The University is planning to incrementally build up the number of students at the Energy Coast Campus site over the next five years. It is anticipated that the majority of this provision will be made up of part time, work based learning and third stream funded students. The University expects to be working not only in partnership with the NDA but also Lakes College; Lancaster University; UCLan and Manchester University in the delivery of future projects.

21. The Dalton Nuclear Institute at the University of Manchester is able to offer companies depth and breadth of consultancy expertise from technology assessments to reviews of socio-economic impacts in the key areas of materials performance, radiochemistry, radiation sciences, fusion, modelling and simulation and nuclear physics.

22. UCLan's 2005 acquisiton of the Westlakes Research Institute (WRI) has given the John Tyndall Nuclear Research Institute access to the WRI internationally respected expertise base with specialisms in environmental measurement and monitoring, environmental legislation and radiological and environmental assessments. This operation has over 60 staff involved in research and consultancy and all have significant experience of working in the nuclear industry. Colleagues regularly advise national and international bodies including the International Atomic Energy Authority. UCLan supported by Westlake Renaissance and the west Cumbria Development Fund has invested £5 million on the comprehensive redevelopment and extension of the Westlakes Campus. Facilities include a new wet laboratory and advanced teaching areas with the latest high performance computing facilities, making this a recognised centre of excellence for nuclear activity on Britain's Energy CoastTM. The new Samuel Lindow Building forms the heart of the UCLan Westlakes Campus. The building has been developed from the original Westlakes Research Institute building, upgraded to provide enhanced facilities for students, state of the art technology and environmental performance in line with UCLan's other facilities. Opened in September 2009, the facility is already delivering a wide range of courses for the nuclear industry along with events and business incubation activities. Westlakes Scientific Consultancy provides environmental consulting and health research services. The UCLan Centre for Sustainable Development also is able to provide support to the nuclear industry on a wide range of sustainability issues.

23. UCLan is leading the Nuclear University Enterprise Network (UEN) together with the Northwest Regional Development Agency (NWDA), supported by Westinghouse UK, part of the Westinghouse/ Toshiba global organisation specialising in fuel manufacture and reactor design. The UEN will support entrepreneurship across the university, involving academic staff, students and industrial partners, with activities focussed around the nuclear theme and associated Science, Technology, Engineering and Mathematics subject areas.

24. The Nuclear-graduate Programme (see paragraph 18) co-ordinated by Lancaster University has been funded by the Nuclear Decommissioning Authority to help run the most comprehensive graduate programme the nuclear industry has ever seen. The progamme has been established to run over a 47 month period and is backed by more than 20 leading companies, from Rolls-Royce to BAE Systems and Toshiba, and aims to plug a nationwide skills gap in decommissioning. The industry faces shortage of not only qualified engineers but also graduates in finance, communications and marketing, HR and environmental science. Twelve graduates from a variety of backgrounds have already been recruited for the first programme cohort of three, with placements organised through Lancaster University's Centre for Employability Enterprise and Careers (CEEC).

Conclusion

25. The universities in the North West have a strong history of providing supporting to the nuclear industry both in terms of academic taught courses and the growing breadth of research in this field. Partnerships with external organisations and employers are producing higher education courses in the nuclear sector more tailored to the needs of the industry and the study requirements of its employees. This submission shows that the University sector in the North West is well positioned to support the nuclear industry in the region. The North West Universities would welcome any incentives or assistance that could be provided in this endeavour.

January 2010

NUCLEAR COURSES IN THE NORTH WEST

Course Name	*Course Description*	*Supplier*	*Course URL*
Foundation Degree in Nuclear Engineering	Nuclear decommissioning requires an understanding of the principles of nuclear physics, engineering, reactor design, radiation protection, safe working, environmental remediation, waste characterisation, disposal & treatment, business & project management and the governance & commercial structure of the nuclear industry. This course covers all of these areas, so equipping students with the skills to eventually become effective decommissioning technicians and managers and so enter what is going to be one of the most buoyant employment markets of the early 21st century.	UCLan	http://www.uclan.ac.uk/scitech/john_tyndall_nuclear/courses_and_skills.php#FDNucDec
Foundation Degree in HVAC Engineering/Foundation Degree in Construction Engineering	The courses cover the theory and practice for the construction, operation and maintenance of buildings and the services within them. In both courses the work environment is used as a contextual tool and it also provides a vehicle for learning. The HVAC course emphasizes nuclear ventilation, an area of skill shortage. With the Construction course the emphasis is on the breadth of management and technical skills needed to operate effectively in the workplace, from aspects of procurement and measurement to structural design.	UCLan	http://www.uclan.ac.uk/scitech/john_tyndall_nuclear/courses_and_skills.php#FDNucDec
Postgraduate Certificate in English for Nuclear Engineering	The Postgraduate Certificate in English for Nuclear Decommissioning has been designed as a full-time course for the overseas nuclear engineers and experts involved in planning, implementing and controlling international nuclear decommissioning projects.	UCLan	http://www.uclan.ac.uk/scitech/john_tyndall_nuclear/courses_and_skills.php#FDNucDec
MSc, PG Dip, PG Cert in Energy and Environmental Engineering (Nuclear Decommissioning)	Increasingly, both across the UK and internationally, nuclear and environmental scientists and engineers are developing clean and safe methods of nuclear decommissioning. There is a need for specialists, who understand the technological and environmental principles behind nuclear decommissioning. This programme is designed to provide those skills. It draws on existing strengths in the University in built environment, energy and the environment, nuclear decommissioning, risk assessment and management studies.	UCLan	http://www.uclan.ac.uk/scitech/john_tyndall_nuclear/courses_and_skills.php#FDNucDec

Course Name	*Course Description*	*Supplier*	*Course URL*
Foundation Degree in Nuclear Project Management and Programme Control	This course offers a broad foundation of skills needed in project management and in programme control, that are applicable on a nuclear licensed site and more broadly across a range of industries. It should be beneficial to people interested in progressing to leadership positions in project and programme management; and particularly so in connection with the nuclear industry. Level 1 modules include: Information Technology, Health & Safety in the workplace, Law and Management, Planning in the Nuclear Industry, Design Awareness, Governance of Decommissioning, Documentary Control and Nuclear Science. Level 2 modules include: Construction Law, Construction Management, Governance of Decommissioning 2, Engineering Management and Resource Planning, Safety Case Management, Project Control and Professional Practice.	UCLan	http://www.uclan.ac.uk/scitech/john_tyndall_nuclear/courses_and_skills.php#FDNucDec
Foundation Degree in Nuclear Related Technology	This programme is aimed at students seeking to commence a career in technology or engineering, and who want to apply their education in a nuclear setting. There are four main streams to choose from, each of which has been identified as a key demand area in the industry: Science & Process, Commissioning & Maintenance, Instrumentation & Control, Design Engineering. Graduates from these courses will form the new generation of engineers, scientists and professionals needed as the nuclear industry addresses both decommissioning and new build. This course is delivered via Lakes College West Cumbria, GenII Engineering & Technology Training Ltd and Sellafield Limited.	UCLan	http://www.uclan.ac.uk/scitech/john_tyndall_nuclear/courses_and_skills.php#FDNucDec
BSc/BEng top-up degree in Nuclear Related Technology/ Decommissioning	A selection of moduels allowing successful graduates from all of the UCLan Foundation Degrees to progress to complete a full honours degree within 1 year after exiting the FD.	UCLan	http://www.uclan.ac.uk/scitech/john_tyndall_nuclear/courses_and_skills.php#FDNucDec
Certificate and CPD : Scientific and Technical Aspects of Nuclear Waste	The Course provides expert knowledge of best practice in nuclear waste management, develops skills that will enable participants to seek improved, costeffective and regulatory-acceptable methods when working at the forefront of of waste treatment and management on nuclear licensed sites.	UCLan	http://www.uclan.ac.uk/scitech/john_tyndall_nuclear/courses_and_skills.php#FDNucDec

Course Name	*Course Description*	*Supplier*	*Course URL*
Foundation Degree in Engineering (Nuclear)	New for 2010 and offered at UCLan Westlakes Campus and also at partner colleges Blackpool & Fylde and Hartlepool the FdEng Engineering (Nuclear) course involves the identification, analysis, evaluation and subsequent solving of problems associated with manufacture and process engineering, setting those activities within the context of nuclear operations. Level 1 topics include Nuclear Fundamentals, Communication and Personal Development, Engineering Technology, Mathematics, Design, Materials and Manufacture, Mechanical Principles and Electrical/electronic Principles. Level 2 topics include a range of specialist nuclear modules covering Reactor Design, the Fuel Cycle and Safety, plus modules covering Thermal & Fluid Processes, Instrumentation & Control and Computer-aided Engineering. Further modules include Engineering Design 2, Business and Professional Development, and Materials and Manufacture; and a project to practice and further develop skills needed in industry.	UCLan and Blackpool & Fylde College	http://www.blackpool.ac.uk/course/engineering-nuclear-foundation-degree-level-5-university-central-lancashire
Certificate in Nuclear Team Leadership	Developed in conjunction with the Nuclear Industry and with development funding provided by the National Skills Academy (Nuclear), the Certificate in Nuclear Team Leadership is delivered by the UCLan Lancashire Business School. Its key goal is to develop the competencies of team leaders in the areas of change management and team leadership in the nuclear industry through a curriculum that combines academic study, skills development and application. The course covers the understanding, assessment and application of appropriate models of leadership theory, models of change management and managing performance. This programme has been adopted by major organisations across the sector and is delivered in a flexible manner to meet the needs of both employers and employees.	UClan	http://www.uclan.ac.uk/information/campuses/cumbria/courses.php
Postgraduate Certificate in the Governance of the Nuclear Industry	This part-time course is for nuclear professionals involved in the design and implementation of nuclear projects, especially where the role has a public facing element, covers UK Civil nuclear policy, governance theories and issues, and nuclear industry sustainability and sustainable communities.	UCLan	http://www.uclan.ac.uk/information/campuses/cumbria/courses.php

Course Name	*Course Description*	*Supplier*	*Course URL*
MA Global Energy Futures	This part time course for professionals in the sustainable development, energy and environmental sectors provides an intellectually stimulating insight into key issues surrounding the global planning, production and delivery of energy. With modules exploring UK civil nuclear policy, governance issues, theories and cases, sustainability and sustainable communities, 21st Century Energy globalisation and security and renewable energy policy and governance, this masters level programme addresses some of the most important challenges facing the world. It is aimed in particular at those working in public and policy-facing roles involved with stakeholder, public and external relations in the design and implementation of projects in the energy sector.	UCLan	
NTEC	The Nuclear Technology Education Consortium (NTEC) is a national consortium offering full-time and part-time postgraduate courses in Nuclear Science & Technology. The courses include the following specifically offered in the north-west: Lancaster University—Lancaster brings expertise in innovative nuclear course design including part-time industry-based schemes involving modules in the Design of Safety-critical Systems and Decommissioning and Robotics Engineering. The University of Liverpool—The University of Liverpool runs over 20 masters training programmes in the Faculties of Science, Engineering and Medicine. A number of the programmes have been supported by EPSRC in the past with the development of computer aided learning being an important feature. The masters training programmes are completely integrated into the University quality assurance and are informed by the excellent research carried out within the University. The University of Manchester—The university has nuclear research activities in 10 departments covering aspects of materials, radiochemistry, nuclear physics, fusion, nuclear medicine and environmental science. The university has considerable experience in industrially-focussed modular programmes and e-learning formats. Manchester has also established the Dalton Nuclear Institute to coordinate and grow its nuclear research capacity.	Lancaster University, The University of Liverpool, The University of Manchester, Westlakes Research Institute	http://www.ntec.ac.uk/

Course Name	*Course Description*	*Supplier*	*Course URL*
	Westlakes Research Institute—Grounded in over 10 years of rigorous applied research and commercial contract work focussed on environmental and nuclear activities, WRI has built up a portfolio of academic and professional training modules. These have received academic validation, demonstrating their adherence to QAA standards. These are offered on postgraduate courses at the Universities of Liverpool, Lancaster, Manchester and Newcastle.		
MEng Nuclear Engineering	This course will provide a comprehensive education in engineering focused towards the design and operation of facilities that enable electricity to be generated in nuclear power plant. The course will also cover medical applications of nuclear technology.	Lancaster University	http://www.engineering.lancs.ac.uk/undergraduate/nuclear_engineering.asp
MSc in Decommissioning and Environmental Clean-up	This MSc is a response to the need for postgraduate training dedicated to the multidisciplinary activities that will comprise decommissioning in the 21st century. The focus is a balanced blend of project management, safety, engineering and environmental awareness that has arisen out of detailed discussion with stakeholders in industry and academe to ensure decommissioning evolves as an activity carried out safely, to time and budget and with respect for the environment.	Lancaster University	http://www.engineering.lancs.ac.uk/postgraduate/courses.asp?ID=33
MSc in Safety Engineering	This course focuses on the complete engineering system, comprising people, hardware and software. It is particularly relevant for senior engineers and managers working in high-hazard or transport industries.	Lancaster University	http://www.engineering.lancs.ac.uk/postgraduate/courses.asp?ID=36
MSC in Radiometrics: Instrumentation and Modelling	The programme covers basic radiation principles, the use of detection systems and associated instrumentation applications, and modelling techniques.	University of Liverpool	http://www.liv.ac.uk/study/postgraduate/taught_courses/radiometrics_instrumentation_msc.htm
Pg Cert in Radioactive Waste Monitoring and Decommissioning	The Postgraduate Certificate in Radioactive Waste Monitoring and Decommissioning is a part-time programme covering work in particle and nuclear physics.	University of Liverpool	http://www.liv.ac.uk/study/postgraduate/taught_courses/radioactive_waste_monitoring_certificate.htm
MSc in Nuclear Science and Technology	The Nuclear Science and Technology MSc is delivered by a consortium of ten Universities and Institutes (Nuclear Education Training Consortium), ensuring that research and teaching ,expertise is available across the whole programme. Sample modules include: Decommissioning Stream, Nuclear Technology Stream, Decommissioning, Environment and Safety and Nuclear Technology.	University of Liverpool/University of Manchester	http://www.liv.ac.uk/study/postgraduate/taught_courses/nuclear_science_technology.htm

Course Name	*Course Description*	*Supplier*	*Course URL*
Foundation Degree in Nuclear Decommissioning	This degree equips students with an understanding of the principles of nuclear physics, engineering, reactor design, radiation protection, safe working, environmental remediation, waste characterisation, disposal & treatment, business & project management and the governance & commercial structure of the nuclear industry. This course develops skills that will be instrumental in enabling students to become effective decommissioning technicians and managers and so enter what is going to be a key employment market of the early 21st century. The course is currently offered at Lakes College, West Cumbria and Bridgwater College in Somerset, with UCLan quality assurance.	West Lakes College (UCLan)	http://www.lcwc.ac.uk/foundationdegreenucleardecommissioning
BEng (Hons) Robotics and Mechatronics	The BEng (Hons) Robotics and Mechatronics course brings together aspects of modern electronic processing methods and mechanical system design, to develop robotic and mechatronic systems, applicable in many areas including modern manufacturing, aerospace, and nuclear industries. A range of algorithms, tools and development environments are covered, including neural networks, control systems, computer vision, and programmable digital systems, which enable sophisticated systems to be developed, and implemented in real-time. The course produces resourceful, competent, clear-thinking graduates with a range of skills and experience relevant to a wide range of modern industries.	University of Central Lancashire	http://www.uclan.ac.uk/courses/ug/beng_rm.htm
Nuclear Engineering (by Research) EngD, MPhil, PhD	Nuclear engineering by research	University of Manchester	http://www.manchester.ac.uk/postgraduate/researchdegrees/researchdegrees/bysubject/?index=NG

Memorandum from Westinghouse Electric Company (NWN 10)

About Westinghouse

Westinghouse Electric Company, a group company of Toshiba Corporation, is the world's pioneering nuclear power company and is a leading supplier of nuclear plant products and technologies to utilities throughout the world. Westinghouse supplied the world's first Pressurised Water Reactor in 1957 in Shippingport, Pennsylvania. Today, Westinghouse technology is the basis for approximately half of the world's operating nuclear plants.

Westinghouse is headquartered in Pittsburgh Pennsylvania and employs around 10,000 people around the world. The company has three core business areas—nuclear fuel, nuclear reactor services and nuclear power plants.

China will build four Westinghouse AP1000 reactors—two on the Sanmen site and two on the Haiyang site. Construction on the first of these plants, at Sanmen, began in February 2008, and is now well underway. A further six AP1000 plants have already been ordered in the US, with many more in the planning stage.

UK regulators are currently assessing two reactor designs in detail—including the Westinghouse AP1000—to determine if they meet the UK's safety and environmental requirements.

In the UK, Westinghouse runs the Springfields site in Preston, Lancashire (where around 1,800 people are employed), on behalf of the Nuclear Decommissioning Authority. The vast majority of the UK's nuclear fuel has been made at Springfields, over a period of more than 50 years.

Executive Summary

— The North West is the region at the heart of the UK's nuclear industry, with the full nuclear fuel cycle represented.

— A key element of that representation is the Springfields site, managed by Westinghouse, where around 1,800 people are employed, and where the vast majority of the UK's nuclear fuel has been made over the past half century.

— The region also stands well placed to benefit from potential growth of the nuclear industry in future, and already hosts many of the key academic and skills development bodies which will help to facilitate this.

— There is currently good co-ordination between the various companies, universities, skills development agencies, regional and sub-regional bodies. This needs to continue if the potential benefits to the region are to be fully realised.

In the remainder of this submission, we will comment on the specific issues identified in the Inquiry Terms of Reference, namely:

The effect of expanding the nuclear industry on the North West, including the impact on: the economy, jobs, skills, local and regional business and the environment.

1. The North West is already the focal point for the UK nuclear industry with around half of the industry's employees and the full nuclear fuel cycle in the region (enrichment at Capenhurst, fuel manufacture at Springfields, power generation at Heysham, and waste management and reprocessing at Sellafield, with most of the National Nuclear laboratory staff providing underpinning R&D across their sites). In addition, there is a wealth of supply chain companies providing plant, components, services and technical expertise to the larger players.

2. The industry already supports tens of thousands of direct jobs in the region, with thousands more supported indirectly.

3. Given this strong base, there is a great opportunity to sustain and increase the economic benefit which the industry brings to the region, as the nuclear industry prepares for expansion. The distinction between the two aspects is important.

— Firstly—the timescales for new nuclear power plants are very long (the first reactors typically producing power to the grid around 2018–19), and so some of the benefits will not arise for several years to come, In part therefore, this will simply offset what would otherwise be a decline in nuclear industry employment over the same period. At Springfields, for instance, current plans would see the site decline as we approach 2023, and the scheduled end of operation of the AGR fleet, which provides the mainstay of the site's business. The first impact of new fuel manufacturing business will be to help to sustain the site's workforce at around present levels out for decades to come.

— If the UK industry then continues to grow, and with potential export business, there is then the potential to grow numbers on the site and to sustain these higher levels of employment for many decades to come.

4. It is clear that with a secure—and in the longer term, increased—nuclear employment base in the North West, there would be corresponding benefits in skills provision, the indirect employment which the industry supports and to the wider economy. This could all be delivered with minimal environmental impact, compared to many other sectors.

The role of regional universities and education bodies in supporting the nuclear industry in the region.

5. The North West already hosts many of the UK's leading centres of academic excellence in nuclear matters. The Dalton Nuclear Institute at the University of Manchester is one prime example, with University of Central Lancashire and Lancaster University being among the others. In addition to universities there is a wealth of skills provision from colleges and other centres, such as Blackpool and Fylde College.

6. The provision of skills and training to the nuclear industry is co-ordinated to a large extent by the National Skills Academy for Nuclear (NSA-Nuclear), which is also headquartered in the North West. This body provides effective liaison between industry and skills providers, making sure that the training on offer is meeting industry needs, and ensuring that providers and courses are accredited, so the training is clearly seen as being "fit for purpose" across the sector. Westinghouse is pleased to be actively involved in supporting NSA-Nuclear in a range of ways.

7. It is clear that a larger, stronger nuclear industry, with a future stretching out for decades ahead, will need a correspondingly greater skills sector to fuel the demands for new entrant employees and their ongoing development. The North West's training providers are ideally placed to grow in this way, and would stand to benefit from continued operation and future expansion of the nuclear sector in the region.

What support is needed to maximise the potential benefits for businesses in the region?

8. The North West has the biggest concentration of supply chain companies to the nuclear industry of any region in Britain. This is reflected by the fact that the Regional Steering Group for the NSA-Nuclear covering the North West is—by far—the largest such group. Data from the Nuclear Industry Association also shows a strong locus of their member companies in the region. There are likely to be benefits for the region from nuclear new build, therefore, wherever it takes place.

9. It is important to have strong encouragement and co-ordination of the supply chain from regional and sub-regional bodies such as the NWDA, CBI North West, West Cumbria Business Cluster, Westlakes Renaissance, Lancashire Economic Partnership, and so on. The Nuclear Decommissioning Authority, based in the North West and with a strong set of socio-economic responsibilities, also have an important role to play, as do major North-West-based companies such as Westinghouse.

10. These bodies should work with industry via NIA and NSA-Nuclear to ensure that supply chain activities are "joined up" across the sector. Where possible it is clearly helpful to prevent duplication between separate programmes, whether this is in relation to management of different NDA sites or in relation to different new build programmes.

11. Much of this co-ordination activity already takes place, but it is important to retain the regional perspective as the industry moves forward and new players become involved.

What improvements to the regional infrastructure will be needed, including during the construction phase?

12. Assuming that the context of this question relates specifically to nuclear new build, then the answer will depend to a large extent on the details of specific projects, which are not yet clear.

13. In Cumbria—although two plots of land have been acquired by RWE npower, and a further plot by the consortium of GDF Suez/Iberdrola/Scottish and Southern Energy—it is far from clear what power plants will be built, by whom, where and when. EdF Energy—the owners of the Heysham site—are due to dispose of the new build land there at some point, but the new ownership is not yet determined and thus plans for that site in relation to potential new build are far from clear.

14. In Cumbria, a lot of useful preparatory work is being done by Westlakes Renaissance, in collaboration with a wide range of interested parties in that region, to look at grid options, supply chain capability, road, rail and sea transport logistics, and so on.

15. The question of timing will also be important in relation to any new build at Heysham. Grid connection requirements, for instance, will differ depending on whether or not there is overlap between the operation of the existing stations there (the more recent of which is due to close in 2023—but could potentially see lifetime extension) and any new build power plants coming on line.

What are the arguments for and against each of the proposed four sites announced on Monday 9 November?

16. All of the sites announced on the draft National Policy Statement have characteristics which make them well suited to nuclear new build, as well as some issues which need to be carefully addressed. However the matter of which of these sites (or others listed on the NPS) are developed will be a matter for the developers (in essence—the power utilities) and not for either national Government or regional policy-makers. We are therefore slightly surprised to see the Committee seeking views on this matter.

What lessons can be learnt from earlier commissioning experiences?

17. Both the UK electricity market and the nuclear industry have moved on substantially since the last time a nuclear power plant was constructed in the 1980s/90s, so it is important not to be too dogmatic in applying either positive or negative learning from that period to the consideration of new nuclear build in the 21st Century.

18. However, there are some learning points which can sensibly be applied to present day thinking. Perhaps most important is to ensure that all parties have a strong interest in seeing the project delivered to time, cost and specification. Clear and well-communicated accountabilities and obligations will also be important, as will detailed forward planning and clarity on the requirements of contractors and sub-contractors in respect of both what is to be delivered and the safety, quality and other behavioural standards expected.

The role of regional bodies, and partnership arrangements between such bodies, in maximising the potential benefits and minimising the negative impacts of expanding the nuclear industry in the North West.

19. Again, it is difficult to be specific here without knowledge of what expansion—if any—the nuclear industry in the North West is likely to experience. As noted earlier, the specifics of any new build projects have yet to be defined.

20. However, if the potential opportunities for the North West arising from the nuclear sector over coming decades are to be maximised, then strong co-ordination between industry, academia and regional agencies will be essential. Westinghouse welcome the news that the North West has been designated as the Low Carbon Economic Area for Nuclear, under the stewardship of the NWDA, and we look forward to working with the NWDA and other bodies to help to bring about the potential benefits.

21. We also are pleased that it is proposed to establish a "Nuclear Cluster" for the North West, bringing together the major nuclear players in the region, again under the guidance of the NWDA, and with leadership provided by NSA-Nuclear. We look forward to participating actively in this initiative as it develops in the early part of 2010.

22. In summary—although there is still some uncertainty over the scope, scale and timing of possible nuclear industry expansion in the region, we are confident that the right foundations are in place, with good communication between all interested parties, to enable the region to secure maximum benefit from the nuclear industry's anticipated resurgence.

5 January 2010

Memorandum from Nuclear Free Local Authorities (NWN 11)

I provide a submission from the Nuclear Free Local Authorities (NFLA) Steering Committee to the North West Parliamentary Select Committee's "Inquiry on the Future of the Nuclear Industry" in the North West. The Nuclear Free Local Authorities are made up of 70 councils from across the UK and Ireland. Its terms of reference can be found on the NFLA website http://www.nuclearpolicy.info.

The NFLA response concentrates on the effect of expanding the nuclear industry on the North West, including the impact on the economy, jobs, skills, local and regional business and the environment. It also notes issues around the opportunity costs of new nuclear build and the continuing issues of dealing with the North West's radioactive waste legacy.

1. Introduction

The Draft National Policy Statement for Nuclear Power (Nuclear NPS) (EN-6) includes proposals for ten new nuclear power stations in the UK, four of which are in the North West Region—Sellafield, Braystones and Kirksanton in Cumbria and Heysham in Lancashire. Consideration needs to be given to the potential detrimental impacts on the economy of just one English region developing four large energy infrastructure projects over the next fifteen years, particular in Cumbria where three of the four projects are proposed.

Replacing nuclear reactors will save only around 4% of the UK's carbon emissions. Therefore, the NFLA believes there is a real need to be absolutely sure that promoting new nuclear reactors is not going to negatively impact on the ability to deal with the other 96% of emissions. Investing in new reactors could well divert investment from other low carbon technologies and energy efficiency measures. Whilst the Government argues it is taking action to reduce carbon emissions on many different fronts—including ensuring a diverse low carbon energy mix and investing in energy efficiency, the NFLA argues that building new reactors has a high opportunity cost—the cost of forgoing the alternative outcomes that could have been purchased with the same money. The economy of the North West would be able to achieve far more if money spent on new nuclear reactors were instead spent on energy efficiency and renewables.

It is also necessary to bear in mind that the nuclear waste produced by new reactors will also have to be managed. Cumbria is likely to be called upon to play a large role in this whether or not it expresses a willingness to do so.

2. A "Type-cast" Economy

The UK Government has stated that a new reactor programme could create 9,000 construction and 1,000 operational jobs per station.(1) Former Government Minister John Hutton told the UNITE conference on 28 March 2008 that up to 100,000 new skilled jobs could be created by a new nuclear programme.(2) The NFLA would suggest this figure is rather over-stated as it is based on a scenario which involves the construction of twenty new reactors—up to 32GW, double what has been proposed in the current consultation.

The NFLA would argue that further clarity is required concerning these job numbers. EDF, one of the companies likely to be involved in new-build, has said its plans for the UK "could create approximately 350 direct permanent jobs and over 2,000 temporary jobs during the peak construction period" for each power station. However, EDF has also said its station currently under construction in Finland currently employs "around 600 (construction) people work at the site, with up to 3,000 during peak times".(3)

As a capital intensive industry, nuclear power is not a very efficient way of creating jobs. It produces around 75 jobs per year per TWh of power, whereas wind power produces 918–2.400 per year per TWh. And due to technological changes, any new nuclear power stations would employ fewer people than existing plants.(4)

Investment in renewables and energy efficiency would create *seven* times more green jobs over the next ten years than would be lost in the coal and nuclear sectors in Europe, according to a report published by Greenpeace and the European Renewable Energy Council (EREC), and backed by a number of trade unions.(5a)

Peter Bradford, a former member of the Nuclear Regulatory Commission, argues that nuclear power could actually kill jobs. The capital markets are not swimming in credit. The NFLA would argue that if billions of pounds are spent for nuclear construction it may well suck up money that might be otherwise be available for, say, wind projects that could create far more jobs per pound spent.(5b)

It could be argued building nuclear reactors in west Cumbria could also prevent any possibility of diversifying the local economy, especially if the area also volunteers to host a nuclear waste repository. Many new businesses would be reluctant to move into an area which is so heavily focused on promoting the nuclear industry. It may also detract from the promotion of other industries, such as those connected to food and agriculture or tourism, which require an area that has a reputation for having a clean environment.

A large influx of workers during the construction phase of a new reactor or geological disposal site project would put a strain on local services and facilities. Short duration, capital intensive construction projects have been shown to seriously distort the local labour market. Often the bulk of those employed are from outside the local area. After the project is completed many migrant workers remain in the area compounding local employment problems.(6)

3. Opportunity Costs of New Nuclear Build

The NFLA believes that tackling climate change is an urgent priority, so the UK Government needs to spend its limited resources as effectively as possible. In other words it is imperative to maximize the carbon reductions that can be achieved with every pound spent. Investing in expensive nuclear power is not particularly cost effective. Energy efficiency can be up to seven times more cost effective. So investment in new reactors effectively worsens climate change because each pound spent is buying so much less of a "solution" than if it were spent it on energy efficiency measures.(7)

The proponents of nuclear power argue that, because climate change is serious we need to promote renewables, energy efficiency *and* nuclear power. This suggests the Government has infinite sources of finance to spend on large numbers of energy projects, which is clearly not the case, and particularly so given the extent of the public finances and a worldwide economic recession. A scarcity of resources means anything that is spent on nuclear power will not be available to be spent on other energy projects.

Nuclear power is likely to divert attention and resources from renewables and energy efficiency projects which could be carried out in the North West and be a much more cost effective way of creating jobs and reducing carbon emissions.

Paragraph 2.5.1 of the National Nuclear Policy Statement (NPS) explains the Government's policy on nuclear energy. It states that nuclear power should be free to contribute as much as possible towards meeting the need for 25 GW of new non-renewable capacity. It makes no attempt though (and nor does EN-1) to explain, for example, why decisions on the provision of this extra 25GW of new capacity cannot be left to the utilities and the marketplace to decide, or why offshore wind or small-scale renewables could not be left to provide as much as this as possible. Given that both EDF and Eon have been asking the Government to set a maximum contribution for renewables—at around the 30% level proposed in the Renewable Energy

Strategy—so as not to constrain nuclear[8]—it would be sensible for the Government to state clearly that its priority is for electricity to be generated by sustainable renewable methods which do not generate waste—radioactive or otherwise.

4. The Role of Local Authorities in the North West Region

The failure of the Copenhagen Conference to come up with a legally binding set of climate targets means all public agencies must redouble its attempts to open up new fronts at the local and grassroots levels to reduce carbon emissions. The trailblazing work of a few local councils, such as Kirklees and Manchester, is beginning to show how grassroots campaigns can be turned into effective action.

The Government's view that demand management opportunities will not be sufficient to affect the need for bulk generation and new large energy infrastructure (EN-1 para 3.3.19) is particularly disappointing in this regard. A groundswell of actions by individual communities led by local authorities will need all the financial support they can get from national government. If the Government is focussed on getting new nuclear reactors built to the exclusion of building a local decentralised energy system, then it will be difficult for local authorities to continue this exciting leadership role.

In the Government's 2003 Energy White Paper it promised local authorities a "step change" in policies and programmes to deliver energy efficiency.[9] The 2003 White Paper included a commitment to encourage local authorities to take the lead, acting as catalysts for change. Some local authorities have indeed been carrying out some innovative climate change strategies, but without more central government support these schemes will never be ambitious enough or at the scale required to meet carbon abatement targets. The UK is still waiting for the step change in energy efficiency which was promised six years ago.[10]

Furthermore, the Government's Low Carbon Transition Plan[11] expects 30% of UK electricity to come from renewables by 2020 and 10% from nuclear and coal with carbon capture. But only 2 of the 30% would be from small-scale renewables—whereas the solar PV industry alone expects to provide 12% across Europe. The difference between 2% and 12% alone would be enough to save the UK having to replace its nuclear reactors.[12]

The Government's proposed Feed-in Tariff, or "Clean Energy Cashback" scheme has been set at a rate that is inappropriately low. Alan Simpson MP, who advised the Government on Feed-in Tariffs, says the UK Government should aim to get much more than 2% of electricity from micro-generation. "If they were five times as ambitious, it would only cost the average family another £2 a year". But, according to The Guardian, the nuclear industry has been lobbying against support for renewables because it undermines the case for new nuclear stations.[13]

The Government's target is to reduce carbon emissions by 80% by 2050. It also has a target of eradicating fuel poverty by 2010. Yet, according to Ofgem, renewing infrastructure and meeting carbon targets is likely to require an investment of up to £200 billion meaning increases in domestic energy bills of 14% to 25% by 2020.[14] Clearly, without a large domestic energy efficiency programme it will be impossible to meet both climate change and fuel poverty commitments.

A policy which can cut emissions from the domestic sector by 80% by 2050 will require every house to have excellent insulation as well as some form of Low and Zero Carbon Technology—micro-generation and community heating schemes. This means carrying out installations in all of the UK's 25 million dwellings over the next 40 years or 625,000 dwellings every year between now and 2050.[15]

Local authorities will have to play a major role in implementing these policies, but beyond a few trailblazing authorities, an insufficient amount of effort is going into this area.

The Local Government Association (LGA) agrees that local government is pivotal to delivering the step-change in CO_2 emissions reductions required.[16] The scope for local authority action is significant. Through delivery of services such as transport, planning and housing as well as through their influence on all sectors of the community, local authorities can make reductions in emissions from corporate activities and through stimulating savings in the wider community. Such action can help to deliver joint social, economic and environmental aims and link together initiatives to maximise their impact.

5. Nuclear Waste

Probably the most contentious point made in the Nuclear NPS concerns nuclear waste. The Government says its preliminary conclusion is that it is satisfied effective arrangements will exist to manage and dispose of the waste produced by new reactors. "*As a result the IPC need not consider this question.*" (para 3.8.20) Consequently the need to store spent nuclear fuel at the reactor sites for up to 160 years is not even going to be examined by the new Infrastructure Planning Commission.

The Government's confidence that it will find a suitable site in a community which has expressed a willingness to host a site is misplaced. The three Cumbrian authorities looking into whether or not to volunteer will not finish the first round of consultation until 31 March 2010, and will not look at the radioactive waste inventory until later in 2010. The full extent of the new reactor programme is still unknown and may require a second deep geological disposal facility. Cumbria may yet decide against hosting a deep geological disposal facility, or it may decide it is only willing to host a facility for legacy waste.

However, the Government has explicitly stated it is prepared to "*explore other approaches*" ie override a Community's wishes—if the voluntarism approach to disposal does not work.[17] This completely undermines the voluntary approach and suggests that Cumbria could be forced to accept waste whether it wants to or not.

The issue of dealing with nuclear waste already created is far from resolved. The Government cannot, therefore, assume that waste produced by new reactors can be safely disposed of—along with legacy waste—in a deep geological disposal facility. Thus, the assumption that adequate arrangements for the long term management of radioactive waste from new reactors will exist when required is highly questionable.

Under the Planning Act 2008 the Nuclear NPS consultation is the last chance to challenge the principle that new nuclear reactors should be built at the four proposed sites in the North West, and that these reactors should be permitted to generate spent nuclear waste fuel which may be stored on the sites for up to 160 years.

The Justification consultation quotes the ICRP Publication 77 which states that "*Waste management and disposal operations are an integral part of the practice generating the waste. It is wrong to regard them as a free standing practice that needs its own justification.*"[18]

In other words, the disposal of spent fuel and nuclear waste from new reactors may well be subject to no further public scrutiny after 22 February 2010. It looks likely that, as things stand at the moment, the IPC will be simply told that the strategic question of whether nuclear waste should be disposed of in a geological repository has already been decided and that any planning application for a geological disposal facility only needs to be examined with regard to local planning issues. There will effectively be no Nirex Inquiry Part 2.

In other words, Cumbria could be forced to accept a geological disposal facility against its will without even so much as a public inquiry.

6. Conclusion

In its submission to the North West Parliamentary Select Committee the NFLA has sought to show that there are major unresolved issues and concerns over a nuclear new build programme. Other renewable energy alternatives, energy efficiency and micro-generation may all be significantly curtailed in favour of nuclear power. The NFLA hopes the Committee will consider these issues and make appropriate recommendations to the Government.

5 January 2010

References:

[1] DECC Press Release 23 January 2009
http://nds.coi.gov.uk/content/detail.aspx?NewsAreaId=2&ReleaseID=390580&SubjectId=2

[2] Hansard 21 April 2008. Column 1467W http://www.publications.parliament.uk/pa/cm200708/cmhansrd/cm080421/text/80421w0096.htm#08042337000028

[3] See "Killing Jobs" NuClear News No.4 March 2009
http://www.no2nuclearpower.org.uk/nuclearnews/NuClearNewsNo4.pdf

[4] Goldemberg, J, 2004, The Case for Renewable Energies, International Conference for Renewable Energies, Bonn, quoted in NEF, 2005,Mirage and Oasis, p41. http://www.neweconomics.org/gen/z_sys_PublicationDetail.aspx?PID=209

[5] Media Newswire 22 September 2009
http://media-newswire.com/release_1099153.html
Energy Sector Jobs to 2030: A Global Analysis, Greenpeace International 2009
http://www.greenpeace.org/international/assets/binaries/energy-sector-jobs-to-2030.pdf

[5] How did $50 billion high risk, job killing, nuclear loans get in the stimulus? Fraudulent budget gimmickry, Climate Progress. February 11, 2009. http://climateprogress.org/2009/02/11/nuclear-loan-guarantee-program-stimulus/

[6] The impact of a Power Station on Gwynedd. Gwynedd Planning Officer, September 1976.

[7] Lovins, A More Profit with Less Carbon, *Scientific American*, September 2005
http://www.sciam.com/media/pdf/Lovinsforweb.pdf

[8] See Nuclear vs Wind in Renew On-line No. 82. Nov-Dec 2009
http://www.natta-renew.org/S0014ABD4.2/ROL82.doc

[9] Warren, A Energy Efficiency Step Change? More like a soft shoe shuffle. Daily Telegraph 5 February 2008. http://www.telegraph.co.uk/earth/earthcomment/3324265/Energy-efficiency-step-change-More-like-a-soft-shoe-shuffle.html

[10] See Building New Reactors Damages Attempts to Tackle Climate Change, No2nuclearpower briefing June 2009. http://www.no2nuclearpower.org.uk/reports/NewNuclearDamagesClimate.pdf

[11] The UK Low Carbon Transition Plan.
http://www.decc.gov.uk/en/content/cms/publications/lc_trans_plan/lc_trans_plan.aspx

(12) "Microgeneration Fightback" NuClear News No.11 October 2009.
http://www.no2nuclearpower.org.uk/nuclearnews/NuClearNewsNo11.pdf

(13) Guardian 23 November 2009
http://www.guardian.co.uk/business/2009/nov/22/miliband-renewable-energy-plan-dashed-by-departmental-wrangling

(14) Renewable Energy Focus 3 November 2009
http://www.renewableenergyfocus.com/view/4946/uk-could-miss-target-for-renewable-energy/

(15) Home Truths: A Low Carbon Strategy to Reduce UK Housing Emissions by 80% by 2050, by Brenda Boardman, FoE (EWNI) and Co-operative Bank, November 2007. http://www.foe.co.uk/resource/reports/home_truths.pdf

(16) Leading the way: How local authorities can meet the challenge of climate change".
Local Government Association, Energy Saving Trust, and Energy Efficiency Partnership for Homes, June 2005. http://www.lga.gov.uk/lga/aio/24909

(17) DECC "*The arrangements for the management and disposal of waste from new nuclear power stations: a summary of evidence*" November 2009 (para 106, page 23)
https://www.energynpsconsultation.decc.gov.uk/nuclear/managementdisposalwaste/summaryevidencepaper/

(18) The Justification of Practices Involving Ionising Radiation Regulations 2004: Consultation on the Secretary of State's Proposed Decision as Justifying Authority on the Regulatory Justification of the New Nuclear Power Station Designs currently known as the AP1000 and the EPR. Volume 2 and Volume 3 para 4.1.

Memorandum from Britain's Energy Coast—West Cumbria (formerly West Cumbria Vision) (NWN 12)

A WEST CUMBRIAN PERSPECTIVE

SUMMARY

— Nuclear power offers the best prospect for West Cumbria's sustainable economic development—with it there is a golden opportunity, without it the future is much less promising and certain;

— There could be several phases of nuclear power development, not just to 2025 but to 2050—at one or more sites;

— There are close parallels now with the emergent North Sea oil and gas sector in the 1970's—a similar public/private partnership model may best be able to exploit it;

— An early, new 400 kilovolt "Cumbria ring" electricity transmission system is a pre-requisite for new nuclear power stations, and can help connect more renewable energy too;

— We cannot afford long planning delays, though we must be environmentally sensitive.

— We can also become world leaders in nuclear decommissioning, and in research and development for non-proliferating nuclear technology, but more nuclear supply chain business must stay in Cumbria;

— There are many nuclear and infrastructure related opportunities. They could realise up to £150 billion spending. But they need vision to realise, and in some cases a fresh Government approach;

— We cannot neglect the nuclear legacy, and we must manage it properly in future; and

— We want to achieve our goals mainly through private sector investment rather than the public purse.

INTRODUCTION

1. West Cumbria has been host to the nuclear industry for 60 years, although much has changed in recent years, with growing private sector management and investment, and increasing "reachback" into world-class international engineering skills, technology, and research and development.

2. The nuclear sector provides 40% of the region's gross value added, and around 12,000 direct jobs (25% of the total UK nuclear industry). West Cumbria has 60% of the UK's nuclear facilities, the main ones being:

> *Sellafield*—the biggest nuclear complex in Europe, with site operations covering decommissioning, nuclear reactor spent fuel reprocessing, nuclear waste management and mixed oxide fuel manufacturing. The site is owned by the Nuclear Decommissioning Authority (NDA) and is now managed by a world class international consortium, Nuclear Management Partners Ltd, comprising URS Washington Group (US), Areva (France) and AMEC (UK). It has the largest concentration of nuclear skills and expertise in Europe;

BAe Systems Submarine Solutions, Barrow—designs and builds the new Astute class nuclear submarine. It has unique skills in the UK for manufacturing, integrating and commissioning nuclear plant, in particular for design of nuclear radiation shielding and resilient instrumentation. It is also a leader in the development of safety cases for nuclear sites and products;

Low Level Waste Repository near Drigg—the UK's national low level radioactive waste disposal facility, now managed for the NDA by another world-class consortium, UK Nuclear Waste Management Ltd, comprising URS Washington Group and Areva, together with Serco (UK) AND Studsvik (Sweden);

National Nuclear Laboratory—located at Sellafield, and the UK's principal establishment for nuclear technology research and development. Government owned, and now operated by a UK/US consortium comprising Battelle (US), the University of Manchester, and Serco;

Energus—a brand new, world class centre for the provision of vocational skills for the nuclear industry, spanning both further and high education. It will provide Skills Academy Quality assured training for up to 250 apprenticeships, and is working with the University of Cumbria to deliver programmes to up to 200 under graduates and post graduates;

Dalton Nuclear Institute—another brand new facility, with state of the art equipment for research in radiation sciences and decommissioning engineering (eg the study of radiation damage of materials). It will also facilitate access for academics into the NNL;

UCLAN (University of Central Lancashire)/Westlakes Research Institute—specialist epidemiology research and development; foundation degrees in health, nuclear-related technology management, and National Technology Education Consortium (NTEC) modules; and

Lakes College—further education college. Train to Gain Foundation degrees in nuclear decommissioning.

3. The Region is also host to:

The NDA—located on West Lakes Science Park and responsible for managing the UK's 20 site, £3 billion a year "nuclear legacy" decommissioning, clean-up and waste management programme, including also Capenhurst and Springfields in the NW;

The National Skills Academy for Nuclear—the UK's leading body for an employer-led strategy for developing a standardised, co-ordinated approach to education, training and skills in the nuclear sector, including an industry-wide "passport".

The effect of expanding the nuclear industry in the North West, including the impact on: the economy, jobs, skills, local and regional business and the environment

4. There are two potential futures for West Cumbria. One based largely on decommissioning and clean-up will inevitably lead at some point to a downturn, a loss of several thousand jobs, and reduced investment and spending in the community, as well as the migration of skilled workers and talented school leavers and graduates. On the other hand, there are several ways of expanding the nuclear industry in West Cumbria to the benefit of the local economy:

The building of one or more nuclear power stations

As noted in the Committee's terms of reference, three Cumbria sites have been named in the Government's nuclear power National Policy Statement. Each nuclear power station will cost around £3.5 billion, and is expected to provide some 5,000 jobs during construction—which could start around 2015—and around 500–800 long term jobs during the 60 year life of the reactors. The building of at least one nuclear power station is essential to the region's prosperity from around 2015 onwards. West Cumbria could potentially take up at least eight or nine new reactors over time, either at Sellafield alone or a combination of sites.

Nuclear manufacturing

Cumbria has a number of potential manufacturing sites for components for new nuclear build—at Barrow, Workington, and—near to Whitehaven—Cleator Moor, Lillyhall and Moresby Park, as well as potential manufacturers (with whom we are in discussion). Moreover, West Cumbria is keen to work with the likes of Forgemasters, Rolls Royce, Westinghouse, and the new Nuclear Advanced Manufacturing Research Centre.

The modular construction of nuclear reactors could also offer opportunities for local assembly and use of the regions ports and railways, alongside the necessary road infrastructure improvements to enhance these facilities.

Growing the supply chain.

Sellafield spent £737 million in the supply chain in 2008–09, of which 26% was spent with local firms. The supply chain is about [300] deep, including major tier two suppliers like AMEC, Serco, and Doosan Babcock. 65% of Sellafield's suppliers have a presence in West Cumbria, but over 80% of them are headquartered outside the county. So the key tasks are to increase the share of site spend taken by local firms, and to encourage more supply chain firms to invest directly in West Cumbria.

The building of new nuclear power stations in West Cumbria obviously offers further opportunities.

Nuclear Fuel Cycle

There are opportunities for the reprocessing of spent fuel for UK and international customers. These are currently not being progressed because of a perception that the Government would be unwilling to allow new business at present. The Government has also decided that the spent fuel from the UK's new nuclear power programme will be disposed of in the proposed deep geological nuclear waste repository, and stored on power station sites in the interim (probably until at least 2130), unless business makes a convincing case otherwise. We believe that on-site storage is likely to become more controversial; that reprocessing is more sensible; and that it would significantly reduce the size-required for and cost of the £20 billion repository.

The Government has still to take a decision on long term plutonium management. There are in practice only two options—to dispose of the plutonium in the proposed underground waste repository or to make new mixed oxide nuclear fuel from the plutonium and uranium separated from liquid high level waste during reprocessing. This would require either private or public sector investment in a new manufacturing plant. However, given the costs of storage and disposal, we believe that re-using the plutonium as nuclear fuel would make economic and strategic sense, provided there is a global market for the fuel, as an alternative to uranium fuel.

We also believe that reprocessing of spent fuel for overseas customers and re-use of plutonium would make sense as part of UK and international non-proliferation efforts to give developing countries access to civil nuclear power, but not to weapons technology.

Waste management

Three Cumbrian local authorities—Allerdale and Copeland Borough Council's, and Cumbria County Council—have alone in England and Wales expressed interest in discussing with Government the possibility of hosting the proposed deep geological repository. As in other countries planning similar facilities, the support of the local community will be needed. The legacy "benefits" package offered by the Government is likely to be a key factor, along with perceptions of the local socio-economic advantages and disadvantages of the nuclear industry at the time.

Nuclear Research and Development

The establishment of the National Nuclear Laboratory (NNL) provides an opportunity to establish a world renowned nuclear science and technology laboratory, to deploy nuclear technology in overseas markets, and provide advice on nuclear issues—including on spent fuel, plutonium and waste management, non-proliferating nuclear technology, and decommissioning and clean-up. A fully commissioned Central Laboratory at Sellafield (cost circa £250 million) is vital to achieving this. It would provide jobs and essential research, and increase the UK's international standing, and contribution to non-proliferation.

Taking the above opportunities together, we believe that on the back of new nuclear power there is the potential to create in West Cumbria (and therefore the NW) over the next 5–15 years internationally-recognised Centre's of Excellence in:

- Decommissioning and Clean-up.
- Waste Management.
- Fuel Cycle Management.
- Non-proliferation technology.

The role of regional universities and education bodies in supporting the nuclear industry in the region

5. The region has benefitted from the growing contribution of the University of Central Lancashire (UCLAN) and the University of Manchester (Dalton Institute), alongside the University of Cumbria—which has established a West Cumbria campus centred on nuclear education. With the NDA as the initial catalyst, they are helping to provide a substantial nuclear education, skills and research infrastructure, centred around Sellafield (NNL), and the West Lakes Science and Technology Park (Dalton, UCLAN, Lakes College) and Lillyhall (Energus, GEN II, University of Cumbria) business parks.

6. We believe such an infrastructure is vital to support the legacy clean-up programme, and helps to provide a compelling reason for locating new nuclear power stations in West Cumbria.

7. More widely, we believe that increased collaboration by further education bodies, such as the Universities of Manchester and Liverpool, can be helpful at regional and, working with others like the University of Sheffield, national level. We also support greater links between universities such as these, and research organisations like NNL, and prospective nuclear manufacturers like Westinghouse and Rolls Royce. West Cumbria wants to help as much as possible to deliver such collaboration, and believes it can make a substantial contribution.

What support is needed to maximise the potential benefits for the region

8. The biggest need is for more private sector investment. A new nuclear power station would provide this on a huge scale, and would be the catalyst for further inward investment. We look forward to working in partnership with proposed developers. Their willingness to contribute to the socio-economic development of the region will be important.

9. We need continued support from Government. To some extent this means financial assistance, but more importantly we need recognition of the inter-linkages between nuclear and other policy issues such as health, education and transport. West Cumbria can help Government deliver its low carbon agenda, but it will need Government help to deliver related requirements—whether for school academies, a health campus, or for new roads. Working together will deliver a "win/win" for West Cumbria and Government.

10. As noted above, we also believe that certain current Government policies need a fresh look.

11. Continued support for the NDA and NNL is vital. Under the NDA, the UK is doing more to tackle the UK nuclear legacy than ever before, and through competing site management it has brought in world-class operators. Public expenditure will clearly be tight, and we agree that the NDA must provide Government with a range of spending options, to determine best value for money. However, we believe it particularly important that the Government continue to support the NDA's programme to address the potential high hazards on the Sellafield site, particularly the so-called "legacy ponds and silos". Similarly, we believe that the expansion of the NNL will serve a wider UK interest.

What improvement to the regional infrastructure will be needed, including during the construction phase?

12. The foremost requirement—indeed a pre-requisite—will be for a timely new electricity transmission network to connect a new Cumbrian nuclear power station to the existing 400 kilovolt national grid system, to the north near Carlisle and to the south at Heysham in Lancashire. This so-called "Cumbria ring" is being discussed with National Grid and local planners.

13. A new nuclear power station will need temporary accommodation for up to 5,000 workers, during construction. It will involve the movement of large quantities of materials and of heavy components. We have begun work with the local authorities to assess the impact in areas like housing, schools, healthcare, roads, railways, and ports to determine what infrastructure upgrades are necessary, and what legacy benefits might be implemented.

What are the arguments for and against each of the proposed four sites announced on 9 November?

14. We believe these are well set out in the National Policy Statement, and that all three West Cumbrian sites should be approved by Parliament, on merit. All three West Cumbrian sites have a proposed utility developer, and an agreed or offered date for connecting new electricity grid infrastructure, between 2021 and 2025. West Cumbria has been the home of the nuclear industry for 60 years, and has hosted nuclear reactors (now closed) for over 50 years. The proposed Sellafield site is adjacent to and therefore has synergies with the current Sellafield complex, with access to a qualified workforce and technical support. The Braystones site similarly is near to it. As noted earlier, and by Government, West Cumbria is host to the largest concentration of nuclear facilities in the UK, with a continuing focus on skills and education. These include facilities for spent fuel, plutonium and waste management. New nuclear build is the focal point of our sub-regional regeneration plan—"Britain's Energy Coast", and there is strong public support for it (albeit location specific). Sellafield potentially offers the scope for more nuclear reactors than any other site in England and Wales, and therefore offers longer term potential for phased development to 2050 and beyond. We believe such development is likely to be needed if the UK is to achieve energy security and meet its climate change targets.

15. We recognise that new nuclear power stations would be likely to impact on the local environment and ecology, especially given the proximity of the Lake District National Park. The potential impacts, and possible mitigating measures, will continue to need to be discussed with bodies such as the National Park Authorities and the local authorities. It will also be important for local authorities to be properly resourced to address the various planning issues, including potential applications by developers to the Infrastructure Planning Commission.

16. We believe that the Sellafield site is best placed for early development because it is already in an area of concentrated nuclear development, and because of developers stated construction plans.

17. We believe that Government has properly questioned whether a combination of sites in West Cumbria (and the NW more widely) could be deployed within a similar timeframe, and whether this would have a negative impact. We have looked into this issue, and consider that a properly-managed, phased programme

of development would enable the deployment of either a combination of sites or multiple phases of new reactors at the Sellafield site, by around 2025 or shortly thereafter. As noted, an alternative, could be longer term phasing.

What lessons can be learnt from earlier commissioning experiences?

18. Although the UK has not built new nuclear power stations for over 20 years, it still has strong experience in nuclear engineering, a developed nuclear supply chain, a good skills base, and access to world-class domestic and international technology. Sellafield, for example, has in recent years constructed and commissioned a range of commercial nuclear facilities, such as the THORPE reprocessing plant, as well as nuclear and waste materials handling facilities. We believe that these strengths, together with the experience gained by developers and reactor vendors from new nuclear build in China, Finland and France will stand the UK in good stead. Continuity of Government policy support and delivery, timely grid connectivity, and speedy planning approval will be vital. Timing is of the essence given the global renaissance in nuclear power. Developers will need to work with local communities to ensure sustained socio-economic benefit.

The role of regional bodies, and partnership arrangements between such bodies, in maximising potential benefits and minimising negative impacts of expanding the nuclear industry in the NW

19. We look forward to working closely with the NWDA to implement the Government's decision that the NW should be the Low Carbon Economic Area for nuclear. As noted above, there are a range of opportunities for West Cumbria to help deliver local, regional and national goals. We believe we are well placed at sub-regional level to promote the regeneration of West Cumbria, to consider the role of nuclear alongside other short and longer term needs and to work with local authorities, potential developers and other key stakeholders.

4 January 2010

Memorandum from Copeland Borough Council (NWN 13)

EXECUTIVE SUMMARY

- The Nuclear industry is embarking on a worldwide renaissance creating massive business opportunities for the NW Region. The region as a whole provides the UK's concentration of nuclear expertise and capacity with more than 25,000 skilled professionals being employed in the sector in more than 300 enterprises across the region with a combined turnover in excess of £3 billion *per annum*.
- Nuclear power is also key to regeneration of the Borough of Copeland and West Cumbria. It will rejuvenate economic activity related to the full nuclear fuel cycle. This will include design and engineering, fuel manufacture, packaging, management, recycling & conditioning and management of waste products. This will provide significant benefits for the wider region as a whole as well, within the many nuclear related facilities.
- Opportunity to build on existing expertise and establish Centre of Excellence for Nuclear Power in UK—and export services internationally.
- Job opportunities directly and via supply chain.
- Benefits University research innovation and skills agenda.
- Infrastructure provided as part of investment will support wider economic development. However, further work is required to identify scope and programme for up-front items.
- Local Planning response must be effective and requires proper resourcing. Even more critical where three sites in one area as in Copeland.
- Economic gain needs to be carefully managed to balance with environmental matters.
- Partnership arrangements, consultation/communication, and clear recognition of roles will be important in ensuring a successful process and the benefits to the region are maximised.

INTRODUCTION

1. West Cumbria has been host to the nuclear industry for 60 years, although much has changed in recent years, with growing private sector management and investment, and increasing "reachback" into world-class international engineering skills, technology, and research and development.

2. The nuclear sector provides 40% of West Cumbria's gross value added, and around 12,000 direct jobs (25% of the total UK nuclear industry). Approximately half of all jobs in Copeland are in the Nuclear Industry. Copeland has 60–70% of the UK's nuclear facilities, the main ones being:

> *Sellafield*—the biggest nuclear complex in Europe, with site operations covering decommissioning, nuclear reactor spent fuel reprocessing, nuclear waste management and mixed oxide fuel manufacturing. The site is owned by the Nuclear Decommissioning Authority (NDA) and is now

managed by a world class international consortium, Nuclear Management Partners Ltd, comprising URS Washington Group (US), Areva (France) and AMEC (UK). It has the largest concentration of nuclear skills and expertise in Europe. The Sellafield operation also supports significant numbers of high level staff in their facilities at Warrington and Cheshire;

Low Level Waste Repository near Drigg—the UK's national low level radioactive waste disposal facility, now managed for the NDA by another world-class consortium, UK Nuclear Waste Management Ltd, comprising URS Washington Group and Areva, together with Serco (UK) AND Studsvik (Sweden);

National Nuclear Laboratory—located at Sellafield, and the UK's principal establishment for nuclear technology research and development. Government owned, and now operated by a UK/US consortium comprising Battelle (US), the University of Manchester, and Serco;

Dalton Nuclear Institute—another brand new facility, owned and operated by Manchester University, with state of the art equipment for research in radiation sciences and decommissioning engineering (eg the study of radiation damage of materials). It will also facilitate access for academics into the NNL;

UCLAN (University of Central Lancashire)/Westlakes Research Institute—specialist epidemiology research and development; foundation degrees in health, nuclear-related technology management, and National Technology Education Consortium (NTEC) modules;

The NDA—located on Westlakes Science Park and responsible for managing the UK's 20 sites, £ 3 billion a year "nuclear legacy" decommissioning, clean-up and waste management programme, including also Capenhurst and Springfields in the North West;

The *Westlakes Science and Technology Park* a geographical focus for nuclear related companies and expertise.

Energus training facility at Lillyhall providing vocational training skills alongside Lakes College.

The effect of expanding the nuclear industry in the North West, including the impact on: the economy, jobs, skills, local and regional business and the environment

3. The impact on the economy of the expansion in the regional and national nuclear industry will be significant. Currently Copeland Borough and the rest of West Cumbria are suffering from the loss and decline of traditional industries. The decommissioning of nuclear facilities at Sellafield, in Copeland, will in time add significantly to that decline. This decline has already led to the loss of job opportunities, the movement of skilled workers and school leavers away from the area and as a result reduced spending and investment in the area. Projections suggest that two thirds of all current jobs at the Sellafield site (33% of all Copeland's employment) will disappear within the next decade. Building one or more nuclear power stations in the Borough will provide an important means of offsetting this and provide wider regional benefits, through;

— the opportunity to build on the area's expertise and profile to create a Centre of Excellence for the Nuclear Energy industry and associated technologies in the UK and for onward deployment overseas. This is a significant opportunity given the major plans for new nuclear investment now being developed worldwide (eg including 100 new reactor sites in China);

— £3.5 billion investment in each facility. Creating 5,000 construction jobs per power station and between 300 and 500 permanent jobs during the 60 year lifetime of the power stations. The investment in new reactor sites will drive a general upturn in the sector as a whole as increased requirements are generated in related areas including fuel manufacture, processing and packaging and recycling and disposal;

— demand from international and national inward investors to locate in the area to supply the business needs of the utility providers;

— major benefits for the technical and professional nuclear supply chain which is concentrated in the NW in Manchester, Warrington & Cheshire;

— opportunities to increase the spin-off supply chain benefits to existing and new manufacturing businesses and further encourage businesses to locate in West Cumbria;

— career development opportunities for local school leavers and undergraduates boosting local colleges and universities to deliver the skills that the industry and its supply chain require. Manchester University is the leading sector related academic institution potentially benefiting from the long term development potential of the sector in the region;

— potential of private sector utilities paying for essential infrastructure investment to benefit the wider development of the regional economy and sustainable communities agenda. The inadequacy of transport infrastructure in West Cumbria has been highlighted again in the recent flooding emergency;

— private sector funding arising from the nuclear industry will fund the necessary grid infrastructure improvements which will create the capacity on the grid to allow the development of the renewable energy sector in the North West in parallel with new nuclear power; and

— the delivery of the proposed nuclear investment programme protecting future energy supplies in the NW (which are at risk) to support its economy and wellbeing.

The role of regional universities and education bodies in supporting the nuclear industry in the region

4. Manchester University is the leading educational establishment in supporting the nuclear sector. The support it provides from Manchester is facilitated by a presence locally in Copeland through its involvement as a partner in the National Nuclear Laboratory and the new Dalton Institute Campus at Westlakes Science and Technology Park at Whitehaven. The University of Central Lancashire (UCLAN) similarly has a campus at the same location providing training and educational services to the sector. The University of Cumbria has established a campus in West Cumbria at Lillyhall focussed on nuclear education. Additional investment in nuclear power stations and the implications of this through the wider nuclear sector will provide further opportunities for collaboration between education bodies and private sector utility providers/manufacturers through the provision of skills development programmes, research and technological innovation. It will provide a local base for our institutions from which they may seek benefits from the massive worldwide investments in the industry.

What support is needed to maximise the potential benefits for the region

5. Plans for investment from the private sector in the provision of up to three new nuclear power stations will necessitate a range of responses to ensure that the region maximises the potential benefits.

6. Investment in infrastructure specifically in the national grid, road and rail links will be essential. Significant components of such new infrastructure will need to be in place before construction starts to allow for the movement of construction vehicles and materials, whilst other components will need to be provided before the power stations become operational eg new/upgraded rail provision. However it is recognised that considerable further work is required to identify the infrastructure required to facilitate the developments and ensure the balance with environmental considerations is maintained. Infrastructure essential for the development will need to be delivered by way of planning gain but will provide wider benefits to the region. It is important that the right impact studies and Local Development Framework are in place to inform decisions by the new Infrastructure Planning Commission on what will be necessary.

7. Copeland Borough Council is currently preparing its Local Development Framework. The current timescale predicts the Core Spatial Strategy plan will be finalised for adoption in June 2011. The LDF will provide the planning policy framework for growth and change within the Borough and will enable the power station developments and the spin-off impact for residential/infrastructure business/health developments. Further work and resources will be required to ensure that current good progress is maintained and that the LDF adequately reflects the aspirations for power station developments within the Borough.

8. New power stations will have significant planning impacts on Copeland Borough within which all three are situated. The local planning authorities will need to be properly resourced to ensure that these impacts are understood and subsequently managed in order to achieve successful local development and respond appropriately to the pre-planning application processes and expectations of the Infrastructure Planning Commission (IPC). We are concerned that no such financial provision has been made. This creates a risk of local detailed considerations not been fully taken into account potentially unnecessarily discrediting the process and the developments. Similarly Local Authorities will need to be resourced to deal with a potentially large number of associated Planning applications. This is particularly critical where the cumulative effects of three sites in one area need to be managed. (A copy of a letter to Rt Hon John Healey MP, Minister for Housing and Planning is attached as Annex 1)[26]

9. The proposed development of three power station sites within the local area will create a focus of attention from a variety of interest groups and stakeholders both at local, regional, national and international levels. The Councils and the development sponsor have clear roles in relation to public engagement and consultation under the Planning Act in the new formal planning process. However, the national and local interest in such development will mean that significant resource will be required to effectively manage public and stakeholder involvement. Joined up consultation at the local level will be essential to ensure that the local community receives a clear and consistent message and has the opportunity to respond. Such a strategy should be prepared and agreed by national Government Departments, regional bodies, local authorities and utility developers. In this way communication and consultation can be delivered effectively and efficiently and will help to ensure that the process and therefore the proposals are not discredited.

[26] Information provided, not printed.

What improvement to the regional infrastructure will be needed, including during the construction phase?

10. As indicated earlier there is still much work to be done to assess the infrastructure required to accommodate the proposed new development of three power stations sites. Local strategic stakeholders including the Borough and County Councils are already working to develop a response to this issue in relation to housing, schools, healthcare, roads, rail links, and ports. The key requirement will be for a timely new electricity transmission network to connect the new nuclear power stations to the existing national grid system, to the north near Carlisle and to the south at Heysham in Lancashire. This so-called "Cumbria ring" is already being discussed with National Grid and local planners.

What are the arguments for and against each of the proposed four sites announced on 9 November?

11. The National Policy Statement sets out the arguments for the development of the three sites in Copeland. All are close to the existing Sellafield operation and have access to a qualified workforce and appropriate technical support—albeit additional capacity will be required during construction and possibly operation. All three will benefit from close proximity to the largest concentration of nuclear facilities in the UK and the growing support from the research, innovation, education and skills providers. New nuclear build is the initial focal point of our sub-regional regeneration plan—"Britain's Energy Coast", and there is strong support for it and the economic benefits it could provide for the local community. The Council supports in principle the development of new nuclear reactor sites in the Borough. However, it important to be sure that development takes place on appropriate sites in an appropriate way. Without detailed local impact assessments looking at a broad range of local considerations, at this time the Council does not feel enabled to determine the suitability or the priority that should be given to each of the individual sites.

12. The economic benefits will need to weighed-up against environmental considerations specifically where the infrastructure requirements may impact on the landscape in and around the Lake District National Park. All three sites lie outside of the National Park boundary. Within the context of the Energy Coast Masterplan which supports West Cumbria as a location for energy generation and related facilities, the Council has a preference for the concentration of facilities rather than dispersal. Concentration of energy generation in nuclear reactors sites will have great benefits in relation to the protection of our sensitive environments. For example, a new nuclear power station site with two reactors each producing 1600 megawatts each would be environmentally preferable to 3200 x 1 megawatts wind turbine units spread around the area adjoining the Lake District National Park. Infrastructure designed to support new investments must also be designed to deliver our sustainability objectives.

What lessons can be learnt from earlier commissioning experiences and the role of regional bodies, and partnership arrangements between such bodies, in maximising potential benefits and minimising negative impacts of expanding the nuclear industry in the NW?

13. Experiences akin to the NIREX approach to commissioning of the high level waste repository in mid-Copeland in the mid nineties should be avoided at all cost. Appropriate engagement with local communities is going to be fundamental and arrangements for "joining-up" the activities of local, regional and national bodies and authorities will be key to achieving the desired outcomes of the proposals. Resourcing local communities to do this is absolutely vital. Partnership arrangements should be reviewed at an early stage to ensure they are fit for purpose and any identified gaps and differences filled or resolved. Areas requiring a common approach should be identified and jointly resourced and an overarching partnership structure agreed.

14. Local experience of investment in the THORP reprocessing plant points to the need to ensure that early work takes place on related infrastructure to ensure it is in place as soon as it is needed. Consideration needs to be given to the lead in times to achieve this.

6 January 2010

Memorandum from the Environment Agency (NWN 14)

SUMMARY

The Environment Agency welcomes the opportunity to submit evidence to the North West Select Committee's inquiry into "The Future of the Nuclear Industry in the North West". We are the principal environmental regulator in England and Wales, including regulation of the environmental impacts of the nuclear industry.

— The potential expansion of the nuclear industry in the North West must be seen in the context of the existing mature nuclear industry in the region as well as the contribution new nuclear power stations can make to the UK's energy mix and achieving a low carbon economy.

— The North West has the highest concentration of nuclear and nuclear-related support facilities in the UK, many of which are ageing and require ongoing maintenance. Operators and regulators need a range of skills to deal with the environmental challenges posed by these facilities.

— We are committed to ensuring that the environmental risks and resulting impacts from existing and new facilities are minimised and that existing and potential operators have sufficient knowledge, experience and funds to achieve this objective.

— With the Health and Safety Executive, we are engaged in the Generic Design Assessment (GDA) of two candidate nuclear power reactor designs for potential construction in England and Wales. Our aim is to ensure that any new nuclear reactors meet the highest standards of safety, security, environmental protection and waste management.

— We contributed to the Department of Energy and Climate Change (DECC) Strategic Siting Assessment process for new nuclear power stations and provided advice to DECC on the availability of cooling water and of the potential flooding and coastal erosion risks at the nominated sites.

— We will assess any site specific environmental impacts at the time prospective operators apply to construct and operate a reactor or other facility at a particular site.

— We believe the Government has set clear strategic aims and policy in respect of new nuclear build and dealing with radioactive waste. More needs to be done to ensure the required nuclear infrastructure is maintained and where necessary new facilities provided including for the geological disposal of waste. This is becoming increasingly important in relation to the potential deep disposal of high-level waste.

1.0 *Introduction*

1.1 The Environment Agency regulates key environmental protection aspects of nuclear power stations throughout their design, construction, operation and decommissioning. These include disposals and discharges of radioactive wastes, abstraction and discharge of cooling waters, and the disposal of non-radioactive wastes. We also regulate the environmental aspects of the process plant that supports the nuclear power industry such as Sellafield.

1.2 In our new corporate strategy for 2010–15 we announced that we would work with the nuclear sector to ensure that any new nuclear power stations constructed meet world class environmental standards and the infrastructure is in place for legacy decommissioning and clean up and radioactive waste management and disposal. Much of the nuclear legacy lies in the North West at Sellafield, and the region will play a very important role in its long term management.

2.0 *The effect of expanding the nuclear industry on the North West, including the impact on: the economy, jobs, skills, local and regional business and the environment*

2.1 There is a mature nuclear industry in the North West with facilities of varying age and stages in their lifecycles. The North West is home to much of the key nuclear infrastructure including:

— Nuclear fuel enrichment and fabrication.

— Fuel reprocessing, materials management and storage.

— National Low Level Waste facility.

— Nuclear waste treatment and storage.

— Operating nuclear power stations.

— Shut down and decommissioning power stations.

— Nuclear submarine construction.

— National Skills Academy for Nuclear.

— Universities for developing nuclear skills and longer term research.

— Research and development facilities.

— Nuclear Decommissioning Authority (NDA) head office.

— Potential host communities for geological disposal.

2.2 Government has set clear strategic aims and policy in respect of new nuclear build and how existing radioactive waste is to be managed. The existing infrastructure, skill set and supply chain must be maintained and enhanced to be able to support new nuclear power stations and any other nuclear developments. As part of this it is important to ensure the legacy of waste from the last 60 years of nuclear operations is dealt with promptly so that safety, security and protection of the environment are assured.

2.3 The NDA will need to make progress with decommissioning and restoring old nuclear sites in the region. This is a significant challenge at Sellafield that will require the development of new techniques and the transfer of skills.

2.4 The Government published "A Framework For Implementing Geological Disposal" on 12 June 2008. Communities are invited to express an interest in entering into discussions with Government about the possibility of hosting a geological disposal facility at some point in the future. Where communities have come forward in the North West, local liaison groups have been formed and the county council is now

involved in discussions. We support this progress towards providing a geological disposal facility as it will be a vital part of reducing the environmental risks from existing wastes and decommissioning sites. It will also provide confidence that the industry's radioactive wastes can be safely managed and safely disposed of.

2.5 Working jointly with the HSE using a new approach, called Generic Design Assessment (GDA), we are assessing the safety, security, waste management and potential environmental impacts of two candidate nuclear power reactor designs before an application to build at a site is made. We expect to complete the joint GDA work on these designs in 2011.

2.6 In relation to our radioactive discharge regulatory functions we will apply the principles set out in the Government's 2009 UK Strategy for Radioactive Discharges. Before granting or significantly varying authorisations for radioactive discharges we will ensure that the waste management strategy chosen by holders of authorisations under the Radioactive Substances Act 1993 represents the use of Best Available Techniques to provide proper protection for people and the environment.

3.0 *The role of regional universities and education bodies in supporting the nuclear industry in the region*

3.1 The continued success of the nuclear industry in the region (including operators, supply chain and regulators alike) will rely on its ability to attract and retain the broad spectrum of skills and experience that it needs, not least in the environmental field.

3.2 We welcome the lead that Lancaster and Manchester Universities and the University of Central Lancashire are taking in providing courses directly relevant to the nuclear industry and in facilitating the national, NDA-led "nucleargraduates" scheme. In particular we welcome the work of the National Skills Academy for Nuclear to establish the Nuclear Skills Passport. This will help ensure that the sector maintains a skilled workforce and addresses changes in skills needed in the future.

3.3 More will need to be done to ensure that all elements of the education needs are supported, including schools, apprenticeships and further education colleges, as well as graduate and post-graduate programmes.

4.0 *What support is needed to maximise the potential benefits for businesses in the region*

4.1 Increasingly bodies in the nuclear sector are working successfully in partnership towards common goals. The nuclear industry needs to set out clearly what support it needs and when.

4.2 The supply chain needs to be responsive and in particular make sure it is ready to respond to new nuclear build opportunities. This is likely to mean that certain quality standards need to be raised and assurance schemes put in place.

4.3 Nuclear timescales are long so programmes need to be sustained over the long term. There is a need for Government to ensure stable and assured funding of decommissioning programmes to make progress in reducing risks, and to facilitate healthy competition and development of the supply chain.

4.4 The global nuclear market place is growing rapidly and will be attractive to many businesses located in the North West. Whilst this offers a significant opportunity for such businesses it is important that the region is an attractive location for business to meet regional and national needs.

5.0 *What improvements to the regional infrastructure will be needed, including during the construction phase*

5.1 We believe there is a need to integrate the regional infrastructure required for new nuclear build with the planned facilities to support the decommissioning and clean up programme in the region. It should be noted that the planned investment in new build at Sellafield is around £400 million *per annum*.

5.2 Building new nuclear power stations, and potentially facilities needed to support geological disposal, may need temporary port facilities and road and rail improvements. It is certain that there will need to be an upgrade to the power grid connections from West Cumbria to support the proposed new power stations. All these infrastructure improvements have the potential for significant impact on the region's environment.

6.0 *What are the arguments for and against each of the proposed four sites announced on Monday 9 November*

6.1 We believe the energy market should reward low carbon generation. We welcome the publication of the draft Nuclear National Policy Statement (NPS) together with the other energy NPSs. We are a consultee for this work and will carefully consider it. In due course we will publish our response to the Secretary of State

6.2 We contributed to the Strategic Siting Assessment process for new nuclear power stations. We commented on the abstraction of cooling water and on the flooding and coastal erosion risks for the nominated sites at Kirlstanton, Braystones, and Sellafield in Cumbria and Heysham in Lancashire. We advised DECC that it was reasonable to conclude at a strategic level that all these sites could potentially be protected against flooding and coastal erosion throughout the operational life of any likely power station development. We also advised that there was potentially a suitable cooling water source for the sites.

6.3 We are providing developers with information about the environment around potential sites so they can make informed decisions. We have been consulted about the scope of Environmental Impact Assessments and will provide information as part of this process. We regulate certain site investigation works that are needed to check that sites are suitable for development, for example site ground water investigations.

6.4 We are a statutory consultee in the planning process and will be consulted by developers and by the new Infrastructure Planning Commission (IPC) during the pre-planning and planning phase of new nuclear facilities.

7.0 *What lessons can be learnt from earlier commissioning experiences; and the role of regional bodies, and partnership arrangements between such bodies, in maximising the potential benefits and minimising the negative impacts of expanding the nuclear industry in the North West.*

7.1 We are engaged jointly with HSE's Nuclear Division in the Generic Design Assessment (GDA) of two candidate designs for nuclear power stations for England and Wales. We established a Joint Programme Office and this has been beneficial in providing a single point of contact for candidate design organisations and the public.

7.2 We will continue this joint working when dealing with site specific applications. We are supporting DECC during its engagement with communities around proposed sites for new nuclear power stations. This is proving beneficial in explaining our regulatory processes with regard to new nuclear build and in dealing with the legacy issues from the nuclear industry.

7.3 This new approach has meant that we are involved at the earliest stages where we can have most influence and where lessons can be learned. We believe that GDA will be more effective and efficient both for the regulators and the nuclear industry, and ultimately provide greater protection for both people and the environment.

6 January 2010

Memorandum from Braystones Concern Group (NWN 15)

— 1. Job opportunities, economy and economic diversity in West Cumbria.

— 2. Economic/infrastructure viability of West Cumbria for nuclear power generation.

— 3. Ability of West Cumbria to host multiple nuclear construction personnel.

— 4. Braystones—greenfield site, landscape value and cultural heritage.

— 5. Braystones—coastal, environmental and biodiversity impact.

— 6. Braystones coastal flood defences.

— 7. Safety and Emergency Plans for Sellafield and Braystones. Industrial blight.

— 8. Industrial hazard/proximity to Braystones residential property. Safety, services.

— 9. Concentration of nuclear facilities in West Cumbria: more even distribution.

— 10. Braystones site suitability, public and political support.

1. Whilst jobs are welcome in West Cumbria, the overall effects of multiple nuclear developments would have many negative effects. What is frequently referred to as an area of outstanding natural beauty, would be greatly defaced by such extensive nuclear industrial sprawl. This would have a detrimental effect on the visitors perception of West Cumbria as a tourist destination. At a time when the area is desperately trying to diversify its economy, tourism jobs would simply be displaced by more "nuclear" jobs, thus not actually increasing real jobs with the numbers being promised. It would greatly increase the economic stranglehold that the nuclear industry has on the area and would discourage many other discerning businesses that might otherwise have chosen West Cumbria. (A £45 million cheese factory planned for Workington in West Cumbria did not go ahead in 2007, because of plans by Studsvik to build a radioactive waste processing plant at Lillyhall.) There are already a number of nuclear developments proliferating in West Cumbria, with Copeland and Allerdale councils trying to coax the public into accepting even more.

2. West Cumbria is not an economically suitable region for multiple reactor builds, as grid connectivity would prove particularly difficult and costly in such a remote area. West Cumbria is not where energy production is most needed. Any multiple reactor builds should be sited close to centres of high energy demand, where more suitable infrastructures and grid systems already exist. The recent devastation from flooding in West Cumbria has highlighted the wholly inadequate infrastructure throughout the region, which already struggles to service existing industrial demand. Repair and replacement of crucial bridges is currently estimated to take years. The southern sector of the main arterial route through Copeland has been de-trunked and is literally the width of a single vehicle in places. Road closures due to accident or maintenance can require alternative diversion routes 120 miles long. Major road improvements take at least 10 years to provide. If the Braystones site was developed, it would seriously compromise the existing Emergency Arrangements for the Sellafield site.

3. During construction of the proposed new nuclear builds, Copeland would be inundated with tens of thousands of migrant workers. This would completely overwhelm the inadequate infrastructure, housing and public services. During the massive influx of construction workers for THORP in the 1980's, there was an unacceptable increase in public disorder, crime and road accidents and Copeland never received the promised infrastructure upgrades. In the aftermath there was devastating unemployment, to the extent that it was noted in parliament that this must never be allowed to happen again.

4. The Braystones site is the only undisturbed greenfield site that is not adjacent to an existing nuclear site. It would destroy prime, ancient greenbelt farmland, which affords highly valued views across the Irish Sea towards the Isle of Man, Ireland and south west Scotland. The site is of great archaeological potential and is adjacent to one of the most important Neolithic sites in Northern England at Gibb Tarn. Public enjoyment of the Grade II listed Victoria Jubilee Tower in Braystones would be greatly degraded by the overwhelming close proximity of 80 plus meter reactors.

5. The stretch of coast between Sellafield and Whitehaven is "Undeveloped Coastal Area" of "High Landscape Value" containing many environmentally sensitive habitats. The River Ehen is an important salmon and trout fishery and is unpolluted by industry: it skirts the proposed Braystones site and would be vulnerable to pollution from such a major industrial complex. The upper reaches of the river are Freshwater Mussel breeding grounds and are given SSSI protection. Significant numbers of River Lamprey found in the River Ehen are particularly sensitive to industrial pollution and it's habitats are nationally declining under threat from industry. The species is given SACS protection in Britain. Several times a year the river floods south onto the flood plain known as the "Boggles". This is an environmentally sensitive habitat for Wildfowl, Natterjack Toads, Bats, Deer, Badgers and Barn Owls. Any pollution arising from the RWE site at Braystones would contaminate this area. The rare suite of kettle-holes located at the SSSI Silver Tarn would be highly vulnerable to the close proximity of such large scale industry. Medicinal leeches are harvested from water at the north end of Braystones. The marine cooling systems for new reactor builds near Sellafield would disturb the unique, accumulated radionuclides on the sea bed, releasing them into the environment. The proposed massive "heat dump" into the Irish Sea by multiple reactor sites, could adversely affect marine environment temperatures.

6. The sea flood defences for the proposed RWE site at Braystones rely on a sand and shingle spit that didn't exist 250 years ago. Reference to pre-1750 maps reveals a dramatically different coast line. It is reasonable to assume that the site would need to be quarantined and kept under surveillance for several hundred years. Given the predicted climate change and rising sea levels, reliance on current flood defences would be flawed. RWE suggest that there are concrete and masonry rivetments local to Warborough point and the sand and shingle spit along which the railway runs. This is not the case and can be clearly observed on a site visit.

7. The RWE development would effectively trap the residents of Braystones and Beckermet between the sea and two major hazardous nuclear complexes. The site would engulf the road north out of Braystones, leaving two remaining roads, which are frequently impassable due to heavy flooding. In the event of an accident at either the Sellafield or Braystones sites coinciding with flooding, residents would be left with no Emergency Evacuation Route. Braystones and Beckermet residents would suffer the most extreme industrial blight of all the communities affected by new nuclear build, being sandwiched between two nuclear sites. Reference to a map of the area is recommended to understand the exact location of the RWE proposal north of Braystones in relation to Braystones, Beckermet, Nethertown and Sellafield.

8. Many Braystones residents' properties would be abutting the site boundary. Following the Bunsfield fire, there will be many concerns from residents and the HSE about building a major hazardous industrial complex in such close proximity to existing residential properties. The current regime at Sellafield of armed police challenging pedestrians walking close to the perimeter fence, would presumably be similar at the Braystones site. The close proximity of such major industrial construction and operations would greatly compromise residents' rights to the peaceful enjoyment of their properties. The proposed transporting of large plant components via a marine off-loading facility, over the beach, the beach bungalow community and the rail line raises many serious safety concerns. Disruption to public rail services would be unacceptable at a time when road traffic congestion would need to be alleviated. Many Braystones residents on low income are particularly reliant on the rail service.

9. The proposed high concentration of nuclear reactors in Copeland is unacceptable. Sites that may otherwise have been situated in Scotland seemed to have simply been displaced into the single borough of Copeland. The proximity of so many reactors to the most sensitive nuclear site in Europe should be questioned. The people of West Cumbria have borne the major burden of the nuclear industry for more than 60 years. The responsibility for nuclear power should now be shared more fairly across Britain.

10. The Braystones development is not supported by the local public or local councillors (Councillors Norman Clarkson and David Southward) as was demonstrated at several public meetings (also County Councillor Tim Knowles in a letter to the Whitehaven News 30 April 2009). Even the local MP, a prominent supporter of Nuclear Power, declared in the Whitehaven News in November 2009, that there is no public support for the Braystones or Kirksanton sites and has shown a strong preference for developing the existing Sellafield complex. DECC have conceded that the Braystones site fails several of their own criteria but claim that it is of overriding national interest to include Braystones in its list of reactor sites, due to a shortage of sites. There are sufficient existing nuclear sites to potentially generate at least 28GW of power. Given the

many engineering, safety, environmental, economic and infrastructure obstacles posed by the Braystones site, it is hard to believe that other more suitable (brownfield) sites do not exist. Greenfield sites should only be considered near centres of high energy demand, to avoid transmission losses.

5 January 2010

Memorandum from Radiation Free Lakeland (NWN 16)

Radiation Free Lakeland was formed in November 2008 following Cumbria County Council's "expression of interest" in the geological disposal of nuclear waste. Supporters are people from all walks of life in Cumbria and further afield whose aims are: a) to ensure the risks from nuclear waste are minimized and b) that no more nuclear waste is produced. Our written evidence will cover the following:

Summary

The content of the Draft National Policy Statement for Nuclear Power Generation (EN-6) was precipitated by the 2007 Government White Paper "Meeting the Energy Challenge." Both the Draft National Policy Statement and the White Paper are written in the gung ho spirit of "dodgy dossiers" with the express aim of hoodwinking the public into justifying the unjustifiable. The 2007 White Paper was further buoyed up by Malcolm Wicks' "Energy Security Paper backs Dash for Homegrown Energy" in August 2009 (British prime minister Gordon Brown's special envoy on energy security and a former energy minister).

What all these dossiers have in common are statements of fantasy rather than fact. The fantasy is beguiling and would have the British public believe that nuclear power is:

— Carbon free/Climate friendly.

— Safe for the Environment.

— Safe for human health.

— Economic.

— Sustainable.

— Home grown.

1. *Carbon Free/Climate Friendly…..?*

1.1 Every nuclear power plant requires a dedicated back up of energy—in fact they need an "over supply" of energy to prevent catastrophe during operation and waste management. In the case of Sellafield's waste management the Fellside CHP plant does this job. Following a Freedom of Information request it was revealed that the amount of gas bought in to ensure "security of supply" to Sellafield last year was £30 million (FOI NDA REPLY 9781940). Any gas left over is sold on to the National Grid. Sellafield stopped producing electricity in 2003. The CO_2 emissions from Fellside since then are in excess of three million tonnes. When asked, the NDA could give no reply as to how a secure energy supply to new build would be met or how Sellafield's own energy requirement would be met post fossil fuel.

1.2 The Nuclear Fuel cycle produces greenhouse gases thousands of times more potent than carbon dioxide. Following a Freedom of Information request from Radiation Free Lakeland (FOI—NDA 10689349) it has come to light that Sellafield (no longer producing electricity) quadrupled its emissions of hydrofluorocarbons (HFCs) from the period 2007 to 2008. HFC's are hundreds and can be thousands of times more powerful than carbon dioxide. The reporting threshold is 100kg but Sellafield produced over four times this amount in 2008 alone.

1.3 Apart from hydrofluorocarbons and other potent greenhouse gas emissions, the nuclear cycle absolutely relies on the production of chemicals such as concentrated nitric acid in large quantities. Nitrous oxide (N_2O) is produced by nitric acid production and is not only 310 times more powerful than CO_2 but it lasts over 100 years in the troposphere. According to the Nuclear Decommissioning Authority, Sellafield is home to the most dangerous concoction of tens of millions of gallons of nitric acid (1086.7 m^3) in High Level Liquid Waste tanks holding "nitric acid solution containing fission products, some actinides and some solids". Fossil fuel and the internal combustion engine has done much to trash the environment but fossil fuel is well and truly trumped by nuclear power at the top of the polluting industrial food chain and reliant on all other polluters for its existence.

2. *Safe for the Environment ….?*

2.1 Following Freedom of Information requests from Radiation Free Lakeland the Nuclear Decommission Authority have revealed that:

> *"The Abstraction license issued by the Environment Agency to the NDA allows abstraction of a total of 6,637,307m^3 of water per annum, but the maximum abstraction in any 24 hour period must not exceed 18,184m^3"*

This equates to over four million gallons abstracted from Wastwater every day, essential to cool the nuclear waste (and provide nuclear workers and equipment with power showers *etc*). More water is abstracted from the Calder and Ehen with discharges to these rivers. While the Lake District is known for its freshwater resources—this kind of relentless use and abuse is unsustainable especially when the resource is fresh water—the most precious and essential prerequisite for life. Wastwater was formed a relatively short time ago—10,000 years—nuclear waste remains dangerously "hot" for substantially longer. When asked, the NDA could give no indication of how new build water supplies would be met. Seawater is too corrosive for many nuclear processes.

2.2 With regard to nuclear radiation and wildlife the nuclear guru James Lovelock has said,

> "If you wanted to preserve the biodiversity of rainforest, drop pockets of nuclear waste into it to keep the developers out. The lifespan of the wild things might be shortened a bit, but the animals wouldn't know, or care. Natural selection would take care of the mutations". For "rainforest" substitute "Cumbria." James Lovelock's blasé prediction is backed up by evidence: "Hesse-Honegger discovered a shocking degree of deformation in bugs from fallout areas in Sweden. From 1986 until 2007, she systematically examined the morphological appearance of various types of true bugs around the world. She collected more than 16,000 Heteroptera, examined them in detail, identified different types of malformations and produced over 300 detailed illustrations. In areas around nuclear power plants and nuclear reprocessing facilities in Switzerland (Aargau), France (La Hague), and Germany (Gundremmingen), for example, severe disturbances and malformations were found in true bugs and other insects" Courtesy of Verlag Helvetica Chimica Acta (Chemistry & Biodiversity 2008, Vol. 5, issue 4, p. 499-539)

3. *Safe for Human Health….?*

3.1 The German company RWE is tendering for nuclear build here in Cumbria while effectively outlawed from new build in Germany largely as a result of health concerns In Germany. The German people object strongly to proposals to extend the life of existing plants—new build in Germany is off the agenda. This is chiefly as a result of the KIKK studies, showing a direct link between proximity to nuclear installations and cancer. As Dr Ian Fairlie reports in the New Scientist article 26 April 2008 "the KiKK studies (a German acronym for Childhood Cancer in the Vicinity of Nuclear Power Plants), whose results were published this year in the *International Journal of Cancer* (vol 122, p 721) and the *European Journal of Cancer* (vol 44, p 275). These found higher incidences of cancers and a stronger association with nuclear installations than all previous reports. The main findings were a 60 per cent increase in solid cancers and a 117 per cent increase in leukaemia among young children living near all 16 large German nuclear facilities between 1980 and 2003. The most striking finding was that those who developed cancer lived closer to nuclear power plants than randomly selected controls. Children living within five kilometres of the plants were more than twice as likely to contract cancer as those living further away, a finding that has been accepted by the German government".

3.2 The Radiation Linked Diseases Compensation Scheme based at Sellafield is there to compensate nuclear workers, but as the KIKK studies show the surrounding population up to 50,000 is also adversely affected by nuclear installations. While routine emissions are damaging to human health—the prospect of a serious accident would be catastrophic. In the same month that the Norwegians were told by the industry that a hypothetical "accident" such as a loss of cooling water to the waste tanks "could not happen" —the hypothetical accident became a reality. On 1 April 2009 there was a loss of cooling water to the High Level Waste tanks—the problem was hours away from being catastrophic. This loss of coolant to HLW tanks is designated as the "Reference Accident" (worst credible accident) for Sellafield's Emergency Plans. The worst-case scenario would be public evacuation from Glasgow to Liverpool (perhaps permanent). The Norwegian report concluded that if just 1% of the tanks' inventory was accidentally released, the radioactive fallout in Norway would be five times greater in the areas worst affected by the Chernobyl accident. If 10% of the tanks' contents were released, the fallout would be fifty times the country's maximum post-Chernobyl experience.

4. *Economic…..?*

4.1 Others will speak of the tens of billions required for new build and the hundreds of billions required for decommissioning. Radiation Free Lakeland would like to highlight just some of the hidden economic costs of nuclear.For example a staggering £30 million every year on gas to Sellafield. Sellafield has the obscene luxury of paying nothing—zilch—for its in excess of four million gallons of fresh water a day—around the same amount of water as three Cumbrian towns would use. In Cumbria, individual household water bills are rising year on year.

4.2 For the last ten years there has been an unprecedented increase in taxpayers money filtering through the Nuclear Decommissioning Authority to many essential services in Cumbria such as Citizens Advice, Schools and Hospitals. The NDA claims that its considerable largesse running into tens of millions is helping communities suffering from the economic shock of nuclear closure. With the sale of "NDA" land (land acquired with public funds) for potential new build this largesse has instead become a "slush fund" used with the rather abusive aim of grooming communities into passive acceptance of nuclear. For example, the NDA has released information, in response to a Freedom of Information request showing that £34 million has

been given to hospitals, colleges, and wildlife and heritage groups since 2005. Cumbria County Council has a staffer sponsored by the NDA, as does Made in Cumbria, established to help small businesses involved in the food and craft sectors.

4.3 Money has been given to a lifeboat appeal, footpaths, and a harbour wall scheme amonst other things. The Citizens Advice Bureau in Copeland has received almost £80,000. In addition to the £34 million, the NDA will be "investing" £10 million over three years in the University of Cumbria. According to *The Guardian*, the NDA is spending taxpayers' money on "social" projects "as if Christmas has come early".

Cumbrians are being "bought off" with their own money. Apart from the University of Cumbria, money is going to other organisations which should be properly funded by central government—Cumbria's nine cottage hospitals received £18 million. Money the NDA and other nuclear companies are disbursing in Cumbria is going to organisations that Cumbrians are relying on to be impartial and vocal watchdogs on nuclear issues. Cumbria Wildlife Trust's work on the Biodiversity Action Plan was part funded by Sellafield Ltd. Friends of the Lake District and the Lake District National Park Authority both work in partnership with Cumbria Vision on various projects such as the Lake District World Heritage Project, and the Cumbrian Biodiversity Action Plan. Cumbria Vision is the main economic development agency in the County, and is promoting the West Cumbria Energy Coast Masterplan, which received £250,000 from the NDA.

5. *Sustainable…?*

5.1 The most widely accepted definition of sustainability can be traced to a 1987 UN conference. It defined sustainable developments as those that "meet present needs without compromising the ability of future generations to meet their needs"(WECD, 1987). The Golden Rule of Sustainability is "do unto future generations as you would have them do unto you". "Sustainable means using methods, systems and materials that won't deplete resources or harm natural cycles" (Rosenbaum, 1993).

5.2 With these principles of sustainability in mind the question should be posed:

Is nuclear power the biggest threat to Cumbria's future food security?

— Windscale Fire—Contaminated Lakeland Food—Systematically Destroyed

— Chernobyl—over 20 years ago—
353 British farms including in Cumbria are still under Restrictions

— Routine Emissions
"New evidence of an association between increased cancers and proximity to nuclear facilities raises difficult questions. Should pregnant women and young children be advised to move away from them? Should local residents eat vegetables from their gardens? And, crucially, shouldn't those governments around the world who are planning to build more reactors think again?"
2008 New Scientist—*Dr Ian Fairlie —consultant on radiation in the environment*

6. *Home grown*

6.1 New nuclear would "boost energy security."

Regarding "energy security," the known UK resource of uranium is on Orkney where the Orcadians successfully won a battle in the 1970's to keep their uranium in the ground. A direct consequence of nuclear fanaticism in Britain is having devastating effects worldwide. From the Grand Canyon to Lapland to Australia, indigenous communities around the world are fighting thousands of uranium mining claims.

7. *Conclusions*

7.1 People could be forgiven for assuming that the Department of Energy and Climate Change was put created with the cynical remit to push for new nuclear build and "geological disposal" at ANY cost—of health, safety, or trashing of the climate and environment. DECC have asked that people/organisations do not publish their responses to the draft Nuclear National Policy Statement until the select committee has "appraised them" Is this to ensure that the Site Selection "Consultations" —some of which have already taken place, can happen without the hindrance of dissenting voices being heard ? At the Site Selection "Consultation" Meetings the DECC exhibition and officials are blandly reiterating all the nuclear fantasies contained in the draft (dodgy dossier) Nuclear National Policy Statement

7.2 Our response is NO—Radiation Free Lakeland opposes in the strongest possible terms the draft Nuclear National Policy Statement. Cumbrians should be assured of infrastructure such as schools and hospitals without being bribed into "geological disposal" and new nuclear build in the vicinity of the worlds most ferociously radioactive stockpiles of nuclear waste.

5 January 2010

References:

2007 White Paper on Energy
www.berr.gov.uk/files/file39387.pdf

Energy Security Paper backs Dash for Homegrown Energy
http://www.malcolmwicks.org.uk/energy

Carbon Free/Climate Friendly…?

*Attached Freedom of Information Requests regarding Resource Use and Health

Safe for the Environment…?

*Attached Freedom of Information Requests regarding Resource Use and Health

Safe for Human Health

Compensation Scheme for Radiation Linked Diseases
http://www.csrld.org.uk/

Norwegian Ministry of the Environment—New report on Hypothetical Accident at Sellafield
http://www.regjeringen.no/en/dep/md/Whats-new/News/2009/new-report-on-hypothetical-sellafield-ac.html?id = 550556

Overview of Radioactive Waste Storage Reviews

"An accident or terrorist attack here could, for example, require the evacuation of the area between Liverpool and Glasgow and cause up to two million deaths".

nfznsc.gn.apc.org/docs/radwaste/RWB19.pdf

The German Kikk Study
http://www.alfred-koerblein.de/cancer/english/kikk.htm

Homegrown…?

Orkney uranium mining opposed
http://www10.antenna.nl/wise/index.html?http://www10.antenna.nl/wise/b5/uranium.html

Finnish Lapland under threat of uranium mining
http://ranua.nuclear-heritage.net

Grand Canyon under threat of uranium mining
http://www.biologicaldiversity.org/news/press_releases/2009/uranium-mining-09-08-2009.html

Australian wetlands under threat of uranium mining
http://www.ecnt.org/html/cur_mining_uranium.html

Memorandum from Brian Crawford (NWN 17)

I am Brian Crawford, a resident of Millom, south west Copeland in Cumbria. I am a local councillor, a DEFRA Minister's Recreational Sea Angler Representative on the Cumbria Sea Fisheries Committee and Secretary of the local South Cumbria Sea Sports Association Ltd. (www.scssa.co.uk) A small boat sea angling club. I would like to make the following comments regarding the establishment of new nuclear build at Kirksanton in particular and Braystones and Sellafield in addition.

1. Millom and district, population about 10,000, is a very deprived community. Until the 1960's its major employer was the Millom Ironworks and the local Hodbarrow Iron Ore Mines. Following their closure, employment centres shifted to Barrow in Furness, 27 miles south and Sellafield, 25 miles north. This area will substantially benefit from any input of employment such as a new power station a few miles away at Kirksanton. However, this gain in employment may be offset in the long term if as a result, the local HMP Haverigg may have to close with staff and prisoners being transferred elsewhere as is being suggested.
2. As a sea angler for over 60 years, beach, pier and boat, my main concern is with the potential effects of the required water intakes for each new reactor. If the three Copeland nuclear power stations are constructed, this could result in nine to 12 new nuclear reactors over a 20-mile stretch of Copeland coast. Each reactor will require up to 30 million gallons of seawater per day, or 60 cubic metres per second of cooling water. This is drawn up through pipes of a substantial bore, pumped through reactor cooling pipes, where it is heated to about 30 degrees centigrade, before being pumped back out to sea.
3. Following debate with marine ecologists, it is established that these intakes cause substantial mortality rates with most species of sea fish, particularly larval, immature and developing stages of fish at most risk, together with some crustaceans such as shrimps, prawns, crabs, etc. This coast is also of major importance for migratory species such as salmon, sea trout and the endangered freshwater eel.

4. Research work carried out suggests the effect of each intake if not effectively screened could be similar to the fish removed by two small trawlers working off the coast, 24/7, 365 days per year for 60 years. If this effect is multiplied by at least nine reactors, the result could decimate sea fish and crustacean populations in the Irish Sea, especially with the addition of proposed new reactors at Heysham and Wylfa. The result on recreational sea angling and the multi-million pound commercial sea fishing industry would be terminal.

5. It has also been suggested that the intakes are protected from fish ingress by screens, usually of 1 cm square mesh. However, it has been confirmed that the flow of water is such pressure as to enable escape for any fish trapped against this mesh not to escape, so they die. Skips are filled with such dead fish and removed to landfill sites. In several cases however, floating debris is smashed against the screens with such force as to breach the screen enabling fish to be pumped around the system.

6. All fish and crustaceans passing through the system are killed and pumped back out to sea to act as "ground-bait" to attract yet more fish to the area to be sucked in by intakes.

7. It is hoped that as the Environment Agency has responsibility for areas covered by these intakes, appropriate research and development will take place before the new reactor intakes are activated, to ensure the worst case scenario as above does not happen and efficient interceptor screens are in place to divert any fish or crustacean "sucked in" to be safely returned to its aquatic environment without harm.

5 January 2010

Memorandum from Sally Millar (NWN 18)

I would like to comment on EN-6 with regard to the North West region, and with special reference to Cumbria and the proposal of Kirksanton as a site for new nuclear power.

The effect of expanding the nuclear industry on the North West, including the impact on: the economy, jobs, skills, local and regional business and the environment;

Copeland has been designated "The Energy Coast", not "The NUCLEAR Energy Coast". I feel that diversity would much better serve the economy, especially in the long term. 500 or so permanent jobs are promised at Kirksanton, benefitting the Millom area, BUT over 400 jobs would be lost if HMP Haverigg (adjacent to the Kirksanton site) were to be closed/moved, as suggested. Prison workers' skills are not those required for the nuclear industry!

As you will see from my address, I am part of a growing tourism industry. There is clear evidence from surveys that people do not want to holiday in the shadow of a nuclear power station. My guests come to ride, relax and enjoy water sports on the beach, play golf, walk on the nearby hills, and enjoy the peace and quiet and the beautiful scenery. A power station at Kirksanton would dominate all local views, from the beach, from the fells—and from this village. Doubtless B&B would be required by contractors, temporary workers and commuting workers, but the nature of my business would be completely changed, and businesses such as the local stables would close. Tourism jobs and income would be lost.

As mentioned above, our local environment is a great asset to the tourism industry. It is also extremely important ecologically. The Kirksanton site shares boundaries with The Lake District National Park, and European protected wildlife sites, as well as an important marine habitat. The types of mitigation suggested are totally inadequate.

Besides the damage to tourism and the natural environment, a building and industry of this scale would totally change the character of this quiet part of Cumbria, and the way of life of its residents. Regeneration is needed, but this particular proposal is out of scale and inappropriate, AND has a limited life, since there would not be appropriate land adjacent to this site for a replacement power station in 60 years time.

The role of regional universities and education bodies in supporting the nuclear industry in the region;

My remarks *vis-à-vis* diversification of energy industries apply equally to educational provision. Surely it makes more sense to develop education programmes and qualifications which look at all aspects of energy provision, rather that taking the narrow view of nuclear alone.

What support is needed to maximise the potential benefits for businesses in the region;

Again, diversification. Opportunities for the growth of small businesses looking at renewable energies. We have wind, waves, tides and biomass all around us. Opportunities for the growth of green tourism in the area. A Discovery Centre such as that suggested in an alternative plan proposed by the Morecambe Bay Partnership would attract visitors and enhance their stay, unlike a nuclear power station.

What improvements to the regional infrastructure will be needed, including during the construction phase;

If you travel to the Millom area as part of your remit, as I trust you will, you will experience our local road system. You will appreciate the prohibitive cost of upgrading it to a standard suitable for the transport of materials and the daily/weekly commuting of temporary workers, let alone the practicality of an evacuation in the case of an "event" at the power station. In the past few weeks alone, the area has been cut off on several occasions by snow and floods.

Transport of construction materials by sea would involve the building of a MOLF, an extremely complex challenge given the nature of the coast, the adjacent internationally protected dunes and estuary, and the extreme weather.

What are the arguments for and against each of the proposed four sites announced on Monday 9 November;

As a resident of the village next to Kirksanton, I do not have experience of the other sites proposed, so cannot speak for the practicalities of their use. However, common sense dictates that it cannot be wise to install so much of this new, unproven technology in such a small area, with all four sites bordering the Irish Sea.

Re. the Kirksanton site, I have mentioned some issues above. You should also be aware that there are many flaws and untruths in the recently published AoS and HRA documents, some of which were pointed out during the SSA consultation in the spring, but have not been corrected or acknowledged. I believe the site to be totally unsuitable, but due to the very short notice of this request for information, there is no time to list all issues here. However, you should be aware that there are notable difficulties in resolving flood risk issues both inland and at the shore. Reference to responses received by DECC from the local community in the spring, and information at www.savekirksanton.org.uk will inform your discussion.

What lessons can be learnt from earlier commissioning experiences; and

The role of regional bodies, and partnership arrangements between such bodies, in maximising the potential benefits and minimising the negative impacts of expanding the nuclear industry in the North West.

I cannot comment on this final point.

I am happy to provide any further information if you think I can help.

5 January 2010

Memorandum from Mrs Jill Perry, Parliamentary Candidate for the Green Party for Copeland Constituency (NWN 19)

SUMMARY

— The cumulative effect of three sites in Cumbria would be unacceptable.

— The economic dependence on one industry would be detrimental to West Cumbria.

— Investment in renewable energy and energy efficiency would bring more benefits in terms of jobs and climate change benefits.

— This potential has not been seriously examined with respect to Cumbria.

— The purpose of education is not to support industry.

— We should not be looking to subsidise firms to gain contracts with the nuclear industry.

— We should not be looking to build new roads or air facilities or to upgrade existing ones.

— Building industrial nuclear facilities on rural green field sites is unacceptable.

— There is a health risk to local populations which has not been recognised in this country.

— There would be damage to internationally important marine wildlife sites.

— The increased radioactive discharges could cause breaches of site license and international obligations.

1. *The effect of expanding the nuclear industry on the North West, including the impact on: the economy, jobs, skills, local and regional* business and the environment

1.1 The North West has a disproportionately large number of the proposed sites for nuclear expansion—four of the 10 proposed sites, therefore leaving it vulnerable in many ways to the influence of that industry.

1.2 Within the North West, Cumbria has a disproportionately large number of the proposed sites—three of the four sites.

1.3 We are limiting our comments to the effect on Cumbria where it will be most acutely felt, although the same could be said for the North West as a whole.

1.4 The economy of West Cumbria has been dependent on the nuclear industry for many years, and this has been recognised as a problem. Single industry economies are always vulnerable, never healthy. The nuclear industry was forced, for many years, to fund bodies set up to diversify the local economy.

1.5 The West Cumbria Tourism Initiative was set up to promote tourism, provide new tourism venues and draw tourists away from the honey pots of the Lake District. As a result many tourism businesses began and/or were expanded and new visitor venues were initiated, many of them along the coastline—including the Beacon, The Rum Story and the Maryport Aquaraium.

1.6 Made in Cumbria was set up to promote local arts and crafts, and expanded to include local foods. With our strong farming industry and the burgeoning fashion for locally diverse foodstuffs, coupled with a growth in tourism this has proved to be a successful venture.

1.7 The recession, the environmental necessity of flying less and a continuing interest in good quality local food means the food and tourism have strong potential for continued growth. All this stands to be lost if nuclear expansion is allowed to go ahead. Our growing reputation for a clean environment will recede, as the old one of polluted seas, industrialised coastline and dangerous venues reasserts itself.

1.8 Furthermore the effect on jobs will be negative. Although a nuclear new-build programme would of course create jobs, the cost per job would be very high—not because of high take-home pay for the industry's workers, but because the high costs of the necessary safety, security and regulatory measures, for example. It has long been known that renewable energy sustains far more jobs per unit of power than fossil fuel or nuclear energy. A recent comparison shows the following jobs per year per TwH per energy source:

Wind 918–2400, Coal 370, Gas and oil 250–265, Nuclear 75

1.9 In addition, it has been estimated that an energy efficiency increase of just 1% a year, sustained over a 10-year period, would create 200,000 additional jobs in the EU sustained over 10 years.

1.10 This is taken from From J Goldemberg, 2004, *The Case for Renewable Energies,* International Conference for Renewable Energies, Bonn, and *DG Internal Policies of the Union*, Economic and Scientific Policy Dept, Briefing Note on the employment potential of renewable forms of energy and increased efficiency of energy use, p13, referencing European Commission, 2005, *Doing More With Less—Green Paper on energy efficiency.*

1.11 With a high wind resource, energy capacity of rivers and streams, large numbers of building with a good size of land adjacent, considerable amounts of farm and food waste, good potential for growing energy crops on unproductive land, and huge numbers of households not connected to the gas network Cumbria has a very significant potential for job creation in the commercial and domestic scale renewable energy, heat and transport fuel industries as well as installation of energy efficiency measures. These are jobs from which local tradesmen could benefit.

1.12 I do not believe that this potential has been examined in any detail by the agencies whose responsibility it would be to do so. In fact the full report The West Cumbria Spatial Masterplan (which is now commonly referred to as "The Energy Coast") is 197 pages long and on reading it, I have found three passing references to opportunities for growth in renewable energy, and one to energy efficiency, while all of the above nuclear plans are gone into in much detail.

1.13 In fact this quotation is taken from Masterplan working paper—Baseline Analysis (31 July 06), paragraph 3.8

> "Although West Cumbria is a natural location for nuclear development, *the region does not have the compelling rationale for attracting alternative energy sources and development. It has some wind resources, but no more than other regions* and certainly less than Scotland. It has no coal or gas generation (other than Fellside CHP) and we have not seen any evidence of alternative energy development or research in the region (hydrogen, fuel cells, renewables, energy efficiency *etc*).
>
> *West Cumbria would face stiff competition from other UK locations better know for alternative energy (offshore Aberdeen and East Anglia, tidal and wind, Scotland). It could even be the case that, given its nuclear tag, West Cumbria could even be considered an unattractive location for alternative energy research particularly renewable energy.*"

1.14 I regard this as clearly factually wrong, with regard to its assessment of wind resource, and as inadequate with regard to other alternative energy sources.

1.15 One might expect the working paper devoted to energy issues to take a more in depth view. The following quotation is taken from Masterplan working paper 2—Energy, Technology and Nuclear (September 2006, updated August 2007)

> "1.1 For example, although there are a small number of wind farms along the coast we did not see this as a major opportunity given that the wind resource has been largely exploited and the presence of the national park naturally curtailed wind development in a large part of the region. Overall, the region is a net energy importer and this position is likely to remain unchanged. Other than perhaps nuclear power generation, it is unlikely that there will be major opportunities in the broader energy sector."

1.16 It is perverse to consider that the National Park might not only be a hindrance to wind energy development but that it is so "naturally", however it is not seen as a deterrent to the nuclear industries.

1.17 These errors, inadequacies and bias seriously undermine the resultant report, which is apparently being given much weight by the Government, regeneration agencies and industry. The greater job creation potential of renewables and energy efficiency must be given serious consideration before any nuclear power plant is considered.

2. *The role of regional universities and education bodies in supporting the nuclear industry in the region*

2.1 I do not believe it is the role of universities or higher education institutions to support local industry. Instead they should have the function of inspiring a hunger for life-long learning, promoting responsibility, self-confidence and a sense of community, not providing a workforce for business and industry needs.

3. *What support is needed to maximise the potential benefits for businesses in the region?*

3.1 This seems to be an invitation to business to make a bid for financial support, and yet we are consistently told that any new nuclear power stations must be built without public subsidy.

3.2 National Government and regional bodies should not be providing financial or other support to enable regional businesses to tender successfully for nuclear work, as this amounts to yet another public subsidy to the nuclear industry. For details of other subsidies see "Nuclear Subsidies—how the market is rigged in favour of dangerous nuclear electricity" January 2007 www.No2nuclearpower.org.uk/reports

4. *What improvements to the regional infrastructure will be needed, including during the construction phase*

4.1 Many respondents will see this question as an invitation to request road development. There has been consistent demand for improvements to the Barrow to Whitehaven section of the A595 and upgrading of the A66 in Cumbria. This is linked in the minds of business interests with regeneration and in fact The West Coast Spatial Masterplan supports both these developments, improvements to the A595 north to Carlisle, and the alleviation of congestion around Workington and Whitehaven by Whitehaven Eastern Bypass, Workington Southern Link, and A5086 improvements.

4.2 We know that increasing journey speed leads to increased journey length, and all that this will do is increase car and lorry travel, making a mockery of stated desire and intention to reduce carbon dioxide emissions. One of the reasons given for developing nuclear power is to reduce carbon emissions (this is spurious for many reasons, which it does not appear relevant to state here) but if potential developments lead to road upgrades this is shown to be wrongheaded.

4.3 Furthermore The West Coast Spatial Masterplan calls for development of airport facilities and increased use of air travel. In fact it states "air travel is an important factor in underpinning the development of the local economy in West Cumbria" and quotes from York Aviation, The Social and Economic impact of airports in Europe, January 2004, saying "nuclear fuel and research and development are air transport-intensive sectors and that companies engaged in these activities are more likely to be influenced by proximity to an airport and the availability of air services. It is likely, then, that the potential development of new nuclear power stations will lead to calls for air services to be developed at Carlisle airport, thus further undermining the Government's and the region's commitments on climate change.

4.4 It is vitally important that calls for improved road and air links are resisted, and that investment in rail is prioritised.

5. *What are the arguments for and against each of the proposed four sites announced on Monday 9 November*

5.1 If the three proposed sites in Cumbria were to go ahead, a journey from Whitehaven to Millom by road or rail could involve passing new nuclear reactors at Braystones, two new nuclear reactors at an extended Sellafield, the existing Sellafield site, Drigg nuclear waste dump and new nuclear reactors at Kirksanton. This could be considered an unacceptable cumulative effect on such a short journey.

5.2 Braystones and Beckermet could find themselves effectively surrounded by nuclear power stations, in industrial sprawl of the nuclear site into greenfield areas. Not only does this industrialise a largely rural area rendering it unpleasant to live there, there are also attendant health risks which have not been adequately dealt with at this early stage.

5.3 The study, Epidemiologische Studie zu Kinderkrebs in der Umgebung von Kernkraftwerken (KiKK), commissioned by the German Government, published on the internet on 24 December 2007 and in paper form on 2 January 2008 caused an outcry in Germany and was accepted by the German Government, and as a result there are no plans for new reactors in Germany, however it has received no attention in this country. The KiKK study is significant as it indicates that the increased risks of childhood leukaemia are very large, are unequivocally linked to proximity to nuclear reactors, appear to extend as far as 70 km from the nuclear reactors; and cannot (as is often suggested in the UK) occur by chance. This is particularly significant for Braystones as it could have reactors to the south and north of the village.

5.4 Kirksanton

5.4.1 The building of a nuclear power station here would involve the radioactive contamination of a green field site. It would also be unacceptable industrial development in the countryside.

5.4.2 This is a pretty and unusual coastal village which has managed to forge a small but significant tourist industry which would be irreparably damaged by the building of nuclear power stations.

5.4.3 It is adjacent to internationally recognised and protected wildlife areas (Morecambe Bay and Duddon estuary) which would be damaged by the building of coastal facilities to support the construction phase, and by the pollution from the operational phase.

5.4.4 It would be necessary to demolish existing wind turbines on the site to accommodate the nuclear power station.

5.5 Braystones

5.5.1 The development of a nuclear reactor here would involve the pollution and contamination of a green field site, and would be unacceptable industrialisation of the countryside and the destruction of a historic beachside community.

5.5.2 The village and its inhabitants would be put at risk from the operation of the power plant, not just from the risk of a catastrophic accident but also from the regular discharges. More can be read on this in the *International Journal of Cancer* (vol 122, p 721) and the *European Journal of Cancer* (vol 44, p 275), or by contacting Dr Ian Fairlie or reading his article in reports in the New Scientist 26 April 2008.

5.6 Sellafield

5.6.1 The operation of up to three reactors adjacent to the Sellafield site could well result in the site license for radioactive emissions being exceeded.

5.6.2 We also have legal duties as a result of the Ospar agreement for the marine environment to achieve "*substantial reductions or elimination of discharges*" by the year 2020, "*to levels …close to zero*", which it looks unlikely we can meet, if we continue to propose building nuclear power stations at coastal locations.

5 January 2010

Memorandum from Tim Kendall (NWN 20)

As the North West Regional Select Committee of the House of Commons is seeking evidence for its new inquiry on the Future of the Nuclear Industry in the North West and seeking comments regarding arguments against the named sites, please will the commitee be made aware of the responses to the Kirksanton site. These formed part of the opportunity to comment on site nominations in initial consultation. The web link to view the Kirksanton responses is http://data.energynpsconsultation.decc.gov.uk/documents/report/kirksanton.pdf

As is apparent by the large response to the Kirksanton nomination the arguments against this Greenfield site are far reaching and throw the whole process into dispute. The Governments own criteria regarding the use of Greenfield sites, consultation of stakeholders and more has been overlooked in allowing the nomination by RWE of Kirksanton to progress to further consultation.

24 December 2009

Memorandum from the Keep Our Future Afloat Campaign (NWN 21)

1.1 The Keep Our Future Afloat Campaign (KOFAC) is a trade union led organisation. UNITE (Amicus) and GMB are the principal sponsors. The aims of KOFAC are to:

— sustain and grow jobs in naval shipbuilding in north west England;

— secure full utilisation of the unique naval ship and submarine building assets found in the north west of England's naval shipbuilding industrial base—the shipyard at Barrow and a supply chain of 1,700 companies; and

— sustain the naval ship/submarine design capability, which is located in Barrow—600 designers comprising 60% of UK total capability.

KOFAC is a non political organisation which sets out to influence the policy of Government, its agencies, leading companies in the defence industry and trade union policy.

EXECUTIVE SUMMARY

2.1 This evidence highlights the importance of the NW's defence nuclear industry which sustains 23,000 highly skilled jobs. It explains that the region's nuclear industry covers civil and defence market segments which offer potential for wealth creation and jobs provided the Government sanction orders for nuclear powered submarines and expedite approval for civil nuclear power stations.

2.2 The NW is the hub of a national supply chain for the submarine industry. Supply chain fragility and affordability are key issues.

2.3 Nuclear engineering skills needed to support the nuclear renaissance exist in the UK. They are mostly preserved in the defence programme. There is a need to increase the number of people to meet the requirements of the new civil nuclear build programme and to ensure that the rise of demand for skills in civil does not already impact on the defence industry's sustainability.

2.4 The UK engineering industry has an opportunity to build an internationally competitive nuclear engineering capability on the back of the UK civil and defence new build programme. However, a coordinated approach to realising the potential of nuclear can be achieved through investment and the development of skills. The Britain's Energy Coast Initiative in Furness and West Cumbria is a model for how more joined-up, targeting of public sector support will ensure that companies in the civil and defence supply chains are assisted to access the existing range of business support products including GBI, government grants and UKTI international market opportunities.

3. THE NW NUCLEAR INDUSTRY'S STRATEGIC IMPORTANCE

3.1 The nuclear industry in NW England has been established for over 60 years. It comprises:

— the civil nuclear industry; and

— the defence nuclear industry.

Both are of international significance and make an important contribution to the NW of England's economy estimated by NWDA at £3 billion[1] in terms of wealth creation, export earnings and employment. Nuclear industry employment is a source of high wages within the region's Assisted Areas of Furness and West Cumbria where worklessness is already high.

3.2 The drivers for the civil nuclear industry are considered to be:

— security of energy supply for the UK;

— the desire to expand low carbon energy generation using nuclear power; and

— safe, long term storage of nuclear waste and its prior treatment.

3.3 The drivers for the defence nuclear industry are considered to be:

— national security and the need to sustain sovereign capability in submarine building; and

— the unique capabilities offered by nuclear powered submarines in enabling the Royal Navy to deliver its tasks.

There are 12 key locations for the nuclear industry in the region, seven being located in Cumbria. Only one is wholly a defence nuclear site.

3.4 The NW's nuclear decommissioning and defence nuclear industry are of strategic national importance. The Defence Industrial Strategy (DIS)[2] declares a national security imperative for the retention of a sovereign capability in the design and manufacture of nuclear powered submarines[3] stating that *"for the foreseeable future, the UK will retain all those capabilities unique to submarines and other nuclear steam raising plants to enable their design, development, build, support, operation and decommissioning."* The DIS also identifies in broad terms the areas of expertise the Ministry of Defence considers are essential to retain onshore in the UK, and the need to *"drive down and control the costs of nuclear submarine programmes."*

4. EMPLOYMENT IN NUCLEAR NW

4.1 The nuclear sector supports an estimated 23,000 jobs in the NW[4] (about 1.5% of total Northwest employment). This is approximately half of the UK's 45,000 nuclear sector employees.

4.2 Sellafield is the largest civil site with around 8,000 employees.

4.3 Barrow is the largest defence site with over 5,000 employees. Employment at Barrow increased from 2,900 in 2003.

4.4 The civil nuclear sector in West Cumbria accounts for around 25% of the local employment. In Barrow and Furness it accounts for over 16% employment.

5. The Defence Nuclear Industry in the NW

5.1 The defence nuclear industry in NW England is centred upon Barrow in Furness, Cumbria at BAE Systems Submarine Solutions shipyard which is the UK's centre of excellence for the design, build, test and commissioning of nuclear powered submarines. The BAE Systems shipyard in Barrow is the only UK facility with a Nuclear Installations Act nuclear safety case and site licence for the design, construction, test and commissioning of nuclear powered submarines, a task it has performed since 1958.

5.2 Astute, the first of a new class of submarine is the 26th nuclear power plant to be constructed and commissioned at Barrow. At least three new naval reactors will commission before the first UK civil nuclear power constructions starts. Four Astute submarines have been ordered of an anticipated seven or eight. This construction programme will continue until 2019 or beyond if fully funded. The concept phase for the Vanguard successor submarines commenced in 2007; detailed design work will commence soon in preparation for construction in parallel with the last Astute class submarine.

5.3 Defence nuclear industry has stimulated significant employment growth since 2003 in Furness, where the nuclear shipyard employs 5,084 people able to deal with complex build/outfit and systems integration tasks now. Employment has increased by 2,184 from 2,900 in 2003. In 2008–09 employment rose by around 1,000 people. Recent graduate and apprentice recruitment shows the commitment to attracting young people into the business as follows:

Table 1

GRADUATE AND APPRENTICE RECRUITMENT BARROW NUCLEAR SHIPYARD

Year	*Graduates*	*Apprentices*
2007	59	97
2008	85	134
2009	75	102
2010*	38	95
Totals	257	428

Note *Forecast

5.4 The UK Government has a programme to build seven or eight Astute class nuclear powered attack submarines and up to four nuclear powered missile carrying submarines which could sustain the supply chain well into the late 2020s. However, funding beyond the current orders for four attack submarines and conceptual design only of the missile submarines remains uncertain in the current financial climate. It is absolutely critical that a steady succession of orders flows if the industry is to have a long term future.

6. Supply Chain Issues

6.1 Approximately 60% of the prime contract value for a nuclear submarine is subcontracted to the supply chain—the top ten firms account for 80%.The supply chain extends throughout the UK and the NW. Every time an order is placed almost every area of the UK benefits. The Astute supply chain consists of approximately 190 "significant" suppliers; many are UK-based as security issues in particular, have a significant impact on procurement policy. BAE Systems has established a "Key Suppliers Group."

6.2 The nuclear submarine industrial base construction supply chain is fragile. It is particularly susceptible to gaps in the programme. Gaps result in an erosion of the UK's submarine manufacturing and skills base. Difficulties were encountered between 1999 and 2003 and some single source suppliers abandoned the supply chain in pursuit of more regular and assured work and many experienced people left the industry. As the National Audit Office observed *"The time delay between the construction of the Vanguard-class submarines and the beginning of the Astute programme meant that key skills and submarine-building experience had been lost. The awarding of other shipbuilding work to the Barrow shipyard did not prove sufficient to maintain those skills specific to the design and construction of submarines"*[5]. Ministers have recognised the need to address workload gaps. Addressing the House of Commons Defence Select Committee in Session 2006–07, Defence Procurement Minister Lord Drayson said that "*The central lesson that we have learnt is that if we are to maintain the level of skills that we need within an industry, this is not just applying to the submarine industry but is a general fact of the defence industry. If we need to maintain those skills, we need to provide sufficient work to do so, but the way skills can be maintained is only by putting them into practice .The skills inevitably fade if they do not practice them."* Lord Drayson argued further that, *"to have a pause [in the submarine programme] and then look at regenerating the capability ten years down the track…we cannot expect, and it is not realistic to expect, that that submarine industry could be re-built again."* This means that UK ability to build Astute boats 4–8, a successor to the Vanguard-class and maintain an SSN capability beyond the current Astute order book depends on there being a steady flow of orders. We urge the Committee to seek from the MoD clarity about the future submarine programme orders In particular whether an order for Astute class boat 5 will follow in 2010 and whether pressure on public finances will place at risk a stable, long term workload able to deliver one submarine built every 26 months.

Civil Nuclear Supply Chain Issues

6.3 The Government's commitment to enable the replacement of civil nuclear generating capacity, offers a challenge to the whole UK nuclear industry after such a long period of inactivity. Although the UK nuclear engineering base has contracted, there is an opportunity for companies to enter the UK market to fill the gap. If UK companies do not step up to this challenge, foreign competition will. We welcome the work the Office of Nuclear Development is undertaking. However, it is crucial that Government provides industry with incentives to invest, both with regard to skills and infrastructure capacity and works with developers to promote understanding of the level of business likely to be available from any new build programme. This information is, as yet, unknown, as it would depend on the extent of such a programme, the proposed reactor design, the structure of the construction consortia and their procurement strategies.

6.4 The trade unions support UK manufacture. More advanced reactors offered for the UK market, (Westinghouse's AP1000 and GE's ESBWR), both feature a high degree of modularisation. Westinghouse's modular, "factory based" construction approach is most compatible with shipyard strengths/skills developed in nuclear submarine building. Other proposals are more likely to be built overseas. The nuclear shipyard's significant experience in design for modularisation in the submarine programme and the level of module outfit routinely used at Barrow is higher than the aspirations of the civil reactor vendors cutting programme time and risk.

6.5 Innovation learned in the submarine build supply chain in reducing cost, through, for example, examination of specifications (performance & capacity), Commercial Off The Shelf (COTS) solutions, supply chain management, site integration, commissioning and management of warranties, could also be applied to a civil nuclear build allowing significant pre-commissioning and risk reduction to the programme.

6.6 Demand for civil and defence nuclear manufacturing could stress the submarines supply chain because production capacity is limited. The international demand for components to support civil nuclear build may overwhelm key areas of the supply chain which support submarines. For example there is a worldwide shortage of nuclear capable forging capacity. Submarines require the same capabilities for their nuclear plants. Therefore, the UK Government and the nuclear engineering manufacturing base need to work co-operatively to maximise the value it delivers and support ways to generate new capacity because the timescales before the new power stations are required do not allow free competition and market forces cannot do so alone.

6.7 It is important that the impact of the civil nuclear build programme on its "core product" submarines and the comparatively high level of activity in civil nuclear does not dominate the attention of the existing supply chain.

6.8 There is a wide range of BIS led Business Support Solutions available. Companies need to be helped to access them especially in Assisted Areas. Grant incentives will speed up investment in production capacity.

7. Skills

7.1 The 1958 Mutual Defence Agreement with the United States means that only UK nationals can be employed on a naval nuclear propulsion programme. The security requirements take over three months to achieve clearance of personnel. As BAE Systems Submarines is currently focused on the defence programme, it cannot make firm offers for employment until security clearance is received. Many staff are lost in this period to competitors with, for example, civil nuclear business which has less onerous security restrictions.

7.2 Very few UK companies, with the exception of the defence industry, have recently managed major projects with such a large high quality engineering content as a nuclear power plant. The design, construction and maintenance of nuclear-powered submarines, including the nuclear propulsion system, is an inherently complex enterprise and the skills being maintained and developed in the defence industry are highly valued in the civil nuclear industry and demand will increase in the run up to the start of new build in 2012. There is a risk that individuals could migrate from one segment of the industry to the other.

7.3 The economics of civil nuclear power, with its high capital costs, make schedule adherence and quality (reliability and safety) the dominant measures of a project's success. These projects can afford to ring-fence pools of the best nuclear resource as a contingency against problems on the programme critical path. The submarine programme does not have the same economic drivers and needs other strategies to retain resource.

7.4 Nuclear submarine building demands the highest standards of manufacture and sustaining a uniquely skilled and specialised workforce. Nationality restrictions on who can work in the UK's nuclear submarine programme limit the pool of suitably qualified staff from which industry can draw to deliver naval architecture, systems and marine engineering. Designers and engineers are required in a range of specific areas such as computer-aided design, electrical and mechanical systems, systems integration, structural hydrodynamics, noise and vibration, including acoustics, life support and safety, both of the hull and of the nuclear propulsion system. The Nuclear Regulatory Authorities and the Submarine Enterprise require these

people to keep up their Suitably Qualified and Experienced engineers and production accreditation for the safe and efficient build of a nuclear powered submarine by performing "real work" on "real" submarine projects. The decline of the UK civil nuclear programme has forced the military nuclear programme, and in particular the nuclear submarine programme, to develop and fund its own expertise and personnel in order to remain operational. Retention would be seriously threatened by any disruption to the production drum beat, a significant delay to the start of the design for a future submarine or, migration of people into the civil nuclear sector.

7.5 It is in the nation's strategic interest that both civil and defence parts of the NW nuclear industry are fostered and that one is not allowed to attract labour from the other or that wage rate differentials result in skills migrating from defence to civil nuclear.

8. Nuclear Decommissioning Authority (NDA)

8.1 We fully support the roles of the NDA, to deliver a world class programme of safe, cost-effective, accelerated and environmentally responsible decommissioning of the UK's civil nuclear legacy, particularly at the sites in NW England and to ensure that communities in the vicinity of decommissioning sites gain socio-economic benefits.

8.2 The draft NDA Business Plan 2010–13 shows a proposed halving of its socio-economic budget from £10 million to £5 million. We believe that the current level of funding for 2009–10 should be sustained as a means of helping the NDAs W Cumbria Priority Area through the current recession.

9. Support Needed to Maximise Benefits for Businesses in the Region

9.1 It is recommended that the Britain's Energy Coast Masterplan is fully supported by the Select Committee as a means of delivering a nuclear renaissance in the NW.

9.2 We welcome the role the National Nuclear Skills Academy in West Cumbria is providing, along with The Dalton Institute, Energus and development of the Westlakes Research Institute to address higher level skills in the nuclear sector.

9.3 We also welcome the work of the Office for Nuclear Development and the proposals in "*Manufacturing New Challenges and Opportunities"* (8 September 2008), for delivery of support to grow the civil nuclear industry in the UK, to develop a globally competitive supply chain and fill gaps where capability exists.[6]

9.4 The key roles for regional bodies, partnerships in maximising potential benefits and minimising negative impacts of expanding the NW's nuclear industry, must be to support firms ability to meet the needs of the construction and operational phases of a civil nuclear development and use of public a sector discretionary funding to reducing the fragility of the submarine nuclear industrial base.

9.5 Existing business support and new programmes must address the specific issues associated with the restructuring of the nuclear supply chains. This can be done by requiring RDAs to target the supply chain in their areas as part of a national focus to maximise take up of business support products available through Business Link.

9.6 SMEs should get assistance with the new tendering procedures and to assist diversifying into new markets and into work in other parts of the world through UKTI.

10. Improvements Needed to Regional Infrastructure

10.1 If new nuclear power stations are to be developed in W Cumbria and N Lancashire, followed by deep repository facilities, the Government should, with the industry, work to improve access, housing and leisure facilities in the sub-region. Improvement of the 400kw power grid is a key pre-requisite, followed by investment in the A590, A66 and A595.

11. The Four Proposed Civil Nuclear Power Sites: Heysham, Kirksanton, Braystones, Sellafield

11.1. We support the development of all four sites.

12. Attracting Investment

12.1 It is crucial that direct development of factories and offices on sites such as The Waterfront in Barrow in Furness and Westlakes Science & Technology Park take place to create the space for attracting investment and jobs in the nuclear sector.

8 January 2010

References

(1) Nuclear Power's Chain Reaction for NW England: Press Release, NWDA, 3 December 2009

(2) Defence Industrial Strategy, Ministry of Defence, 2005

(3) Defence Industrial Strategy, Ministry of Defence, 2005,

(4) NW Nuclear—A Strategic Approach to the Nuclear Sector in the Region, NWDA, April 2006

(5) The UK's Future Nuclear Deterrent Capability, 3 November 2008, National Audit Office

(6) Manufacturing New Challenges, New Opportunities, BIS 2008, p.14

Memorandum from Cumbrians Opposed to a Radioactive Environment (CORE) (NWN 22)

1. CORE is opposed to any expansion of the nuclear industry in the UK on the grounds that, in terms of mitigating carbon emissions, it will deliver too little too late to be of any significant benefit. Further:

— It will bring additional environmental detriment in the form of its indelible local, national and international radioactive finger print;

— the capital-intensive nature of new-build will act as a distraction to national effort on the vital development of renewable energies in the UK;

— historic evidence shows that nuclear plans have consistently failed to deliver on time or within budget;

— the issue of the disposal of existing nuclear wastes remains unresolved—despite recent Government claims to the contrary which contend that one or more as yet uncosted and unsited Geological Disposal Facilities may, subject to acceptance by some volunteer community, come into operation at some unspecified date in the future;

— it is premature for the Government to preliminarily conclude that effective arrangements will exist to manage and dispose of future wastes produced by reactors from the new-build programme—and dangerously irresponsible to postulate that the Infrastructure Planning Commission "need not consider this question"; and

— new nuclear power stations and the transports that feed them will provide a dangerous incentive for terrorist attention and will raise proliferation risks.

2. It follows therefore that CORE is wholly opposed to the plans for new build in the North West—at the currently nominated sites at Kirksanton, Braystones and on NDA-owned land adjacent to Sellafield. CORE's opposition is based not only on the above objections but also on the status that already exists in West Cumbria (as defined below) and which can only be exacerbated by new-build in the region:

— it is well documented that central to the aspirations of Britain's Energy Coast West Cumbria (BECWC), nuclear expansion is to underpin the regeneration plans for the area. This "mainstay" role for nuclear was confirmed last month by Lord Mandelson who, in announcing the selection of the NW as a Low Carbon Economic Area, said *"nuclear work and development in the region will be prioritised ….*";

— such prioritisation will be detrimental to attracting the non-nuclear investment and employment that has urgently been sought by West Cumbria's local authorities and others over the last decade;

— the Committee should note that in the last major attempt to regenerate the local economy—by a combination of local authorities and British Nuclear Fuels plc in the late 1980's (following the projected job losses from the completion of the construction of the THORP reprocessing plant), the main component of the regeneration plan was the construction of the Westlakes Science and Technology Park whose aim was to diversify the local economy and create jobs;

— at the latest count (Autumn 2009), some 85% of the tenants currently located at Westlakes are directly related to the nuclear industry with the result that the Park now functions effectively as a Sellafield satellite and has brought neither diversification nor an increase in non-nuclear employment;

— it is also well documented that West Cumbria has been dominated socio-economically by the nuclear industry (Sellafield) for the last half century. This dependence upon one industry has lead directly to a stagnation of non-nuclear enterprise in the area. New-build in West Cumbria will not only perpepuate this domination for a further 60 years or more but will also ensure the area's continuing dependence on the vagaries of one historically unreliable industry, at the same time deterring non-nuclear investment in the region;

— what is an already unsatisfactory and unacceptable regional status will be compounded by the plans to build new reactors in West Cumbria—as recognised by Government itself and described in detail in its Draft National Policy Statement for Nuclear Power Generation (EN-6). For all three nominated West Cumbrian sites, EN-6 acknowledges, under Cumulative Effects, that the sites' appraisal of sustainability identifies that strategic significant effects on conservation and other

issues cannot be ruled out and that *" the development of nuclear power stations at nominated sites in the region may increase the significance of the adverse impacts …. So that the cumulative effects in the region are increased"*;

— EN-6 further warns that the development of individual West Cumbrian sites could have negative effects on the local infrastructure and that *"these negative effects may become more significant if more than one nuclear power station is developed in the region"*;

— Cumbria County Council's Emergency Planners have already warned, in terms of emergeny planning capabilities, of the inadequacy of local infrastructure systems to deal with events outside those currently scoped for the Sellafield site itself;

— the Committee might also note that, in written evidence presented to the 1996 NIREX Public Inquiry by local authority planners, the presence of Sellafield and the long-lasting environmental legacy of its operations (nuclear wastes, radioactive discharges and health detriment) was shown to have acted not only as a deterrent to new non-nuclear enterprises and investment being attracted to West Cumbria but also as a deterrent to tourists and holidaymakers; and

— despite years of detailed investigation into the radiation and health detriment to the communities that stems from West Cumbria's nuclear operations, no unequivocal verdict has been reached. With the jury "still out" on the issue, the most recent study findings from Germany and the US showing a clear link between nuclear power stations and raised levels of childhood cancer must now be taken into account by the Committee and Government and must, under the precautionary principle, mitigate against any further expansion of nuclear power within the UK.

3. CORE also raises the following site specific objections to the three nominated sites in West Cumbria:

— not one of the three nominated sites in West Cumbria "fits the bill" suggested by Government in its initial guidelines on new-build—namely that a) sites should preferably be licensed nuclear sites, b) that sites should be located close to the demand for electricity and c) that sites should possess the necessary transmission infrastructure;

— the NDA-owned land adjacent to Sellafield and the sites at Kirksanton and Braystones are all unlicensed greenfield sites, are singularly remote from where electricity is/will be in greatest demand (the UK's South), and currently lack the necessary transmission infrastructure;

— the prospective developer of the Kirksanton and Braystones sites, German company RWE in partnership with EoN, refused at public meetings in West Cumbria to disclose its site selection process, saying only that they were drawn to the area because of "the level of acceptance for nuclear in West Cumbria";

— the sites' selection therefore remains a mystery as to why such unsuitably remote sites were nominated in the first instance and why they should currently remain on the Government's list of "sites deemed suitable";

— the mystery of RWE's nominated sites at Kirksanton and Braystones is further compounded by its statements in early 2009 that, together with Eon, "*it aimed to build and operate 6000 MW of nuclear capacity in Britain"* (Reuters 12 March 2009). Having later successfully acquired, via the NDA's auction process, the existing nuclear power station sites at Wylfa and Oldbury, the company subsequently stated *"we have set targets for ourselves of up to six Gigawatts and we have the sites that will deliver us that capacity. We are happy with where we are"* (Reuters 10th June 2009). The clear inference from the above is that RWE's sites at Kirksanton and Braystones are surplus to its generating requirement;

— despite the clear failure to fully meet many of the criterion assessed by Government without further mitigating measures being taken, both the Kirksanton and Braystones nominated sites are deemed to have passed the requisite tests—with all outstanding failures subject to later investigation by the Infrastructure Planning Commission. Such a manipulated assessment merely highlights the unsuitability of the RWE sites; and

— RWE has confirmed to CORE that development of its Kirksanton site will result in the removal of the long established and viable Haverigg windfarm.

4. Conclusion.

CORE concludes that new-build in the UK is an unnecessary and dangerous distraction from the development of sustainable and renewable energies. For the North West, and West Cumbria specifically, any nuclear expansion via new-build will condemn the region to continued domination by and dependence upon an unreliable nuclear industry and act as a deterrent to non-nuclear investment and jobs. Further, from a detailed reading of Government assessment (EN-6) shows the clear unsuitability of the West Cumbrian sites in terms of their ability to meet the requisite criteria.

8 January 2010

Memorandum from Frances Rand (NWN 23)

I should like to comment on the proposal for the Kirksanton site for a new build nuclear power station.

This is not a local "gripe". The opposition to this is now local, regional, national, and indeed international. The reasons are all on the "save Kirksanton" website with which I wholeheartedly agree. This proposal will lead to the ruination of this area-one of the few in England which offers tranquillity/a beautiful beach suitable for bathing as well as watersports/horseriding/as well as mountain walking/climbing, birdwatching etc. Tourists will not want to come to see a power station! The destruction of wildlife habitats goes without saying. The proposed site is directly adjacent to the Lake District National Park, and SSSI land. There is even a petrified forest visible directly offshore. We need to preserve all this for future generations not destroy it forever!

The future for this area is renewable energy and tourism, both would keep and create jobs, which some mistakenly think a nuclear build would bring.

9 January 2010

Memorandum from Lake District National Park (NWN 24)

Please find enclosed completed forms *Comments on nominated nuclear power station sites* for the three sites in Cumbria.

In addition to submitting these completed forms we wish to submit the following general comments in relation to the appropriateness of each nominated site:

With regard to the Kirksanton nomination:

We raise fundamental reservations about this new build proposal. This nomination should not progress for the following reasons:

— The new build site lies immediately adjacent to the National Park boundary. As such the new build will have a significant adverse impact upon the setting of the National Park and its special qualities as it is out of scale with this sparsely settled area. No national need has been demonstrated for this particular site to offset the potential harm, particularly given alternative sites for nuclear new build have also been put forward by the private sector as part of this nomination process. It is contrary to national, regional and local planning policy.

— The site lies on part of the Cumbrian coast where non intervention is the preferred approach of the Shoreline Management Plan. This strategy would be seriously compromised—and has not been adequately addressed as part of the submission.

— In addition to the actual build there are serious concerns about its associated infrastructure. There has been no contact with the National Park Authority to ensure infrastructure requirements, for example, overhead power transmission, have no adverse impacts upon the National Park.

Regarding the proposals on the northern part of the West Coast the Authority acknowledges the existing presence of nuclear facilities and its importance to the economy of Cumbria. Our stance outlined in our Local Development Framework Core Strategy *Preferred Options* remains appropriate. This is shown as an attachment to this letter. But there is some concern that the developments at both Sellafield and Braystones could result in a massing of power stations that cumulatively will have an adverse impact upon the setting of the National Park in visual terms from the sites and also from additional infrastructure requirements. For this reason we would prefer only one site coming forward as part of this nomination process, if Cumbria is seen as an appropriate location for further nuclear development.

With regard to the Sellafield nomination:

Our initial preference is the Sellafield site, given it lies adjacent to the existing nuclear facilities and should be more easily assimilated in the wider landscape and concentrate the built form, avoiding an adverse impact on the setting on the National Park. Whilst it would be contrary to national, regional and local planning policy we recognise there may be mitigating circumstances to see this site as a departure from policy.

With regard to the Braystones nomination:

This would not be our preferred site as introduction of another development of this scale 3.5km to the north of the existing site would visually extend, rather than contain, the built form and given the timescales to decommission Sellafield would have greater visual impact on the setting of the National Park and its special qualities. It is contrary to national, regional and local planning policy and there are no mitigating circumstances to warrant a departure from policy for this particular site, particularly given the nomination for the Sellafield site so close to Braystones.

In addition to comments relating to the actual new build we raise significant reservations about the potential impact of infrastructure associated with any nuclear new build. Our preference is for an all offshore grid connection route. Any infrastructure should not adversely affect the National Park. To date we have only been consulted on grid infrastructure provision with the Sellafield nominators. We strongly urge the government to consider infrastructure requirements as part of the nomination process.

8 January 2010

Memorandum from Sheila Roberts (NWN 25)

1. Whilst I agree we need to diversify using "greener" (?) energy, it is hard to believe a so-called caring British Government could ride roughshod over the lives of people living in our country today. *most notably, i think of the village of Beckermet in Cumbria*.

2. To consider building Reactors so near this small village and surrounding villages with all the worry it is causing these poor residents is unforgivable. To even think of doing this, when there is the Sellafield brown field site one and a half miles away is reprehensible.

3. Also why should the North West bear the brunt of all this disruption which should be shared more equally throughout our countryside? Cumbria should really be avoided as it is exceptionally beautiful and attracts visitors from abroad generating much-needed revenue for Britain.

Memorandum from Dr Rachel Western BA (Oxon) PhD MRSC (NWN 26)

Dr Western is Nuclear Researcher for Friends of the Earth groups in Cumbria and also a member of "Nuclear Waste Advisory Associates" (NWAA).

Her academic background is in the science and policy issues associated with nuclear waste management; and she has worked for the nuclear waste agency (Nirex), and also for Friends of the Earth (HQ).

Summary

It is implicit from the Terms of Reference for this North West Regions Committee Inquiry that the development of "New Build" reactors in the North West is a *fait accompli*.

The objective of this text is to demonstrate that such a step would be an extremely reckless undertaking. The Sellafield nuclear site, which dominates Cumbria is in an extremely poor state of repair and does not have adequate funds to ensure Public Safety.

It is this problem that must be prioritised by the nuclear industry in the North West.

In addition to this the institutional framework that is meant to ensure democratic engagement and Public Protection is quite palpably failing. Institutions such as the Nuclear Installations Inspectorate (NII), CoRWM and Copeland Borough Council are not performing their duties adequately. This has important implications.

A programme to achieve "*passive safety*" of current wastes must be adopted—and it must be recognised that moves towards a deep disposal programme for radioactive wastes are simply not credible.

It should also be acknowledged that proposals to use the 100t plutonium stock-pile as an electricity source does not represent the most economic or optimal approach.

Finally—Cumbria has thriving farming and tourism industries. It would be very unwise to put these in further jeopardy by prolonging the dominance of the nuclear industry in Cumbria.

Local Involvement

The phrase:

"*public understanding and engagement*"

occurs frequently in the discourse concerning the possibility of "New Build" reactors or the development of RadWaste facilities in the North West.

This phrase requires close examination with respect to two aspects:

(i) it's implicit assumption that somehow the public "don't really understand" the nuclear industry—and therefore need to be "taught"; and

(ii) that "*engagement*" is what is needed. However the format of this "engagement" is not specified.

The University of Cumbria has an established record in participatory research in the health and social sectors, with academics prominent in international networks. Existing expertise such as this should be built on and drawn upon to enhance local capacity.

In addition to this it is absolutely imperative that the decision-making processes that are ultimately adopted are rigorous and based on a credible evidence base.

NDA—Lack of Credibility of its Evidence Base for Radioactive Waste Policies

See Appendix for Full Exchange

In the autumn of 2008 the Planning Inspector for the Cumbria County Council's Hearing concerning their draft "*Minerals and Waste Core Strategy and Development Control Policies*"—(abbreviated here to the "Waste Planning Framework") identified the following "key issue" as central to the "Test of Soundness" of Cumbria County Council's draft waste framework.

Key Issue:

(i) "What is the *basis and justification* for the approach to radioactive wastes, including the specific policies for storage/disposal of high/intermediate and low-level wastes, and *is the strategy based on a robust and credible evidence basis?*"

(Emphasis added)

In response the NDA generated the following text:

NDA Comment

> "The repository has a new Parent Body organisation with seconded management team, not a new operator, and the proposals do not *demonstrate* that wastes will be managed elsewhere, just that strategically, every effort will be taken to apply fit-for-purpose management to wastes that are currently expected to be disposal [sic] at the Repository to make optimum use of the national asset, as per Government Policy."
>
> (Emphasis in original)

It can be seen that this text makes no sense in terms of the request for information concerning whether or not the Policy rests on a "*robust and credible evidence basis"* referring instead to fit-for-purpose management.

"Evidence-base" and "management" are not the same thing.

Phil Davies of "*Nuclear Waste Advisory Associates*" (NWAA) has pursued the matter through correspondence with the NDA following a meeting that was held in September 2009.[27]

At this meeting Bill Hamilton of the NDA stated the note was submitted in error. Phil Davies followed this statement up with a letter (also on 22 September)—in which he requested that Bill Hamilton:

— confirm in writing, his statement that the document was submitted by mistake, and also

— inform Phil Davies of any steps that he would take to rectify the situation—ie to provide the documentation that would indicate that the NDA's radioactive waste policies are founded on "*a robust and credible evidence base*"

In October the NDA responded to a further E-mail from Phil Davies—to indicate that: Bill Hamilton could be quoted as saying that an error had indeed been made in the (November 2008) NDA document—and that Bill Hamilton was following this matter up with the originators of the document.

On 30 December 2009 Phil Davies contacted the NDA again as he had not heard further from Bill Hamilton. The NDA responded (4 January 2010) that the October response was the response. However the October E-mail contained no information at all on the NDA's view of what comprised the "*robust and credible evidence base"* for their policies on Radioactive Waste. This was the information that the Planning Inspector had originally requested.

Phil Davies replied (4 January 2010) to Judith Holland of the NDA:

> "I would suggest to you that a response is called for since the NDA' s "Comment" *in no way answers the question*, and appears to be *virtually devoid of meaning*"

Phil then went on to enquire:

— whether a corrected version of the document would be issued; and

— whether such a corrected version would be made available to Cumbria County Council

[27] The meeting was for NGO stakeholders and was held at the NDA Offices in Buckingham Gate. It was held on Tuesday 22 September 2009.

The NDA response (5 January) was as follows:

> "you have had a response to your original question. That is the end of the matter as far as I am concerned."
>
> (E-mail from NDA Information Access Manager)

It is clear from this response that the NDA do not possess a "*robust and credible evidence basis*" for their policies on radioactive waste management—or at least one that they are prepared to share with the Public in order to enable critical scrutiny.

NII—Lack of "Veracity"—Particular Implications for the Planning System

Due to the oversight role of the Nuclear Installations Inspectorate (the NII), the public are led to believe that they may be assured that a New Build reactor would be run safely.

However, the following text indicates that this is not the case.

The particular example is the management of the particularly hazardous wastes at Sellafield and the text indicates;

— not only NII's failure to ensure that the problems are dealt with; but also

— the NII's "lack of veracity" concerning the matter.

The "lack of veracity" is of particular importance in this context as the original issue arose during a Planning Hearing.

Due to the revision of Planning Law—and the need for the public to rely on officialdom to —the lack of rigour displayed by the NII is a matter of great concern.

Copeland Borough Council—Misrepresentaion of Local Views

It should be noted that a compliant has been made against Copeland Borough Council with regard to misrepresentation of local views concerning possible development of waste facilities or "New Build" reactors in the Borough. The letter is set out in full at the end of this document.

Environment Minister (September 2001)

A Wrong Decision Could be Catastrophic

In September 2001, at the very start of the: "*Managing Radioactive Waste Safely*" (MRWS) programme the Environment Minister, Michael Meacher stated:[28]

> "*The legacy of a wrong decision could be catastrophic*."

What Sellafield Does

Text concerning the Sellafield site, which is in Cumbria (on the Irish Coast) is set out at some length here to indicate that historical and current practice indicate that the Cumbrian nuclear industry is not sufficiently responsible to be tasked with the construction of a "New Build" nuclear reactor—or deep disposal facilities for radioactive wastes.

Rather, the industry should focus on achieving "*passive safety*" of current wastes.

The main process carried out at the Sellafield nuclear site is the separation of plutonium from used nuclear fuel rods. This procedure is carried out using a liquid based chemical technique known as "*solvent extraction*". Following the plutonium separation, the majority of the radioactive wastes are to be found in a hot nitric acid mixture known as "Liquid High Level Wastes (HLW).[29]

The Hazard Presented by Liquid High Level Wastes at Sellafield

The American expert on nuclear hazards and security, Gordon Thompson, has described nuclear facilities as:

> "*Weapons for an Enemy*"[30]

The Sellafield liquid HLW presents a particular risk—because being liquid it would readily spread if a plane were to crash at Sellafield.

Estimates have been made of the impact of such an attack—for example, the Parliamentary Office of Science and Technology (POST) has reported it may result in the need to evacuate between areas as far apart as Glasgow and Liverpool.[31]

---

[28] "*Government looks for Public Consensus on Managing Radioactive Waste*"—DEFRA Press Release—12 September 2001, 132/01

[29] Prior to re-solidification (vitrification).

[30] http://www.irss-usa.org/pages/documents/UKDefCttee01_02_000.pdf, p2

[31] "*Assessing the risk of terrorist attacks on nuclear facilities*" Parliamentary Office of Science and Technology Report —Report 222, July 2004 page 81

In terms of the number of possible fatalities, some indication may be given by the STOA Report.[32] Figures presented in this report[33] indicate that an attack at Sellafield could result in two million fatalities.[34]

The NII on Problems with Liquid HLW Treatment Facilities (July 2008)

The Liquid HLW at Sellafield is meant to be turned into a solid—using a technique known as "*virtrification*". However, treatment facilities designed to achieve this are subject to severe technical problems. These problems were detailed in the (July 2008) Newsletter of the "*Nuclear Installations Inspectorate*" (NII).

Plant Failures in Spring 2009

In April of 2009—the Sellafield Liquid HLW tanks experienced a "near miss" in which the cooling water system failed. Due to the fact that the HLW is self-heating, it is at constant risk of boiling dry. "*Sellafield News*"[35] reported that that the incident was so serious that the Site Emergency Control Centre arrangements had to be called on.

Just the following month, (May 2009) another emergency occurred within the HLW treatment facilities—this time in "Evaporator B". Although Sellafield initially claimed that there would be no subsequent plant shut-downs; the closure of THORP[36] (for up to seven months) was announced was announced in June.[37]

At the end of this document, the (2009) prevarication on this matter by CoRWM (ii)—in the evidence that they supplied to Government is set out.

Current Risks at Sellafield—cf—Available Funding

June 2009

Keith Case, Sellafield's commercial director, said:[38]

> "*the work that needs to be addressed is of such a high hazard nature that the money will still need to be spent, even if Sellafield's budget comes under pressure.*"

October 2009

NII inspector Mark Foy warned[39] that the risks at Sellafield are:

> "*far too high.*"

November 2009

The Times report that the Government is drawing up plans for large spending cuts at Sellafield.[40]

Possible Consequences of an Accident/Attack at Sellafield

Summer 2001

A report for the European Parliament concluded that an accident/attack at Sellafield could kill two million people.[41]

---

[32] "STOA Study Project" on the "*Possible Toxic Effects from the Nucler Reprocessing Plants at Sellafield (UK) and Cap de la Hague (France)*" Mycle Schneider *et al*
Commissioned by the European Parliament, Directory General for Research
Scientific and Technological Option Assessment (STOA) Programme
Contract No EP/IV/A/STOA/2000/17/0 —Final Report—August 2001

[33] On page 45

[34] The basis for this calculation is set out at the end of the document

[35] "Sellafield News" Wednesday 8 April 2009—Issue 1101 (page 2) http://www.sellafieldsites.com/UserFiles/File/Sellafield%20News/Sellafield%20News%2008_4_09.pdf

[36] the more recent Plutonium separation plant"

[37] (in order to allow checks on Evaporator "C")

[38] "Contractors warm up for £1.3 billion Sellafield clean-up" Contract Journal, Wednesday 10 June 2009
http://www.contractjournal.com/Articles/2009/06/01/68289/with-13bn-to-spend-per-annum-nuclear-decomissioning-work-has-a-long-half-life.html

[39] "*Sellafield's risks are too high—NII*" Whitehaven News, Wednesday 7 October 2009
http://www.whitehaven-news.co.uk/news/sellafield_s_risks_are_too_high_nii_span_style_color_red_add_your_comments_span_1_620879?referrerPath=news

[40] "Cuts loom over UK's nuclear clean-up budget" The Times, 25 November 2009
http://business.timesonline.co.uk/tol/business/industry_sectors/natural_resources/article6930592.ece

[41] See STOA Report ["STOA Study Project" on the "*Possible Toxic Effects from the Nuclear Reprocessing Plants at Sellafield (UK) and Cap de la Hague (France")*" (page 45)
Mycle Schneider *et al*
Commissioned by the European Parliament, Directory General for Research
Scientific and Technological Option Assessment (STOA) Programme
Contract No EP/IV/A/STOA/2000/17/0 —Final Report—August 2001] http://www.nualaahern.com/publications/wysestoa.pdf
+ E-mail from Shelly Mobbs (Health Protection Agency) to Rachel Western—26 November 2008 (Re:—Comversion form "man-Sieverts" to number of fatalities.

July 2004

The Parliamentary Office of Science and Technology (POST) reported that an accident/attack at Sellafield could release a cloud of nuclear contamination whose fall-out could spread as far afield as Glasgow and Liverpool.[42]

Summer 2008

The Nuclear Installations Inspectorate (NII) reported that the High Level Waste facilities at Sellafield were in a chronic state of disrepair—and that replacement equipment was needed as a matter of "*utmost urgency*".[43]

Replacement Equipment was not installed

2009

Serious Failures at Sellafield—including two Emergencies—are reported:

High Level Waste Failures—reported 2009

- Emergency due to Tank Cooling Failure[44, 45, 46]
- "Evaporator"—shut-down in an emergency[47]
- Serious Problem with "Vitrification" Plant[48]

Problems with Disposal

The background text discusses problems with the concept of nuclear waste disposal at some length. Example include a 100 million fold data range in the parameters for Uranium, and the recent recognition that radioactive carbon could pose a risk one thousand times greater than the regulatory limit.
CoRWM—Failure to Address Scientific Problems Identified at 1990s Inquiry on the "Nirex" Disposal Project

In Doc 2592 (31 July 2009) CoRWM stated that:

> "a study *is to be* commissioned on the key lessons that can be learnt from both the siting process conducted and the Inquiry." (page 15)

In fact the study to be commissioned by CoRWM on 31 July was in fact a study that had already been presented (on 14 July)—and did not address the scientific issues.

The background information concerning this issue is set out at the back of this document.

Problems with the Disposal of Radioactive Waste (2009)

In November (2009) Francis Livens [member of the Committee on Radioactive Waste Management CoRWM (ii) and also Professor of Radiochemistry at the University of Manchester] said:[49]

> "*In recent years we have recognised where we do not have relevant expertise,*
>
> [concerning radioactive waste management]
>
> and that is a first step towards dealing with these pressing problems.
> *We are starting at a very low base along what will be a long and complex journey.*"

And also in November 2009 Clive Williams of the Environment Agency stated:

> "*work may or may not indicate that an acceptable safety case can be made."*[50]

A more extensive discussion of problems associated with the disposal of radioactive waste is set out at the end of this document.

---

[42] "*Assessing the risk of terrorist attacks on nuclear facilities*" Parliamentary Office of Science and Technology Report —Report 222, (July 2004) page 81

[43] Nuclear Installations Inspectorate—July 2008 Newslettter—pp 15–17 (for quote see p16 top of right hand column) http://www.hse.gov.uk/nuclear/nsn4308.pdf

[44] "Cooling Water Supplies" —Note from Sellafield Press Office—14 April 2009

[45] "Sellafield News" Wednesday 8 April 2009—Issue 1101 (page 2) http://www.sellafieldsites.com/UserFiles/File/Sellafield%20News/Sellafield%20News%2008_4_09.pdf

[46] See also "*Nuclear Installations Inspectorate—March 2009 Newsletter*"page 15 http://www.hse.gov.uk/nuclear/nn45.pdf

[47] Whitehaven News—Weds 20 May 2009 http://www.whitehaven-news.co.uk/news/thorp_threats_1_557207?referrer Path = home

[48] "*Nuclear Installations Inspectorate—March 2009 Newsletter*"page 15 http://www.hse.gov.uk/nuclear/nn45.pdf

[49] "*Nuclear waste research resurfaces*" "Chemistry World" http://www.rsc.org/chemistryworld/News/2009/November/20110901.asp
Friday 20 November 2009

[50] E-mail from Clive Williams to Rachel Western and Adam Scott [CoRWM (ii) Secretariat] 16 November 2009

BLIGHT

The problems associated with predicting the impact of radionuclides on wildlife and the countryside are set out. It is concluded that there is insufficient knowledge to enable reliable predictions of what such impacts would be.

Given the importance of farming and tourism to the Cumbrian economy this is a an important reason why the construction of "New Build" nuclear reactors should not be pursued in Cumbria.

PLUTONIUM—STORAGE, CHEAPER & "NO REGRETS"—CF USE AS FUEL

It has been proposed that the separated Plutonium stocks currently held at Sellafield should be fabricated into fuel rods and utilised in plutonium-based reactors.

However, even the NDA's own documentation recommends against this. Thus Appendix "B"[51] of the NDA's (January 2009 "Plutonium Options" Document) which is an "Economic External Review " — carried out by John Brook, (who had previously carried out work for the NDA on the Sellafield MOX fuel fabrication plant—"SMP")[52]—concludes that storage is the cheaper option and probably the "*no regrets option*" (page 139)

12 January 2010

Memorandum from Mrs Jenny Hawkes (NWN 27)

SUMMARY

Expanding the nuclear industry in the North West will have a huge long term detrimental effect on the economy, jobs, skills, local and regional business. By focussing all economic and business interests on one main source of power production it will deprive all other types of industry of investment for many years; it will stifle diversity and has the potential to destroy the environment in and around the Lake District. There is no justification for the Secretary of State to approve applications to build and operate two new types of nuclear reactor in the UK. My reasons for such views relate to:

1. Constrained public consultation process.
2. Economic Assessment.
3. Stifle diversity.
4. Safety and timescales.
5. Environmental issues.
6. Infrastructure.
7. Health matters.

1. *Constrained and flawed public consultation*

1.1 I do not agree with the Secretary of State's views in relation to the proposed expansion of nuclear power in the UK including West Cumbria (at Braystones, Sellafield and Kirksanton) or his statement to the house on 9 November 2009 in which he stated that the production of nuclear power is cost effective, safe and reliable. Neither the Prime Minister nor the Secretary of State have provided me with a response to any of the questions that I have asked in relation the evidence on which his views are based, or to provide members of the public with an objective and sound knowledge base on which to consider the issues raised in the consultation. Therefore, I have had to undertake my own extensive research to find the robust evidence required to respond to his consultation, to respond to the NW Select Committee, to answer these questions for myself and to explain my reasoning. This has included reviewing the Government and the DECC websites.

1.2 I believe that the consultation processes are seriously flawed including the restrictions and time constraints placed on the public by this Select Committee, and that the Government have not fulfilled the consultation criteria set out in the regulatory justification process.

1.3 The processes are not easily understandable or accessible to the public and are clearly targeted at major national organisations and bodies including the nuclear industry. Local communities who will be affected by the proposals set out in the Secretary of State's proposals have been given minimal access to genuine consultation.

1.4 Nor have the general public been given easy access to the relevant evidence or government information in order to bring rigour to challenge the decisions being made. I have had to apply for a range of relevant information on the development of nuclear industries through the Freedom of Information Act.

---

[51] Appendix B: Economic External Review —Assurance of the Plutonium Disposition Cost Modelling—Report to the Nuclear Decommissioning Authority Reference : NDA/Pu-Disp—1/JB December 2008 —(Appendix B—pp 135–139)

[52] page 136

1.5 Since April 2009 I have repeatedly written to Mr Miliband asking for information from DECC relating to costs, safety, reliability and environmental issues in relation to the evidence for his statements to the House advocating the nuclear energy developments. In particular I asked for evidence that led to his view that nuclear is a low-cost, low-carbon form of electricity generation which can yield economic benefits to the UK.

1.6 I have received no acknowledgement or response from Mr Miliband, so, in November 2009 and again in December 2009, I wrote to Gordon Brown saying that as an ordinary member of the public I felt unable to make accurate comment on the serious issue of new nuclear power based on evidence from DECC. I have had no answers to the questions that I have posed to Mr Miliband. I also pointed out that time is now of the essence if members of the public are to be encouraged to respond to the NW Select Committee in the North West or the government's consultation. I was very disappointed that Mr Brown was prevented from seeing my correspondence by civil servants at the Direct Communications Unit at number 10. Whilst I understand that Mr Brown receives thousands of letters each week and is unable to respond personally to all of them. By simply forwarding the letter to DECC, about whose lack of response I was complaining, adds to my concerns about the flawed consultation processes. I copied all the correspondence to my own MP, Lady Ann Winterton who has also asked for a response from Mr Miliband. To date neither she nor I have even received even an acknowledgement from Mr Miliband or DECC.

1.7 As a result of my research I can find no justification for the Secretary of State to approve applications to build and operate two types of nuclear reactor in the UK. My reasons are shown below

2. *Economic assessment:*

2.1 I strongly disagree with the Secretary of State's view that nuclear is a low cost form of electricity generation which can yield economic benefits to the UK. Mr Miliband has failed to provide evidence on the comparative costs between the main sources of future power production, in particular renewables, fossil fuels and nuclear power production. It is unclear how the overall costs of nuclear power production have been determined by DECC. These costs do not appear to include the total cost of nuclear power production cycle which is huge and could lead to fuel poverty in this country. Massive costs range from the mining and transportation of uranium to this country; transporting fuel and spent fuel across England and Wales (Scotland has already said no to nuclear); production of nuclear fuel from the raw materials; building and running nuclear power plants and ancillary non-nuclear power plant; de-commissioning of nuclear-related plants; dealing with increased toxic waste from new types of nuclear reactors (seven times greater than existing reactors); legacy nuclear waste (50 years worth of highly toxic waste sitting in ponds at Sellafield that no one knows what to do with) and taxpayers' underwriting of the safety aspects of nuclear power. In early summer 2009, in a government debate on additional funding for nuclear reprocessing at Sellafield, Jamie Reed, MP reported that £1.3 billion per year is currently being spent on legacy nuclear waste at Sellafield. My research based on detailed evidence shows that nuclear power is not financially viable or sustainable and has the highest cost of all energy production methods.

2.2 Mr Miliband has failed to explain where the substantial financial investment is to come from or how the government can be assured that companies will be able to fund and build any new nuclear power stations or that there will be no future burden on the tax payer . He provides no evidence for his statements that "*there are unlikely to be any economic dis-benefits arising from new nuclear power stations or that there are benefits to the fuel poor from limiting increases in the cost of electricity generation from nuclear power.*"

2.3 There are many sources of strong evidence which set out the reasons why the UK should not pursue the further development of the nuclear option. Three key pieces of evidence that should be considered by the Select Committee are:

(i) The evidence from France shows that the French, who have adopted nuclear power on a large scale, are still importing energy as they cannot afford nuclear power and 25% of people in France are living in power poverty. Their oil imports have not been diminished, their nuclear safety record is very poor.

(ii) The most detailed, independent, recent analysis of the comparative costs of nuclear power come from Citigroup Global Markets Inc. research and analysis paper of 9 November 2009 "New Nuclear—The Economics Say No". It explains in detail why there should be no investment in nuclear new build. There is no similar independent evidence from DECC.

(iii) In November 2009 the Guardian newspaper reported that Sellafield Ltd admitted its £1.8 billion nuclear reprocessing plant may not be able to meet NII orders for operation, as a result of continuing technical problems. Two of the plants have been breaking down repeatedly, and the third has been closed after a rise in radiation levels. Work has started on a new £100 million evaporator, but it is behind schedule, and probably won't come on stream before 2013. Germany may sue if spent fuel is not returned reprocessed. Closure of the plant would slow decommissioning of British nuclear plants, and remove much of the £70 billion needed for that process, which reprocessing at Thorp was supposed to raise a good deal of, meaning another drain on the British public's taxes.

3. *Stifle diversity*

3.1 When Mr Miliband launched the consultation at the Houses of Parliament on 9 November 2009, he made no mention of how the taxpayers would pay for this nuclear gamble, nor the cost to other developing energy technologies of putting all our eggs in the nuclear basket. There is a wide range of developing energy technologies and higher education opportunities across the whole of the north west of England that are being deprived of investment because of the impact of concentrating all available funding on the expanding the nuclear industry. One of the simplest, cheapest, quickest and viable ways of maximising potential benefits for the public and businesses communities across the region is not to choose nuclear but to improve our energy efficiency. Everyone can be involved, we can do it now, safely and it won't cost the earth.

4. *Safety and timescales*

4.1 The costs of producing power from nuclear sources are prohibitive; also there is no way that the new nuclear reactors could be built in time. The government already subsidises the nuclear industry and there have also been proposals to add a tariff to consumer bills to pay for the excess costs of nuclear power. Two new types of nuclear reactors are being proposed for plants in this country. One of a type proposed for the reactors in West Cumbria is being built by a French company called Areva at the Olkiluto plant in Finland and at Flamaville in France. Both building programmes have fallen far behind schedule because of design problems and are way over budget. The French company is involved in a legal battle in Finland with the end user utility company about the overruns. The new American Westinghouse design is also running behind schedule. Both designs have serious flaws.

4.2 The HSE has to approve the safety of any new designs before they can be built in the UK. Kevin Allars, director of new nuclear build at the HSE, admitted frustration that the design assessment process of the new nuclear reactors being proposed for this country is already behind schedule owing to insufficient information from the companies promoting the reactors and to the lack of enough trained staff in his own directorate to do the work. In a report published on 26 November 2009, the HSE said that it is too early to say yet if issues relating to the structural integrity of the design of the Areva EPR can be resolved simply or whether it may result in design modifications being necessary. An alternative nuclear reactor design being proposed for the UK is the new American Westinghouse design. This design was owned by BNFL prior to Labour selling it off to Westinghouse, is now owned by Toshiba of Japan. It too, is running significantly behind schedule and has also been criticised by the HSE. Their report questions aspects of the civil and mechanical engineering plans as well as the structural integrity of the Westinghouse design.

4.3 Nuclear technology is not robust, safe or environmentally friendly. There were 1,767 leaks, breakdowns, or other safety "events" at British nuclear plants between 2001 and 2008. A recent Nuclear Installations Inspectorate (NII) report says about half were serious enough "to have had the potential to challenge a nuclear safety system". A radioactive leak, undiscovered for 14 months, was found at Sellafield just before a visit by the prime minister in February last year. A board of inquiry concluded the leak went unnoticed because "managerial controls over the line were insufficient and there was inadequate inspection". Meanwhile, elsewhere on the site two containers of highly radioactive material went missing. The operator said it was most likely that "the anomaly lies within the accounting procedures".

4.4 Since September 2009 there have been four fires at nuclear power stations, three in France in September and November, and one at Dungeness B in Kent last month. A spate of nuclear leaks last year forced the French government to address public fears by ordering drilling into, and sampling, of the groundwater under all 58 French nuclear reactors. Last July, a heatwave shut a third of French reactors, because rivers became too hot to act as coolant. France was forced to import electricity from the UK.

5. *Environmental issues*

5.1 Mr Miliband also stated that nuclear power is proven and reliable—it is not. Nuclear technology is not robust, safe or environmentally friendly. The Government is proposing to site three new nuclear power stations between Workington and Ulverston on the West Cumbrian coast—in the very area which has suffered, and regularly suffers, from unpredictable extensive flooding. Worse still, DECC is considering burying nuclear waste, that they don't otherwise know what to do with, in the same areas Mr. Brown visited when he spoke to the flood victims. There is no proven, safe or reliable way anywhere in the world of disposing of nuclear waste so why bury it on a flood plain in West Cumbria? There are concerns about water contamination from the Yucca Mountain Project where America buries its nuclear waste, in an area where the annual rainfall is 9.5" *per annum*. Cumbria averages 35.84" rainfall *per annum*, even without the current exceptional storms. In December 2009, Dr John Ashton, Director of Public Health in West Cumbria raised concerns about water contamination with the flood victims in West Cumbria, how much worse could it be for local people if flood water became contaminated with radio-active waste?

5.2 My research shows that nuclear energy is not CO_2 free. The only part of the nuclear power production cycle that seems to be carbon neutral is the actual running of the nuclear power plants; the government also appears to be overlooking the fact that nuclear power plants produce many other toxic emissions, far more damaging to the environment than CO_2. It's interesting that Sellafield's nuclear reprocessing plant has to have its own reliable gas fired power plant which burned £30 million of gas last year.

6. *Infrastructure*

6.1 There has been no mention of how the regional infrastructure in West Cumbria will need to be developed during and post any construction phases or who is to fund it. Local networks such as road, rail, power supplies, drainage, sewers and telecommunication connections are currently overloaded and insubstantial. For example, there have been no discussions with Network Rail about any development of the coastal railway line which is already prone to flooding and needs continuing significant work to maintain the single track. Access by road to West Cumbria is difficult with only one main A road, the A595 which, when closed for any reason, results in long detours across mountain roads. Road access to the villages of Braystones and Kirksanton is very poor because of the topography of the area. Extensive and robust flood defences will need to be installed before any of the construction work begins around the proposed sites at Braystones, Kirksanton and Sellafield because of coastal erosion, and the area is crossed with rivers which regularly flood. RWE has proposed building a marine offloading facility at Braystones to bring in construction supplies by sea including the nuclear reactors. They have taken no account of the lack of draught available even at high tide or the need to dig out the sea bed which is heavily contaminated with plutonium.

7. *Health Matters*

7.1 The Committee on Medical Aspects of Radiation in the Environment (COMARE) will only pronounce on the health aspects of nuclear power after the closing dates for the consultation on the Energy NPS and your response submission date.

7.2 Nor can I find any evidence based health information from the local PCTs on health matters in relation to public health and nuclear power, of the possible radiological health detriment to the people of West Cumbria from Sellafield or the potential health detriment arising from three new nuclear power plants. There is no mention of the potential health detriment arising from the management and disposal of nuclear waste in and around West Cumbria, the continuing toxic emissions into the atmosphere or ongoing discharges into the Irish Sea.

7.3 I had assumed that, as the most authoritative health body in West Cumbria, NHS Cumbria would be submitting a response to your Select Committee and to the governments' consultation on Nuclear Power, regarding the possible radiological health detriment to the people of West Cumbria from Sellafield or the potential health detriment arising from three new nuclear power plants at Braystones, Kirksanton and Sellafied. In the light of repeated flooding in Cumbria over recent years the Public Health response should give a detailed assessment of the potential health detriment arising from the management and disposal of nuclear waste in and around West Cumbria. Also I expected that such a response would take account of the Redfern Inquiry into human tissue analysis in UK nuclear facilities. Under the Freedom of Information Act I asked if Dr John Ashton could send me a timely copy of the response and asked him if he intended to publish it in the national and local press. To date I have not received any acknowledgment of my request or a copy of his response.

7.4 The most informative evidence based research I can find is from the German KiKK study which has been accepted by the German Government and shows increased cancer incidences near all 16 German nuclear reactors and a 2.2 x increase in child leukemias which both have proven strong links to living near and working in nuclear reactors.

Background Information

I thought it would be helpful for you to understand my own position in relation to what is a continuing nightmare journey of discovery. In February 2006 my husband and I purchased a three bedroomed bungalow on Braystones Beach in West Cumbria in preparation for my retirement from the NHS as a senior commissioning manager in 2007. My husband's family also have a beach bungalow there, with four generations of the Hawkes family visiting and holidaying on the West Cumbrian coast for over a hundred years. Whilst we were quite aware of the history of Sellafield since the 1950's, at the time of purchasing Latona (our bungalow) we understood that the Sellafield plant was being decommissioned. There was no mention of the government's proposal to consider new nuclear designs.

When I took early retirement from Central and Eastern Cheshire PCT, I was invited to become a policy advisor at the Department of Health for the Children, Family and Maternity Branch. Since that time I have also been appointed as a sessional expert for safeguarding children by DH, with the National Support Team in the response to sexual violence agenda. I also act as an independent health consultant, working on children and family matters across the country, for example, completing a detailed review of safeguarding children's services at Alder Hey in June this year. Sadly, I have also acted as an independent chair of many serious case reviews into the deaths or serious injuries of children as a result of abuse or neglect.

It was fortunate for my family, that with all my work in London and many visits across the country, we decided not to sell our house in Congleton, Cheshire and move to Braystones permanently.

In the middle of March this year, along with all our neighbours at Braystones, for the first time we became aware of RWE's proposal to buy farm land directly behind our beach to build a nuclear reactor. We also became aware of the initial nuclear new build consultation process via the Whitehaven News and through the paper, of a public meeting to be held in Whitehaven to discuss proposals of siting three nuclear reactors

in West Cumbria at Kirksanton, Sellafield and Braystones; and local MP, Jamie Reed's proposals re the development of the area he calls the "Energy Coast". None of the local communities had been involved in any of the debates about these proposals and it came as a huge shock to us all that plans were so far advanced.

Needless to say, the local communities have become galvanised into action and we have all gone through a huge learning curve. We have been shaken from our complacency and belief that the whole nuclear cycle is reliable, safe, and cost effective. As an example, my nine month old grandson came to stay with us at Latona, just after I had finished the Alder Hey report in the summer. The weather was lovely and we played on the sand, he particularly liked digging with his hands in the sand and splashing his face in the rivulets coming from the ebb tide. The following day a small tracked vehicle was travelling up and down the beach in grid pattern over the same area where my grandson had been splashing. Every now and then, the vehicle would stop and the man driving the vehicle would get out with a bucket and spade and a Geiger counter. After running the Geiger counter across the beach he would home in on a patch of sand and dig up samples. Following further monitoring with the Geiger counter he then put samples in his bucket s and loaded them into the vehicle and continued to this until the tide came back in. When I asked him what he was doing he said that he was looking for radio-active particles on the beach. I asked him if he had found any and he said that he had only found three that day.

We were all so naive in that we believed assurances from the government, DECC and the nuclear industry that it was safe and environmentally friendly. My husband and I did lots of research and met many people across the country who know far more than us. In June, my husband set up a website setting out all the evidence based information that we could find on the nuclear industry and the nuclear debate, to inform the West Cumbrian communities. The website is www.toxiccoast.com and we have continued to build up a huge amount of evidence based information. During all this time we have not had any form of response from DECC or Mr Miliband in answer to our questions, and RWE have now bought the farms at Braystones and Kirksanton in preparation for the new nuclear reactors to be built. Jamie Reed, MP for Copeland, was a PR director at Sellafied before he was elected, most of the local West Cumbrian councillors are, or have been, employed by the local nuclear industry, so that we feel there is no unbiased political view of the situation. Hence we feel disenfranchised, and have started to copy our MP Lady Ann Winterton into everything, as an independent political observer.

In my national role as an expert in safeguarding children I am horrified that I have been responsible for letting my own grandson be exposed to toxic radio-active waste and have not safeguarded him, albeit with the best of intentions. Through the Freedom of Information Act we have gained access to many reports including the monthly figures for finds of radio-active particles on beaches from St Bees down to Ravenglass over the last five years. Links to all that we have found are on the website.

I hope that this letter has set the context for our increasing alarm and I would be grateful if you could share my personal account with members of the Select Committee.

4 January 2010

Supplementary memorandum from Scottish Power Ltd (NWN 28)

At the evidence session on 23 February (concerning nuclear power in the North West), I promised to get back on a couple of matters relating to ScottishPower's employment policies. My apologies for the delay in doing so.

What is ScottishPower doing to help address the gender imbalance in science and engineering careers?

ScottishPower is part of a UK-wide steering group called the Power Sector Skills Strategy Group (includes for example, EDF, Eon, SSE and National Grid) and this group has recently had approval to form a National Skills Academy for Power to tackle the continuing long term skills shortage. This will include a targeted sector attractiveness strategy, which will specifically focus on workforce diversity, including gender.

On an ongoing basis, we continue to work with schools and are represented at careers fairs. For example, earlier this year we participated in a careers event run by INEOS where we have been able to speak to 2,000 pupils in the Falkirk/Grangemouth area, which is local to our largest coal-fired coal power station, at Longannet.

ScottishPower is a member of the Science Technology Engineering and Maths Network (STEMnet). STEMnet have a concept called "STEM Ambassadors" in a number of companies to ensure companies such as ScottishPower can engage with target audiences to encourage the uptake of STEM subjects and to increase the probability of them entering a technical career in the future. We have about 40 current staff, mainly our current graduates and apprentices who have been trained as STEM Ambassadors.

We also champion careers in the power industry through programmes such as *Young Apprentice*, which provides pupils in years 10 and 11 with a taster of an apprenticeship. This involves short work experience placements (50 days in total over a two year period).

What are ScottishPower's apprenticeship numbers?

Across the whole ScottishPower group we currently have 82 apprentices, which equates to around 3.3% of our total employees in technical and engineering roles.

The number of apprentice places we offer depends on our requirements and can fluctuate somewhat from year to year. It is important for us to have a pipeline of home-grown talent for our technical and engineering roles (especially given the national demand for these skills) but the numbers also have to take account of business needs including the ebb and flow of demand on our established workforce.

23 March 2010

Printed in the United Kingdom by The Stationery Office Limited
3/2010 444790/2417 19585