

**IN THE HIGH COURT OF JUSTICE**  
**QUEEN'S BENCH DIVISION**  
**ADMINISTRATIVE COURT**

**CO/ /2011**

**IN THE MATTER OF AN APPLICATION FOR PERMISSION TO APPLY FOR JUDICIAL  
REVIEW**

**B E T W E E N:**

**THE QUEEN**

**on the application of  
GREENPEACE LIMITED**

**Claimant**

**and**

**THE SECRETARY OF STATE FOR ENERGY AND CLIMATE CHANGE**

**Defendant**

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**FIRST WITNESS STATEMENT OF JOHN SAUVEN**

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I, **John Sauven**, of Greenpeace Limited of Canonbury Villas, London N1 2PN state as follows:

1. I am employed by the Claimant, Greenpeace Limited ("**Greenpeace UK**"), as its Executive Director and am duly authorised to make this witness statement on its behalf.

2. All of the facts stated in this witness statement are true to the best of my knowledge and belief and (except where stated otherwise) are within my own knowledge. Where facts are not within my own knowledge, I have stated the source of my information.
3. I am making this witness statement in support of Greenpeace UK's claim for judicial review. The subject matter of the claim is the decision of the Defendant, the Secretary of State for Energy and Climate Change ("**S/S**"), dated 19 July 2011, to designate, under section 5 of the Planning Act 2008, the National Policy Statement ("**NPS**") known as EN-6 ("**the Nuclear NPS**") which sets out the national policy that is to govern the determination of future applications for development orders to permit the building of new nuclear power stations.
4. The grounds of challenge are set out in the Statement of Facts and Grounds ("**the SFG**") which accompanies the claim form, and with which this witness statement is intended to be read. As noted at paragraph 104 of the SFG, however, as at today's date the S/S has not yet provided his substantive response to our pre-action protocol letter, but we have had to issue the claim today because of the short statutory time-limit for challenging NPS designation decisions, which is significantly shorter than for judicial review claims generally. We have therefore noted that we may need to amend our grounds of challenge to take account of the S/S's substantive response once it is received.
5. References in this witness statement are to documents in the Claimant's Bundle identified by file number / tab / and page number.

### **The matters covered in this witness statement**

6. This witness statement covers the following matters:
  - Information about the Claimant and its standing to bring the claim;
  - The background to, and the process leading up to, the decision being challenged;
  - The Fukushima disaster;
  - Greenpeace's response to the Fukushima disaster;
  - Reviews by the Office of Nuclear Regulation ("**ONR**") and international bodies to seek to understand and learn lessons from the Fukushima disaster;

- Problems with the ONR Review;
- The finalised Nuclear NPS and the failure to carry out any prior consultation on the impact of Fukushima (Ground 2 of the challenge); and
- Greenpeace's other ground of challenge (Ground 1).

### **Greenpeace and its standing to bring the claim**

7. Greenpeace UK is the autonomous regional office of Greenpeace, a campaigning organisation which has as its main object the protection of the natural environment. Greenpeace has regional offices in 40 countries, 2.8 million supporters worldwide and 220,000 in the UK.
8. It is independent of governments and businesses, being funded entirely by subscriptions from individuals.
9. Greenpeace has worked on the issue of nuclear power since its inception. It has gathered expertise and access to expertise on all issues to do with nuclear power – including safety, health, security, economics, transport, waste and proliferation.
10. Greenpeace's expertise and status on climate change and nuclear power is recognised in a number of international and national fora. At international level, Greenpeace has consultative status as an NGO with the United Nations Economic and Social Council. Greenpeace has participated in and observed UN negotiations on treaties and agreements relating to climate change since 1989. Greenpeace staff have been authors of chapters in reports of the Inter-Governmental Panel on Climate Change. Greenpeace has participated in conferences of the Parties to the Convention on Bio-Diversity, including providing information on the impacts of climate change on bio-diversity; it participated in the Earth Summit in 1992, in the 2002 World Summit on Sustainable Development and in the 2004 International World Conference on Renewable Energies. Greenpeace has official observer status, and engages in consultations of the World Bank, the International Energy Agency, the International Monetary Fund and the Asian Development Bank.

11. Over 30 years, Greenpeace has participated as an observer and contributed to the adoption and implementation of international conventions in the nuclear field. For example, Greenpeace participated in drafting and monitoring implementation of the London Dumping Convention (prohibiting the disposal of radioactive waste at sea), and contributed to the establishment of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (a code created in direct response to Greenpeace's and others' criticism of the absence of standards) by submitting technical, scientific and legal analysis, and drafting suggestions. More recently, Greenpeace International had input into the recent discussions of the Council of the European Union leading to the adoption, on 19 July 2011, of a Directive on the management of spent fuel and radioactive waste.
12. Greenpeace has observer status at the Conference on Disarmament and contributes to review proceedings monitoring implementation of the Treaty on the Non Proliferation of Nuclear Weapons (NPT), the Comprehensive Test Ban Treaty (CTBT) and contributed to the adoption of a Fissile Material Treaty. It is an active participant in the work of the International Atomic Energy Agency (IAEA): through work to develop further its Liability and Safety Conventions, in the General Conference and in special sessions on international radioactive waste transportation and multilateral fuel cycle development. It has observer status at the Oslo Paris Convention meetings (OSPAR).
13. Within the UK, Greenpeace has regularly been invited to give evidence to Committees of both Houses of Parliament on matters to do with nuclear power. It was invited to have representatives on the Committee on Radioactive Waste Management National Stakeholder Group; the Committee Examining Radiation Risks of Internal Emitters; the Ionising Radiation Health and Safety Forum; the Nuclear Decommissioning Authority's National Stakeholder Forum, Waste Issues Group and (Nuclear) Materials Issues Group.
14. Greenpeace's expertise on nuclear power has been recognised by the courts since 1993 in *R. v Inspectorate of Pollution Ex p. Greenpeace Ltd (No.2)* [1994] 4 All E.R. 329 when it was described as having "particular experience in environmental matters, access to experts in the relevant realms of science and technology (not to mention the law) [and] is able to mount a carefully selected, focused, relevant and well-argued challenge. It is not

without significance that in this case ... the Greenpeace "team" ... had been able to evaluate the respondents' and BNFL's evidence and were able to jettison 4 (out of 6) grounds and concentrate on 2."

### **The background to, and the process leading up to, the decision being challenged**

15. In February 2007 Greenpeace was successful in its application for judicial review of the then Government's decision to give policy support to nuclear power. [CB2/5/775] The Court held that the decision to give support to nuclear power was in breach of Greenpeace's legitimate expectation of full consultation.
16. In May 2007, the Government published a new Energy White Paper and commenced a further consultation on the Future of Nuclear Power. [CB2/5/821] Greenpeace and other NGOs believed, however, that the documents and consultation exercise were again misleading and biased and so complained to the Market Research Standards Board ("MRSB") in September and October 2007 [CB2/5/833]. Over one year later, the MRSB upheld the complaint and held that the conduct of the citizen deliberative events by Opinion Leader (carrying out the consultation on behalf of the Government) was in breach of the professional code's provision that "[MRS company partners] must take reasonable steps to ensure that Respondents are not led towards a particular answer". In its decision MRSB found that:

"..there were a number of examples where they considered that objectively viewed, information was inaccurately or misleadingly presented, or was imbalanced, which gave rise to a material risk of respondents being led towards a particular answer. MRSB concluded that..... Opinion Leader failed to take reasonable steps under B14 of the MRS Code of Conduct to ensure that this would not happen." [CB2/5/874]
17. Greenpeace and other environmental NGOs had meanwhile withdrawn from the consultation because they did not want to appear to endorse a process which was based on factual inaccuracies and misled the public.
18. Greenpeace's concern, in the context of these preliminary consultations, was that the then Government was pushing ahead with a programme to support nuclear power without

properly considering or informing the public about the considerable risks and expense involved in such a programme.

19. Following the second consultation, and despite its flaws, in January 2008 the government published an Energy Bill and a Nuclear White Paper. It announced that it would be expecting the nuclear industry to build a new generation of power stations. However, it also recognised that there were significant concerns about nuclear power, in particular over safety, environmental releases of radioactivity and national security and over the management of radioactive waste, including spent fuel, and the need for a long-term solution for this waste. The White Paper included an announcement that the Government would carry out a Strategic Siting Assessment ("**SSA**") to identify and assess sites which were suitable for deployment of new nuclear power stations by 2025.
20. There followed a consultation programme by the Government on the future of nuclear power and related issues – such as the disposal of radioactive waste and the design of nuclear power stations. Other bodies, such as the Environment Agency ("**EA**"), the Health and Safety Executive ("**HSE**"), and the Nuclear Decommissioning Authority ("**NDA**") were also carrying out consultation exercises in relation to aspects of nuclear power. Greenpeace devoted considerable time and expertise to responding to the consultations and carrying out other activities such as meeting with civil servants in the Department for Energy and Climate Change ("**DECC**"), participating in the NDA meetings on Plutonium Disposition, meeting with the Committee on Radioactive Waste Management, the EA and the ONR and taking part in events concerning the Managing Radioactive Waste Safely process. For completeness, I attach at [CB2/6/1315] a table listing the Greenpeace written responses to consultations on the various issues and copies of the responses at [CB2/6/1319-1611]. However, in this witness statement I deal only with the matters which are directly relevant to the NPS and the siting of nuclear power stations.
21. In July 2008 the Government issued a consultation paper, *Towards a Nuclear National Policy Statement: Consultation on the Strategic Siting Assessment Process and Siting Criteria for new Nuclear Power Stations in the UK* and related documents. [CB2/5/867] In its response, [CB2/6/1433] Greenpeace noted that there were many different consultation processes and, while welcoming the opportunity to comment, expressed concerns at the

lack of clarity about the relationship between the different consultation processes being carried out and the interconnectedness of issues which had been separated for consultation and decision. Greenpeace also said that it thought it “imperative that the environmental report to accompany the NPS should include a full independent assessment and report of the possible effects of a radiological emergency (due to accident or terrorist attack) on either a reactor or spent fuel stores – no matter how small the likelihood of such an event because the impacts could be so massive.” [CB2/6/1439]

22. In January 2009, DECC published a response to its consultation on the SSA criteria (*Towards a Nuclear National Policy Statement*) [CB2/5/875] together with an environmental study and a Habitats Regulations Screening Report. The DECC response indicated that the SSA process would not involve consideration of detailed site-specific data or aim to pre-empt the planning and regulatory considerations, which would be undertaken later at the development consent stage. The SSA response set out detailed criteria that have been identified as strategically important, relating to nuclear safety, environmental protection, societal issues and operational requirements.
23. As part of the SSA, the Government also conducted a Strategic Environmental Assessment (“**SEA**”) to assess the high-level environmental impacts of any new nuclear power stations, in accordance with the requirements of the SEA Directive (*Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment*), although the process was referred to as an Appraisal of Sustainability (“AOS”).
24. The *Appraisal of Sustainability Report* was published in November 2009. [CB2/5/907]
25. At the same time, DECC launched its first consultation on six draft NPSs on energy infrastructure, including a draft Nuclear NPS. [CB2/5/923] In January 2010 Greenpeace made a submission to the House of Commons Energy and Climate Change Committee with regard to the proposed energy NPSs [CB2/6/1489]. In February 2010 Greenpeace made its submission to the DECC Consultation. [CB2/6/1517]
26. In its submission, Greenpeace again noted the difficulties created by parallel consultations and decisions [CB2/6/1490]. It pointed out that the NPS was being proposed despite the

fact that there were no current solutions for the problem of disposal of radioactive wastes and spent fuel.[CB2/6/1493] This is important in the context of lessons to be learnt from the Fukushima incident because failures like those experienced there would affect on-site storage of spent fuel in particular as well as the reactor.

27. Greenpeace noted the following concerns about site selection and flooding:

**Climate Change: Sea level rise, storm surge & flooding**

All of the sites earmarked for new nuclear development in the NPS are in coastal areas, mainly because of the significant volume of water reactors need for cooling. However, the UK's coastal zone is, in many cases, a dynamic and shifting environment. Changes in coastal geomorphology may well become more significant in the future because one of the predicted outcomes of anthropogenic climate change is an increase in global sea levels. This in turn could have a significant detrimental impact on nuclear power stations sited in coastal regions. Whilst the government claims it has closely assessed the potential impact of sea level rise on possible sites for new nuclear, Greenpeace would like to draw the Committee's attention to research carried out for us by the Middlesex Flood Hazard Research Centre. This found that *"it is hard to escape the conclusion that the most sensible approach would be to reject all nuclear new-build within the dynamic coastal environment."* New research has suggested that loss of ice from the West Antarctic ice sheet could *"contribute to a projected total sea level rise of up to 1.4 metres by 2100"* at a far quicker rate than previously estimated. This figure could *"result in large tracts of eastern England being inundated with seawater...It would also increase the chances of storm surges flooding major coastal cities, such as New York and London, even with the protection offered by the Thames Barrier."* The Met office recently concluded that *"by 2100, storm surge heights may increase dramatically — by up to 1.7 metres in the most affected areas of Suffolk, where the Sizewell B nuclear power plant is located."* Yet in the nuclear NPS the HSE admit that it has only been able to assess sea level rise based on modelling and predictions for 100 years - even though one of the plans for spent fuel is to keep it on site for possibly up to 160 years.[CB2/6/1521-1522]

28. Before any Government response to the consultation exercise, there was the General Election. In May 2010, the new coalition government published a coalition agreement, setting out what had been agreed between the Conservative and Liberal Democrat parties as their basis for working together. [CB2/5/925] The coalition agreement stated that the parties had agreed a process that would allow the Liberal Democrats to maintain their opposition to nuclear power, while permitting the government to bring forward planning policies to enable nuclear new build.

29. In particular, the coalition agreement stated that:



- The government would complete the drafting of a Nuclear NPS and put it before Parliament for approval.
- A Liberal Democrat spokesman would speak against the NPS, but Liberal Democrat MPs would abstain from voting. The coalition agreement emphasised that this would not be treated as an issue of confidence between the two parties.
- The government would abolish the Infrastructure Planning Commission and replace it with a specialist unit within the Planning Inspectorate to be called the Major Infrastructure Planning Unit (MIPU), with the final decisions on development consent being taken by the Secretary of State. [CB2/5/931]

30. However, despite what was said in the coalition agreement about the Liberal Democrat's opposition to new nuclear power, on 18 October 2010, the S/S (Liberal Democrat Chris Huhne) said:

"I'm fed up with the stand-off between advocates of renewables and of nuclear which means we have neither. We urgently need investment in new and diverse energy sources to power the UK. We'll need renewables, new nuclear, fossil fuels with CCS, and the cables to hook them all up to the Grid as a large slice of our current generating capacity shuts down. The market needs certainty to make this investment happen, and we are determined to clear every obstacle in the way of this programme." [CB2/5/933]

31. In October 2010, DECC launched a new consultation on significantly revised drafts of the six NPSs, which included a revised draft Nuclear NPS.[CB2/5/935] The government's response to the consultation on the first draft NPS was published alongside this second consultation. [CB2/5/941]

32. In its response to the concern about flooding and the sites selected the Government said this:

7.345 Details on the flood risk assessments required are included in EN-1 [i.e. the "Overarching Energy NPS"] and the Nuclear NPS<sup>95</sup>.

7.346 The EA has advised that the report referenced considers four factors: changes in sea-level to 2080, increase in storm surge height to 2080, changes in sea-level after 2100 and additional sea-level change due to ice sheet melt. The EA has advised that they used Planning Policy Statement for their considerations during the SSA and there is no significant difference between the assessments of sea level rise up to 2080.

7.347 With regard to storm surges, the EA has advised that the Middlesex University/ Greenpeace report used UKCIP02 predictions, whilst EDF's nomination report for Bradwell used storm surge predictions from UKCIP06 predictions. The

EA considers that for a strategic assessment there was no significant differences between the considerations. The EA has advised that the Middlesex University/Greenpeace report contains a "worst case scenario" for ice sheet melt as described in the section headed "Climate Surprise". This scenario is based upon a 2004 report and predicts a 5–6 metre sea level rise, which is significantly higher than the H++ ice melt scenario in UKCP09 which predicts a rise of approximately 2 metres. The EA consider that UKCIP09 is a better source for a "worst case scenario".

7.348 In addition to meeting the requirements of Part 5 of EN-1, the revised draft NPS sets out that applicants should identify the potential effects of the credible maximum scenario in the most recent projections of marine and coastal flooding. Applicants must then be able to demonstrate that, where necessary, they could achieve future measures for adaptation and flood management at the site.

7.349 Should future climate change projections suggest that sites were at an increased risk there would be time for action to be taken to increase sites' protection or take other actions to deal with this increased risk. The EA's advice was based upon a strategic assessment. Any applicant would have to make detailed site-specific Flood Risk Assessment for both the development consent order and nuclear site licence applications. [CB2/5/947-948]

33. It is also of note, particularly in the light of the fact that the Fukushima accident has led to the evacuation of towns up to 40 kilometres away from the site and exclusion zones up to 30 kilometres radius from the site [CB2/5/1313],<sup>1</sup> that the Government response said this:

7.293 Whilst the likelihood of an accident with off-site consequences is extremely low it is important that in the event of such an accident, emergency response plans can be put into effect. The efficacy of emergency arrangements is related to the density of population around a nuclear site. The Government has applied a policy of siting new nuclear power plants in areas where the population density does not exceed certain thresholds and during the SSA an assessment has taken place to see whether a proposed site should be excluded because population density. The HSE advised that the "semi-urban criterion" is appropriate for setting this threshold. A worked example of how this scan<sup>90</sup> took place is provided within the HSE's guidance on the demographics assessment .

7.294 The assessment considers cumulative weighted populations present in a given area. The population density (number of people per square kilometre) is measured out to various radial distances around the nominated site, and in any 30 degree sector, then compared to constraint limits. Weighting factors are attached to take account of the reduction in radiation dose, with distance from a possible accident situation. For the SSA, the analysis was carried out to a radius of 30km from a proposed site. [CB2/5/946]

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<sup>1</sup> American citizens were advised to evacuate from a radius of 50 miles

34. The revised draft Nuclear NPS was significantly different from the first draft, including as to the proposed sites deemed suitable for deployment of new nuclear power stations by 2025. Eight proposed sites, at Bradwell (Essex), Hartlepool (Borough of Hartlepool), Heysham (Lancashire), Hinkley Point (Somerset), Oldbury (South Gloucestershire), Sellafield (Cumbria), Sizewell (Suffolk) and Wylfa (Anglesey) remained in the shortlist. Dungeness (Kent) was not considered suitable due to concerns over the impact on important habitat sites. Braystones and Kirksanton (Cumbria) were not considered suitable due to concerns over whether they would be ready for deployment by 2025 and their potential impact on the Lake District National Park.
35. The revised Nuclear NPS also included changes to the sections relating to the consideration of alternatives, the regulatory justification for new nuclear power stations, and the relationship between the planning regime and nuclear regulators.
36. The revised draft Nuclear NPS reflected the Government's position that it was confident that geological disposal of nuclear waste will be implemented, and it stated the period of time for which on-site storage of higher activity waste would be allowed and the role of the IPC in relation to nuclear waste management.
37. Greenpeace responded to the revised NPS in January 2011. Its response is at [CB2/6/1570].

### **The Fukushima disaster**

38. At 14:46 local time on 11 March 2011, a magnitude 9 earthquake struck off Japan's north-east coast. The 11 operating nuclear power reactors in the region all "tripped" as designed (the nuclear fission process was stopped).
39. Even after the fission process has stopped, however, the fuel in a nuclear reactor continues to produce considerable amounts of heat, and it is necessary to keep water circulating over the fuel to remove that decay heat. This is to prevent damage to the fuel rods, and to the containment around the reactor - the thick steel pressure vessel and the

surrounding concrete structure designed to keep fissile material isolated from the outside world.

40. The information that is so far in the public domain regarding the Fukushima disaster suggests that, as a result of the earthquake, mains electric power to the pumps providing this cooling water was lost, and so back-up diesel generators kicked in. But an hour later the tsunami hit, taking out the diesel generators and the oil storage tanks. The loss of power to the pumps led to water in the pressure vessel boiling and the fuel heating up hugely.
41. Uncirculated, both the water temperature and the water pressure inside the reactor continued to rise. The reactor radiation began to split the water into oxygen and volatile hydrogen. The resulting hydrogen explosions breached the reactor building's steel containment panels.
42. So, although the Fukushima-Daichi facility had many measures in place to shut down operations in the event of earthquakes, the plans did not anticipate a loss of power to their coolant pumps and, on the basis of the information presently available, it is this that is generally recognised as having led to meltdown and the continuing disaster.

### **Greenpeace's response to the Fukushima disaster**

43. Greenpeace Japan has been campaigning against the nuclear industry for many years and has a great deal of expertise and experience with all aspects of it.
44. Since the accident, Greenpeace's expertise has also been recognised by national and regional government officials in Japan, with much of the advice and commentary by Greenpeace experts acknowledged and acted upon. In particular, Greenpeace has:
  - Provided independent commentary and information after the Fukushima incident, to people in Japan and internationally: [CB2/5/949] & [CB2/5/953]

- Sent six teams of radiation experts with scientific equipment to conduct independent investigation of radioactive contamination on the ground, on the sea, as well as in the food products. Full results of measurements and sampling are available:[CB2/5/983]
  - Apart from sharing the findings in a fully transparent manner, Greenpeace radiation experts repeatedly provided advice to citizens and requested appropriate action from authorities in order to sufficiently protect public health. This included: a call for expansion of the evacuation zone around the nuclear plant [CB2/5/957] (which the Japanese authorities agreed to do one day after our results were made public); a call for evacuation of some highly contaminated communities outside of the initial evacuation zone (a call confirmed two days later by UN expert mission, and later implemented by Japanese government); a call to set up a proper screening system to detect contaminated food on the markets; a call for a suspension of fishing and seaweed collection in contaminated waters along Eastern coast; a call to extend the radiation monitoring both on land as well as on the sea. Japanese authorities repeatedly followed the recommendations initially raised by Greenpeace experts, and on several occasions acknowledged the helpful contribution our organisation's data and advice had made.
  - Carried out offshore and sea-based radiation monitoring with Greenpeace ship Rainbow Warrior: [CB2/5/1045]
  - Worked closely with several independent technical experts to analyse the accident as it evolved, and communicated to public realistic assessments of subsequent hazards of radiation releases and other events. Based on those data, we were one of the first voices pointing to the fact that the accident qualified for the highest level (Level 7) on the international scale of nuclear events - a fact that Japanese authorities admitted only two months later: [CB2/5/1041]
45. Separately to what we have been doing in Japan, we have also commissioned expert reports interpreting events at Fukushima. These have included:
- the Large report for GP Germany [CB2/5/961]; and
  - the Hirsch report on scale of radiation release). [CB2/5/951]

46. In addition, Dr Hirsch was asked to identify potential safety risks and design weaknesses in Generation III+ reactor EPR. His report on that issue [CB2/5/1051] was subsequently submitted to the French authorities. It found several problematic features, namely when it comes to securing emergency cooling of reactor and spent fuel ponds.

### **Reviews by the ONR and international bodies to seek to understand and learn lessons from the Fukushima disaster**

47. On 14 March 2011, the UK government wrote to the Chief Nuclear Inspector (Dr Mike Weightman) asking him to prepare a report on the implications of the explosions and fires at the Fukushima Daiichi nuclear power plant following the earthquake and tsunami on 11 March 2011, and the lessons to be learned for the UK nuclear industry. The letter noted that it was, "essential that we understand the full facts and the implications, both for existing nuclear installations and any new reactor programme".<sup>2</sup> The letter asked for an interim report by mid May 2011, notwithstanding that (as the letter accepted) there was uncertainty as to how the situation would unfold. [CB1/4/587]
48. Dr Weightman's interim report ("**the Interim Report**") was published on 18 May 2011. [CB1/4/613] His final report is due in September 2011.
49. There has also been activity at the EU level. In March 2011, EU energy ministers agreed to introduce stress tests for nuclear power plants in the EU. The stress tests, which started in June 2011, will be carried out by independent national authorities and will be subject to peer review. National progress reports are expected to be available by September 2011 and the European Commission, together with the European Nuclear Safety Regulators' Group (ENSREG), will prepare a report on the stress tests in November 2011. The European Council will then assess the initial findings in December 2011, on the basis of the Commission's report.

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<sup>2</sup> Similarly, the minutes of the meeting of the Nuclear Development Forum on 17 March 2011 state: "The Secretary of State said that ... he would not rush to a knee jerk reaction. He confirmed that he felt it was essential that we understand the full facts behind the incident before acting". [CB1/4/589]

50. At the international level, the contracting parties to the Convention on Nuclear Safety (CNS) met in April 2011 for their 5<sup>th</sup> review meeting. In response to Fukushima, an additional nine issues were added to the agenda [CB2/5/991-992], including:
- i) nuclear power plant design against extreme events;
  - ii) offsite response to emergency situations (e.g. station blackout);
  - iii) emergency management and preparedness following worst case accident scenarios;
  - iv) safety consideration for operation of multi-units at same Nuclear Power Plant site;
  - v) cooling of spent fuel storage in severe accident conditions;
  - vi) training of Nuclear Power Plant operators for severe accident scenarios;
  - vii) radiological monitoring following Nuclear Power Plant accident involving radiological release;
  - viii) public protection emergency actions; and
  - ix) communications in emergency situations.
51. Although the CNS parties generally only meet every three years, they have agreed to convene an extraordinary meeting to review the lessons of Fukushima in 2012. [CB2/5/997] In the statement adopted by the CNS contracting parties it was stated, "It is understood that the lessons learned process cannot be completed until sufficient additional information is known and fully analysed." [CB2/5/991]

### **Problems with the ONR Review**

52. Dr Weightman of the ONR called for evidence for his review on 4 April 2011, giving a deadline for evidence to inform his Interim Report to be submitted by 15 April 2011 and a deadline for evidence regarding the final review to be submitted by 15 June 2011. [CB2/5/959]
53. Greenpeace responded to this call for evidence by a letter of 14 April 2011 [CB1/4/597]. In this letter Greenpeace asked, among other things:

- That they be informed what nuclear safety issues were being reviewed since the basis for the inquiry was vague (see also similar criticisms made by others: [CB2/5/1037]);
- How the review would deal with evidence put forward as part of the review;
- Whether the review would look at reactors, key auxiliary plant and spent fuel stores;
- Whether it would look at the impact of terrorist attacks as well as accident scenarios;
- Whether it would publish submissions for consideration and comment, given that the call for evidence stated, "My report will be produced in an open and transparent way. I therefore intend to publish all submissions on ONR's website as they are received";
- For reasons for the tight deadlines, in view of the fact that the situation at Fukushima was not yet under control or known;
- For provisions for public information and consultation;
- That the review take evidence in public for the final report.

54. Greenpeace also made it clear that that it was impossible to have a proper review by 15<sup>th</sup> June 2011. As Greenpeace pointed out in its correspondence with Dr Weightman, the ONR review timeline of 6 months to final report made little sense in light of the ongoing nature of the situation at Fukushima and the considerable uncertainty that still exists. Greenpeace therefore concluded that the timeline was in fact "imposed in order to maintain the existing new-build timeline rather than properly to learn lessons from Fukushima and to assure safety". [CB1/4/598]

55. Greenpeace has not been alone in making such criticisms; see also similar criticisms by the Nuclear Free Local Authorities ("**NFLA**"), which has stated that "it is quite clear that the Fukushima emergency is still very much an ongoing incident, and that it is far too early to draw any meaningful conclusions from the accident." [CB1/4/717] In addition, a draft report by SERCO<sup>3</sup> of 15 April stated, "It must be stressed that this interim report is

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<sup>3</sup> SERCO is an experienced company in nuclear safety, technology and management



very 'preliminary' and any observations may need to be refined as more evidence of the accident emerges". They also referenced the, "somewhat limited data available". [CB2/5/1005]

56. The questions which Greenpeace raised on 14 April 2011 in an attempt to clarify how the inquiry would be conducted have never been answered, despite confirmation by the ONR to the media that a response would be provided.
57. On 3 May 2011, Dr Weightman responded to concerns about unpublished submissions, stating that ONR were working to release submissions and would do so by the end of May, noting that there would be an opportunity to respond to submissions after the interim report was published. [CB2/5/1035] Various submissions were published in the week commencing 15 May but were withdrawn two days later.[CB2/5/1043] To date, the submissions have still not been made available on the ONR website.[CB2/5/1043] It has also been reported that the ONR has declined to release information requested under the Freedom of Information Act submitted by media organisations. [CB2/5/1039]
58. There were also problems with the Technical Advisory Panel ("**TAP**") that was due to be created to assist with the review. For example, on 13 April 2011 the ONR wrote to Mr John Large, an experienced nuclear engineer and head of the engineering consultancy firm Large & Associates, informing him that he had "been nominated to represent NGOs as a member of the panel." [CB2/5/985] Greenpeace was not informed of the fact that Mr Large was being nominated as an NGO representative. In any event, Mr Large subsequently declined to be nominated due to the commitments involved and the failure to provide any remuneration beyond basic expenses. According to the ONR, three weeks prior to the deadline for the interim report the TAP had still not been established [CB2/5/1033]
59. As already noted above, however, notwithstanding these difficulties the Interim report was published in mid-May 2011 and, as far as Greenpeace is aware, the final report is still due to be published in September 2011. While we of course understand why it was felt important to draw some early interim conclusions about the impact of the Fukushima disaster on the safety of *existing* nuclear power facilities in the UK, we are very concerned

about the obvious potential for the speed with which the review is being conducted to compromise its thoroughness. That is particularly so in circumstances where: (i) the full facts about the Fukushima disaster are still emerging; and (ii) the Interim Report (and presumably also the final report) has included conclusions and recommendations which are not limited to making a preliminary assessment of the safety of existing nuclear facilities based on the currently available information, but expressly relate to the safety of future nuclear power stations which, if authorised and built, will have an operational lifespan of around 60 years.

60. Despite the unreasonably short timetable for Dr Weightman's review, Greenpeace has sought to do what it can to assist the review. In particular, we submitted comments and evidence by letter to Dr Weightman dated 15<sup>th</sup> June 2011 [CB1/4/725], referencing and attaching various documents. Greenpeace would have liked to have submitted substantially more information but due to the tight time limits, not to mention other consultations on nuclear that were taking place at the same time (see below at para.64), it was unable to do so.

### **The finalised Nuclear NPS and the failure to carry out any prior consultation on the impact of Fukushima**

61. On 21 June 2011, in a written ministerial statement [CB1/4/773], the S/S welcomed the findings and recommendations in the Interim Report and undertook to:
- continue to work with international partners in the G8, G20 and *International Atomic Energy Agency (IAEA)* to ensure that information is shared in a timely and open manner in the event of any future global nuclear event;
  - carry out a review of the Japanese response to the events at Fukushima and identify any lessons for UK emergency planning by the end of 2011; and
  - review the UK's own national nuclear emergency arrangements to ensure that they are as robust as possible and can deal effectively with prolonged nuclear incidents, and update guidance before the Chief Nuclear Inspector's final report.
62. On the same day, however, the Government proceeded with laying the final version of the Nuclear NPS before Parliament. That final version of the Nuclear NPS was, in terms of its

substance, essentially the same as the draft Nuclear NPS published in October 2010. There had been no additional consultation following the publication of Dr Weightman's Interim Report. The Government's approach therefore appears to have been to regard the Interim Report as effectively a 'green light' for proceeding with the Nuclear NPS on which it previously consulted, notwithstanding:

- the areas of serious concern already highlighted in the Interim Report as requiring further investigation (see paragraph 66 below); and
- the fact that Dr Weightman's review remained ongoing, the final report was expected in September, and, as explained above, even that review had been conducted at such a speed that it could not hope to take full account of what had happened at Fukushima and what was to be learnt from it, including in relation to the safety of prospective new nuclear developments in coastal regions.

63. As noted above, the Nuclear NPS was formally designated by the S/S on 19 July 2011 and it is that decision that Greenpeace is now challenging. [CB1/3/111]

64. Greenpeace has made clear in its correspondence with the Government that it thought the Government's proposed Nuclear NPS required to be reconsidered in the light of the tragedy in Japan and the emerging knowledge about what went wrong, the emergency response, and what lessons need to be learnt about the true risks which particular nuclear projects and particular sites may pose. For example, in the context of its consultation response to DECC on the Paris and Brussels Conventions on nuclear third party liability Greenpeace said:

"Given what we know about Fukushima – and what we have yet to learn – it is simply not sensible for the Government to continue with this consultation. Specifically we wish to raise that

- The Government must reconsider its consultation proposals which were published before the tragedy in Japan;
- The Secretary of State for Energy and Climate Change has asked the Office for Nuclear Regulation to undertake a review of nuclear safety in the UK because of the situation in Japan. Yet no review of the financial implications – for the taxpayer, local authorities and emergency services – has been called for with regard to the financial impact of a nuclear accident;
- It is likely that much more information is needed before a revised consultation can be published. This should only be undertaken with

detailed information on the extent of the financial impact of Fukushima is known....” [CB1/4/603] 22 April 2011.

65. As already noted, however, DECC provided no further information and no further consultation took place. If it had, Greenpeace would have responded in full, including, if necessary, by commissioning expert reports.
66. In particular, and amongst other matters, Greenpeace would have raised the following points:
- In light of what happened at Fukushima, there are now very significant concerns over whether sites listed in the Nuclear NPS can be made safe from flooding – via mitigation or other measures – over the time needed to secure a reactor and essential associated facilities (i.e. up to 2180, to cover both reactor operations and spent fuel storage on site). This would include flooding from an event that creates a tsunami or storm surge due to sea level rises and the impacts of climate change. The strategic site analysis on which the Nuclear NPS was based expressly recognised that 5 out of the 8 sites identified in the NPS as being suitable for new nuclear power stations were situated wholly or partly in areas classified by the EA as being areas of high flood risk (including, in the case of Oldbury, from a potential tsunami-type event involving sudden inundation with water)<sup>4</sup>;
  - Given the conclusions in the Interim Report, the EA’s flood risk assessments cannot be relied upon for the assessment of flood risks relating to particular proposed development sites. The Interim Report found that further consideration of the reliability of the EA’s flood risk assessments was therefore required. In the meantime, it is not appropriate to rely on flood risk assessments that may not be fit for the purpose for which reliance has been placed on them.
  - Furthermore, the fact that new nuclear power stations will be subject to regulation by “the nuclear regulators” (principally the ONR) is not a justification for effectively excluding the IPC from considering any heightened degree of nuclear accident risk which may be associated with siting a new nuclear power station on a high flood

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<sup>4</sup> See EN-6, Vol I, §3.6.14 [CB1/3/262], and the site assessments at EN-6, Vol II, for the following sites: Bradwell, Hartlepool, Hinckley Point, Oldbury and Sizewell.

risk site. The nuclear regulators themselves accept that nuclear power cannot be 100% safe, and they therefore carry out their regulatory responsibilities by reference to an approach they call "ALARP" (i.e. that the risk should be kept "as low as reasonably possible"); and, in following that approach, they will therefore no doubt require that, if a site of a nuclear power station is in a zone of high flood risk, flood defences and other mitigation measures are taken. But that does not mean that there is *no* additional risk arising from situating a new nuclear power station in an area of high flood risk, as compared with one where the risk of flooding is lower. Thus, it must surely make sense for the IPC to apply a preference for low flood risk sites. As explained at SFG paragraphs 20 and 21, that in fact is the approach that applies under all of the *other* energy NPSs (e.g. for non-nuclear power stations) by way of the "sequential test" and the "exception test", but the Nuclear NPS effectively precludes the IPC from taking account of that obviously relevant consideration when considering applications for development consent for new nuclear power stations. In light of the Interim Report's findings as to the critical contribution made by water inundation to the causation of the Fukushima disaster, there must, at the very least, be serious questions asked about whether the approach to flood risk mandated by the Nuclear NPS is appropriate;

- In addition, the EA does not have the institutional control to assess the requisite time period. In particular, there is no certainty that mitigation measures can meet the risks that might arise in 100-150 years. It is not possible therefore to know whether the sites designated in the NPS can be protected from the impacts of flooding over the necessary timescale;
- Similarly, in light of Fukushima and the difficulties involved there in securing emergency electricity supplies for vital cooling, it is necessary to prove that electricity supply, both on and off site (including back up sources and supplies) can be guaranteed in the event of an emergency over suitably long timescales, given that hazards faced might include, for example, a combination of both flooding and high winds. This analysis has not been done;

- In addition, no provision has been made for the IPC to take account of the relative degrees of risk associated with alternative sites arising from differences between them in terms of the likelihood of their suffering prolonged interruption of incoming electricity supplies that may give rise to a need to rely on exhaustible back-up generation facilities;
- The most limited interpretation of the Fukushima accident is to put it down to an earthquake and tsunami. A broader interpretation should, in Greenpeace's view, have seen it as a test of robustness to assault by hazards simultaneously, and as to whether stations are robust to (and sited to enhance their robustness to) loss of power generally, and whether these stations are robust to a loss of active cooling capability. These challenges may be encountered in a variety of circumstances, not just those arising from an earthquake;
- The nuclear NPS does not directly address the issue of public health, leaving this as a "local consideration". There is an assumption therefore that emergency planning only needs to be a local consideration and that the relevant individual local authorities will have the expertise, capacity, finance and skill-set to cope with the on-site and off-site consequences of a nuclear accident. As Fukushima demonstrates, a nuclear emergency may form part of a much wider emergency situation involving a variety of key infrastructure facilities (both nuclear and non-nuclear), and can lead to an ongoing situation and to radiation releases over a prolonged period of time, as well as involving a need to evacuate and re-house large numbers of people. The Interim Report and its recommendations for further action indicate that the assumptions made in the Nuclear NPS on this specific issue have not yet been fully tested. Further the relevant UK authorities have not yet made their full responses to the ONR recommendations. It is not known if the 'on the ground' implementers of emergency services e.g. local authorities and emergency service organisations have had any input into the Interim Report's relevant recommendation;

67. In addition to the above, had there been appropriate consultation on the impact of Fukushima, Greenpeace would have, amongst other things, presented detailed evidence on what was learnt from Fukushima, how other regulators are dealing with the issues

raised by the disaster and what issues arise from consideration of the siting of new reactors and spent fuel stores at those sites designated in the nuclear NPS. As it is, the only opportunity to raise questions and present further information prior to the designation of the Nuclear NPS has been through the early stage of the ONR review (i.e. in the lead-up to the Interim Report), a review which is ad-hoc and necessarily limited in its approach.

68. It is also likely that, had there been further consultation, others would also have responded; see for example the points made by the NFLA [CB1/4/717], in relation to Weightman's interim review. In addition, Greenpeace is aware of various concerns raised by knowledgeable people within the industry, initially published by the ONR and subsequently published by Rob Edwards, a freelance journalist specialising in environmental issues. In particular, various important concerns appear to have been raised by Sean Moules of the NDA and SERCO. [CB2/5/1001] & [CB2/5/1003]

69. It now seems from communications between government officials and nuclear companies that Greenpeace's concerns were borne out and that there was no real intention to properly consider the implications of Fukushima. For example, an article in *The Guardian* on 30 June 2011 published the following quotations from government officials whose names had been redacted: [CB2/5/1079-80]

- "We need to ensure the anti-nuclear chaps and chapesses do not gain ground on this. We need to occupy the territory and hold it. We really need to show the safety of nuclear."
- "We need to all be working from the same material to get the message through to the media and the public."
- "Anti-nuclear people across Europe have wasted no time blurring this all into Chernobyl and the works". "We need to quash stories trying to compare this to Chernobyl".

70. These statements appear to me to show that government officials' approach to what happened at Fukushima has essentially been to seek to communicate messages that nuclear power is safe and to rubbish any dissenting voices. Certainly these statements do not appear to be consistent with officials approaching the disturbing events at Fukushima with an open mind as to what careful analysis of those events and their aftermath might reveal about the safety of nuclear power (including in the UK context) and the UK's ability

to respond to a major nuclear incident which could arise as part of a broader emergency situation such as one caused by natural disaster, an act of war, or terrorism.

71. The *Guardian* article also refers to a request made by the Chief Executive of DECC's Office of Nuclear Development (Mark Higson) to the electricity company EDF to welcome the expected announcement by the Energy Secretary of a safety review and to attend a conference organised by the Government to "discuss a joint communications and engagement strategy aimed at ensuring we maintain confidence among the British public on the safety of nuclear power station and nuclear new-build policy in light of recent events and the Fukushima nuclear power plant". [CB2/5/1080] This was on 7 April only 3 days after the ONR's call for evidence and before any information was made public by the Government as to whether or not it was appropriate to proceed with the Nuclear NPS at the present time and without any further consultation.

72. The article also notes:

"Other documents released by the government's safety watchdog, the office for nuclear regulation, reveal that the text of an announcement on 5 April about the impact of Fukushima on the new nuclear programme was privately cleared with nuclear industry representatives at a meeting the previous week." [CB2/5/1080]

### **Greenpeace's other ground of challenge**

73. As noted above, the relative suitability of each site listed in the Nuclear NPS has not been reviewed in the light of Fukushima, including the reliability of assessments regarding the security and diversity of mains electricity to each site. It is clear that sites will vary in terms of the ability to call up and deliver alternative electricity supplies in the event of an emergency. In particular, remote sites which rely on a single main grid connection may be more of prolonged interruption of mains electricity supplies, than those in areas that provide a greater range of options for restoring electricity supplies in the event of a failure. Similarly, if there are problems with accessing or operating the back-up equipment on these sites, it is likely that getting qualified personnel to repair equipment or getting additional equipment to the sites (and having sufficient personnel on and off site to undertake necessary tasks) will prove more problematic.



74. Access and transport routes to such sites are a key factor (as will be the threat of other hazardous facilities on or near the site which may also be at risk from the same event that has led to the need to take emergency action). For example, a site such as Sellafield, which is remote (in a coastal area isolated by a nearby mountainous region) and less accessible than other sites, demonstrates the various geographical and locational issues that will impact on whether and how it is possible to deal with an emergency, including prolonged electricity outages. A low-lying site such as Bradwell – where widespread flooding (e.g. in the event of a storm surge) may hamper an emergency response – may present a whole set of different problems that are less likely to be found at other sites, albeit that they too will have their own issues.
75. The issue of population and density presents further problems for sites. Those with larger populations around them may benefit from the opportunity to call on more support in the event of an accident (for example, emergency personnel). However, the numbers of people likely to require assistance in the event of an evacuation will create a whole other set of additional problems that a remote site is less likely to face. A site with a lower density of people in the vicinity may pose a lesser problem from an evacuation point of view but, as set out above, the very remoteness (combined with difficult access and/or transport routes) could make an emergency response more difficult.
76. Especially post-Fukushima, all of the above factors – the risks of flooding (on site and within the locale), on-site and off-site electricity supplies, the combination of facilities on site involved in an accident, the ability to enact emergency plans, the site location and the population density around a site – are, in Greenpeace's view, plainly factors that ought to be taken into account by the IPC when deciding whether or not to grant development consent for the building of a new nuclear power station on a particular site. The effect of the Nuclear NPS is to set the framework for, and effectively to limit the scope of, the IPC's consideration of issues relating to whether or not such consent should be given. To limit consideration of these matters by the IPC is already problematic, particularly as the degree of risk associated with each of those matters will vary between the 8 sites listed in the Nuclear NPS, and yet there is no mechanism for the relative risks as between those

alternative sites to be weighed against one another before development consent is granted.

77. To limit consideration of these matters is matters is all the more unjustifiable in circumstances where the S/S has failed to take proper account of the findings of the Interim Review which, as noted above, raise a number of serious concerns, and highlight the need for further investigation, in relation to some of those very same matters.

### **Conclusion**

78. As explained above, despite the Fukushima disaster and the fact that the causes and lessons of that disaster are still emerging, the S/S has chosen to press ahead with the Nuclear NPS which he consulted on before that disaster, and has done so without any further consultation on the NPS, and without waiting for the further investigations that the Interim Report indicated were necessary. In Greenpeace's respectful submission, that approach is not an appropriate one, particularly given that the very purpose of the NPS is to set a framework for dealing with development consent applications for years to come, authorising developments which will have an operational lifespan of 6 decades, and will continue to present site containment and decontamination issues at their locations for many decades thereafter.
79. For the reasons set out in the SFG and in this witness statement, Greenpeace has therefore decided to bring this judicial review claim and ask the Court to look at these matters, which are plainly of huge public interest, and grant the relief sought.

**I believe that the facts stated in this witness statement are true.**

Signed: \_\_\_\_\_ Date: 26 August 2011