



House of Commons  
Transport Committee

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# Navigational Hazards and the Energy Bill

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**Ninth Report of Session 2003–04**

*Report, together with formal minutes, oral and  
written evidence*

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## The Transport Committee

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# 1 Introduction

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1. The Government wants renewable energy to supply 10% of UK electricity by 2010, and hopes this may reach 20% by 2020. The Department for Trade and Industry (DTI) *Renewables Innovation Review* in February 2004 concluded that wind power, both on-shore and off-shore, could provide almost all the growth in renewable energy required to meet the 2010 target. It was also likely to continue to be the dominant renewable technology until 2020. The Review concluded that the UK was currently behind in progress towards the 2010 target: renewable energy should have supplied 3% of electricity by 2002-3 but provided only 1.8%. It asserted that the target could still be met “if barriers to wind’s deployment can be eliminated”, and that significant off-shore wind generation was likely to be required to do so.<sup>1</sup> The Government intends to permit a wind farm development outside United Kingdom territorial waters, within the 200 mile zone which the United Nations Convention on the Law of the Sea permits for a state’s economic exploitation.

2. The Energy Bill will facilitate the development of offshore wind energy. During its the passage through the House of Lords, it became clear that a significant number of those in the ports and shipping industry felt that Government policy on offshore renewable energy was being developed without properly considering the hazards that badly-sited installations could pose to shipping. We decided to hold a brief evidence session to assist those of our colleagues who will be responsible for the scrutiny of the Energy Bill itself. On Wednesday 28 April we took oral evidence from Trinity House, the Chamber of Shipping, the UK Major Ports Group (UKMPG), the National Union of Marine, Aviation and Shipping Transport Officers (NUMAST), the British Wind Energy Association and officials from the Department for Transport and the Department of Trade and Industry. In addition to the memoranda submitted by these witnesses, several other interested parties took the trouble to submit written evidence, which we have made available in advance of the second reading debate on the Bill in the House of Commons. We are grateful to all those who gave evidence in an extremely short time.

## The impact on shipping

3. Any large offshore object is a potential navigational hazard. We were told sites approved for future development were “about the size of the City of Nottingham, two thirds of the size of the Isle of Wight”.<sup>2</sup> There are easily understood risks in having physical installations of this size where vessels will have to pass them closely. The largest modern container ships can carry more than 6,000 twenty foot containers and sailing a ship which is affected by winds and tides is not like the precise and simple matter of driving a car. As Mr Brownrigg told us:

The difficulty with shipping is that, in perfect conditions, everything works smoothly and you can bear narrow pinch points from time to time, but things do not always work smoothly. For example, if one had a risk at any stage of steering power failure or some other failure, which God forbid one does not have, then the freedom to

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1 DTI website, [www.dti.gov.uk/energy/renewables/policy](http://www.dti.gov.uk/energy/renewables/policy)

2 Q 7

manoeuvre for these vessels would be severely limited if they are located too closely and there is therefore a consequent increased danger of collision or snagging of cables and so on. Similarly, as soon as you divert shipping to avoid these, there are all sorts of implications which arise from that; new potential risks arise which need to be taken into account.<sup>3</sup>

In addition to these physical risks, wind installations may interfere with radar, VHF communications and even with a mariner's ability to see other vessels or navigation marks.

## Competing Interests

4. As the Government told us, “climate change poses a real threat to our world”.<sup>4</sup> The United Kingdom is fortunate in that it has considerable wind energy resources both onshore and offshore, and so has a potential source for renewable energy. In addition, we have potential to be a world leader in the development of wave and tidal resources. However, as an island, the United Kingdom relies on access to its ports for a wide variety of imports and exports. The UK Major Ports Group and the Chamber of Shipping told us that “95 per cent of the nation’s trade moves by sea, and the economic significance of our industry should not be underestimated” and that some 25 per cent of internal trade moves by sea.<sup>5</sup> Sea and Water pointed out that shipping is an environmentally friendly mode of transport.<sup>6</sup> It is Government policy to “facilitate shipping as an efficient and environmentally friendly means of carrying our trade”.<sup>7</sup> **It is the Government's task to balance the need of the country for clean renewable energy with its need for ready and safe access to its ports by the shipping through which we trade. In doing this, it must take account of the very real risks that off-shore installations pose for shipping.**

## The Energy Bill

5. Once the decision had been made to encourage development within the 200 mile limit, new legislation was needed. Clauses 85-89 of the Energy Bill allow development of Renewable Energy Zones (REZs) beyond the 12 nautical mile limit of territorial waters, and ensure that existing legislation relating to granting of consents applies in such waters. Clauses 102-104 of the Energy Bill introduce a power for the Secretary of State to declare that navigation rights have been extinguished in relation to a renewable energy installation in territorial waters. The DTI assert this will protect the developer from being sued repeatedly for interfering with the public right of navigation, and that this helps provide the security required to encourage investors. This power will not extend to waters beyond 12 miles.

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3 Q 5

4 Ev 53

5 Ev 33, Ev 40

6 Ev 58

7 *A New Deal for Transport: Better for Everyone: The Government's White Paper on the Future of Transport*, Cm 3950, July 1998, para 3.181

## 2 Site Identification and Development

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6. Even before the *Renewables Innovation Review*, significant efforts had been put into developing off-shore wind farms. It is important to appreciate that this technology is still developing; as Dr Edge of the British Wind Energy Association told us:

this is a very early stage technology ... There has only been 500 megawatts of capacity worldwide offshore and the UK, with only 64 megawatts, is number two. There is a lot of important learning that needs to occur before big developments can take place.<sup>8</sup>

7. The earlier stages of development of sea-based wind farms took place within territorial waters (12 nautical miles). The United Kingdom's first small-scale (2 turbine) offshore wind farm was opened 1 km off Blyth (Northumberland) in December 2000. In 2001, the Crown Estate, as owner of the seabed out to 12 miles, announced that 18 companies had pre-qualified for site development in "Round One" of the off-shore wind programme. A further site off Northern Ireland was added at the request of the Northern Ireland authorities.

8. The Round One sites are shown in the map in the Appendix, and include:

- North Hoyle (off Rhyl, North Wales): the United Kingdom's first commercial, 30 turbine offshore wind farm which began producing electricity last autumn.
- Scroby Sands (off Great Yarmouth): currently under construction.

9. The next stage was to permit development beyond territorial waters, in the 200 mile zone. Under the first round, off-shore wind farms and developers were free to choose the locations of the projects, but a more strategic approach has now been adopted. The Government's 2002 consultation document *Future Offshore* suggested that immediate future development of offshore wind farms should be confined to three "strategic zones": the Greater Wash, the North West (Liverpool Bay), and the Thames Estuary. These areas are marked as "DTI SEA" on the map. The approach was confirmed by the consultation, and the DTI launched a Strategic Environmental Assessment (SEA) of these large areas.

10. As a result of the SEA, DTI requested that the Crown Estate make sea-bed available in the strategic areas for wind farms and issued guidance on their siting with the areas, including a coastal exclusion zone of between 8 and 13 km. In a 2003 tender round ("Round Two"), 41 projects were submitted, of which lease options were awarded to 15 (see map). Some of these options straddle or lie beyond the 12-mile limit of territorial waters.

11. Although the initial options have been granted, there are still several years of work before any final decisions about the sites are made. The British Wind Energy Association told us that it is at this stage, when detailed plans are being prepared, that their members would consult interested parties, such as ports and the shipping industry.<sup>9</sup> However,

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8 Q 138

9 Qq 112-114

witnesses from maritime industries felt that companies which had spent a great deal of money on environmental assessments of particular sites were unlikely to respond positively to proposals for change.<sup>10</sup> They considered it was unrealistic to expect maritime interests to be properly taken into account at this late stage, and that they should have been included from the outset.

## The Strategic Environmental Assessments

12. It was clear from the evidence that those in marine industries felt that the process for identifying the strategic areas in which Round Two development would be permitted had been seriously flawed. For example, Sea and Water told us:

it appears that the initial consultation process is limited to the DTI, Crown Estates and the wind farm developers – or their consultants. The secondary round of consultation is usually much wider but at that stage there is often little opportunity to make significant changes to installations which have the potential to impact adversely on the maritime industry.<sup>11</sup>

UKMPG pointed out that although interested parties were given the opportunity to contribute “the strategic areas were so large that it was impossible to make any specific comment on implications of the proposals for the safety of navigation without knowing the number, size and location of the proposed sites.”<sup>12</sup>

13. The DTI told us that the areas had been chosen “because of their favourable wind resources combined with shallow water and good connections to the onshore electricity grid, all key features for wind farm development.”<sup>13</sup> In oral evidence they indicated that the wind energy industry had also influenced the choice of these areas.<sup>14</sup>

14. It is noticeable that no reference was made to minimising potential interference with navigation or dredging activities through the choice of site. This approach might have been acceptable if marine interests had been properly represented subsequently when the Strategic Environmental Assessment of these three areas was carried out. They were not. The UKMPG told us:

It is notable that the study was overseen by a steering group of 15. Six members of the group were from Government Departments, five were from Government Agencies, three were from environmental NGOs plus a representative of the Wind Energy Association. There was no representation from the Department for Transport or the Maritime and Coastguard Agency, nor from port or shipping interests.<sup>15</sup>

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10 Q 22

11 Ev 57

12 Ev 32

13 Ev 54

14 Q 22 9

15 Ev 31-32



**With little or no maritime representation on the steering group, it is hardly surprising that “the SEA [strategic environmental assessment] made very little reference to navigational matters.”<sup>16</sup>**

15. Mr Richard Mellish, Director, Electricity Consents, of the DTI said that the DfT and the MCA were not represented on the steering group because of “practicalities around the composition of the steering group being too large to cover such a diverse range of interests which could arise”.<sup>17</sup> This is a poor excuse. As Dr Edge told us, these are new developments in which “a lot of important learning ... needs to occur”; it is vital that all concerned are properly represented in that process. **We do not understand why the Department for Transport and the Maritime and Coastguard Agency did not insist on being represented on the steering group on the environmental assessment of the strategic areas. Still more seriously, we do not understand why the Department for Trade and Industry did not see that their inclusion was essential. It is clear from a glance at the map appended to this report that every one of the strategic areas is on the approach to a major port or ports. The DTI should have been immediately aware of the need to ensure that the Strategic Environmental Assessments adequately identified navigation and marine safety issues.**

16. The DTI encouraged developers to discuss the impact of their proposals with the Maritime and Coastguard Agency before submitting tenders for Round Two sites. In addition, the Tender Assessment Panel was to consider the cumulative impact of site bids on navigation, and to consult the DfT and MCA.<sup>18</sup> Mr Mellish told us that the Government regarded the MCA as its adviser on marine safety matters.<sup>19</sup> Nonetheless, UKMPG told us:

A number of the sites straddle important shipping routes. If the farms are constructed in the locations proposed significant deviations will be required. In addition to the cost and delay so involved this will also tend to create “hot spots” at turning points where there are a large number of vessels in close proximity, again increasing the risk of collisions.<sup>20</sup>

The Chamber of Shipping believes that at least half of the 15 sites chosen for further evaluation are “within areas where a significant number of shipping movements take place”.<sup>21</sup>

17. Although witnesses felt that the MCA itself had been “left out of the loop” when the Round two sites were identified<sup>22</sup>, we are also concerned that the Agency had does not conduct its own consultations properly. For example, NUMAST was given a scant three weeks, over a holiday period, to respond to proposals about a wind farm off the coast at Cromer.<sup>23</sup> We appreciate the importance of the MCA, but we were also surprised that in

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16 Ev 32

17 Qq 203-204

18 Q195

19 Q258

20 Ev 32

21 Ev 42

22 Q 82

23 Q 85

oral evidence, our witnesses from the Government never once referred to the possibility of advice from the General Lighthouse Authorities, who are also authorities explicitly on navigation matters.

18. In oral evidence we were given graphic examples of some of the difficulties with the sites selected in Round Two. We were told that the London Array site on the Thames “actually blocks one of the three access channels into the Thames. It goes right across the mouth of the Fisherman’s Gat”.<sup>24</sup> One of the sites in Liverpool Bay will disrupt the ferry service between Heysham and the Isle of Man, imposing delays of half an hour a crossing, and extra fuel costs.<sup>25</sup> Mr Garbutt of NUMAST told us that the proposed site in the Humber was “located at a very busy junction where there are three vessel traffic separation schemes converging for traffic entering or leaving the Humber along with coastal traffic making their routes north and south.”<sup>26</sup>

19. The Department for Transport told us that it still had concerns about the sites for which lease options had been granted, and would be pursuing those concerns both in discussions and in writing.<sup>27</sup> **It is obvious that, just as the DfT and the MCA were not properly involved in the Strategic Environmental Assessments, their advice was not heeded at the tender stage. Many of the sites chosen for further evaluation may have serious impact on marine operations. It is imperative that the concerns of the ports, the shipping industry and all those who use the sea are properly addressed in their further evaluation.**

## Consents

20. The award of an option on a Crown Estate lease gives a developer certain exploration and investigation rights. This is the stage reached for Round Two projects. However, the lease option is not sufficient permission alone to build an off-shore wind farm; further statutory development consent is required. Only when the consent process is complete will the Crown Estate grant a lease.

21. The process of obtaining consent is complex. In broad terms, Ministerial consent is required under the Electricity Act 1989, the Food and Environment Protection Act 1985 and either the Coastal Protection Act 1949 or the Transport and Works Act 1992 (the choice is that of the developer). The DTI’s Offshore Renewables Consents Unit provides a single application point for developers. Before making an application, the developer must prepare an Environmental Statement on the proposal. This includes an evaluation of the effect on navigation and requires discussion with marine users.

22. The Maritime and Coastguard Agency is currently consulting on revised guidance on the navigational safety issues which developers will need to take into account when seeking consent. They will have to address the traffic in the area, the effect of tides and tidal streams, whether sites could present difficulties or be dangerous in normal or bad weather conditions, the possible effects on communications, radar and positioning systems, the

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24 Q 20

25 Q 61

26 Q 71

27 Q 234

market of the proposed installation, additional marine routing measures, and emergency shut down procedures in the event of search and rescue, counter pollution or salvage operations nearby.<sup>28</sup>

23. However, it is clear that there are significant potential difficulties with some of these issues. We were told that there was an urgent need for more research on vital matters such as the potential interference of wind farms with VHF signals, which are the major means of alerting other craft and rescue services to vessels in distress. Wind installations may also interfere with radar, and mask the presence of vessels nearby.<sup>29</sup> Not only is the RAF concerned about the effects on aircraft systems, there were suggestions in our evidence that they could interfere with ground-based systems used for security purposes.<sup>30</sup> Such installations may have unanticipated effects on the hydrographics of the site concerned. **The Department for Transport has now agreed to fund research on the possible effects of offshore installations on communications systems.<sup>31</sup> We welcome this, but we are surprised that, three years after the publication of *Future Offshore*, the Department is consulting on what such research should cover. There could hardly be a more telling example of a lack of “joined up government”.**

24. Any proposal for an off-shore wind installation should include details about the procedures to be followed in the event of a collision between a vessel and the wind farm. We note that there were three collisions between passing ships and oil and gas installations on the UK Continental Shelf between 1975 and April 1997. Oil and gas installations are far smaller than the installations which are now being proposed. **Given the difficulties of manoeuvring large vessels subject to wind and tide, the possibility that vessels may lose steerage, and that vessels in difficulty may well be crewed by persons whose qualifications and experience are not gained in the United Kingdom, we believe that some sort of collision, at some time, is inevitable, and that plans must be in place to deal with it.**

25. The options granted to the wind energy companies stipulate the amount of energy they should generate, but allow that amount to be reduced by up to 25%. They also allow the companies to propose new sites, or alterations to their sites, if necessary, rather than being absolutely confined to the original area bid for. However, we were told that the expectation would be that a minimum of 75 per cent of the area of a particular site would be occupied by wind turbines.<sup>32</sup> Despite this, Brian Wadsworth, Director of Logistics and Marine Transport at the DfT, was confident that it would be possible to reduce the impact of the proposals on maritime safety, and told us that his department would be working energetically to ensure this.<sup>33</sup> **If changes to sites are proposed, those working in marine industries must be properly consulted, and their expertise must be used in identifying safer alternatives.**

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28 MCA; Proposed UK Offshore Renewable Energy Installations (OREI) - Guidance on Navigational Safety Issues.

29 Ev 60

30 Qq 8-10

31 Qq 237-242

32 Q 134

33 Q 234

26. Clauses 96 to 101 of the Energy Bill make provision for safety zones around renewable energy installations. It is possible for safety zones to be put forward by the Secretary of State's own initiative, or on application from a third party. Although the Government had previously appeared to believe that safety zones would be needed around all wind farms, when we took evidence we were told that this was not necessarily the case.<sup>34</sup> **Given the dangers involved, we believe that safety zones are needed for every installation. The consent procedures should require that the location of safety zones around installations is addressed.** The Royal Yachting Association was concerned that applying safety zones in such a way that they excluded all vessels, including small craft which might be able to negotiate wind turbines safely, would unnecessarily affect the activities of those who sailed for pleasure.<sup>35</sup> The provisions of the Energy Bill permit a great deal of variety in the specification of safety zones; where it is prudent to do so, exceptions might be made for small craft.

27. The marine industries are also concerned that the detailed consents that off-shore wind installations need to proceed are virtually guaranteed because of the conditional leases already granted by the Crown Estates Commissioners.<sup>36</sup> The Government told us that "we would ... not be consenting to any development which would be a danger to navigation".<sup>37</sup> However, Mr Mellish was not altogether categorical:

Clearly if there was any suggestion by any person raising an objection to a proposal, we would consult the MCA and the Department for Transport on whether they saw that actually as a danger and if they confirmed that, I would be very surprised if we went ahead with a proposal with that as a backdrop.<sup>38</sup>

**Consents should only be granted to installations which can be shown not to compromise the safety of navigation. If the research needed to achieve this has not yet been done, then the consents will have to be delayed. If the size of installation proposed cannot be sited safely within the Strategic Environmental Areas, then the Government and industry will have to think again.**

### 3 Future Developments

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28. It is clear that that many of the problems we have identified have arisen because those with marine expertise were not involved at an early stage of site development. We were told that this had occurred because it was necessary to protect the commercial confidence of the developers, who were competing for site lease offers.<sup>39</sup> We welcome the fact that the Department for Transport has invited the Crown Estate to discuss the process with the Chamber of Shipping, which may improve future rounds.<sup>40</sup>

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34 Q247

35 Ev 38-39

36 Ev 32

37 Q 206

38 Q 207

39 Ev 59

40 Ev 42

29. There are several options which could be considered for the future. We asked our witnesses whether it would be possible for the Government itself to identify the sites for installations. We understand this is done in some other countries.<sup>41</sup> This would mean there would be no considerations of commercial confidentiality. Although the Government would incur costs in site investigation, it should in principle be able to recover those costs. Developers will not have to do the investigations necessary to identify sites, and the prospects of getting consent must be higher if the Government itself has properly identified the development sites. However, although the DTI considered that Government identification of sites might be possible, Mr Mellish told us:

I think there would be concerns about us trying to duplicate some of the skills which exist within the wind industry and beginning to be developed there in terms of understanding the engineering required offshore when the site selection is chosen.<sup>42</sup>

We do not see why the Government would have to assess the suitability of sites for the wind industry. Its tasks would be to identify those sites with the lowest practicable conflicting interests, whether shipping or environmental, and leave it to the industry to decide if they were suitable for its purposes. Mr Mellish was also concerned that government identification of sites could be seen to compromise the integrity of the consent process. Given that the current process has already led the industry to believe that consents are likely to be granted, whether or not they are merited, we are not convinced that this difficulty cannot be overcome.

30. During the Government's consultation on the SEAs, Trinity House put forward proposals for a revised version of shipping "clearways". This concept was supported by the Chamber of Shipping and Sea and Water, but Trinity House told us the Government had not responded to the suggestion. When we took evidence, Mr Wadsworth suggested that the idea might have merit, provided that it was based on up-to-date data.<sup>43</sup> **We welcome the Government's apparent willingness to consider new ways of identifying suitable sites for development, and managing the development process. However, we note that it seems to have taken our inquiry to open this dialogue, and persuade the Government to consider a proposal which Trinity House, together with the other General Lighthouse Authorities, made much earlier. The serious concerns of the General Lighthouse Authorities should have been addressed without any need for our intervention.**

**31. However the next round of development is carried out, it is imperative that it is better handled than the current one, and that the organisations responsible for marine safety, the ports, and representatives of the marine industries and those who work in them, are properly consulted at an early stage. Commercial confidentiality should not compromise marine safety, or the country's economic interests.**

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41 Q267

42 Q205

43 Q251

## 4 The Energy Bill

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32. Although the processes for identifying potential sites for off-shore wind installations have been so deficient, most of our witnesses felt that the Energy Bill itself provided an acceptable framework for subsequent development.<sup>44</sup> Surprisingly, only the British Wind Energy Association wished to see changes. The clauses over which there was disagreement were Clauses 100 and 101, inserted at report stage in the Lords; while our witnesses from the marine industries felt they ensured that the interests of ports and those involved in shipping were properly taken into account, the BWEA felt they gave those interests too great a prominence.<sup>45</sup>

33. Any legislation and approval for wind farms must take account of the United Kingdom's obligations and duties under the United Nations Convention on the Law of the Sea (UNCLOS). Notably, these include the right of foreign ships to freedom of navigation in the 200 mile zone, which includes the freedom to move, stop and anchor at will. This freedom is not absolute; the foreign vessel must have due regard to the coastal state's economic and other rights and those of other states to lawfully use the sea. The United Kingdom is free under UNCLOS to construct structures and installations, including wind farms, to exploit the natural resources within the 200 mile zone, provided they do not cause interference to "recognised sea lanes essential to international navigation" (Article 60(7)). Where necessary, the United Kingdom may also establish reasonable exclusion zones in the interests of protecting shipping, structures and installations from collision. Clause 100 of the Bill echoes UNCLOS and states that:

Installations and the safety zones around them may not be established where interference may be caused to the use of recognised sea lanes essential to international navigation.

34. Mr Wadsworth said that the International Maritime Organisation (IMO) would be consulted about any proposal which might impinge on international navigation rights.<sup>46</sup> We understand that although there have been no applications for the IMO to consider navigation rights in respect of wind farms, the Organisation has considered how such requests would be handled. They would be considered by the working group on ships' routing, of the Sub-Committee on Safety of Navigation, on which all member States are represented, and which meets once a year. The Sub-Committee on Safety of Navigation recommendations would be forwarded to the apex technical body of IMO, namely the Maritime Safety Committee for consideration and adoption, as appropriate. Once adopted, it would take another six months from the date of adoption for implementation. If there are no problems the process could take 1½ to 2 years from the initial date of the proposal. Clearly, if there are problems with particular sites, it may take over two years to resolve them. Once IMO approval had been given, member states would be notified so that charts and maps could be appropriately amended.

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44 Q 56

45 Q 168

46 Q 228



35. Clause 101 specifies that:

In assessing whether installations and the safety zones around them present a danger to navigation, the Secretary of State shall ensure that their cumulative effects on safety of navigation are taken fully into account.

The BWEA felt that this was unnecessary, since the effects of installations on navigation would have to be taken into account in the environmental assessments.<sup>47</sup> We are wholly unconvinced by this; although the environmental assessment process is not complete, the complete disregard for navigation shown in the strategic environmental assessments suggests that navigation issues may well be overlooked, or not given the appropriate weight. The length of time required for IMO processes may also tempt those concerned to assume IMO involvement is not needed; it is reasonable to ensure there is a reminder on the face of the Bill.

36. On 26 April Stephen Timms, the Minister for Energy, e-commerce and Postal Services, wrote to Mark Brownrigg, the Director General of the Chamber of Shipping. He said:

turning to the Energy Bill I remain unconvinced of the case for explicit mention in the text of the imperative to respect the safety of navigation. We are putting in place legislative provisions for offshore renewable energy installations which are intended to supplement the legislation which already applies to such projects. The legislation exists to ensure that safety of navigation is not compromised by these projects. Our intention is not to consolidate all the legislative provisions one Bill, which would be a different exercise. There would be a risk of confusion if we treated navigation matters separately to other issues. The obvious question would be why we are not dealing similarly with other important issues such as regulation of the impact on the environment.<sup>48</sup>

By the time that officials appeared to give evidence to us this policy had been changed. We were assured that the provisions would remain in the Bill. We were told that “our line would be that they should not be taken out of the Bill, but we will need to adjust them to make sure that they work in practical terms.”<sup>49</sup> **The Government has woefully mishandled the development of off-shore wind energy. Clauses 100 and 101 must remain in the Bill. This is necessary to restore the confidence of the marine industries which, like renewable energy, are vital for our country's future. We were told that any amendments the Government proposed to these clauses would be intended to make them “practically workable”.**<sup>50</sup> We urge our colleagues to ensure that this is the case, and that any amendments do not lessen the clauses’ effectiveness.

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47 Q 168

48 Not printed

49 Q 208

50 Q 209

## 5 Conclusions

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37. The development of policy on off-shore renewable energy zones has shown departmental government at its worst. As Mr Grayson, National Secretary of NUMAST, said:

It would appear that there has been some economic imperative or political imperative driving this forward. ... The lead department has been the DTI and the DfT, MoD and Defra have been secondary here.<sup>51</sup>

As a result, the DTI has developed a policy which ignores the basic needs of the shipping industry. As the lead department, the DTI should have made sure that *all* interests were considered as an early stage. Instead it seems to have listened too much to the industry it sponsored, and failed to involve departments which could have represented competing interests.

38. When we took evidence it appeared that the Government was at last considering properly involving the representatives of the maritime industries and their safety bodies who should have been involved from the outset. It will be several years before consent is given for the first wind farm on a Round Two site. We expect the Government to ensure that proper consultation takes place while the detailed plans for Round Two sites are developed, and to ensure that marine interests are taken properly into account in future rounds.

### Conclusions and recommendations

1. It is the Government's task to balance the need of the country for clean renewable energy with its need for ready and safe access to its ports by the shipping through which we trade. In doing this, it must take account of the very real risks that off-shore installations pose for shipping. (Paragraph 4)
2. With little or no maritime representation on the steering group, it is hardly surprising that “the SEA [strategic environmental assessment] made very little reference to navigational matters.” (Paragraph 14)
3. We do not understand why the Department for Transport and the Maritime and Coastguard Agency did not insist on being represented on the steering group on the environmental assessment of the strategic areas. Still more seriously, we do not understand why the Department for Trade and Industry did not see that their inclusion was essential. It is clear from a glance at the map appended to this report that every one of the strategic areas is on the approach to a major port or ports. The DTI should have been immediately aware of the need to ensure that the Strategic Environmental Assessments adequately identified navigation and marine safety issues.(Paragraph 15)
4. It is obvious that, just as the DfT and the MCA were not properly involved in the Strategic Environmental Assessments, their advice was not heeded at the tender

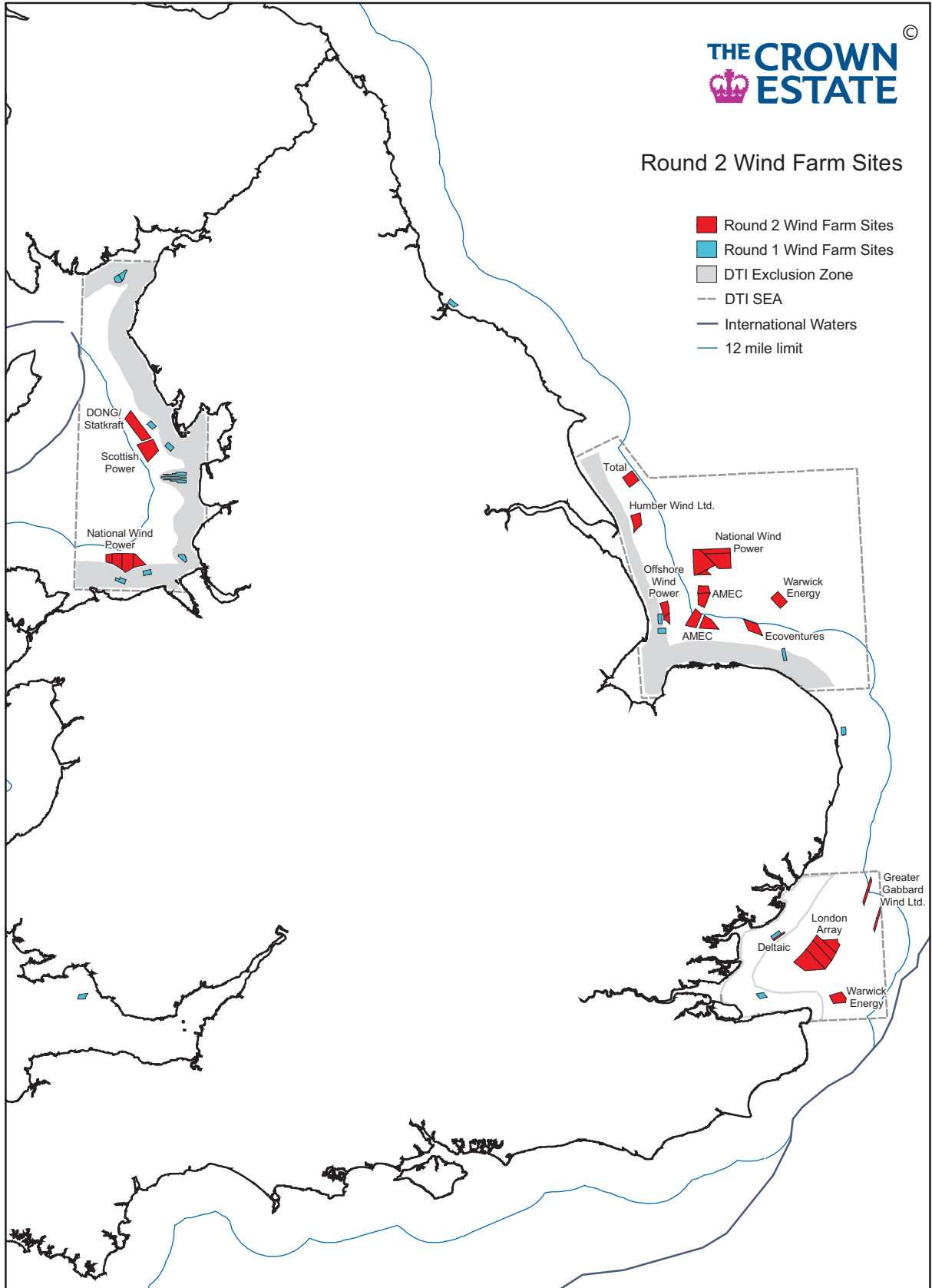


stage. Many of the sites chosen for further evaluation may have serious impact on marine operations. It is imperative that the concerns of the ports, the shipping industry and all those who use the sea are properly addressed in their further evaluation. (Paragraph 19)

5. The Department for Transport has now agreed to fund research on the possible effects of offshore installations on communications systems. We welcome this, but we are surprised that, three years after the publication of *Future Offshore*, the Department is consulting on what such research should cover. There could hardly be a more telling example of a lack of “joined up government”. (Paragraph 23)
6. Given the difficulties of manoeuvring large vessels subject to wind and tide, the possibility that vessels may lose steerage, and that vessels in difficulty may well be crewed by persons whose qualifications and experience are not gained in the United Kingdom, we believe that some sort of collision, at some time, is inevitable, and that plans must be in place to deal with it. (Paragraph 24)
7. If changes to sites are proposed, those working in marine industries must be properly consulted, and their expertise must be used in identifying safer alternatives. (Paragraph 25)
8. Given the dangers involved, we believe that safety zones are needed for every installation. The consent procedures should require that the location of safety zones around installations is addressed. (Paragraph 26)
9. Consents should only be granted to installations which can be shown not to compromise the safety of navigation. If the research needed to achieve this has not yet been done, then the consents will have to be delayed. If the size of installation proposed cannot be sited safely within the Strategic Environmental Areas, then the Government and industry will have to think again. (Paragraph 27)
10. We welcome the Government's apparent willingness to consider new ways of identifying suitable sites for development, and managing the development process. However, we note that it seems to have taken our inquiry to open this dialogue, and persuade the Government to consider a proposal which Trinity House, together with the other General Lighthouse Authorities, made much earlier. The serious concerns of the General Lighthouse Authorities should have been addressed without any need for our intervention. (Paragraph 30)
11. However the next round of development is carried out, it is imperative that it is better handled than the current one, and that the organisations responsible for marine safety, the ports, and representatives of the marine industries and those who work in them, are properly consulted at an early stage. Commercial confidentiality should not compromise marine safety, or the country's economic interests. (Paragraph 31)
12. The Government has woefully mishandled the development of offshore wind energy. Clauses 100 and 101 must remain in the Bill. This is necessary to restore the confidence of the marine industries which, like renewable energy, are vital for our country's future. We were told that any amendments the Government proposed to

these clauses would be intended to make them “practically workable”. We urge our colleagues to ensure that this is the case, and that any amendments do not lessen the clauses’ effectiveness. (Paragraph 36)

# Appendix



## Formal minutes

*The following Declarations of Interest were made:*

Mr Brian H Donohoe and Clive Efford, Members of Transport and General Workers' Union

Mr Ian Lucas and Mr Graham Stringer, Members of MSF Amicus

Mr Graham Stringer, Director, Centre for Local Economic Strategies

**Tuesday 4 May 2004**

Members present:

Clive Efford

Mr Brian H Donohue

Mr Ian Lucas

Mr Graham Stringer

In the absence of the Chairman, Mr Brian H Donohoe was called to the Chair.

The Committee deliberated.

Draft Report (*Navigational Hazards and the Energy Bill*), proposed by the Chairman, brought up and read.

*Ordered*, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 38 read and agreed to.

*Ordered*, That the map of Round 2 Wind Farm Sites be appended to the Report.

*Resolved*, That the Report be the Ninth Report of the Committee to the House.

*Ordered*, That the Chairman do make the Report to the House.

*Ordered*, That the Appendices to the Minutes of Evidence taken before the Committee be reported to the House.

[Adjourned till Wednesday 5 May at 2.30pm.]

## Witnesses

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<b>Mark Brownrigg</b> , Director-General and <b>Tony Hall</b> , Senior Manager, Chamber of Shipping	Ev 1
<b>Steve Cuthbert</b> , Chairman, UK Major Ports Group	Ev 1
<b>Allan Graveson</b> , Senior National Secretary, <b>Andrew Linington</b> , Head of Communications and Campaigns and <b>David Russell Garbutt</b> , Master, NUMAST	Ev 9
<b>Dr Gordon Edge</b> , Head of Offshore Wind, British Wind Energy Association and <b>Rob Hastings</b> , Board Member with responsibility for offshore wind, BWEA, Vice-president of Shell Renewables	Ev 13
<b>Captain Michael Frampton</b> , Associate, London Offshore Consultants	Ev 13
<b>Richard Mellish</b> , Director, Electricity Consents and <b>Cathy Allen</b> , Energy Bill Policy Manager, Department of Trade and Industry	Ev 21
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# Reports from the Transport Committee since 2002

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Second Report	The Departmental Annual Report	HC 249
Third Report	The Regulation of Licensed Taxis and Private Hire Vehicle Services in the UK	HC 215-I
Fourth Report	Transport Committee Annual Report 2002-03	HC 317
Fifth Report	The Office of Fair Trading's Response to the Third Report of the Committee: The Regulation of Licensed Taxis and Private Hire Vehicle Services in the UK	HC 418
Sixth Report	Disabled People's Access to Transport	HC 439
Seventh Report	The Future of the Railway	HC 145-I
Eighth Report	School Transport	HC 318-I
Ninth Report	Navigational Hazards and the Energy Bill	HC 555

## Session 2002–03

First Report	Urban Charging Schemes	HC 390-I
Second Report	Transport Committee: Annual Report 2002	HC 410
Third Report	Jam Tomorrow?: The Multi Modal Study Investment Plans	HC 38-I
Fourth Report	Railways in the North of England	HC 782-I
Fifth Report	Local Roads and Pathways	HC 407-I
Sixth Report:	Aviation	HC 454-I
Seventh Report	Overcrowding on Public Transport	HC 201-I
Eighth Report	The Work of the Highways Agency	HC 453
Ninth Report	Ports	HC 783-I
First Special Report	Government and Office of Fair Trading Responses to the Seventeenth Report of the Transport, Local Government and the Regions Committee, The Bus Industry	HC 97
Second Special Report	Government Response to the Committee's Fourth Report, Railways in the North of England	HC 1212

## Session 2001-02

First Special Report	The Attendance of a Minister from HM Treasury before the Transport, Local Government and the Regions Committee	HC 771
Second Special Report	Government Response to the to the Fifth Report of the Transport, Local Government and the Regions Committee, Session 2001-02, European Transport White Paper	HC 1285
Third Special Report	Government Response to the Eighteenth Report of the Transport, Local Government and the Regions Committee, Session 2001-02, National Air Traffic Services' Finances	HC 1305





# Oral evidence

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## Taken before the Transport Committee

on Wednesday 28 April 2004

Members present

Mrs Gwyneth Dunwoody, in the Chair

Mr Brian H. Donohoe  
Clive Efford  
Mrs Louise Ellman  
Ian Lucas

Miss Anne McIntosh  
Mr John Randall  
Mr George Stevenson  
Mr Graham Stringer

*Witnesses:* **Rear Admiral Jeremy de Halpert**, CB, Deputy Master of Trinity House; **Mr Mark Brownrigg**, Director-General, and **Mr Tony Hall**, Senior Manager, Chamber of Shipping, and **Mr Steve Cuthbert**, Chairman, UK Major Ports Group, examined.

**Chairman:** Good afternoon, gentlemen. You are most warmly welcome here. We have a little bit of housekeeping to undertake before we begin this session. Members having an interest to declare?

**Clive Efford:** I am a member of the Transport and General Workers' Union.

**Ian Lucas:** I am a member of AMICUS.

**Mr Stevenson:** I am a member of the Transport and General Workers' Union.

**Chairman:** I am a member of ASLEF.

**Mr Donohoe:** I am a member of the Transport and General Workers' Union.

**Mrs Ellman:** I am a member of the Transport and General Workers' Union.

**Miss McIntosh:** I declare an interest in Eurotunnel.

**Mr Stringer:** I am a member of AMICUS and Director of the Centre for Local Economic Strategies.

**Q1 Chairman:** Some of you have appeared before us and therefore know that we have a few ground rules. I ask that you speak up and ask that you identify yourselves and then, if there is anyone who wants to make some general remarks before we start, perhaps you would be kind enough to indicate.

**Rear Admiral Jeremy de Halpert:** I am Jeremy de Halpert, Executive Chairman of Trinity House Lighthouse Service.

**Mr Hall:** I am Tony Hall of the Chamber of Shipping.

**Mr Brownrigg:** I am Mark Brownrigg, Director-General of the Chamber of Shipping.

**Mr Cuthbert:** I am Steve Cuthbert, Chairman of the United Kingdom Major Ports Group and Chief Executive of the Port of London Authority.

**Q2 Chairman:** Does anyone want to say anything briefly before we begin?

**Mr Brownrigg:** All of us here support the principle of offshore wind farms; they just have to be in the right place. That is where we are coming from. Our concerns relate solely to where farms are located and to the need to ensure that they do not interfere with the safe navigation of ships, cause hazards to ships and their crews or harm the marine environment.

Offshore energy resources involve an emerging technology and the processes for dealing with this are evolving. Our primary objective is to ensure that safety is fully taken into account in Round Two and that more effective consultation processes are put in place for future rounds. There should be consultation from the earliest strategic planning stages. If that is accepted, then we can avoid many of the difficulties that are being raised in the future. We very much welcome the assurances given by the Department of Trade and Industry and the Department for Transport both directly to us and in the debates in the House of Lords on the Energy Bill. From our viewpoint, it is now important that the Government follow through the practical implications of those assurances. We have three specifics which we would like highlighted at this stage. We hope very much that Government will accept the new Clauses 100 and 101 agreed at report stage.

**Q3 Chairman:** That is of the Energy Bill?

**Mr Brownrigg:** Absolutely and we have had a recent indication that the Government are not minded to accept those. We hope that the Government will carry through the recommended research on communications and on the environmental impact on the seabed and we hope that Government will ensure that shipping and ports are properly consulted in the future from the earliest stages.

**Q4 Chairman:** Another of the ground rules is, when you agree with one another, I would ask you not to repeat the same argument and, where you disagree, perhaps to indicate in order that I can call you. Given that you have said very plainly that you are not objecting to either the theory of wind farms or the general need for some kind of environmental generation of electricity, what are the particular hazards of offshore wind farms? Is there a hazard that offshore wind farms and shipping pose to one another?

**Mr Brownrigg:** There is really the general question of the proximity of the location of the wind farm and established shipping channels. Distances at sea are

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much smaller than they look when they are expressed in terms of miles and some channels, take for example the Black Deep in the entrance to the Thames, are already long and narrow and there is the example of the wind farm which is currently being contemplated which is placed exactly along the edge of that channel.

**Q5 Chairman:** Are we talking about Round Two wind farm sites, the Crown Estate map and the one at the entrance?

**Mr Brownrigg:** We are, indeed. That channel is by and large one kilometre wide. We do not know yet whether any exclusion zone that may be agreed would encroach on that channel or be within the wind farm site. If it did, it would take up half the channel. The difficulty with shipping is that, in perfect conditions, everything works smoothly and you can bear narrow pinch points from time to time, but things do not always work smoothly. For example, if one had a risk at any stage of steering power failure or some other failure, which God forbid, then the freedom to manoeuvre for these vessels would be severely limited if they are located too closely. There is therefore a consequent increased danger of collision or snagging of cables and so on. Similarly, as soon as you divert shipping to avoid these, there are all sorts of implications which arise from that; new potential risks arise which need to be taken into account.

**Q6 Chairman:** What are the most significant risks? Can you quantify them?

**Mr Cuthbert:** May I go on and answer your question from what Mr Brownrigg said? There are issues in relation to radar, both shore to ship through vessel traffic services and ship to ship. For instance, in the Thames Estuary, the whole of the Estuary is monitored by PLA radars and there is a traffic control system which I know that you personally are very familiar with. There are also ship-to-ship radars as ships navigate through the access channels. We need some very thorough and rigorous work to determine the extent of interference to radars from the various wind farm arrays.

**Q7 Chairman:** Has anybody done it then? There has been a first round. Has no one produced some reliable plan?

**Mr Cuthbert:** There has been some little work done on the first round but the scale of the ones in Round Two are substantially higher. The farm that you have just drawn your Committee's attention to is 70 square miles. It is about the size of the City of Nottingham, two thirds of the size of the Isle of Wight, with between 250 and 350 proposed arrays versus 30 in the existing farms that have been consented, only one of which has yet been built. So, you get interference from the farms and it would be hard to find radar targets in front of the farm and certainly there will be shadows behind the farm where you will not be able to see a ship on radar. Whilst it may be possible for the land based radars, the Vessel Traffic Services radars, to be modified in some way to take that into account, I think it is very

difficult to see how this can be done on ship-to-ship radars. Ships navigate—and Rear Admiral de Halpert is the mariner present today—using radars and there is also the question of VHF radio and radio interference where we believe there will be degradation of radio signals and communications between the ships and the ships and the shore are also very important in terms of navigation.

**Q8 Chairman:** Rear Admiral, is that not rather an important point? Can you give us some indication? Would there not be some defence risks in this as well?

**Rear Admiral Jeremy de Halpert:** There are certainly defence risks there although, in my current role, I am not the defence expert.

**Q9 Chairman:** No, I was asking personally.

**Rear Admiral Jeremy de Halpert:** And indeed the ability to have proper radar and radio control over port approaches in the Thames Estuary and, as we will see in due course, in the Humber and off Liverpool as well, is necessary in ensuring port security as well as navigation and ship security that must be in place if we are to take on board all the technological improvements and port security issues that are coming in. Windfarms could cause an interference and certainly very much complicate the navigation and security position.

**Q10 Chairman:** Was this the system that the Committee went to see at the estuary of the Thames? Surely one of the reasons for the new expenditure on that new system was the need to monitor very closely ships that were entering in order that we had some degree of defence. Would there be any interference with that?

**Mr Cuthbert:** Yes. The system was originally built and designed for safety of navigation because the Thames Estuary, as you will recall, is full of sandbanks and there are only three or four actual access routes through the estuary into the ports of London and the Medway. Obviously, in recent years, we have cooperated with the Kent, Essex and Metropolitan Police and the port control system is now an integrated part of the Counter Terrorist Partnership for London which is led by Sir John Stevens, the Commissioner of the Metropolitan Police.

**Q11 Mr Donohoe:** Can I just take this through to what the cost implications are because there were proposals to put wind farms in my constituency and it meant that the whole of the radar for Prestwick Airport and indeed Glasgow Airport was going to have to be upgraded at quite a phenomenal amount of money. Is that the same implication that we are talking about here both in terms of radar that is being used operatively on the land and also between ships?

**Mr Cuthbert:** Air traffic radars operate on a slightly different principle to ship radars and shore-to-ship radar. I think it is early days to say that we can draw a direct parallel but there are certainly substantial cost implications in modifying radar and VHF

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systems and other navigation and communication systems between the ship and the shore which are likely to be substantial. I do not think we could go so far as to say that we could actually put quantified figures to that yet.

**Q12 Mr Donohoe:** Is it right that it is you who has to pay these costs and not the industry that has put in these windmills?

**Mr Cuthbert:** We trust that the developers will meet these costs and, as far as the Thames is concerned, with the two farms that have already been consented under Round One, the developers have agreed to pay these costs.

**Rear Admiral Jeremy de Halpert:** I will add to that that indeed the DTI has said that the safety of navigation costs would be borne by the developer. So, coming back to the opening questions as to what the problem is in navigation safety, we have a lot of ships with manoeuvrability problems operating in the same area of water as the developers want to put wind farms.

**Q13 Mr Donohoe:** The problem with that is that you are talking about the developer paying the costs for something that is not mobile. How do you defray the costs in that sense?

**Rear Admiral Jeremy de Halpert:** Any infrastructure that is required to be put in place to safeguard navigation safety and ship safety in that region will be a cost to the developer, whether it is a completely new radar/radio system or whether it is additional buoys.

**Q14 Mr Donohoe:** In terms of the industry that I know something about, the oil industry, these things are moving around and about and fortunately there have not been any accidents with these. What is the real difference in real terms? Is there more danger in what is being proposed in terms of wind farms against that of oil installations?

**Rear Admiral Jeremy de Halpert:** Yes. It is another degree of difficulty. When the oil industry was exploring where to develop in the North Sea, we developed a system where we could have safe lanes. So, we looked at where the shipping went and where the oil/gas industry wanted to develop and we made exclusion zones, so there were areas that they could develop and there were areas that were safeguarded for ship navigation. That was generally well offshore; so, in deep water and there were no other real restrictions involved and everybody was happy. It was a deconfliction, a harmony. In this particular issue, both Round One and Round Two are very much more inshore. They are now compromising the very narrow channels of safe navigation; we now really have a conflict with windfarms and where shipping can only go and not where shipping cannot go. That is the problem.

*The Committee suspended from 3.04 pm to 3.12 pm for a division in the House*

**Q15 Miss McIntosh:** Just on one point that Mr Brownrigg mentioned on security and danger. Do you think that wind farms could potentially be a security threat and not a defence threat?

**Rear Admiral Jeremy de Halpert:** I do not believe that I am really qualified to answer that question and I think that either the MCA or the MoD would be in a better place. Only in the narrow Thames Estuary example would it interfere. Whether that is a defence problem, I do not know.

**Q16 Miss McIntosh:** At what stage were you as an industry consulted on Round Two?

**Mr Hall:** We started to be consulted on Round Two immediately after the announcement by Government that they had offered the possibility of licences in the areas concerned. At no time before that time were we consulted.<sup>1</sup>

**Q17 Chairman:** At no time? What happened with Round One?

**Mr Hall:** With Round One, everyone was on the learning curve. We were consulted on the consent procedures and then, after the consent procedures, individual developers came forward to us with their individual proposals for scoping studies for comment and it was at that stage that we started to get involved officially.

**Mr Cuthbert:** I think as far as the ports were concerned, our experience was somewhat different and the DTI did publish a consultation document in November 2002 to which we and others responded in February 2003 and, in July 2003, the DTI acknowledged the PLA's concern certainly about farms in the Thames Estuary and agreed to consult with us, but also in July they announced that the three areas, the Thames, the Greater Wash and the North West areas, had been chosen for further investigation.

**Q18 Chairman:** So, when they really virtually started on Round One, they announced that they had decided on Round Two?

**Mr Cuthbert:** Yes. In July 2003, the PLA wrote to the DTI and the Crown Estate to say that they felt in the invitations to bid that information relating to the Port of London Authority area where a licence is required from the PLA were deficient and, in August 2003, a PLA letter was sent to all applicants and, in November 2003, before the announcement, I attended in the capacity with my PLA hat on a meeting with the Crown Estate and the DTI where some of the advanced proposals for the Thames Estuary were discussed and two of those farms that were really slap bang in the middle of navigation channels were not actually consented.

**Q19 Chairman:** But, Mr Hall, you do not think you had the same kind of treatment?

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<sup>1</sup> *Note by witness:* The answer to Question 16 is correct with respect to individual Round 2 sites announced in December 2003, but in relation to Round 2 Strategy the Chamber of Shipping was consulted earlier in November 2002, and did respond in February 2003.

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**Mr Hall:** As far as timeframe is concerned, I was referring to the announcement which was made in December 2003 on Round Two. It was not until after that period that we actually became involved in the full consultation.

**Q20 Miss McIntosh:** Is there a potential conflict in the initial siting of the wind farms between what would pose the most serious navigational hazard and yet what is the cheapest for the developer to develop?

**Mr Cuthbert:** I think that is quite a difficult question for us to answer because we are not aware of the developers' costs and we cannot speak on the developers' side. The London Array site on the Thames certainly does require what is called London Array site part one to be moved substantially because, at the moment, it actually blocks one of the three access channels into the Thames. It goes right across the mouth of the Fisherman's Gat. So, we do think certain things have to be moved and we believe it was put there because of inappropriate consultation in the early stages.

**Q21 Chairman:** You are really saying that they did not know what they were doing or you are saying it rather politely.

**Mr Cuthbert:** I would put it slightly different. I think if they had consulted with Trinity House, the MCA and the PLA, I cannot see why they would have actually put London Array part one where they put it.

**Q22 Chairman:** Well, you précis it one way and I will précis it another.

**Rear Admiral Jeremy de Halpert:** Just to qualify the last question, our experience in Round One where they were really quite small farms, one mile by two miles, maybe 30 turbines in each close inshore, by the time that Trinity House was negotiating with them to see whether they would amend the footprint in order to clear channels, we came up against the conflict that an immense amount of environmental research had been invested in the lease as given by the DTI and Crown Estates and therefore the firms were very reluctant to shift their footprint. When told that the footprint would encourage greater costs in extra navigational marks in order to comply, then commonsense tended to prevail but, in one particular case in South Wales, we had to go to public inquiry in order to force them to change that footprint, which they eventually did.

**Q23 Miss McIntosh:** Mr Brownrigg, you mentioned the two clauses which were inserted, I think you called them new Clauses 100 and 101. If those new clauses are not kept, are you saying that the integrity of safety zones will be on the line?

**Mr Brownrigg:** I am not talking about the integrity of the safety zone. What I am saying is that there is no other commitment explicitly stated within the Energy Bill to observe the imperatives of safe navigation if there is not a reference in there.

**Q24 Chairman:** Mr Brownrigg, in view of what the Rear Admiral said about the experiences on Round One, what was the department's attitude when you told them? They must have known that you had to go to public inquiry on one specific site.

**Rear Admiral Jeremy de Halpert:** I would like to answer that. We were all in the industry very concerned, so we held a seminar in November of last year at Trinity House for everybody in the industry, master mariners, people in the oil and gas industry and the other development areas—because we will have wave farms and tidal farms coming on-stream in due course—to thrash out the issue about the conflict between shipping and static farms like these. It was acknowledged across the board with the 120 people there that we needed early consultation, and DTI and DfT representatives were there.<sup>2</sup> It was a commonsense approach that you do not build wind farms in the very narrow and shallow approaches to major ports. Well, one month later, Round Two was declared just before Christmas and that is what we have.

**Q25 Chairman:** So, you are telling me that the DTI were actually there at the time when this seminar took place?

**Rear Admiral Jeremy de Halpert:** Yes.

**Q26 Chairman:** When there was a general opinion throughout all the representatives in different aspects of sea trade that this was not a good idea and yet, a month later, the second announcement was made?

**Rear Admiral Jeremy de Halpert:** That consultation must occur with, shall I say, the representatives at this table to get a clear idea of the deconfliction of inshore shipping against areas where development could occur, a real commonsense approach.

**Q27 Mrs Ellman:** What concerns you the most about sites selected in Round Two, sites identified at this point?

**Rear Admiral Jeremy de Halpert:** That the big ones—and there are three 70 square mile ones that have been referred to by Mr Cuthbert already—are sited in the approach routes to three of the major ports of this country—the Humber, the Thames and Liverpool—and, with the amount of shipping converging on a single port entrance, there is a great risk of having a navigation incident or disaster.

**Q28 Mrs Ellman:** How do you think this situation has come about? These are grave risks which you have identified. How are we going to move from it?

**Mr Cuthbert:** I think really the DTI has been very enthusiastic and determined to promote the alternative sources of offshore renewable energy and is anxious to implement the Government's policy in that regard. Unfortunately, I think probably not intentionally but through a lack of understanding of

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<sup>2</sup> *Note by witness:* The Conclusions and Recommendations of the Trinity House Seminar, together with the subsequent exchange of letters between C.E Trinity House and Mr Timms, Minister of Energy, have been forwarded to the Clerk of the Committee.

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marine matters, they have failed to take into account the hazards they were potentially creating to the safety of navigation.

**Q29 Mrs Ellman:** Are you suggesting lack of knowledge? How can that be when there are so many sources available?

**Mr Cuthbert:** I think it is an example of a failure to deliver joined-up government.

**Mr Brownrigg:** I would mention again that I think this consultative process has been in an evolutionary phase, if you like, and I think that we are learning—

**Q30 Chairman:** There are evolutionary phases that turn into chaos. It may be an interesting extension of various scientific theories but they are not very helpful, are they?

**Mr Brownrigg:** Absolutely and we really do want to learn the lessons from Round One and make sure that they are carried through properly in Round Two with full consultation and activation from now; and, for future rounds, that really the consultation takes place at a much earlier stage, at the strategic planning stage.

**Q31 Mrs Ellman:** The Marine and Coastguard Agency have laid down some very clear procedures before sites can be chosen; they talk about up-to-date traffic surveys of the area concerned, the site position of the structures, the navigation of the structure, the impacts on search and rescue . . . What has gone wrong here? Have they been left out of this or have they been deficient in what they have done?

**Mr Hall:** One of the important aspects that has been left out which is not, we believe, adequately addressed in the MCA guidance is the obligation that Government have under the UN Convention of the Law of the Sea that installations may not interfere with recognised sea lanes essential for international navigation. That is an obligation which, in discussions within the Lords debate and in communications with Government, has been reaffirmed by Government as an obligation that they can fulfil but that obligation under the law of the sea only applies within the exclusive economic side which is akin to the renewable energy zone that the UK Government intend to establish. That leaves the question as to whether that obligation will apply within the territorial waters when many of these wind farms are proposed to be established particularly under Round One. So, we believe that there has been insufficient recognition to that obligation which is on Government and it is an obligation that we would suggest can only be taken into account at the strategic planning stage of wind farm developments and not left to individual developers to interpret.

**Q32 Mrs Ellman:** But interpretation of the UN obligation of passage through the sea is only part of this, is it not? If I could ask you about the activities of the Marine and Coastguard Agency, would you say that they have not looked at their responsibilities or have they been simply disregarded? Have you any information on that or any views on that?

**Mr Cuthbert:** I think that the issue here is when people are actually consulted and I think the problem has been that the MCA have found themselves in practice, having issued their guidance note to which you refer in July 2003 and it is out for consultation for an upgrade now—and I cannot be categorical about this—more or less in the same position as we have found ourselves in that they have not been fully consulted in the strategic environmental assessment because that runs to 227 pages and there are very few references in that to the safety of navigation. So, I think the whole area of safety of navigation was omitted right from the very beginning or paid very little attention right from the beginning.

**Q33 Mrs Ellman:** How do you see the situation now? The sites have not been finally selected, have they? Do you now feel you are in a position to influence the final position?

**Mr Cuthbert:** Speaking personally, I am extremely worried because developers have paid money to the Crown Estate for these provisional sites and we are now really on the back foot trying to get the developers to understand the issues that we are addressing this afternoon and persuading them that they should actually change the areas and why they should change the areas and the environmental assessment and statement at the end of the day which they are going to have to produce is up to them to produce. At the same time, we have the Department for Transport agreeing to scientific studies into interference to navigation and electronic systems and also to the hydrology and hydrodynamics of the seabed which is important in some of these areas. So, we are making some progress but clearly we are not starting from an ideal position or the position that we consider we should have done.

**Q34 Mrs Ellman:** Do you think that the department could feel compromised in relation to developers' rights and commercial interests?

**Mr Cuthbert:** I cannot answer that question but I would say that I think it would have been better and preferable had the department properly consulted marine interests first and an awful lot of money and an awful lot of time need not have been wasted to get to the rather tangled position that we are in today.

**Q35 Chairman:** Is it reasonable to ask you to consider re-routing?

**Mr Cuthbert:** I think it is and we are quite happy, speaking on behalf of the Port of London Authority, to suggest alternative areas that would be preferable to those that have actually been provisionally allocated.

**Q36 Chairman:** But you are really saying that you do not feel at any point you were given that chance?

*Mr Cuthbert:* Not until the last . . .

**Q37 Chairman:** Not early enough?

*Mr Cuthbert:* Not early enough.

**Q38 Mr Stevenson:** Could I go back to the problems you illustrated regarding radar and radio communication interference. Do you know this for a fact or is it theory at this stage?

*Mr Cuthbert:* There is a certain amount of published work that is available on the internet and elsewhere that indicates and shows that there is interference. There is a great deal of work that is available for air traffic control radar that clearly demonstrates that there is interference. There is presumably work done also for the Ministry of Defence which is not actually available to us because of the air defence radars around the UK and concerns over wind farms. We are aware that that exists but we do not know what the work actually is. So, I think we have studied what is available in the public domain and my, in the sense of the PLA, navigation systems engineers are convinced that there is interference in the way that we have described and indeed that is why, in the Round One farms, the developers have agreed to mitigation through repeater stations and new radar towers.

**Q39 Mr Stevenson:** I will come to that. So, the answer to my question is that, yes, we have hard evidence to show that this interference which could be dangerous is happening.

*Mr Cuthbert:* We have preliminary scientific evidence to show that that is the case, yes.

**Q40 Mr Stevenson:** Has that been produced to the Department for Transport?

*Mr Cuthbert:* No; we have had to go out and find it for ourselves.

**Q41 Mr Stevenson:** Presumably you have given that to the Department for Transport?

*Mr Cuthbert:* I have not actually shared that yet with the Department for Transport but I am very happy to do so.

**Q42 Mr Stevenson:** Why not?

*Mr Brownrigg:* What we have done is suggest areas that should be researched fully and independently.

**Q43 Mr Stevenson:** Do you see the point I am getting at as a lay person, Mr Cuthbert? You are saying that you have hard evidence and Mr Brownrigg is speaking of areas suggested for research. It is quite important that we get this point clear. Is there evidence to justify your claim that such wind farms will interfere with the navigation, radar and radio communications or are you asking for your concerns to be researched? Which is it?

*Mr Cuthbert:* To answer your question, I am not an electronics engineer but I am informed by my own electronic engineers that there is sufficient evidence to be seriously concerned. We are not in the business here of crying “wolf!”

**Q44 Mr Stevenson:** Would you agree with that, Mr Brownrigg?

*Mr Brownrigg:* Yes.

**Q45 Mr Stevenson:** So, you have asked for research to be done?

*Mr Brownrigg:* Yes.

*Rear Admiral Jeremy de Halpert:* There is another element of interference and that is visual interference. The view on navigating or piloting an 8,000 container ship of very deep draft into the Port of London and you are looking for all the visual marks that you have and they are out there to guide you in, then 250 wind turbines all with their flashing lights and all with the background makes it a very complicated task navigating down an estuary which is three quarters of a kilometre wide.

**Q46 Mr Stevenson:** Could I turn to the developers because we have received evidence that suggests that there is an opinion that Round One has been developed alone. Rear Admiral, you said earlier on—and I am paraphrasing slightly—that developers have given an undertaking to fund the necessary changes that would be required to overcome the problems even though at this stage, due to the fact that research has asked to be done, we are not quite sure what the problems are. This concept of commercial developers actually giving you a blank cheque and you coming back a little later with a figure on it which they will sign for is fascinating. Is that the position or am I simplifying it too much?

*Rear Admiral Jeremy de Halpert:* No, that is the position regarding navigation safety. I think, Chairman, you had a written answer to a parliamentary question quite recently where it said that the costs associated with enhancing the navigational environment when planting the wind farm will be borne by the developer. We can impose what additional costs are required, but the issue at the heart is the hidden cost of the more complex navigation environment that is left behind and the risks of collision and grounding.

**Q47 Mr Stevenson:** Rear Admiral, I am simply seeking to examine this contention that private commercial developers will say, “There is a blank cheque for you, fill it in and we will pay for it.” It is a concept that I cannot quite get my head round. Is that an oversimplification?

*Rear Admiral Jeremy de Halpert:* It is not a blank cheque. Post-Kyoto when we appreciated wind farm development would come in, we went to the international association of navigation authorities, if you like, to draw up an internationally recognised navigational marking system, so that every wind farm, whether it is in Denmark, South Africa or the Thames Estuary, would be marked with the right navigational buoys and would look exactly the same, so there was consistency. So, there is a template against which we will impose on the wind farm developer an expectation of marking.

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**Q48 Mr Stevenson:** You will impose an expectation?

**Rear Admiral Jeremy de Halpert:** Well, a requirement to mark it in such a way.

**Mr Cuthbert:** To add to the question, with the two farms already consented in the Thames Estuary which are small and a long way from the shipping channels, the two developers have agreed—and it is part of orders which they have been granted—that they will provide additional radar towers and radio repeater stations. So, they have made a commitment. They have not given us a cheque but they actually have a legally binding commitment on them to do that.

**Q49 Mr Stevenson:** I have one last question and it comes back to the United Nations Convention on the Law of the Sea because, as I understand it, the amendments that were passed in the House of Lords under the United Nations Convention on the Law of the Sea, the Government have certain obligations and, again as I understand it, the Government can construct structural installations including wind farms within the 200 mile zone provided they do not cause interference to “recognised sea lanes essential to international navigation”. Gentlemen, do we know the international sea lanes that are essential to navigation? Do we have a definitive map?

**Mr Hall:** I would like to try and answer that. As far as we can tell, there has been no definition given to that Article 60(7). We have our own views on what it means which I can elaborate on but, to my knowledge, there is no legal definition for what those terms say.

**Q50 Mr Stevenson:** So, if the Government were minded not to support those amendments which refer specifically to the cumulative effect of this and fall back on the United Nations Convention on the Law of the Sea, can we be clear, gentlemen, that, as far as you are aware, there is no definitive research or research map to define what the UK Government identify as recognised sea lanes essential to international navigation?

**Mr Hall:** There will be a qualification to my answer on that and that would be that the nearest thing which the UK has or did have is the UK safety shipping clearways which were established in the 1970s to ensure that the interface between safety of navigation and oil exploration in the North Sea was adequately covered. An announcement was made in Parliament in about the 1980s that they were going to withdraw that mechanism. For what reasons, I do not know, and maybe the Government will clear that up.

**Q51 Clive Efford:** Just to pick up on a couple of points, from the last answers, do I take it that you have a map that you have presented to the Government saying, “These are areas which we consider safe for the development of wind farms”?

**Mr Cuthbert:** I think it is round the other way. We have actually given the Government a map which shows them where the sea lanes are and pointed out where they overlap the wind farms. So, we were

relying on the Government and developers to come up with alternative sites, if you like, to answer that question.

**Q52 Clive Efford:** As part of the process in Round One was concerned, was there any indication from your side of the table to say that these are areas where it would be safe to develop wind farms?

**Mr Cuthbert:** Only in the case of specific instances. There is one farm—and it is really for the Chamber to answer this point—off the coast of Norfolk where we are very uncomfortable. May I ask Mr Hall to answer that question.

**Mr Hall:** Under Round One, I think it is true to say that there was no strategic planning stage involving discussions with maritime interests. We were on a learning curve and we were looking at each proposal as it came forward. With regard to the Norfolk offshore wind farm which has been approved, there are concerns still in that, because vessels will have to deviate, there is a possibility of converging areas some distance away from the wind farms where there may be potential collision risks. More importantly, there is a very important inshore area between the site of the farm and the coast which ships of small to medium size need to use during inclement weather conditions and we still today do not know whether, with the approval of that site, a two-way shipping lane is going to be available for those ships that want to use those waters in inclement weather.

**Q53 Clive Efford:** I suppose what I am after is whether there is a meeting of minds here or whether you are saying there is nowhere safe to put these wind farms at sea.

**Rear Admiral Jeremy de Halpert:** We have up-to-date shipping routes which I have shown on our coloured chartlets in the Trinity House submission and that shows quite clearly where the main traffic routes are and therefore where the areas of very limited or even non-existent traffic is. You will see from that that there are large swathes of area which are little used by regular traffic and I am conscious that there will be the fishing industry and the yachting industry who will say that they use them. Shipping will generally choose the safest and the safest shortest route between two points because there are tides to catch, there are timetables to keep up with and so on. Then those routes show where the busy shipping goes and it also shows where or how this can be deconflicted. You will see, for instance, in the map showing the entrance of the Humber which is about three pages from the rear that some of the orange wind farms are placed in areas of non-existent sea routes and that is excellent, but the 70 square mile one referred to before is right bang in the middle of the M1 between the Humber and Europe. That does not strike me as serious consultation at the very early strategic stage in order to deconflict necessary trade routes from wind farms.

**Q54 Clive Efford:** In the answers that you gave in terms of interference on radar and ship-to-ship radar, does the technology exist to overcome those problems? Are they surmountable?

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**Mr Cuthbert:** The answer is that, until we have done the research and the Government have funded the proper research and the Government have agreed to do that, we will not know the answer to that question. We believe that there is likely to be an answer. They found an answer, we understand, for air traffic control radars, so it should be possible to find an answer for shore-to-ship radars. Whether we can find an answer for ship-to-ship radar, nobody knows.

**Q55 Clive Efford:** So, in answer to Mr Stevenson's question, it is an open-ended cheque that the wind farm industry are signing because we do not know the answer.

**Mr Cuthbert:** As we understand it, the Government have agreed to finance the scientific studies to look at interference of radar and radio. So, that study—and there must be a limitation on the funds—is to be financed by the Government and the Government have also confirmed to us that wind farms will not be consented until the results of that study are known and assessed.

**Q56 Clive Efford:** Do you believe that the Energy Bill as amended in the Lords provides the right framework for development given the need to improve the consultation and, if not, what would you like to see?

**Mr Brownrigg:** We think that by and large it does. We do believe it is important to maintain the two amendments, the two short amendments which are those that set out the principles, and, beyond that, we have spoken about consultation and the need for independent research. If I could add one thing which I think links in with Mr Stevenson's comments as well as yours on the UN Law of the Sea Convention obligation. That applies to the exclusive economic zone, it does not necessarily carry into the territorial waters, and the Government have said through their spokesman in the debates to date that they consider a common regime desirable. I think we would all agree that it would be crazy to have one regime within the territorial waters and one outside. What we would like to see is those two clauses interpreted in a way which effectively means that the principle in the Law of the Sea Convention that you should not establish artificial islands in the way of essential shipping lanes is interpreted in exactly that way.

**Q57 Chairman:** You did raise some rather elliptical remarks early on to the effect that you do not think the Government are minded to accept the suggestions you have put forward during the passage of the Bill. Why do you think that and what have they said precisely?

**Mr Brownrigg:** Our understanding is that because the Coastal Protection Act exists outside the Energy Bill, it is a standard legal practice not necessarily to have cross-references between different legal instruments. That was our understanding. On the other hand that may be, but we believe that the safety of navigation is so crucial in the placement of wind farms that there should be some cross-reference of a general nature and that is why these

two are raised in a general sense. But there is also the question of the Transport and Works Act and the degree to which this imperative of securing the safety of navigation carries through into that because applications under that Act can disapply the navigation requirements under the Coastal Protection Act.

**Q58 Chairman:** Do you want to expand that, Mr Cuthbert?

**Mr Cuthbert:** Yes, please. The other reason to add to that is that the Energy Minister wrote us a letter on 26 April to say that he was minded to reverse the two amendments in the House of Commons.

**Q59 Chairman:** Would you be kind enough to let us have a copy of that letter in order that we may include that.

**Mr Cuthbert:** Certainly.

**Q60 Mr Stevenson:** I am puzzled. If the obligation under the law of the UN Convention applied to international waters as distinct from coastal waters, how do the Government protect the international shipping lanes if things happen in coastal waters that obstruct those ships getting into port?

**Mr Brownrigg:** That is exactly the point and that is why, in our judgment, you cannot have two different regimes.

**Mr Donohoe:** Following on from my original question about the cost implications in terms of having to key in the costs of development and changing of radar systems, what is your estimation of the cost to UK plc if foreign states do not implement similar schemes if you have a drift of shipping away from the UK to the ports as a consequence of these things?

**Q61 Chairman:** Have you estimated what deviation would cost round those three major ports is what I think you are being asked.

**Mr Hall:** Some work has been done looking at individual sites with regard to the implications on deviation for ships. We have had one contribution from one of our members who has been looking at one of the sites in Liverpool Bay and he operates ferries between Heysham and Douglas, Isle of Man. It means that the scheduled services of these ferries would be severely disrupted and that the vessel steaming time would be increased by over half an hour and there would be extra annual fuel costs as well.

**Q62 Mr Donohoe:** That is one element in terms of ferry timetables but, in terms of freight, for instance, instead of loading or offloading at one of these ports, as a consequence of these things whereby it has become difficult, on the basis of that, they could well take themselves outside the UK and use other port facilities in mainland Europe and that would quite clearly add to the whole question of the amount of income that there is generated from ports in this country as a consequence of these things. Have you done any work on that aspect?



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**Mr Hall:** As far as I know, that has not been quantified.

**Q63 Ian Lucas:** My understanding is that you indicated that the wind farm industry was to essentially pay for all the additional costs that are being incurred by the fact that they are placing the farms in your shipping lanes; is that correct?

**Rear Admiral Jeremy de Halpert:** The immediate construction costs, so the cost—

**Q64 Ian Lucas:** Not the ancillary costs, not the additional costs of setting it up, that is a very important point.

**Rear Admiral Jeremy de Halpert:** If the main route into the Humber were diverted and it is about a 30 mile diversion for all ships going into the Humber if that wind farm went ahead, then those additional shipping costs would not be paid by the developer. The developer would pay to mark the navigation extremities of that wind farm.

**Q65 Chairman:** We export vast number of motor cars through that particular route, would it not add quite considerably to the cost?

**Rear Admiral Jeremy de Halpert:** It would add considerably to the cost and a lot of it is trans-European routes and so the whole schedule would be thrown two hours per sailing out.

**Chairman:** Gentlemen, you have been very helpful. Thank you very much.

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*Witnesses:* **Mr Allan Graveson**, Senior National Secretary, **Mr Andrew Linington**, Head of Communications and Campaigns, and **Mr David Russell Garbutt**, Master, NUMAST, examined.

**Q66 Chairman:** Good afternoon, gentlemen. Would you be kind enough to identify yourselves? I hope you will accept my apology for keeping you waiting. I do not organise the programme on the Floor of the House or it would be done very efficiently.

**Mr Linington:** Andrew Linington, Head of Communications and Campaigns, NUMAST.

**Mr Graveson:** Allan Graveson, the Senior National Secretary, professional and technical.

**Mr Garbutt:** Rus Garbutt, a retired shipmaster as from the end of last month.

**Q67 Chairman:** Thank you very much indeed for coming. Mr Graveson, did you want to say anything to begin?

**Mr Graveson:** Yes. Essentially our submission is as it stands. I appreciate we did put it in rather hurriedly. This is a very important issue to us. We are supportive of the development of wind farms, not least because it provides a great number of jobs in the construction, the development and the maintenance of these wind farms. However, we also have a profound concern over the siting of these wind farms in close proximity to shipping lanes. Perhaps seafarers have the most to lose and that is their lives if something should happen in that respect. What we are deeply concerned with here is the functions and the processes of the departments of state, in particular the Department for Transport, the Maritime and Coastguard Agency and the relationship between the two and the relationship between other government departments and agencies. The Department for Trade and Industry, who have been tasked essentially with making this movement happen from hydrocarbons to renewable energy and who have to be commended in many respects for the way in which they have pushed this forward, together with the Crown Estate and the developers have had a somewhat incestuous relationship to the exclusion of others, at least that is how we perceive it.

**Q68 Chairman:** Thank you. You sent us a very measured memorandum. What is the thing that concerns your members most about the development?

**Mr Graveson:** We do consult in this area with our members, but we are not being consulted. The master mariners in the UK have an exceptionally good record on safety and we are renowned and respected throughout the world for that professionalism and that skill, but here we have not been consulted at all. When we look at the location of these wind farms, with all of the pressures that are on shipmasters today and particularly at that all-important point when you are entering and leaving a port when there is a great deal of pressure and demands upon individuals, with a great deal happening, it is another matter that needs to be considered as it can put undue pressures on people.

**Mr Garbutt:** Madam Chairman, unfortunately I have only recently been able to get a grasp of all the details because, as Allan mentioned, the information has been very slow in filtering through. However, I can speak with authority on the routes from the Humber ports to the near Continent as I have been sailing there for the last 26 years. I can talk specifically about the proposed Humber wind farm. I did read the Scorpion report from Humber Wind Ltd which is very detailed and on the face of it very open and honest, but even they have reservations and uncertainties which we need to consider. My main concern as the ship's master is the safety of the passengers and crew on board the ship, the safety of the ship and the protection of the environment, and I see these proposed wind sites as being in locations which are currently posing definite problems for shipping and specifically the safety of navigation.

**Q69 Chairman:** Such as? Which particular aspects?

**Mr Garbutt:** On the Cromer one, I have just received the co-ordinates of the proposed site, it is the fact that it will severely restrict coastal shipping in that area. That is an area which small coastal vessels use frequently and in bad weather conditions vessels of

a much larger size would use that area as a means of getting a lead to make the ship more comfortable and safer in all respects. It would hinder vessels from taking appropriate avoiding action, it would bring vessels closer together by making them converge onto an alternative route or routes and it would totally destroy any flexibility within the safe navigation limits that we are constrained by. Lastly, should an incident occur where a vessel is likely to be in a collision or where the vessel is likely to be sinking, it would also restrict the beaching area of a vessel in order to save the vessel.

**Q70 Chairman:** It is simply drawing down the area in which they can manoeuvre and protect themselves in bad weather when they would normally come onto the inshore waters. All of these are restricted is what you are saying to us, is it not?

**Mr Garbutt:** That is correct.

**Q71 Chairman:** And dangerously so in your view.

**Mr Garbutt:** Yes, I would say so. In relation to the Humber proposed site, it is located at a very busy junction where there are three vessel traffic separation schemes converging for traffic entering or leaving the Humber along with coastal traffic making their routes north and south.

**Q72 Chairman:** Are you telling us that that wind farm would be across that conjunction of shipping routes?

**Mr Garbutt:** It would be to the north of that conjunction and consequently any vessels coming up on the inside of that route may very well be hidden from radar view. In the event of an incident such as losing their engines or steering failure, because of the close proximity to the Channel to the north-east they may very well find themselves up against a very strong tide up to the north. In a spring tide there is an effect of about 3.4 knots of current in that area and consequently, even a ship that is completely stopped in the water, the extremity of it is 0.6 of a mile from the Channel, so within less than 20 minutes the vessel will be in the sand and that is notwithstanding any way in which the vessel may be proceeding through the water.

**Q73 Ian Lucas:** If we use the example of the area that you know so well and the proposed size of the areas that the wind farm company have put forward for proposed sites, is there sufficient space in the Humberside area generally for these farms to be safely sited?

**Mr Garbutt:** I have not looked at alternative sites. The only time I have had at the moment is to identify the co-ordinates of the sites which have been proposed in these two areas. I have not any alternative sites in mind at the moment.

**Q74 Ian Lucas:** So the position is that you have not been consulted even though the sites have now been put forward.

**Mr Garbutt:** That is correct.

**Q75 Ian Lucas:** What you are saying to us today is that this is the first opportunity you have had to say it, is it not?

**Mr Garbutt:** That is correct.

**Q76 Chairman:** Mr Graveson, considering that British masters are respected so much that they are used not only on UK vessels—unfortunately not enough on UK vessels—but very widely throughout the shipping world, would you think it very surprising that you were not asked for your opinion and experience?

**Mr Graveson:** Dare I suggest that nothing tends to surprise me when dealing with some government departments. However, there are certain areas where perhaps we do get consulted extremely well. It would appear that there has been some economic imperative or political imperative driving this forward. It has been led by another department. The lead department has been the DTI and the DfT, MoD and Defra have been secondary here. While we need to move towards renewable energies, it is indeed astounding that we were not consulted at an earlier stage. There are elements within the shipping industry which have had better consultation than we have. To answer your question precisely, it is very surprising indeed.

**Q77 Ian Lucas:** Mr Garbutt, you talked about restricting the beaching area if a vessel is in trouble. Could you explain exactly what that means? Does it mean that they would run onto a sand bank if there was a problem?

**Mr Garbutt:** If a vessel was sinking, rather than have the vessel sink completely underneath them they would run the ship aground to save the ship and the personnel on board.

**Q78 Ian Lucas:** And that would be prevented if this proposed wind farm was put there?

**Mr Garbutt:** There are other areas, obviously. The beaching area is a more minor argument than the others.

**Q79 Miss McIntosh:** Can you give us an idea of the distances involved in adverse weather conditions in particularly the Humber waters, the small room for manoeuvre that you have?

**Mr Garbutt:** On my own particular route from the Humber to the Continent we would be talking in the region of about five miles in deviation.

**Q80 Miss McIntosh:** And you would be travelling at some speed presumably.

**Mr Garbutt:** Yes. The vessels I would be travelling on would be travelling in the region of about 18 to 20 knots.

**Q81 Miss McIntosh:** What time?

**Mr Garbutt:** We are talking about 20 minutes, something like that.

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**Q82 Miss McIntosh:** So it would curtail your activities quite dramatically.

**Mr Garbutt:** It would certainly cut into your timetable, especially on an eastbound voyage when you have the clock against you and therefore you need all the speed possible to make your timetable.

**Q83 Miss McIntosh:** In your memorandum you expressed disappointment, Mr Graveson, that the MCA (Maritime and Coastguard Agency) were not given statutory consultation status. Is that the first time there has not been proper consultation in your view on such a major navigational hazard?

**Mr Graveson:** Indeed. Generally the relationship with the Maritime and Coastguard Agency is extremely good and we are consulted on a wide variety of issues, but it would appear here that it was not so much a case of apathy by the MCA, I think there was some frustration within the MCA that they were being left out of the loop, that it was a *fait accompli*, that this had been determined within the agency responsible. It is as though they said, "Now, here it is. Get on and make it happen," and that is where the frustration comes in.

**Q84 Miss McIntosh:** Albeit that the Chairman said that it was a measured response to the Committee, you do actually say that you are concerned about the presentation of unwarranted navigational hazards. Do you believe that the DTI is perhaps putting the economics first before the safety aspects of where these wind farms are to be placed?

**Mr Graveson:** You said economics and that is certainly a point I would like to pick up on. One must question the whole economics of this, but I am not going to go into whether wind farms are right or wrong, I am looking at the economics of shipping. If we want to move more cargoes onto ships and particularly around our coasts where we have this multi-lane highway, do we wish to do that or do we wish to continue to increase congestion on the roads? If the DTI have looked at it from an economic view I would be very pleased, but it would seem that they have not done so, they have looked at it from the very narrow perspective of moving from hydrocarbons to renewables to meet an international treaty.

**Q85 Miss McIntosh:** Are you suggesting that were these proposals to go ahead on the basis that we have seen, on the Round Two initial mapping, this would be a barrier to the development of coastal shipping in this country?

**Mr Graveson:** Yes, indeed. There are some areas that have been identified, the one off Cromer in particular. A letter was sent to me from the Maritime and Coastguard Agency on 21 July 2003 and I received it some three days later and a reply was required by 11 August, and this was in a holiday period. I have the very letter here and it is signed by a Paul Wilkins, Head of Navigation and Traffic Communication and Innovation Branch.

**Q86 Chairman:** We would be grateful for a copy of that before we do the report.

**Mr Graveson:** I will provide that.

**Chairman:** Thank you.

**Q87 Mr Stevenson:** I wonder why it is, if the siting of particularly the Round Two wind farm sites is so dangerous, they have actually been proposed.

**Mr Graveson:** In many respects when we look at transport and economics shipping tends to be one of the last considerations of many and in this case it appears that the safety of shipping has had little, if any, consideration. If I wished to develop this wind farm, bearing in mind the fact that I have some costs associated with that development and I am willing to bear certain additional costs associated with the protection of that site with respect to navigation, I am not willing to look at the higher costs in this regard of the construction and indeed the maintenance of that site should it be located elsewhere. So I think the costs of construction and maintenance are offset by the safety and protection costs.

**Q88 Mr Stevenson:** We have heard from Mr Garbutt about his experience in some detail, about the Humber and so on. Have you concerns from an operational point of view about radio communications, radar and the potential interference by wind farms in those vital areas?

**Mr Graveson:** We do have concerns. They are not the principal concern, it is more the proximity of those two to shipping lanes and port approaches in tidal waters. Communications has developed immeasurably over recent years and we do believe that where there is a very good equipment fit on board a ship this should not present a problem. The shipping industry has considerable experience of wind farms particularly off the coast of Denmark.

**Q89 Mr Stevenson:** Would it be preferable for the Government to identify specific sites to take into account the sort of navigational and operational risks that have been identified in the evidence we have received this afternoon and then ask the developers to bid within those sites rather than identifying large areas and allowing developers to come forward with their proposals?

**Mr Graveson:** I would say yes and yes.

**Q90 Mr Stevenson:** If that is the case, given your obvious expertise in this area, is NUMAST in a position to suggest where those sites may be to Government?

**Mr Graveson:** I do not think it is appropriate for us to suggest where they should be because we have an infinite amount of coastline, over some 3,000 miles around the UK. We are perhaps better placed than any other Member State of the European Union for the location of wind farms. To set about identifying those areas I think is a major piece of work which would require a great deal of money. What we would be prepared to do is to say we should not be alone, it has got to be done with industry partners such as the Chamber of Shipping, the Ports Industry, Trinity House, all of us together, that is vitally important, saying we think this is good.

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**Q91 Mr Stevenson:** Three things occur to me: firstly, your criticism of the complete lack of consultation; secondly, the dangerous implications of particularly Round Two if these sites go ahead; and thirdly, your support for a change of strategy by government. If instead of just identifying areas and saying to developers to come along and give their views they actually identified areas themselves that took into account the concerns that you and others have and then asked developers to come forward within those sites—I am not talking about the whole of the thousands of miles of coastline, I am talking about the specific areas, the Humber, the London Array, Liverpool and so on that are specifically congested areas and where your organisation may be able to concentrate and come forward, based on your practical knowledge, with those specific sites that would take account of the navigational and operational problems and argue, during that consultation, that government should change its strategy on this—would that be acceptable to you?

**Mr Graveson:** Yes, I do believe we could make a valuable contribution.

**Q92 Chairman:** We have not talked to you about safety zones. Would they make that much difference?

**Mr Graveson:** I think safety zones are invaluable particularly when we remember that some of the ships being navigated around our coastline are not controlled by people who have the competence of our members in NUMAST and therefore it would be of considerable help.

**Q93 Mr Randall:** You were talking about the experience off the Danish coast. Are the developments there of the same sort of size that are proposed here? Some of them are huge. We heard evidence of them being the size of Nottingham. Is that the sort of thing that already exists?

**Mr Graveson:** Yes, I do believe it is. I have seen them with my own eyes and obviously I have read a considerable amount about them. I think we have got to remember that we are looking here at a very different country. We have got to look at its population, its shipping and its trade, its principal sea ports and the principal traffic routes for shipping. Large wind farms are suitable in certain areas but in other areas it is not appropriate. You can make comparisons with the technology, but when you look into the geographical location, this island of ours is very different to Denmark, we are much more dependent on the sea than Denmark.

**Q94 Chairman:** Mr Garbutt, would you give us a little practical demonstration? Have you dealt with wind farms elsewhere or oil installations?

**Mr Garbutt:** I have not dealt with wind farms, but oil installations such as Leman Bank and around the area of the routes from the Humber—

**Q95 Chairman:** What would be the difference between those oil installations and what is being proposed?

**Mr Garbutt:** The oil installations are usually either single platform or two or three platforms in a small area. They have an exclusion zone around them of around 500 metres and there is adequate space between that is navigable should the event warrant it, should there be a collision risk and a need to pass outside the exclusion zones but between rigs. Certainly off the Humber Gateway they are proposing 60 to 80 wind turbine generators and whilst there are only small in comparison, I understand there is 700 to 800 metres between them and there would be no safe way of passing between those wind turbine generators.

**Q96 Mr Randall:** The construction of these things would be quite a long process. Presumably that would cause a great deal of disruption as well to shipping and to safety because everything is going backwards and forwards all the time.

**Mr Garbutt:** I would expect it would, yes.

**Mr Graveson:** There are indeed dangers associated with construction as there would be with maintenance or decommissioning, but here we are looking at the construction stages and clearly guard ships can be put on location. Another difference with the offshore hydrocarbon industry, oil and gas, is that there is a wide use of guard vessels which are deployed to protect those sites as well as to provide rescue for the personnel on board and it may be appropriate in some of these locations to site guard ships.

**Q97 Mr Randall:** I think you were saying earlier that it is probably self-evident that your members and people used to sailing in our waters are going to find this less of a problem, but if you have got a crew that is not quite up to the standard that we would all like, maybe they have not come across these things before, they could create quite a potential great hazard not only to themselves but to other shipping in the area.

**Mr Linington:** It is worth remembering that there are now more Pilipino seafarers working in British waters than there are British seafarers and it is not just the quality of the crews, it is also the quality of the ships themselves. We look at things like collision risks, the possibility of machinery break down, equipment malfunction, we look at the residual hard core of about 8 to 10% of ships that were found to be unseaworthy in UK port state controlled inspections. All of those are very relevant factors when we start to consider collision risks with developments like this.

**Q98 Ian Lucas:** Do we have sufficient information in any particular place to select safely sites for wind farms of this size and scale?

**Mr Graveson:** To anticipate that one must ask how we are selecting them at present. What are the criteria at present that makes the selection? Are they pulled out of a hat by some magic? I do not know the answer. The information appears to be somewhat lost on me.

**Ian Lucas:** Perhaps we can ask later.

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**Q99 Chairman:** You do not think that doing it that way round, ie letting the developers chose the easy sites, is dictated by what they perceive to be their economic interests?

**Mr Graveson:** It is certainly perceived by us that that has been the case, the choice of location and the position of the wind farm albeit with some regard to UK air defence radar, but other than that it is being done primarily for economic reasons. There seems to be little other consideration certainly in regard to transport in its widest sense. As to the economics of shipping and the safety of shipping, I do believe there has been some environmental consideration given.

**Q100 Chairman:** Finally, Mr Garbutt, after all your years at sea, even with all the new advances in equipment and the marvellous toys that you now

have to play with, is it your view that the movement of the seabed and the effects of the movement of water on the seabed are likely to lead to a situation where there could still be very real hazards thrown up because of the movement of silt into these estuaries?

**Mr Garbutt:** I am not too concerned about the silt aspects, I am more concerned with solid objects either interfering with navigation or interfering with radar and radio communications between ships and the shore.

**Q101 Chairman:** Thank you very much. Do you feel that the MCA has given you sufficient opportunity early enough to comment on the effects on your members of these particular wind farms?

**Mr Graveson:** A simple answer, no.

**Chairman:** Thank you very much. You have all been very helpful.

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*Witnesses:* **Dr Gordon Edge**, Head of Offshore Wind, **Mr Rob Hastings**, Board Member with responsibility for offshore wind, BWEA, Vice-President of Shell Renewables, and **Captain Michael Frampton**, Associate, London Offshore Consultants, British Wind Energy Association, examined.

**Q102 Chairman:** Good afternoon, gentlemen. Would you be kind enough to introduce yourselves for the record?

**Dr Edge:** My name is Dr Gordon Edge. I am the Head of Offshore Wind at the British Wind Energy Association.

**Mr Hastings:** Good afternoon. My name is Rob Hastings. I am Vice-President of Shell Renewables. I am also a Director of the British Wind Energy Association and responsible for offshore projects.

**Captain Frampton:** Good afternoon. I am Captain Mike Frampton who worked for London Offshore Consultants, a shipping and navigation consultancy.

**Q103 Chairman:** Thank you very much. Mr Hastings, did you have something you wanted to say to us before we begin to question you?

**Mr Hastings:** Yes, a brief summary of our memorandum and one or two notes I want to pick up on. The BWEA welcomes an opportunity to contribute to discussions on the siting of offshore wind farms in the context of shipping lanes. The BWEA represents over 315 companies involved in all aspects of the wind power industry, many of which are focused on the offshore sector, and it is the primary voice of the industry in the UK. With the programme of offshore development now in hand, about half of the wind capacity expected to be built up to 2010 is likely to be in the sea. Indeed, if considerable offshore capacity is not realised, then the UK will probably and likely miss its targets for renewables by a considerable margin. The BWEA and its members have been aware from the outset of offshore Round One of the need to address the legitimate requirements for all of the users of the sea in the context of both the Environmental Impact Assessment and the legal framework. There have been extensive dialogues with representatives of fishing interests, the

Maritime and Coastguard Agency, the Royal Yachting Association and many other key bodies. The BWEA supports the Government's proposals within the Energy Bill relating to navigational issues. Specifically, the BWEA strongly supports the framework within the Bill for safety zones. It acknowledges and supports the need for consultation in relation to proposed safety zones. It acknowledges a need to consider an extinguishment or suspension of navigational rights in circumstances where this is necessary, and supports the proposals for consultation in relation to any extinguishment or suspension. Finally, the BWEA is aware of the need to maintain and deepen dialogue with all the parties during the Round Two process. Offshore wind energy development is here to stay and is a key component of the Government's Climate Change Programme. The development of Round Two projects will generate substantial employment in the UK and thus will bring substantial economic benefits as well as environmental benefits.

**Chairman:** Thank you very much.

**Q104 Mr Stevenson:** What consultation has your Association had other than with the Maritime and Coastguard Agency and other key bodies? Did you consult with NUMAST, the Major Ports Group and the Chamber of Shipping on Round One?

**Mr Hastings:** The process that was engaged in Round One was essentially one where it was up to individual developers to identify a location and to proceed with an application to the Crown Estate.

**Q105 Mr Stevenson:** I understand that.

**Mr Hastings:** As an industry representing body the BWEA did not take forward any collaborative consultations to those organisations, but what they

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did do was facilitate a process of information exchange between the consultees and individual developers themselves.

**Q106 Mr Stevenson:** That is very good. So the answer to my question is no, there was no consultation at all. Do you find that rather strange?

**Mr Hastings:** Again, it was not that there was no consultation, it was the case that we were facilitating a consultation process between the developers and the stakeholders.

**Q107 Chairman:** What does facilitating a consultation between the consultees and the stakeholders mean exactly?

**Mr Hastings:** The consultee could be a stakeholder and they may be the same thing, and the developers obviously are interested in engaging with a consultee or a stakeholder to understand what the issues are that they may have in proposing to build a wind farm on a site. That is the normal process of going through a planning application. For example, under a section 36 planning application there is a consultation process required which engages the stakeholders, those people who have an interest in the site, and the developer themselves, so there is engagement there. Where the BWEA could take a part is where there are common interests that are coming out of this consultation process, they could exchange that information and share it around the consultees or share it around the developers.

**Q108 Mr Stevenson:** Presumably the relevant government department, the DTI, says, "Look, we want to encourage the development of wind farms. Your Association members are at the sharp edge of this. Come forward with your proposals." Is that basically what happened?

**Mr Hastings:** In a very basic framework, yes.

**Q109 Mr Stevenson:** As far as your Association is concerned, you are not aware of any consultation that took place between your Association, the Government and the organisations that I mentioned earlier?

**Mr Hastings:** During the Round One process?

**Q110 Mr Stevenson:** Yes.

**Mr Hastings:** I am not aware of that. I should just state for the record that I am a fairly recent member of the BWEA; I was not involved in the Round One process.

**Q111 Mr Stevenson:** That being the case, how do your members take account of potential hazards to navigation when they are looking at the sites if you have not talked to anybody?

**Mr Hastings:** There is publicly available information. I hope you understand that I am talking with the generalisation across a multitude of developers here and developers have different approaches to these particular issues. As a generic response to your question, in terms of getting information about a particular location, this is

publicly available information, some developers may choose to consult with the particular stakeholders who are at that site and some may choose to rely on publicly available information and that is generally the information or data used.

**Q112 Mr Stevenson:** As an Association, are you aware of any of your members consulting with the stakeholders I referred to earlier? Can you help us with that?

**Mr Hastings:** Yes, I can.

**Captain Frampton:** My involvement in the consultation is in writing the Environmental Impact Assessments that go with it and particularly the navigation side of that. I have written those for three of the Round One sites and I have been working with one of the developers for one of the Round Two sites. Yes, it is there that you get the consultation. So we are well down into the planning and development stages when you come to write this document because that is the final step before you submit it and ask for your permit to develop it. For those three sites, yes, there were consultations with the harbour masters, with the main users of the ports, with the Maritime and Coastguard Agency and with the other people who did have a role to play.

**Q113 Mr Stevenson:** Do you accept that the stage when the reports that you referred to are produced is well into the process?

**Captain Frampton:** Absolutely so, 100%.

**Q114 Mr Stevenson:** Would you accept the criticism that that is rather too late?

**Captain Frampton:** It would make my job in writing those statements much easier if it was earlier.

**Q115 Mr Stevenson:** Your specific reference to consultation, I am sorry to press you on this, was that in the sites that you referred to, the three sites? I do not know where they were. Did this consultation include the major British Ports Group, the ship owners, NUMAST?

**Captain Frampton:** No, not NUMAST.

**Q116 Mr Stevenson:** But the other two definitely, yes?

**Captain Frampton:** Yes, the ship owners and operators.

**Q117 Mr Stevenson:** That was on three of the sites. Why was it not on the other sites?

**Captain Frampton:** I do not know for the other sites because I did not write the navigation site assessments.

**Q118 Chairman:** Could you tell us the sites?

**Captain Frampton:** Barrow, Shell Flats, so that is two in Liverpool Bay, and the third one was in Tees Bay off the entrance to the port of Tees.

**Q119 Mr Stevenson:** Do you think the Government should change their approach somewhat here? Rather than identifying areas and then saying to

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your members to bring forward their proposals to develop a wind farm in those areas, do you think the Government should identify the potential navigational risks to shipping, identify those areas where those risks would be reduced if not removed altogether and then ask your members to come along with their plans within those sites?

**Mr Hastings:** Maybe I could just roll this back a little bit to explain a little bit about the process that a development goes through in terms of getting from a proposal from the DTI to invite proposals through to a consented wind farm ready to be constructed. It is important to distinguish between the various phases here. The first phase, which is the one around identifying a potential prospect for development, which is an activity that a developer would normally undertake as an origination process for a business decision investment, is based on limited information and it is based on a risk management programme that a developer would want to undertake, and how much risk that developer takes in terms of investing and understanding how good a prospect that site would be is a decision for the developers.

**Q120 Mr Stevenson:** Is the navigational risk of shipping taken into account by the developer at that point?

**Mr Hastings:** It generally would be if it is considered at that time to be a risk which would prevent the project from being consented, because the next stage in this process is for the developer to put forward a proposal to the Crown Estate—and there have been two different rounds here so it is a generic explanation I am providing—which would say, “This is an area which I would like to develop and I feel confident that I can make this a commercial venture which will work and which I shall be prepared to invest in.” The Crown Estate generally would look at that proposal and assess it for its merits. They were competitive submissions to the Crown Estate. For example, in the second round there was something like 26,000 megawatts of applications and around 7,000 megawatts-worth were offered. There is a competitive process going on. However, once it has been established that there is now an opportunity for a developer to proceed with site security, in other words he knows that if he can get it consented he can build his wind farm there with confidence, then the actual statutory process of the planning application is engaged. That part of the process can be very lengthy. Generally for an offshore wind farm it is probably not less than three years and it is during that process that the full scoping of the stakeholder engagement is undertaken and the stakeholder dialogue and understanding where the risks are and understanding how to work with the environmental issues, with other stakeholder issues, which may be commercial. They are all worked through and eventually, after a fairly lengthy process, the developer would get to the point where it has confidence to submit this to the DTI and to Defra for the various consents that it needs in order to proceed to build a wind farm.

**Q121 Chairman:** I think that is code, is it not, Mr Hastings, for we do it all and right at the end we then talk to the people who might be in some way or other involved in something like shipping?

**Mr Hastings:** Madam Chairman, it would not be at the end. Maybe I did not explain it very well. The actual engagement with navigation interests, for example, would be at a very early stage.

**Q122 Chairman:** But you told us only where, for one reason or another, you thought there was a negative reason. I paraphrase, but I think that is what you said.

**Mr Hastings:** Any reason that could perhaps prevent that project from getting consented.

**Q123 Chairman:** So you do not routinely say, “I’m building something in the sea off the coast. It is going to be a fixed structure in the sea which is a moving structure and which has ships going up and down all round it, but I am not going to ask the people involved in the shipping aspect until I have got to the point where I need planning permission”?

**Mr Hastings:** Again it depends on how much risk the developer wants to take.

**Q124 Chairman:** I would have thought the risk of putting a structure in the sea which is surrounded by ships is a fairly easy estimate, is it not?

**Mr Hastings:** And generally the developers would undertake that exercise. Where the information is available they will undertake it.

**Q125 Ian Lucas:** I would be interested, Captain Frampton, if you could explain at what stage you actually approached the port authorities when you were involved in the three schemes that you brought forward. Are economic assessments of the site made first and then subsequently safety assessments made?

**Captain Frampton:** The process tends to be a fairly cheap and quick scoping study first of all to identify the principal risks and dangers. So we are looking at what the hazards are and what the potential areas of high costs and difficulties are. So you would be looking particularly at things like seabed conditions, the lengths of cable that you are going to have to run back into the shore, your connection back into the Grid, your potential wind yield from the site, so how much electricity at the end of the day you are going to be able to generate and then you must also add to that your environmental concerns, some of which are not very well evaluated or fleshed out at that stage, but they typically include things like MoD radar concerns, bird concerns and then, to a lesser extent, the navigation. You can make a fairly quick and dirty assessment of how much traffic there is likely to be around that area just from a commonsense approach. Once you get past that stage and start to look at the Environmental Impact Assessment and writing that in more detail, from your scoping study the developer would have started to engage in a conversation with the harbour master and the other bodies that are interested in that particular piece of water, and then as you write the Environmental Impact Assessment itself it is normal

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to have meetings with those people as well to discuss what you are doing and where you are going. One of the things that comes out often from those scoping studies is a great deal of concern for the people who are being consulted for the first time and one of the reasons for that is that when you get a Crown Estate lease you actually get quite a considerable area of seabed on which you can build. When you come to look at how much space the actual wind farm will occupy, typically on the Round One sites it was probably about 50% of the site and I suspect for the Round Two sites it is probably even less. So there is quite a lot of micro positioning of the actual turbine towers and the boundary of the wind farm itself within your Crown Estate lease.

**Q126 Ian Lucas:** The Round One sites are very much smaller than the Round Two sites, are they not?

**Captain Frampton:** They are.

**Q127 Ian Lucas:** Presumably it is much easier, therefore, to reposition the replacing of the turbines.

**Captain Frampton:** I think it will be very similar in the Round Two sites to what it was in the Round One sites.

**Q128 Ian Lucas:** It will be easier in the Round Two sites?

**Captain Frampton:** I think it will be. I do not think you are going to occupy anything near the potential area that most of the developers have asked for in their Round Two sites.

**Mr Hastings:** The provisions under the Crown Estate lease allow a repositioning of the sites at a point in time which in fact is at the end of this year. In other words, there was an initial proposal as to what the locations of the sites were and after a preliminary set of consultations to understand what the navigation issues were then there could be a repositioning of those sites to take into account the fact—

**Q129 Chairman:** How big a repositioning are we talking about, a 20 mile move or 30 miles?

**Mr Hastings:** It is a freedom within—

**Q130 Chairman:** Yes, it does not change the size of the site.

**Mr Hastings:** It could do.

**Q131 Ian Lucas:** What proportion of the identified Round Two sites will be occupied by turbines?

**Captain Frampton:** I do not know that answer yet.<sup>3</sup>

**Q132 Ian Lucas:** Is there any restriction on that? We have got a shaded area and it is obviously quite important that we know how much of that area is going to be occupied by wind farms.

**Mr Hastings:** The actual offer that has come from the Crown Estate is conditional that the developer would produce a minimum amount of megawatts of generating capacity on that particular site otherwise they lose the right to lease. That minimum capacity is something like around about 75% of the proposed capacity.

**Q133 Ian Lucas:** That does not tell me the physical size of the sites.

**Mr Hastings:** Are you looking for a specific site?

**Q134 Ian Lucas:** We have been given areas that have been designated as sites. What proportion of those sites will be covered by wind farms? Will it be a half, a quarter, one-tenth, one-fifth?

**Mr Hastings:** The expectation would be a minimum of 75% of the sites would be occupied by wind turbines.

**Q135 Ian Lucas:** That seems to me to be a very high proportion. Would it not be difficult, Captain Frampton, in those circumstances to shift the sites to accommodate busy shipping lanes?

**Captain Frampton:** Not that difficult. You are still talking about quite large areas and it is quite large areas to move within. We are only potentially talking about safety zones around the wind turbines themselves of a maximum of 500 metres as defined under the United Nations Law of the Sea Convention. We are only looking potentially at moving one row from the front of its planned position to the back of the array. So, no, we are not looking necessarily at very large movements to make significant improvements on levels of safety.

**Q136 Ian Lucas:** Would it not be easier for you in many ways if the Government identified safe sites first and then you looked at which sites were economically viable within that?

**Captain Frampton:** That is certainly one way to tackle the problem.

**Q137 Ian Lucas:** Is it not a safe way?

**Captain Frampton:** It is a safe way to tackle the problem, yes.

**Q138 Mr Stringer:** Why does the development of offshore wind farms move at a relatively slow pace when compared to land based wind farms? There is only one in existence, is there not?

**Mr Hastings:** Within the UK there are two, one is in operation and one is under construction or will be constructed shortly. The delay in the delivery of offshore wind farms is largely due to the economics and the size of the wind turbines, the actual physical machines and there is an economy of scale issue. So it is largely due to economics and as the technology moves on and it reduces in cost it actually offsets some of the incremental increasing costs relating to working offshore.

**Dr Edge:** I think it is also the case that this is a very early stage technology and we are in a state of learning. There has only been 500 megawatts of capacity worldwide offshore and the UK, with only

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<sup>3</sup> *Note by witness:* Captain Frampton has now prepared a spreadsheet calculating the approximate area of each Round Two site that will be occupied by turbines. Certainly with the 5MW machines that are likely to be used there is ample space to fit the arrays within the leased sites and thus micropositioning is possible. See Ev 65



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64 megawatts, is number two. There is a lot of important learning that needs to occur before big developments can take place.

**Q139 Mr Stringer:** That surprises me slightly because there is a lot of resistance to wind farms on land from people who live close to them, either they do not like the look of them or they are too noisy or whatever, whereas you do not have people living in the middle of the North Sea or Morecambe Bay. I just wonder why it has been so slow.

**Mr Hastings:** I would suggest it is simply to do with economics and other considerations as well. In certain sites it is not necessarily simply a case of going and selecting a piece of seabed and going out and building on it for all the reasons we have been talking about today, for example.

**Q140 Mr Stringer:** Can you explain to me as simply as possible, because I do not know very much about your industry, how your members are going to make money out of these wind farms? What are the basic costs and the basic structure of their income going to be when the wind farms are up and working?

**Mr Hastings:** The economic rationale for why you invest in a wind farm is basically that there is an obligation system in place, which has been established by government, which incentivises the production of renewable energy. That translates to something like around about an additional 100% of the cost of brown energy or energy produced by fossil fuels, for example. That supports an income stream that is necessary to support the investment. So generally under those circumstances you come up with an economic equation which is comparable to any large capital cost investment decision.

**Q141 Mr Stringer:** I am not sure I understand you. You are saying that there is a large subsidy for the capital costs of the wind farm which makes it economically viable.

**Mr Hastings:** It is not actually a subsidy on the capital cost, no; it is a green tariff which is paid back to the green energy producer of the electricity.

**Q142 Mr Stringer:** So it is a subsidy when you provide the energy into the National Grid?

**Mr Hastings:** In a simplistic way of describing it, yes.

**Q143 Mr Stringer:** I know I am asking very simple questions about what are probably very complicated commercial and economic decisions. Can you tell me what sort of percentage subsidy over a five- or 10-year period the Government will be providing to these wind farms?

**Mr Hastings:** It is quite difficult to answer that without actually getting at specific numbers because it really depends on the nature and the size of the project, its life and so on, so I am not sure I can actually give an answer.

**Q144 Mr Stringer:** Would it be in the order of magnitude of 50%?

**Mr Hastings:** Fifty per cent of the capital cost?

**Q145 Mr Stringer:** Yes.

**Mr Hastings:** I cannot really say that it actually works like that.

**Dr Edge:** If I could explain simply, the obligation system obliges electricity suppliers to take a certain proportion of their electricity from Grid sources and that cost then devolves on to the consumers through the suppliers having to pay out more for that power. That is organised through a system called the "Renewable Obligation Certificate" and the cost of the Renewable Obligation Certificate for one megawatt hour of electricity, and on the open market one megawatt hour is in the order of £20, at the moment would be about £40–45. Now, that price is likely to come down slightly, but up to 2010 we are looking for a price for a megawatt hour of green electricity of about £20, plus the ROC price of about £40–45.

**Q146 Mr Stringer:** I think I have got some idea of what you are saying, though I am not sure I completely understand it. Would it be possible for you to provide the Committee with a worked example of the costs?

**Dr Edge:** Certainly.

**Q147 Chairman:** By the beginning of next week.

**Mr Hastings:** Certainly.

**Q148 Mr Stringer:** If I can change the subject slightly, apparently there have been three incidents since 1977 where ships have run into oil rigs around the shores of UK and yet the risk assessment of ships running into wind farms seems to be once in every several thousand years. Should really the practical experience of ships bumping into oil rigs be taken into account rather than a theoretical risk assessment of these wind farms? Why is there such a divergence?

**Captain Frampton:** A divergence of the risk or a divergence of the assessment of risk?

**Q149 Mr Stringer:** Of the real experience on oil rigs with the risk assessment for ships banging into wind farms.

**Captain Frampton:** Clearly it is not a simple or easy matter just to calculate the actual risk involved and the numbers, if you like, are not always necessarily that helpful.

**Q150 Mr Stringer:** Which numbers, sorry?

**Captain Frampton:** The frequency of collision numbers.

**Q151 Mr Stringer:** The real numbers are less than helpful or the theoretical?

**Captain Frampton:** The real numbers and the theoretical numbers because, if you think about it, if you are saying three collisions in 30 or 40 years, with the number of movements and ships that have gone past offshore installations, that is probably one collision in 300,000/400,000 passages past, so we are looking at potentially a very rare event and,

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thankfully, it is a rare event which is, I suppose, largely a compliment to the planning of Trinity House in making sure that we can see these things properly and for the seafarers out there who are actually navigating past them. So what happens in practice when you write a risk assessment is that you identify in the broadest terms risks which are clearly unacceptable, so if we were talking about ships colliding with offshore oil and gas platforms or wind turbines happening perhaps once a week, you would perhaps say that was unacceptable, to an area where there is a much lower risk and there is a risk that it should be managed, and the technical wording there would be “ALARP”, so managed the risk to As Low As Reasonably Practicable, and then there are lesser risks which are almost unlikely to occur or of such a nature that tend to get swept up when you deal with the higher-level risks. So when you write and look at a navigational risk assessment, you tend to identify the risks which are required to be dealt with as ALARP, so you look for measures to reduce the risks and things like collisions, yes, are risks that need to be reduced, so rather than go to the quite difficult task of quantifying down to the last detail, the last decimal point that risk, the general solution that is adopted across the industry, not just wind farms, but oil and gas and other offshore activities, is how can we reduce that perceived risk or low risk to a lower risk and hopefully then take it down so that it is at a minimal level. That is the approach which has been adopted and accepted by the MCA when we have been writing navigational risk assessments for the Round One sites and I suspect it is the methodology that we have accepted as we write and as others write for the Round Two sites. So when we look at how to reduce the risks, we look at where we position the sites, we look at the markings which go on the sites, we look at telling other seafarers where those sites are, we look at things like exclusion zones, which in themselves do not actually reduce the risk, but highlight that there is something there which is a potential danger, and those kind of elements tend to bring down the risk and reduce it to “as low as reasonably practicable.”

**Q152 Mr Stringer:** Listening to the earlier witnesses who were practitioners, I got the impression, when they were talking about one in 10% of foreign vessels having problems and having to be looked at when they got in port, that they, as practical and experienced people, saw the risks of collision as much higher than one potentially taking place every several thousand years and, when you look at ships bumping into oil rigs, the real experience is that, so what is the risk divergence? I understand you are talking about methodology, and I want to say that you have gone through a very good methodology that is accepted, but at the end of the day you come out with an answer which does not seem to bear with the experience of practitioners or with the practical experience in the North Sea. Why is there a difference?

**Captain Frampton:** Well, I think that to some extent it is a perception, the perception being that the ships that are detained by ports for inspection in the UK

are probably in the region of about 10%, so one in 10. Most of the detentions and the reasons for the detentions are relatively minor and something which is often fixed in a few hours before the vessel goes on its way. You also have to be a little bit careful how you quantify or how you criticise foreign seafarers. There is a relatively level playing field of minimum qualifications that all seafarers have to have and those are set by the STCW<sup>4</sup>, an international convention on the quality of seafarers, but there are internationally accepted criteria to which all navigating officers would have to be qualified before they are allowed to go to sea. Therefore, there is a minimum level of qualifications and I will say that yes, British seafarers tend to be better qualified than the minimum, but you should not get the impression that everybody driving ships out there is incompetent or has no experience because that would be untrue.

**Q153 Mr Stringer:** No, I was not saying that. Who should bear the costs of reducing this? If you talk about oil rigs which have people on them and these wind farms are not going to have people on them, should your members be prepared to provide guardships and should your members pay for that?

**Captain Frampton:** I think that is probably not one for me, but for the actual developers.

**Mr Hastings:** Yes, I will take that one. The basic normal process in terms of developing a wind farm and getting it to consent is to take into consideration stakeholders’ consent, so in order for us to get consent to a project, there is a requirement, for example, to have a guardship in the vicinity of the wind farm and the cost of that would be to the wind farm developer. Whether he would then still choose to build his wind farm, because now the additional incremental cost of having a safeguarding ship there has actually made the wind farm non-economic, is a decision for the developer at that stage and there is every potential that the wind farm may not be built if there is a significant incremental cost relating to allaying the concerns of the stakeholders.

**Q154 Mr Stringer:** Do you think there should be a complete 100% exclusion zone around a wind farm?

**Mr Hastings:** That is probably unnecessary, but again maybe we should.

**Q155 Chairman:** Very briefly, Captain Frampton, do we need exclusion zones around every wind farm? It is fairly straightforward—yes or no?

**Captain Frampton:** No.

**Q156 Miss McIntosh:** Mr Hastings, is the cost of wind farms offshore, the construction of wind farms and the maintenance of them, higher or lower than the construction of wind farms on land?

**Mr Hastings:** On a relative basis, they are slightly higher.

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<sup>4</sup> *Note by witness:* The International Convention on Standards of Training, Certification and Watchkeeping for Seafarers.

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**Q157 Miss McIntosh:** Can you give us an indication—50% higher, 20%?

**Mr Hastings:** Again it depends on specifics, but it could be something in the region of the incremental capital cost and if you are looking at the cost per megawatt of generated capacity and you do a like-for-like comparison on that basis, the offshore construction costs would be probably something between 10 to 25% higher than they would be onshore.

**Q158 Miss McIntosh:** The Minister has told me in a written answer that it is £2.1 million to connect one onshore wind farm to the Grid by way of a subsidy, which Mr Stringer was talking about. The subsidy to an offshore wind farm, is it going to be higher or lower than that £2.1 million?

**Mr Hastings:** As it currently stands, it would be the same.

**Q159 Miss McIntosh:** How can that be because presumably the infrastructure would be greater to link it?

**Mr Hastings:** The actual electrical connection costs?

**Q160 Miss McIntosh:** I am talking about transporting the electricity from a wind farm which is some miles at sea on to the land before it can connect to the Grid, so is it going to be higher?

**Mr Hastings:** Again if you compare it to an onshore wind farm or an onshore generation facility of any type, it depends on where that location is relative to the Grid into which it will be connecting, and you could have a situation where that generating plant is the same distance from the Grid as the offshore wind farm is from the Grid connection points, so in those cases they would be similar. It depends on the geometry, if you like, and the—

**Q161 Chairman:** How do you, Mr Hastings, assess the economic possibilities of building a wind farm at sea if there are so many variables? I am not a businesswoman, but there must obviously be a way of doing it.

**Mr Hastings:** Madam Chair, there are a lot of people spending a lot of time working on those very issues and there is a degree of experience from oil and gas construction which has come through and on the other side of it there is quite a substantial amount of experience from onshore wind farm construction and generating farm construction, so this has been pulled together.

**Q162 Chairman:** So to take oil and gas zones, which are completely different and the physical proportions are certainly of a different size, and you take wind farms on land which are materially different from wind farms at sea, you use those as the basis of the figures with which you assess what you are going to do with a wind farm at sea?

**Mr Hastings:** In fact the construction techniques you use to construct an offshore oil and gas structure are not very different at all from the same construction techniques you would use to construct a wind turbine, so materially there is no real

difference with regard to engineering technology. There is an applications difference and that is very specific and it is very technical and it is down to the loadings which are coming through from the actual turbines themselves. With regard to the generating equipment itself, that is the wind turbine which stands on top of a tower, for example, that is not materially different from something which you find onshore.

**Clive Efford:** I was going to ask how it is that we came to be where we are with the maritime industry being so upset with the proposals. For instance, the Government want to build a lot of houses in the south-east of England, but I do not expect them to want to build them on the M25.

**Chairman:** You never know!

**Q163 Clive Efford:** I realise that is a giant leap of faith that I just made, but I suspect I might be right! That seems to have been what we have done in terms of shipping, so how have we got to this point?

**Dr Edge:** At the outset of this, I would point out that I am an even more recent direct participant to the wind industry than Mr Hastings, but I would say how we have come to this is the fact that in siting a wind farm, there are a lot of variables involved of which transport and shipping is obviously a big one, but it is not the only one, so in the process of choosing which sites to take, you would have regard to shipping, as Rob was saying earlier, but it would not be the only issue. Therefore, there might be a case where you would find a site which was very good for all of the reasons apart from shipping and you would say, “I would like to look at that one. Can we accommodate the shipping within that?” Now, we may argue that there has not been the correct consultation at the correct stage, but I think the major difficulty comes from the fact that it is actually a multi-variable choice which you have to make when you are sitting there, saying, “Where am I going to put a wind farm?”

**Q164 Chairman:** Mind you, a great container ship stuck right between two wind farms is quite a big variable really, is it not?

**Dr Edge:** It is a big variable.

**Q165 Chairman:** Especially if it happens on Christmas Day, for example.

**Dr Edge:** If you are referring to the one which sank, surely that—

**Q166 Chairman:** I did not know there was a specific one! Yes, tell me about the one which sank.

**Dr Edge:** I was just referring to that one full of cars which sank in the English Channel.

**Chairman:** Yes, the one which even with the buoys on everybody ran into it. Well, we can have great confidence from that as an example, can we not!

**Q167 Clive Efford:** Do you believe there should be any changes to the Energy Bill?

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**Dr Edge:** We are pretty happy with the Energy Bill as it stands. We have had reference to clauses 100 and 101 which our friends from the shipping industry were keen to keep. We would like to see those deleted.

**Q168 Chairman:** Why?

**Dr Edge:** We feel that that is an unnecessary emphasis on the shipping industry. As part of the overall Environmental Impact Assessment, it is one of the aspects which is included and to put these rather general clauses within the Bill would give it a special position within that and whilst it is a very important aspect, as I have said before, it is one of many and it is fully included in the environmental impact process.

**Q169 Clive Efford:** Given the problems we have had described to us today from the maritime industry, do you think adequate consideration has been given to their views at any stage in this process?

**Dr Edge:** I think consideration of their views has been given. We may argue as to whether it is adequate, but I think it is a very early stage in developing the process of developing wind offshore. We are all learning as we are going along. We would clearly like to avoid conflict with the maritime industry, if at all possible, but at the moment we are trying to find a way through a maze of different competing interests offshore of which transport is one.

**Q170 Clive Efford:** Without getting too technical and taking up too much time basically because I am sure Madam Chair would stop me from doing that, but what are the key factors that you consider when you decide on a suitable location? For instance, how did the DTI come to throw this net around these particular areas? Who advised them about that?

**Dr Edge:** Well, these particular areas are areas of relatively shallow water depth which is quite an important thing because the deeper it goes, the more expensive your foundations become, so that is one consideration. Another consideration would be wildlife, birds, what is in the sea, the seabed, there would be marine mammals and cetaceans, and then shipping would be another one of those. There is a large list of potential conflicting stakeholders you have to look at.

**Q171 Clive Efford:** But is our understanding of all of those issues adequate, for instance, that of the seabed?

**Dr Edge:** It is work in progress and one of the things about developing wind farms offshore is that we are actually learning a lot about the offshore environment which we would not otherwise know.

**Chairman:** I do hope you will learn it soon!

**Q172 Mr Randall:** Are you aware that the Government might be considering legislation on the marine environment? Would you welcome it?

**Dr Edge:** What kind of legislation are you referring to?

**Q173 Mr Randall:** That certain areas should be conserved and should not have any development on them.

**Dr Edge:** If you are referring to specially protected areas under the EU Habitats Directive, that will come anyway because the Directive is law.

**Q174 Mr Randall:** No, I think they are looking at wider marine environment legislation. I think one of our sister committees was looking at it. Would that be helpful? You are talking about the environment.

**Dr Edge:** We would welcome any clarification of the environmental issues that are involved in offshore wind farm development, and whether that is in the form of legislation or—

**Q175 Mr Randall:** So your members would not be thinking that it was best to get on with these things quickly before any legislation comes in?

**Dr Edge:** They are being pushed by timetables other than that.

**Q176 Mr Randall:** What other timetables are they being pushed by?

**Dr Edge:** Well, they have their own commercial concerns. They feel an economic driver from the renewable obligation, and the earlier they get their wind farms in, the better and the more income they will receive for them.

**Q177 Mr Randall:** So economic really is the driver?

**Dr Edge:** There is a primary economic driver. We are not going to be sorry for the fact that the people who are developing these wind farms are commercial organisations. We do not see why we should apologise for that.

**Q178 Mr Randall:** No, but that obviously is always a consideration, so some of these other things you have been talking about might not get the type of consideration which perhaps other people think they ought to have.

**Mr Hastings:** As a developer, I can assure you that it is quite difficult for us to proceed on almost any development and move it into the consenting process without giving due consideration to all the stakeholders involved in that process and that means everybody generally. It is inconceivable because there is a precautionary principle applied to these sort of situations in moving forward to consent, so in the case where there is uncertainty that there has not been sufficient stakeholder dialogue, unfortunately that would work against a developer, not for it. There is a very strong safeguard position there.

**Q179 Mr Randall:** Do you feel confident that we have the technical expertise to know exactly what the effects of wind farms of the order you are talking about would have on radar, for example? Have you done any research on that?

**Mr Hastings:** Well, there is empirical evidence to show what some of that effect is already because there are wind farms built and they are operating in

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radar environments, and then there are a lot of studies and research in progress right now to understand what those effects are.

**Q180 Mr Randall:** At this time do you think you have sufficient evidence or not or are you waiting for this other research to come in?

**Mr Hastings:** As a developer, we would be pretty certain that there would be sufficient evidence to support any technical proposals that we are putting forward. Literally, we would not be able to proceed without that support.

**Q181 Mr Randall:** So you have got it, you are happy?

**Mr Hastings:** We are happy that the right progress has been made at a sufficient rate which will give us the expectation of finding the technical solutions which will be necessary.

**Q182 Mr Randall:** So you are happy that the result of all this research will come out with the answer you want?

**Mr Hastings:** Yes, there is a reasonable expectation of that.

**Chairman:** Gentlemen, you have been very patient. We are very grateful to you, thank you very much.

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*Witnesses:* **Mr Richard Mellish**, Director, Electricity Consents, and **Ms Cathy Allen**, Energy Bill Policy Manager, Department of Trade and Industry; and **Mr Brian Wadsworth**, Director of Logistics and Maritime Transport, Department for Transport, examined.

**Q183 Chairman:** Good afternoon. I apologise for keeping you waiting, but it is a very interesting subject and I am sure that you have enjoyed listening to our witnesses. Can I ask you please, first, to identify yourselves?

**Mr Mellish:** Richard Mellish, Director for Electricity Consents at the Department of Trade and Industry.

**Ms Allen:** I am Cathy Allen, also from the Department of Trade and Industry, responsible for the offshore renewable energy zones part of the Energy Bill.

**Mr Wadsworth:** Brian Wadsworth, Director of Logistics and Maritime Transport at the Department for Transport.

**Q184 Chairman:** I am assuming that you will not have a little dissertation to give us and you are quite happy to go straight to questions or did you want to say something, Mr Wadsworth?

**Mr Wadsworth:** I would very briefly like to stress and draw attention to the undertaking which was repeated in the memorandum of evidence, which we have submitted, which Ministers have given, that the Government is committed to ensuring that the impacts of these developments will be minimised and that development will proceed in a controlled and proportionate manner. Moreover, marine safety is of paramount importance and projects which present a danger to navigation will not be allowed to proceed. That is an assurance which Ministers have given here and in writing to the industry.

**Q185 Chairman:** Thank you. I think we could hope that that sort of undertaking would be almost written in. We would not expect Ministers to say that they would do something which was purposely damaging to the shipping industry. However, you will have heard some of our witnesses who made it very clear that they think that they were not consulted in depth, they certainly were not consulted early enough and they are very concerned about the fact that legislation appears to be going ahead without the minor safeguards which they would regard as essential. Is that fair?

**Mr Wadsworth:** Madam Chair, I think it would be perhaps helpful at this point if I could ask Richard to give a brief account of the procedure which the Government has set in place for these developments and how the process of consultation fits into that procedure, and I will be very happy to explain how the Department for Transport has fitted into that process up to now and the representations which we have made.

**Q186 Chairman:** Procedure, Mr Mellish?

**Mr Mellish:** The first step in the process was the public consultation through the *Future Offshore* consultation document. That then led through to the Strategic Environmental Assessment which was conducted by the Department of Trade and Industry in consultation with the steering group which consisted of members from the various different government bodies and agencies. There was consultation on the Environmental Report which emerged from the Strategic Environmental Assessment and that Environmental Report included some information on shipping densities and issues that developers should take into account in considering where to choose sites within three strategic areas which were the subject of the Strategic Environmental Assessment. Then there were two more phases. The third phase was the Crown Estate inviting, in the summer of last year, bids from developers for the development of sites within the three strategic areas and there was some limited consultation, and I can explain why it was limited, within the process of inviting bids for sites. We are now moving into the stage where the site leases have been awarded and there will be the extensive Environmental Impact Assessment work in consultation with all stakeholders by developers on that over the next several years.

**Q187 Chairman:** Were the DfT and the Marine Agency included in the Strategic Environmental Assessment steering group?

**Mr Mellish:** No, but there were separate dialogues with them on issues around navigation to do with the Strategic Environmental Assessment.

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**Q188 Chairman:** So they were not part of the steering group, but after you had done something in the steering group, you then consulted the people who have responsibility for shipping?

**Mr Mellish:** Well, the comments were taken on board, as I say, on information on shipping density which was considered within the Strategic Environmental Assessment and published as part of the output of that SEA process.

**Q189 Mr Stevenson:** Could you be a little more specific, Mr Mellish, because you have may have been in the room when we took evidence from one group about the almost complete lack of consultation? Trinity House, the Chamber of Shipping, the UK Major Ports Group and NUMAST were all questioned on Round Two and they were very critical of the lack of consultation. Could you be a bit more specific as to when direct consultation took place with those organisations?

**Mr Mellish:** A number of shipping bodies will have responded to the consultation document that I mentioned, *Future Offshore*. There were certainly inputs made on the Environmental Report and there was an opportunity to comment on that. There were always issues of course, which I fully recognise, for all of these bodies in commenting given the lack of information on which particular sites we were looking at, and we were looking at very big strategic areas. I am conscious that particularly with Round Two there was a concern that there was not full consultation other than with the Department for Transport who, in turn, consulted the Maritime and Coastguard Agency on the 40 bids we received for Round Two projects and the process of screening them to whittle them down to the 15 where site leases were awarded.

**Q190 Mr Stevenson:** I understand the strategic nature of Round Two, but I find it difficult, looking at Round One, to equate that with the strategic nature of Round Two. We are talking about completely different sites, bigger sites. Therefore, I am referring to Round One, in particular, and I need to ask you the question again, I am afraid. When specifically was consultation directly undertaken with those organisations I have referred to?

**Mr Mellish:** Well, because it was not undertaken through the strategic process, the sites were all around the coast and the emphasis was on developers having consultations on their site proposals with the various interested bodies.

**Q191 Mr Stevenson:** And do you know whether developers did that?

**Mr Wadsworth:** Could I perhaps offer an answer. In respect of the MCA, the MCA indeed did make a number of objections to various aspects of Round One applications on safety of navigation grounds, but the issues were resolved through discussion and negotiation between the MCA and the developers with the result that the MCA's objections were withdrawn.

**Q192 Mr Stevenson:** Yes, that is fine, that is very helpful, but I need to repeat my question because I did not ask about the MCA, I asked about Trinity House, the Chamber of Shipping, the UK Major Ports Group and NUMAST. Now, I am fully prepared to accept that the MCA accepted it because it is a significant issue for them, but for the third time I need to ask my question again. When specifically were these organisations consulted directly in Round One?

**Mr Mellish:** I cannot give you an answer to that without further research.

**Q193 Mr Stevenson:** Would you just care to check and let us know?

**Mr Mellish:** Yes.

**Q194 Mr Stevenson:** Round Two, if I can move on to that, took place, we understand, last year, 2003. The closing date for MCA consultation on navigational safety issues, because that is what we are talking about, is 8 June 2004. In other words, the bidding took place last year and consultation with the MCA on navigational issues does not close until June of this year. It is back to front, is it not?

**Mr Mellish:** Well, the MCA guidance is actually a consolidation of existing freestanding guidance which they formalised into a guidance note, so it does not actually contain new advice, at least, as far as I understand it, not any substantive new advice and it is actually consolidating what has already been issued.

**Q195 Mr Stevenson:** Are you in a position, following my earlier questions, to give the Committee any undertaking about consultation with Trinity House, the Chamber of Shipping, UK Major Ports Group and NUMAST on Round Two? If you are able to give us some assurances on that, when will it take place?

**Mr Wadsworth:** There were, as has been described, various opportunities for consultation in Round Two. The first that I am aware of was the publication of the *Future Offshore* consultation document to which the MCA and certainly the Chamber of Shipping responded at the time. I have not seen any submission by Trinity House, though they may well have responded. The second was the Environmental Report which followed from the Strategic Environmental Assessment and I have seen that the MCA responded towards the end of May last year to that and so did Trinity House. There was an opportunity, a more restricted opportunity, for the Department to make representations in advance of the tender panel which looked at the 40 bids which had been received and decided which to take forward to a subsequent process, and the Department made representations on navigational safety issues in advance of that tender panel meeting and that took place on 24 November 2003.

**Q196 Mr Stevenson:** You see, if this consultation is meaningful, I must say, I will have to read your evidence afterwards to know.

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**Mr Wadsworth:** Of course.

**Q197 Mr Stevenson:** You see, we took evidence earlier on from experienced practitioners and people and we were advised that, for example, the Humber sites are smack in the middle of the M1 of the Humber, that estuary and its approaches. Do you accept that at all?

**Mr Mellish:** I think it is possibly Cromer that was being referred to.

**Q198 Mr Stevenson:** Well, I think our evidence referred to the Humber.

**Mr Mellish:** However, as a general point, clearly from a Department of Trade and Industry perspective, we do not have expertise in all the areas and impacts which will arise with any wind farm, so we will look to the expert bodies, particularly statutory bodies, to advise us. In that case, as Mr Wadsworth just said, we did not have any, of the twelve wind farms which have been consented to so far, which had objections from the Maritime and Coastguard Agency, but clearly we will be heavily reliant on the input we get from the MCA and the Department for Transport.

**Q199 Mr Stevenson:** So if it turns out to be stuck in the middle of the M1, the shipping lane, that is not a very appropriate place presumably?

**Mr Mellish:** No, but clearly a lot of the comments which we received from the MCA and from the Department for Transport about the proposed Round Two sites were taken into account and I think you will find, when you study the maps which are part of the Department for Transport consultation paper, that most, not all, but most of them are very carefully placed to avoid a major shipping lane.

**Mr Stevenson:** Would it not be more appropriate, given the concerns which have been expressed, for government departments to identify sites that minimise or ideally remove navigational and operational risks and then ask developers to bid rather than identifying whole areas of our coastline and saying, "Look, this is an area. Go and bid in it"? Would it not be better if you did the former rather than the latter?

**Q200 Chairman:** Policy, Mr Wadsworth?

**Mr Wadsworth:** Yes, Madam Chairman, I will answer that. As has been said by the previous witnesses, there are a number of factors influencing the determination of the siting of these facilities. Shipping and navigational safety is certainly one and an extremely important one. There are other factors, such as the seabed depth, the nature of the seabed, the environmental conditions on the site, the impact potentially on birds, the impact on visual intrusion and other public concerns, and proximity to connections to the electricity Grid, I think, is another quite important factor, so there are many financial, social and economic factors which are being weighed in the balance, and I think an attempt has been made to avoid identifying sites, as far as possible, which have serious potential impacts on

shipping movement. However, where concerns remain about sites, the process which we are now engaged in, which the Department of Trade and Industry is now engaged in, allows for a further process of negotiation and, if necessary, adjustment to these proposals which moves forward over the next twelve months and beyond.

**Q201 Chairman:** Mr Wadsworth, I am not terribly clear on this and it is probably that I just do not understand what you have said, but you gave the impression that in Round One you talked to the MCA, you resolved a lot of problems and you agreed the sites, but when you look at the Crown Estate map, it makes it very clear that the original Round One sites were quite small. Presumably some of the objections which were raised were to do with the problems which we are discussing, yet the Round Two groups are not only in the same areas and in some cases in slightly more difficult positions in regard to the shipping lanes, but they are much, much bigger. Therefore, if I object in Round One to your putting something quite small in a shipping lane or too close to a shipping lane, would it not seem at least possible that you might consider that before you offered a larger site in the same area?

**Mr Wadsworth:** Well, all I can say is that I think this is one of the factors which was considered apparently, but—

**Q202 Chairman:** It was considered because all of these are very busy, as we know, because the map of shipping lanes in this document is very plain and makes it very clear that they are very, very busy shipping lanes and yet Round Two are all an extension of the existing and they are, almost without exception, in areas where there are shipping lanes, where there are already estuaries.

**Mr Wadsworth:** Perhaps my colleague from the DTI could say a bit more about why attention gravitated towards these particular areas in terms of the leases which were offered by the Crown Estate.

**Mr Mellish:** I think it is for the reason which the British Wind Energy Association pointed to when they gave evidence, which is that certain areas around the coast lend themselves to wind energy development because possibly there is shallow water, because there are strong winds there, because of the connection potential to the Grid.

**Q203 Chairman:** But if you rely on the DfT and the MCA for advice, because obviously that is how you reached your agreement in Round Two, why were they not on your steering group for your second round?

**Mr Mellish:** I think certainly that is one option that we could consider, so—

**Q204 Chairman:** Well, now you may consider it, Mr Mellish, because I have been ignorant enough to raise it with you. Could it not have been thought of a little earlier?

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**Mr Mellish:** I think there will be practicalities around the composition of the steering group being too large to cover such a diverse range of interests which could arise, but I think it is a legitimate point.

**Q205 Chairman:** Too large?

**Mr Mellish:** I just wanted to say that in terms of whether we should be choosing sites and then offering those to developers, that is certainly a possibility. I think that we could move more work into the front end of the consideration of where sites should be chosen by developers, so that would be another option, giving more information on which areas of the sea to avoid for all sorts of different reasons. I think there would be concerns about us trying to duplicate some of the skills which exist within the wind industry and are beginning to be developed there in terms of understanding the engineering required offshore when the site selection is chosen and there might also be concerns about the extent to which, if we were so closely associated with particular sites, we could actually objectively exercise our consent responsibilities in considering whether developers should be given permission to proceed.

**Chairman:** That is an interesting aspect.

**Q206 Miss McIntosh:** In trying in the Department to reach a balance between the economic interests of the ship-owners or maritime interests as opposed to the developers who were trying to meet the Government's own renewable targets, do you not feel that the Department has come down far too readily in favour of the developers of renewable energy?

**Mr Mellish:** I do not think so because I think a lot of the concerns have arisen because of the scale of Round Two now that people are beginning to realise how much bigger the proposals are which are coming through. For the things which we have actually consented to in Round One, as we have already established, there were no MCA objections and I do not think, other than the one where there was a query, that there have been significant navigational concerns. Now, in terms of our deciding on the balance of interests and concerns, we are now coming into that point with the start of that process with these much bigger Round Two developments and certainly we would, as Mr Wadsworth has said, not be consenting to any development which would be a danger to navigation, so that is something which developers will need to take into account in thinking about things like whether their sites need to be adjusted.

**Q207 Miss McIntosh:** So we have a categorical assurance from both departments that if there was a conflict between a location in shallow water with strong winds of a proposed wind farm, but it was a danger to shipping, the consent would not be given?

**Mr Mellish:** Clearly if there was any suggestion by any person raising an objection to a proposal, we would consult the MCA and the Department for Transport on whether they saw that actually as a

danger and if they confirmed that, I would be very surprised if we went ahead with a proposal with that as a backdrop.

**Q208 Miss McIntosh:** We appear to be in the position now where there is potential consensus behind clauses 100 and 101 or clauses 99 and 100 whereby the safety of navigation being free from the cumulative effects or hazards from wind farms has been recognised. Why has the Department written to the various shipping interests to say that they wish to strike those two clauses from the Bill?

**Ms Allen:** As far as I understand it, we have not made a public statement on what we intend to do with these two clauses in the Energy Bill. To be very brief, our line would be that they should not be taken out of the Bill, but we will need to adjust them to make sure that they work in practical terms.

**Chairman:** I think that actually starts some very interesting questions. Do not go away because we will be back!

*The Committee suspended from 5.29 pm to 5.36 pm for a division in the House*

**Q209 Miss McIntosh:** In response to Cathy Allen's response to me, can I be clear in which particular regard the Department does not accept clauses 100 and 101 in their present form?

**Ms Allen:** We have not done a detailed analysis yet, but we will not change the principle of what is in here; it is just to make them practically workable as provisions. For example, clause 100 is rather vague.

**Q210 Chairman:** What is it in that which you do not want to have?

**Ms Allen:** Well, that wording just replicates the wording which is in the UN Convention on the Law of the Sea and, as it stands, it is quite vague. We think it might be better if it says something like, "The Secretary of State may not permit the establishment of . . ." blah, blah, blah, so it places the onus on the Secretary of State rather than the rather vague wording that is there which does not specify who is going to make a decision.

**Q211 Chairman:** But it would, nevertheless, not deviate from the safety zones around them and the installations may not be established where interference may be caused, which is the essential bit?

**Ms Allen:** No.

**Q212 Miss McIntosh:** Would the Secretary of State have the power on the face of the Bill to do this or would it be by regulations which Parliament could not consider?

**Ms Allen:** Well, as I say, we have not made a detailed analysis. We need to do that with parliamentary counsel and with our legal advisers.

**Q213 Miss McIntosh:** And with regard to the other clause?



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*Ms Allen:* Again we do not see that there is any problem in principle with what is there, but we will want to look at the practical way in which the clause will operate.

**Q214 Chairman:** What do you mean by that, Ms Allen?

*Ms Allen:* Well, there are two different processes involved in this clause. There is the assessment of the installation, which is done within the consents process, and there is the assessment of the safety zone, which is the provision in this Bill, so it may be the case that we have to split off those two elements to make the provision work effectively. It is those kind of very detailed analyses of how the clause will work in practice which we are concerned with rather than the principle which is then—

**Q215 Chairman:** Why did parliamentary draftsmen not pick it up in their consultations with you when the legislation was being written?

*Ms Allen:* These are amendments which were introduced in the passage of the Bill through the House of Lords.

**Q216 Chairman:** I see, so your objection is not that they are things which you yourselves have drafted which you now think should be differently dealt with?

*Ms Allen:* They are Opposition amendments which were introduced at, I cannot remember whether it was Report Stage or Third Reading, Report, I think.

**Chairman:** Well, we cannot automatically rule them out just for that reason.

**Q217 Miss McIntosh:** I understand you are not a parliamentary draftsman and neither am I, but my understanding is that if clause 100 is watered down, it is the only reference to safety zone and recognition of cumulative effects of wind farms in the Bill and that is why it is such an important clause, and it does appear to be a compromise around which the industry is united.

*Ms Allen:* Which clause?

**Miss McIntosh:** The second one of the two. In the version we have, it is 100, but it is the second one of the two referred to.

**Q218 Chairman:** It is 101.

*Ms Allen:* Well, we have taken the view from the outset that it is not necessary to provide, in general terms, for the safety of navigation in the Bill because we are employing the principle that we only legislate within the Bill for what is absolutely necessary and cumulative impact is something which developers have to take into account already under the Environmental Impact Assessment Regulations not only of wind farms on the safety of navigation, but on the whole range of issues which people have already mentioned, the environment in the narrow sense, visual impact, et cetera, et cetera.

**Q219 Miss McIntosh:** But it was deemed by the industry that this was a grave and serious omission from the original draft Bill.

*Ms Allen:* Yes.

**Q220 Miss McIntosh:** It would appear that all the industry does feel certainly that the Department for Transport did not perhaps perform the rigorous consultation exercise which it usually would and they do appear to be united around this form of words.

*Ms Allen:* Well, I have said it is not our intention that that clause should be removed from the Bill and it is not our intention that it should be watered down, but it is just our intention that we want to look at it to make sure that it works in practice.

**Chairman:** Well, that is a unique idea in relation to legislation, is it not, Ms Allen? If it works in practice, that should rule it out already!

**Q221 Mr Stevenson:** The first clause which is referred to about installations in territorial waters and renewable energy zones talks about, “safety zones may not be established where interference may be caused to the use of recognised sea lanes essential to international navigation”. You yourself, Ms Allen, talked about the UN Convention on the Law of the Sea which of course refers to the UK being free under that Convention to establish wind farms, so that is provided they do not cause interference with recognised sea lanes essential to international navigation. That being the case, is there a definitive map of what are recognised sea lanes essential to international navigation?

*Mr Wadsworth:* No, is the answer. There is no formal definition of what is a recognised sea lane for international navigation.

**Q222 Mr Stevenson:** If that is the case, how can government departments take into account the requirements under the Convention on the Law of the Sea or indeed the requirements of these clauses that were introduced in the House of Lords and suitably change them to make them practical if there is not any definition as to what is a recognised sea lane essential to international navigation? How can that be?

*Mr Wadsworth:* The answer is that it is customary to consult the International Maritime Organisation to establish that there are no international objections to a proposal.

**Q223 Mr Stevenson:** There is no document or documents which identify where the sea lanes ought to be, could we have a situation where, if the IMO did not object, a wind farm could be established that could conflict with our obligations under the United Nations Convention on the North Sea?

*Mr Wadsworth:* I would say that the position is that international bodies have accepted that obstructions may be created outside territorial waters, that is what Clause 60 is actually about, it gives consent to do that subject to certain conditions, one of those conditions is that it should not interfere with recognised sea lanes essential to our international navigation. The difficulty is that condition has not been defined therefore the only test which one can apply to establish whether one has met the

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requirement or not is to, as I understand it, consult the International Maritime Organisation to establish that the measures which are proposed together with any re-routing measures, any hazard protection measures which may be put in place to protect the obstruction or structure would not be objected to.

**Chairman:** That is what you intend to do?

**Q224 Mr Stevenson:** Mr Wadsworth, if you can help us, please, was there consultation with the IMO during Round One and was it done before the sites were established last summer for Round Two?

**Mr Wadsworth:** It has not been done up to now for Round Two because we do not have a definitive set of propositions on which we can consult the IMO. For Round One I am afraid I do not know the answer to that question.

**Q225 Mr Stevenson:** Will you let us now please?

**Mr Wadsworth:** I will certainly let you know.

**Ms Allen:** Round One sites were all within territorial waters.

**Chairman:** You did not have to consult.

**Mr Stevenson:** You would not have to consult.

**Q226 Chairman:** There is a material difference in Round Two.

**Mr Wadsworth:** Yes.

**Mr Stevenson:** Thank you.

**Q227 Chairman:** You would definitely consult on that basis.

**Mr Wadsworth:** Sorry?

**Q228 Chairman:** You would definitely consult in Round Two for that reason.

**Mr Wadsworth:** Yes, we need to set up a process whereby we ascertain whether or not there are objections internationally to what is proposed.

**Q229 Clive Efford:** How did you determine these areas in which you were inviting tenders? You made reference to it earlier on, what priorities did you set for setting boundaries for these areas?

**Mr Mellish:** There was various data available on wind resource in the waters round the United Kingdom, there were various expressions of interest in having sites in particular areas from developers and there are various bits of information available where the shallow waters are, which are most suitable to the wind farms. That information was assembled and, as you will see, there are some fairly large areas, three large strategic areas selected as being the most promising in terms of wind energy potential.

**Q230 Clive Efford:** The developers had already made an assessment of these areas, they had an idea where they wanted to develop before you set up the tender?

**Mr Mellish:** That was some of the process. We have also undertaken since then a marine atlas mapping study which analyses further the renewable energy potential round the United Kingdom, not just wind

energy but also wave and tidal. There was various existing information and the latest study pulls a lot of that together.

**Q231 Clive Efford:** The Chairman asked you about this earlier on, the information you gathered during Round One did it influence in any way your decision in Round Two?

**Mr Mellish:** There would have been some learning of course. In fact, as we already heard, only Round One wind farming is generating so far, there would have been learning mainly round the process of consents. I think one of the things which has improved and is improving still with Round Two is the process of dialogue, the identification of stakeholders and the whole issue of communication and sharing information. There will always be information which will only emerge when you look at the individual site.

**Q232 Clive Efford:** I see. At this tender meeting on 24 November you made representations at that meeting on behalf of the maritime industry as a result of consultation which had been taking place, were you satisfied with the outcome of that meeting? Was the department satisfied?

**Mr Wadsworth:** That is not quite what I said or not quite what I meant to say, the Department sent written representation on that data to the people who were involved in the tender panel, the Department was not part of the tender panel.

**Q233 Clive Efford:** I see. Thank you for correcting me. Was the Department satisfied with the outcome of that meeting given that you had made those representations, even in writing?

**Mr Wadsworth:** A significant number of changes were made to the proposals which were being offered for lease as a consequence of the tender panel meeting. We continued to have some concerns about some of the sites which are being taken forward to the next round, which we have made clear in discussions with our colleagues in the DTI and in writing.

**Q234 Clive Efford:** The short answer is probably yes. There are issues that still need to be taken on board in relation to the maritime industry?

**Mr Wadsworth:** Certainly. We continue to have concerns that the detailed navigational safety issues need to be examined in relation to the precise design and situation of some of the Round Two sites. As has been explained earlier, there is a process whereby the licence holders of these sites between I think September and December of this year may apply for permission to change the position of their planned generating arrays, and that is the process by which we envisage, which we hope the navigational safety concerns can be addressed.

**Q235 Clive Efford:** Those concerns are round the cost to the industry and also potential risk?

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**Mr Wadsworth:** Indeed so, yes.

**Q236 Clive Efford:** Have we any assessment of the cost to the industry for addressing those risks or who should pay?

**Mr Wadsworth:** The position is that the developer of the facility is required to pay for certain types of mitigating measures, such as the provision of navigational safety aids, buoys, lights or whatever may be required of that kind, that cost will fall on the wind farm promoter. I do not have any detailed assessment of the potential cost impact to the industry of measures which may be required in order to accommodate certain of these wind farm arrays simply because I do not think we have yet achieved that level of detailed analysis of any of the proposals.

**Q237 Clive Efford:** Reference was made earlier on by one of our witnesses to the need for scientific studies to be made of the technical problems which may be caused by wind farms, is that something that is going to happen?

**Mr Wadsworth:** Yes, with we are now proposing to take forward very quickly a study of the issue of potential possible interference with electronic navigation.

**Q238 Chairman:** Who will do that?

**Mr Wadsworth:** Do you mean who as a contractor?

**Q239 Chairman:** How will you write the terms of reference?

**Mr Wadsworth:** It is part of our current consultation with the industry and we are seeking to do this with the industry on how that research requirement should be framed. That consultation has gone out very widely and it closes very soon.

**Q240 Chairman:** How soon is very soon, let us not be coy?

**Mr Wadsworth:** The consultation closes at the end of this month, 30 April. We have already received a few responses, but only a few as yet.

**Q241 Chairman:** Why did you do it so late?

**Mr Wadsworth:** This is quite an extensive process and what has happened is that the tender panel weeded down a large number of proposals—I believe there were something like 40 proposals—to 15.

**Q242 Chairman:** To 15. With respect, the effect of the interference would be the same whether there were—

**Mr Wadsworth:** Yes, I am sorry, I understand your point. In order to assess whether there is an effect and if so what it is on the interference with electronic navigational aids we actually need to do some live testing. Some of that live testing has been done by promoters in Round One wind farms and modelling in connection with their proposals. We are proposing to use the single array which is currently operating, at North Hoyle I believe it is called, as our

test bed to carry out the research we are now proposing to conduct into the scope of potential problems in this area.

**Chairman:** I am sorry I did not mean to interrupt.

**Q243 Clive Efford:** I was going to go on to ask whether the assessments of risk are sufficiently robust given that we have had three collisions between oil or gas installations since 1975. I understand we are predicting these much bigger installations are assessed to be as rare as one in several thousand, how have we come to that conclusion given we have had those three incidents in the past 25 years?

**Mr Wadsworth:** I have not come to such a conclusion myself. I think you may be quoting figures from another source, I do not believe they are the Department's figures, at least I do not immediately recognise those.

**Q244 Clive Efford:** It is the navigational risk assessment of the Burbo Bank Wind Farm which suggests the risk of a power ship colliding with a wind farm is one collision in 267,000 years. It seems astonishing.

**Mr Wadsworth:** It seems a very remote risk. I am guessing now because I am not familiar with the details of this, it may possibly have something to do with the location of that particular facility.

**Q245 Clive Efford:** Are you satisfied that the risk assessment you have made is sufficient?

**Mr Wadsworth:** No, not at all. In fact the Department has made it clear through its representations that there needs to be a very thorough risk assessment carried out of the collision hazard as posed by these Round Two structures and that risk assessment needs to be carried out with the latest available data, which is one of the problems that one confronts in this area, the data which is available may not necessarily reflect the latest position on shipping unless it is very recent. There needs to be an up-to-date survey of shipping movements through these areas in order to prepare a proper risk assessment.

**Q246 Clive Efford:** Mr Mellish, what do the DTI intend to do in terms of taking on board those rather alarming answers to those questions on the issue of risk?

**Mr Mellish:** As the information starts to emerge on the individual proposals under Round Two and at whatever point we get the consent application coming in we need to consult with the Department for Transport and the MCA and consider any objections raised by other shipping bodies.

**Q247 Mr Randall:** If I can return to the Energy Bill, has any decision been made yet as to whether safety zones will apply to all wind farms?

**Ms Allen:** No. The provisions in the Energy Bill relating to safety zones give the Secretary of State a discretionary power. What we have in the Energy Bill is a legislative framework. Quite a lot of further work needs to be done working with the MCA to

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flesh that out. What will happen is that the applicant will put forward a case for the safety zone which has to be based on a risk assessment of that particular installation in those particular waters. There will be full consultation with anybody who has an interest and a decision will then be made whether a safety zone tailored for that installation should be made.

**Q248 Mr Randall:** Only last June the Secretary of State said that safety zones will apply to all offshore wind farms, are you aware of that?

**Ms Allen:** No.

**Q249 Mr Randall:** In a letter of June 25. I wonder what has changed his mind from June to the drawing up of the Bill? What information or what advice has happened?

**Ms Allen:** I am not sure.

**Q250 Mr Randall:** You were not aware that was something which was said definitively on 25 June last year?

**Ms Allen:** No.

**Q251 Mr Randall:** Do you think there is a case for managing shipping traffic, for example using clearways?

**Mr Wadsworth:** Yes, potentially there could be. The concept of clearways has been proposed by the industry as a potential way of informing the future development process for offshore facilities of this kind. We are very happy to look at that and the information on shipping movements which we use to determine what these clearways should be, it will of course have to be current data, that would be very important. I also think it is fair to say that that information would not of itself provide a complete answer to the question of where it might be satisfactory to locate facilities because it will not include information about other uses of the sea, such as dredging, fishing or leisure yachting necessarily. I think clearways as they date from the 1980s were essentially about commercial shipping movements.

**Q252 Mr Randall:** Has any thought been given to what happens at the end of the life of these wind farms? Is there any idea what the lifespan of one of these is going to be?

**Ms Allen:** There is quite a comprehensive statutory scheme for decommissioning offshore wind farms and other renewable energy installations in the Bill.

**Q253 Mr Randall:** I have not looked through the Bill in detail. If something happens to a company who is running one of these, for example if they went out of business who is responsible?

**Ms Allen:** Using the statutory scheme which is in the Bill how it works is that before the installation is installed in the water the developer has to put forward a decommissioning programme and also has to agree with the Secretary of State some mechanism, some form of security to make sure that the funds are available to carry out the cost of that decommissioning when the installation has to be

decommissioned. The mechanism will take account of the fact that the company or the developer could go into administration.

**Q254 Mr Randall:** It is a bit like a deposit. When this needs to be decommissioned this sum of money will be used for that presumably. You have no idea how much it would cost at that particular time, it is going to be rather difficult, is it not?

**Ms Allen:** How it will work is that there will be an assessment based on the cost of the programme at the time that it is made. There is also the possibility of the Secretary of State reviewing those arrangements to make sure that they are current and up to date.

**Q255 Mr Randall:** Finally if I can return to the safety zone, am I correct in thinking that gas and oil installations all have safety zones round them?

**Ms Allen:** My understanding is that there is an automatic 500 metre safety zone round oil and gas installations.

**Q256 Mr Randall:** What is the difference between a wind farm and a gas and oil installation?

**Ms Allen:** We were conscious of the fact, as has already been mentioned, that a wind farm potentially closes off a much larger area of the sea than an oil and gas installation. We do not want to prevent vessels entering into the wind farm array when they can safely do so, that is why we have gone for a tailor-made approach for each particular installation.

**Q257 Mr Randall:** Who decides that?

**Ms Allen:** The Secretary of State consults with the MCA.

**Mr Randall:** All right.

**Q258 Chairman:** The MCA does not do very well on consultation, he has not been consulted very early and he does not seem to have consulted on the basis of who has been talked to in the industry. Is it the intention that the MCA should be the only source of the information in these cases?

**Ms Allen:** The MCA will be the Government's adviser on maritime safety issues but the safety zone provision includes a consultation process so that anybody who has an interest can make representation to the Secretary of State, which will then be taken into account.

**Q259 Mr Stringer:** The difference is between being able to make representation and being invited to make representations. Trinity House, the Chairman of Shipping, the Major Ports Group from the United Kingdom will they all be invited to give their views?

**Ms Allen:** You are right in the sense that it works by making public the fact that there is an application and then relying on people who have an interest to make their views known rather than the Department proactively consulting a number of people. On Section 36 consent applications which come to us we consult the major players but we do not do that on a comprehensive basis.

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**Q260 Mr Stringer:** I have been sat here for three and a half hours and the first half was like watching people from a different universe. We heard a lot of dissent and criticism about the way that Government have consulted people in the first half and that has not been reflected in the evidence we have heard over the last hour, or so, are you going to change any of the processes after what you have heard here this afternoon?

**Mr Mellish:** I think one thing we can do is to look at the processes by which we operate strategically offshore, what I mean is strategic environmental assessments and account taken of navigational interests in Round Two. I am sure we can improve that. There are various options, one is designated clearways. There are things which we can build in. I also think that bodies outside of the wind industry and outside central government departments involved are now increasingly aware of what Round Two looks like and the scale of potential development so dialogue is continually improving.

**Q261 Mr Stringer:** Do you think it would be more consistent with the Cabinet Office guidance on consultation if you invited written responses from the people we have had as witnesses rather than them relying on what is on your website or printed in some magazine? Will you invite them in future?

**Mr Mellish:** If we are talking about the Round Two process that is very much what the Department of Transport have just done.

**Mr Wadsworth:** Yes. We have initiated a very wide consultation on the issue raised by Round Two which we have sent to a large number of organisations, including those you mentioned. I am sure we could also, because one always can, improve our own internal process of consultation. For example the MCA Safety of Navigation Committee which meets twice a year, of which NUMAST, amongst others, are a member, has had wind farm development as a regular agenda item. I understand that NUMAST has not been able to be represented at that meeting and we need to review that position. It seems to me in the light of what they said this afternoon we have to make sure that we are not organising ourselves in a way which they have difficulty coping with or difficulty fitting in with and therefore are unintentionally excluding them from the consultation process.

**Q262 Mr Stringer:** What estimate have you made of the number of sea birds that will be killed by these wind farms?

**Mr Mellish:** In fact it was the actual investigation of sites for potential development of wind farms which brought in data about sea birds which was not known before, there are various sites under Round

One, there is one big site, and another one under Round Two. New information on sea birds came to light which creates another problem.

**Q263 Mr Stringer:** For sea birds I suspect.

**Mr Mellish:** Particularly. We are certainly in dialogue with the RSPB and various other bodies, English Nature for example.

**Q264 Mr Stringer:** How many sea birds is the site which is operating killing a day?

**Mr Mellish:** I could not tell you offhand but we can find out. We are monitoring the conditions of that site along with other sites and we will continue to monitor strikes to see if that is happening a lot. There are some horror stories about large numbers of strikes. The very early wind farms in Spain and the USA were put in bottlenecks for migratory paths which lead to a large number of strikes

**Q265 Mr Stringer:** If you can provide us with that information by the end of the week I am sure we would be grateful. What is the estimated cost to the public purse of this programme of offshore wind farming?

**Mr Mellish:** I hesitate to try and give you an answer. You asked a similar question to the BWEA.

**Q266 Mr Stringer:** And I did not get an answer!

**Mr Mellish:** There are capital grants which have gone into Round One, they were roughly 10% of costs, that is fairly clear. The information I am less clear about is the renewables obligation, mentioned earlier through which further subsidy is effectively passed on. I suspect rather than me trying to make some sort of brave stab at it as you did ask for an example, we could cooperate with the British Wind Energy to provide that.

**Q267 Mr Stringer:** When you are selecting sites did you follow the same process which was followed in Germany and Holland when they have been selecting offshore wind sites?

**Mr Mellish:** I understand that a range of techniques have been used. I am not sure what Holland and Germany did. In France I believe they choose a site and then ask for bids for that site to be made. As we said earlier we were not offering sites, we were offering areas within which we were looking for bids for sites and trying to give guidance on the issues which arise in those areas.

**Q268 Mr Stringer:** Was that different from the practice in Holland and Germany?

**Mr Mellish:** I could not answer that offhand. Again I can provide more information if you like.

**Mr Stringer:** Thank you.

**Chairman:** You have been extremely helpful, thank you very much indeed.

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# Written evidence

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## Memorandum by the British Marine Aggregate Producers Association (NH 01)

### OFFSHORE NAVIGATIONAL HAZARDS

#### AGGREGATE DREDGING INTERESTS—NAVIGATION IMPLICATIONS OF ROUND II WIND FARM DEVELOPMENT

##### *Background*

The British Marine Aggregate Producers Association (BMAPA) is the trade association for the UK marine aggregate industry, and represents nine operators who collectively produce around 95% of the 22 million tonnes of marine sand and gravel dredged from Crown Estate licence areas off the coast of England and Wales. The marine contribution represents around 20% of the total demand for sand and gravel for construction purposes in England and Wales. Current membership includes: Britannia Aggregates Ltd, DEME Building Materials Ltd, Hanson Aggregates Marine Ltd, Kendall Bros. (Portsmouth) Ltd, Northwood (Fareham) Ltd, Norwest Sand & Ballast Co., RMC Marine Ltd (inc. British Dredging Ltd), United Marine Dredging Limited, Volker Dredging Limited.

##### *Aggregate Dredging Operations*

BMAPA members operate 27 aggregate dredging vessels, the majority of which are British flagged, representing a significant contribution to the British Merchant fleet. Aggregate dredging vessels operate around the clock, delivering large volumes of sand and gravel from the licensed dredging areas to wharf facilities, often close to the point of actual demand. As the demand for construction materials is ongoing, vessels will be delivering a new cargo every 12–36 hours, depending upon the size of the vessel and the distance having to be travelled. As a consequence, the industry forms a substantial component of the UK's short sea trade.

The marine aggregate industry operates and manages interests in all three of the SEA areas within which new sites have been awarded under the second round of Tenders administered by the Crown. As a consequence, there are some broad issues that will inevitably arise as both interests seek to develop and operate in close proximity to one another.

As a sector, we have endeavoured to highlight these through both the SEA process and through dialogue with DTI. Furthermore, we have taken the decision to write to all Round II developers in order to highlight the potential issues arising from offshore wind development and marine aggregate dredging that would need to be considered through the site specific application process.

##### *Navigation Issues*

Beyond the immediate potential for interaction with aggregate interests through the placing of structures and cables, offshore wind farm developments have the potential to create indirect conflict with the marine aggregate industry.

From a production perspective, a dredging licence for one million tonnes/year could see 200 cargoes of 5,000 tonnes being dredged—each representing four to eight hours on site. Vessels therefore require safe access to the licence areas and the flexibility to navigate safely within a licence while dredging operations are underway. Careful consultation will be necessary to ensure that these operational requirements are not compromised if wind farm turbines are proposed to be constructed immediately adjacent to production licence areas.

Furthermore, the location of wind farm sites may result in alterations in navigation traffic patterns, as vessels have to modify their passage plans to deviate around these new features. Indirectly, this may force them across existing production licence areas. These implications, and the resulting knock on effects will need to be fully explored by means of comprehensive navigational risk assessment.

In a broader sense, the potential for interaction with the aggregate industry also needs to be considered even when a wind farm site may appear to be considerably distant from existing or planned aggregate interests. In producing over 20 million tonnes of marine aggregate every year, some 7,000 cargoes are dredged—equivalent to four to five cargoes per vessel every week. Aggregate dredgers are therefore constantly transiting British coastal waters, as they navigate between production licence areas and the ports being supplied. To illustrate of the level of use, last year wharf facilities in the River Thames received over seven million tonnes of marine aggregate—equivalent to 1,400 cargoes of 5,000 tonnes. This represents nearly four cargoes (or eight vessel movements in the region) per day, 365 days a year.

Safe navigation access around the coast to and from both production licence areas and delivery ports is therefore imperative. Proposed wind farm sites that have the effect of creating “choke points”, or result in significant alterations to vessel traffic patterns therefore need to be carefully considered through a comprehensive navigation risk assessment.

The industry also makes significant contributions to coast protection schemes, by supplying large volumes of marine sand and gravel for beach replenishment projects. Since the mid-1990s, over 20 million tonnes for this purpose, the majority of which has been undertaken through public funding. Delivering this material requires access to the near shore area. In most instances, the timing of the operation is crucial—particularly where it depends upon the vessels access at certain stages of the tide. The positioning of a wind farm could potentially significantly add to cycle times, by requiring the supplying vessel to transit around the new obstruction. This in turn would result in increased costs being incurred.

#### *Other Stakeholders*

BMAPA would like this submission to be placed in relation to those being made by the Chamber of Shipping, Trinity House and the UK Major Ports Group. The activities of BMAPA members are indicative of the interaction between shipping and offshore windfarms but do not represent the totality of the issues that have, or are likely to, arise.

#### *Attachments*

Attached are two Passage Plans indicating the routes taken by marine aggregate dredgers in the Thames Estuary and Humber Estuary regions. These illustrate the current and potential overlap between the two industries.<sup>1</sup>

*Richard Griffiths*  
Marine Aggregates Officer

*April 2004*

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### **Memorandum by the United Kingdom Major Ports Group (NH 02)**

#### **OFFSHORE NAVIGATIONAL HAZARDS**

##### **INTRODUCTION**

The United Kingdom Major Ports Group is an association which represents most of the major ports in the United Kingdom. Our members control some 40 ports which account for over 70% of all cargo handled in the UK. We welcome the Committee’s inquiry into Offshore Navigational Hazards, and are pleased to have the opportunity to submit a memorandum to the Committee. The inquiry is most timely in view of the Government initiative to promote the development of offshore wind farms. There is great concern within the shipping and port communities about the implications for maritime safety, and about the inadequacy of the consultation arrangements.

We support the Government’s policy to increase the proportion of electricity produced from renewable sources, but we feel that the desire to see the rapid development of the offshore wind farm programme has led to a situation where developers have been encouraged to bring forward proposals without adequate consideration of port and shipping interests. This in turn has led to a situation where there are serious concerns about safety of navigation, and also about the economic implications for the ports and shipping services involved.

##### **THE STRATEGIC ENVIRONMENTAL ASSESSMENT**

In May 2003 the Department of Trade and Industry (DTI) published a “strategic environmental assessment” (SEA) of plans for the construction of offshore wind farms within three strategic areas. These strategic areas were very large. That in the Northwest stretched from the Solway Firth to the coast of North Wales: the “Greater Wash” stretched from well north of the Humber to the Norfolk coast, as well as stretching some 70 miles offshore, and the “Thames Estuary” likewise embraced an area from Harwich to North Foreland.

The DTI’s definition of a SEA is “the formal systematic and comprehensive process of evaluating the effects of a proposed policy, plan or programme . . .”. Regrettably, very little account was taken of navigational matters in the course of this exercise. It is notable that the study was overseen by a steering group of 15. Six members of the group were from Government Departments, five were from Government

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<sup>1</sup> Not printed

Agencies, three were from environmental NGOs plus a representative of the Wind Energy Association. There was no representation from the Department for Transport or the Maritime and Coastguard Agency, nor from port or shipping interests. In the event the SEA made very little reference to navigational matters. In a report of 227 pages only a few paragraphs are devoted to navigation. The report notes that the strategic areas contain a number of important ports and shipping routes, but no attempt was made to evaluate the effect of the proposed wind farms on safety of navigation or the economic consequences for the maritime sector.

It is certainly true that all interested parties were given the opportunity to make contributions towards the assessment, and a number of our members did so. However the strategic areas were so large that it was impossible to make any specific comments on the implications of the proposals for safety of navigation without knowing the number, size and location of the proposed sites. A decision which followed from the SEA was the creation of a buffer zone in the immediate vicinity of the coast, but that was proposed for visual amenity, environmental and conservation reasons, and not for reasons of navigational safety.

#### THE BIDDING PROCESS

Following completion of the SEA the Crown Estate Commissioners (CEC) invited developers to submit proposals for the construction of wind farms within the strategic areas, and it is understood that a substantial number of proposals were received. In December 2003 the CEC announced their preferred bidders, with details of the proposed sites. This was the first occasion that the ports and shipping industries became aware of the locations of the proposed farms, and the scale of what is proposed, although the CEC had had some discussions with some ports which were potentially directly affected. It has been made clear to the developers that their proposals will all be subject to the statutory consent procedures (see below) but the fact that the CEC, a Government body, has offered conditional leases to the developers must carry some implication that the necessary formal approvals will be forthcoming.

#### PORT CONCERNS

The ports' concerns are threefold

1. Wind turbines in close proximity to access channels will interfere with radar and radio communication systems, both ship to ship and ship to shore, thus increasing the risk of collisions or groundings. Where located between shipping lanes their presence will also mask radar detection and visual appreciation of vessel traffic beyond them, again increasing risk.
2. The construction of the turbines will have unpredictable effects on the seabed. This is a particular problem in places such as the Thames Estuary where the pattern of channels already tends to change in an unpredictable way.
3. A number of the sites straddle important shipping routes. If the farms are constructed in the locations proposed significant deviations will be required. In addition to the cost and delay so involved this will also tend to create "hot spots" at turning points where there are a large number of vessels in close proximity, again increasing the risk of collisions.

The annexed note describes details of the problems which will arise in three particular locations. These are illustrations—similar problems will occur in other locations.

The Energy Bill, currently before Parliament includes provisions to assist the offshore wind farm programme. During its passage through the House of Lords considerable concern was expressed about the implications of wind farm developments for shipping and port operations, and two amendments on this subject have been passed. The first would have the effect of ensuring that wind farms were not established where they might interfere with recognised sea lanes, and the second requires the Secretary of State to ensure that the cumulative effect of wind farms on safety of navigation is taken into account before the developments are approved. We consider it very important that these amendments should be retained when the Bill reaches the Commons.

We have also had discussions with the DTI and the Department for Transport about our concerns, including a meeting with Mr Timms, the Minister of State for Energy at the DTI. As a minimum we are seeking the following assurances.

1. In considering applications for wind farm developments under the Coast Protection Act or the Transport and Works Act (developers have the choice of which route to adopt) full account should be taken of the implications of the developments for safety of navigation. The amendments to the Energy Bill should therefore be retained.
2. The Government should undertake a comprehensive technical study of the effects of wind turbines, both singly and collectively, on the performance of ship and shore radars and communication systems with a view to establishing a minimum separation distance between wind farms and shipping lanes. Following this, regional studies will be necessary in order to establish the in-combination effects of several farms on the overall safety of navigation. Regional studies of the morphology of and coastal processes affecting



navigational channels including in-combination effects will also be necessary before any of the Round 2 projects are approved. A memorandum prepared jointly by the Chamber of Shipping and ourselves containing further recommendations for the proposed study has been submitted to Government.

3. A Memorandum of Understanding should be agreed governing the arrangements for consultation with the shipping and ports industries which would apply in any future licensing rounds. In association with this we have proposed that the Government should publish details of the main routes used by shipping in the waters round the UK, for the guidance of prospective developers. (We believe that many of the present difficulties could have been avoided if there had been proper consultation with the ports affected before the CEC granted their provisional leases.)

#### CONCLUSION

We recognise that there are a number of different activities which involve legitimate use of the sea, of which commercial shipping is only one. We are not opposed to offshore wind farms in principle, and we believe that the aim should be to find a means whereby the different activities can coexist safely, with as little interference with each other as possible. 95% of the nation's trade moves by sea, and the economic significance of our industry should not be underestimated. We feel strongly that the implications of the proposals for ports and shipping were not properly considered before the Crown Estate issued their provisional leases, and that it is imperative that our concerns are met before consents for the Round 2 developments are issued.

UK Major Ports Group

15 April 2004

### Offshore Wind Farms Round 2 Licences

#### EXAMPLES OF SPECIFIC PROBLEMS IN PORT APPROACHES

##### *London Array (Thames Estuary)*

One of the largest sites proposed for Round 2 is known as London Array in the Thames estuary. It is a site of approximately 70 sq miles bounded by two of the main approach channels to the Port of London and the Medway ports. The two channels converge at the western end of the site (see chart attached) and over 6,500 vessels a year use one or other of the channels.

The Port of London Authority (PLA) have serious concerns about the implications of this proposed development for safety of navigation. In particular the wind farm could well interfere with radar and radio communications, both ship to ship communication and the port's own vessel traffic management services (VTS) system. Where the two channels converge ships necessarily need to monitor the movement of ships in the other channel, both visually and by radar, but the presence of a wind farm between the two channels will make this much more difficult. A further problem is that dredgers and small recreational craft currently traverse the area of the proposed wind farm. If such vessels are required to deviate and use the channels used by large commercial craft this will increase the risk of incidents.

Another major concern for the PLA is the implication of the construction of the wind farm for the coastal processes within the Thames estuary. The estuary in this area is highly dynamic with channels continually moving, and with some silting up while others appear. The processes that shape the area are complex and very difficult to predict, but it seems virtually certain that the erection of the turbines will have a significant impact on the morphology of the estuary.

A major realignment of the proposed London Array wind farm will be required to maintain the safety of navigation in the Thames estuary and the viability of the Port of London and those on the Medway.

##### *Approaches to the Port of Liverpool*

Another proposed site, consisting of some 40sq miles, is located off the coast of North Wales. As the chart shows, the northern boundary of this site is some two miles away from the Douglas gas platform. A large proportion of the vessels travelling to and from the Port of Liverpool (about 7,500 movements a year) will need to use this passage. This includes loaded VLCCs, large container ships and bulk carriers as well as numerous ferries. If a safety zone is established north of the proposed farm the passage will become still narrower. In addition vessels which have boarded a pilot at the pilot station off Anglesey will need to deviate to avoid the wind farm, thus creating a "hot spot" at the turning point. Overall, the Port of Liverpool considers that the proposed wind farm will pose a serious risk to safety of navigation with increased probability of accidents and pollution.

*Heysham and Fleetwood*

As the attached chart shows, two large wind farm sites are proposed off Morecambe Bay. The sites straddle the main ferry routes from Fleetwood and Heysham. The need to deviate to avoid the sites could call into question the profitability of the routes. It will in addition create “hot spots” at the turning points, with increased risk of collision.

Note. We are grateful to the Corporation of Trinity House for permission to reproduce the attached diagrams. Details of the Wind Farm Sites were supplied by the Crown Estates; the shipping data is derived from shiproutes software by Anatec Ltd. and the charts themselves are reproduced from Admiralty charts by permission of the Controller of Her Majesty’s Stationery Office and the UK Hydrographic Office.

## SHIP ROUTES—ROUND 2 OFFSHORE WIND FARM STRATEGIC AREAS

*Acknowledgements:*

*Wind Farm Sites*—Crown Estates.

*Shipping Data*—Shiproutes software by Anatec Ltd.

*Charts*—reproduced from Admiralty charts by permission of the Controller of Her Majesty’s Stationery Office and the UK Hydrographic Office.

## NORTH WEST STRATEGIC AREA

## ShipRoutes Passing within 10.00nm of Barrow Round 2 WF at 54°2’ N 3°30’ W

<i>Route No</i>	<i>Description</i>	<i>CPA (nm)</i>	<i>Bearing (°)</i>	<i>Ships per Year</i>	<i>% of Total</i>
1	Ramsey-Morecambe Bay*	0.0	211	264	5%
2	Solway Firth-Mersey*	0.2	256	64	1%
3	Belfast-Heysham SeaCat*	1.5	37	420	8%
4	Fleetwood-Larne POIS Route 3*	1.6	38	1,812	33%
5	Douglas-Heysham Steam Packet Co*	3.3	197	1,440	26%
6	Dublin-Heysham Norse Merchant*	7.5	177	1,468	27%
7	Solway Firth-Llanddulas	7.7	271	12	0%
Total				5,480	100%

Key: \* in the table indicates where two or more routes have identical Closest Points of Approach and Bearings and have been grouped together.

## ShipRoutes Passing within 10.00nm of Liverpool Bay Round 2 WF at 53°28’ N 3°36’ W

<i>Route No</i>	<i>Description</i>	<i>CPA (nm)</i>	<i>Bearing (°)</i>	<i>Ships per Year</i>	<i>% of Total</i>
1	Dover Strait-Mersey LYNAS*	1.5	352	683	5%
2	Ouessant-Mersey DOUGLAS S*	2.1	359	2,277	16%
3	Mersey-Dover Strait DOUGLAS S*	2.2	6	1,621	12%
4	Dublin-Liverpool Norse Merchant*	2.5	357	850	6%
5	Liverpool-Dublin Norse Merchant*	2.7	3	850	6%
6	Liverpool-Dublin POIS	2.7	5	600	4%
7	Dublin-Liverpool POIS	2.8	10	600	4%
8	Mersey-Llanddulas	3.2	147	76	1%
9	Solway Firth-Llanddulas	3.4	268	12	0%
10	Mostyn-Belfast*	3.6	218	72	1%
11	Heysham-Liverpool Bay Fields BHP*	3.9	18	182	1%
12	Douglas Field-Liverpool BHP*	3.9	22	26	0%
13	Mersey-Mostyn*	3.9	117	112	1%
14	Mersey-Dover Strait DOUGLAS N*	5.0	1	567	4%
15	Dublin-Mostyn POIS*	5.0	195	1,468	10%
16	Mersey – Drogheda*	5.3	5	28	0%
17	Dundalk-Mersey*	5.8	16	84	1%
18	Belfast – Liverpool Norse Merchant*	6.1	28	1,656	12%
19	Hamilton Field-Liverpool BHP*	7.8	47	26	0%
20	Belfast-Llanddulas*	7.9	223	24	0%

<i>Route No</i>	<i>Description</i>	<i>CPA (nm)</i>	<i>Bearing (°)</i>	<i>Ships per Year</i>	<i>% of Total</i>
21	Mersey-Belfast*	8.6	26	800	6%
22	Llanddulas – Dover Strait*	8.8	211	348	2%
23	Douglas-Liverpool Steam Packet Co*	9.2	43	1,040	7%
24	Hamilton North Field-Liverpool BHP*	9.7	50	26	0%
<b>Total</b>				<b>14,028</b>	<b>100%</b>

Key: \* in the table indicates where two or more routes have identical Closest Points of Approach and Bearings and have been grouped together.

#### THAMES ESTUARY STRATEGIC AREA

##### ShipRoutes Passing within 20.00nm of Thames at 51°4' N 1°48' W

<i>Route No</i>	<i>Description</i>	<i>CPA (nm)</i>	<i>Bearing (°)</i>	<i>Ships per Year</i>	<i>% of Total</i>
1	Tees-Dover Strait d*	0.2	97	4,853	4%
2	Thames-Rotterdam Gat*	1.3	144	4,728	4%
3	Ostend-Felixstow Cork*	1.6	243	688	1%
4	Humber-Dover Strait c*	2.5	106	959	1%
5	Felixstow-Ostend S Chan*	2.5	250	724	1%
6	Felixstow-Dover Strait DW*	4.1	262	3,428	3%
7	Dover Strait-Thames Black Deep*	4.1	262	428	0%
8	Dover Strait-Blackwater	4.4	255	36	0%
9	Felixstowe-Flushing S Chan*	4.5	32	2,780	2%
10	Thames-Flushing N2 Princes*	7.0	161	4,060	3%
11	Rotterdam-Thames Black Deep*	8.4	352	276	0%
12	Thames-Flushing N1 Princes*	8.7	166	4,060	3%
13	Blackwater-Rotterdam	8.7	358	12	0%
14	Felixstowe-Rotterdam S Chan*	9.1	10	9,164	7%
15	Thames-Humber c*	10.9	306	1,386	1%
16	Thames-Hamburg Black Deep*	11.0	316	1,721	1%
17	Thames-Hamburg Barrow Deep*	12.9	310	3,501	3%
18	Ostend-Thames	13.0	180	160	0%
19	Blackwater-Humber	13.3	323	8	0%
20	Baltic-Blackwater*	13.3	325	32	0%
21	Felixstowe-Thames Cork*	13.5	293	174	0%
22	Humber-Flushing g*	13.7	63	715	1%
23	Felixstowe-Thames S Chan*	13.8	307	262	0%
24	Thames-Ostend	14.0	185	144	0%
25	Blackwater-Felixstowe S Chan	14.2	319	2	0%
26	Rotterdam-Dover Strait*	14.7	131	28,542	23%
27	Flushing-Dover Strait*	16.5	158	11,800	9%
28	Blackwater-Felixstowe Cork	16.8	305	6	0%
29	Gothenburg-Harwich DFDS	17.8	331	150	0%
30	Harwich-Gothenburg DFDS	17.8	332	150	0%
31	Hamburg-Felixstowe*	18.5	324	5,454	4%
32	Dover Strait-Thames Princes*	19.6	222	5,952	5%
33	Flushing-Hamburg*	19.7	131	22,459	18%
34	Ouseeant-Rotterdam Sandettie DWR*	19.7	132	7,103	6%
<b>Total</b>				<b>125,917</b>	<b>100%</b>

Key: \* in the table indicates where two or more routes have identical Closest Points of Approach and Bearings and have been grouped together.

**Memorandum by the National Union of Marine, Aviation and Shipping Transport Officers (NUMAST)  
(NH 03)**

**NAVIGATIONAL HAZARDS—SITING OF OFFSHORE WIND FARMS TAKING ACCOUNT  
OF SHIPPING LANES**

The National Union of Marine, Aviation and Shipping Transport Officers (NUMAST), representing over 19,000 shipmasters, officers, cadets and other professional maritime industry staff, welcomes this opportunity to comment concerning whether the siting of offshore wind farms is taking account of shipping lanes.

This is an issue which has received attention in recent weeks and months, particularly as a consequence of the Energy Bill, currently going through the House of Lords, which contains powers for the installation of wind farms and other renewable energy projects beyond the UK's 12-mile territorial limit. However, it is also an issue that NUMAST has had under consideration for some considerable time:

1. On 2 August 2002 NUMAST requested that the technical aspects of lighting and marking of offshore wind farms be placed on the agenda of the Trinity House User Consultative Committee to be held on 16 October 2002—this was done and a useful discussion held.
2. An article entitled: "Wind Farm Caution" published in the NUMAST Telegraph, January 2003, gave details of our concern over the implications of siting turbines close to busy shipping lanes.
3. NUMAST contributed to a discussion session, "The Collision Risk Management Seminar", held at the Corporation of Trinity House on 4 November 2003.
4. Representations made to Captain Stephen Blyth, Chief Executive, Maritime & Coastguard Agency (MCA), at a meeting of the Marine Safety Coordinating Committee 4 December 2003.

While recognising the necessity for transition from a reliance upon hydrocarbon based fuels to that of renewables and the useful contribution that can be made by wind energy, NUMAST has considerable concerns with respect to the decision-making processes and the consultation arrangements concerning the location of offshore wind farms.

It is apparent that energy from renewables is a government objective which is being pursued with the utmost vigour by the Department for Trade & Industry (DTI). Given the reduction in UK hydrocarbon energy sources and the desire to meet strongest environmental targets, this is understandable. However, the haste at which offshore wind farm site leases have been granted appears to have taken little, if any, consideration of the safety of navigation.

In the first round of offshore wind farm site leases, developers identified sites, primarily for their suitability for power generation and for onshore cabling. They then applied to the Crown Estates to lease the chosen site; reference to the safety of navigation appears to have been very limited at best and could be considered as non-existent. The Crown Estates put the onus of ensuring that safety was not compromised on the developers.

Draft guidance notes on the offshore wind farm consent process were issued by the Offshore Renewables Consents Unit (ORCU) of the DTI on 12 October 2001. This outlined the responsibilities of the developers in researching the scoping report, the environmental impact assessment and the final environmental statement to be circulated to all stakeholders. This guidance again stressed that the onus was very much on the developers to ensure that all necessary fieldwork and studies were undertaken at the pre-application stage and that they made early contact with statutory consultees.

The Marine Consents and Environment Unit (MCEU), an alliance of Department for Environment, Food and Rural Affairs' Marine Environment Branch and the Department for Transport's (DfT) Port Division, also produced guidance notes in November 2001 for the environmental impact assessment of offshore wind farms. This was intended to be used by developers in conjunction with the ORCU guidance.

It appears that neither the ORCU nor MCEU guidance gives statutory consultee status to the MCA or to any other body concerned with maritime safety, other than the UK Hydrographic Office and the Trinity House Lighthouse Service.

NUMAST believes it is deeply unsatisfactory that the MCA—the government agency responsible for safety of shipping—was not given statutory consultee status in documentation drawn up by units of departments of government. This is particularly unsatisfactory given that one such unit involves the parent department of the MCA, namely, the DfT. It would appear that there is little, if any, joined-up thinking within the DfT and one must question the competence and functioning of this vital Department of State.

While not directly attributable, it has also been reported that the Ministry of Defence (MoD) has been consulted with respect to both the location and disposition of wind farms. This is believed to be with respect to the consideration of UK Air Defence radar, rather than the safety of navigation.

It would appear that the limited consultation with both the UK Hydrographic Office and the Trinity House Lighthouse Service has been concerned solely with the prolongation of site development notices issued in Notices to Mariners and the navigational marking of offshore wind farms.

The location of offshore wind farms has, to date, been very much a closed loop between DTI, Crown Estates and consultants engaged by the developers with some recognition of the requirements of the MoD. The first stage of the consultation process has been very much, “in-house” and not open to public scrutiny. It appears that other government departments and agencies and NGOs are only consulted at the second stage when there is limited opportunity to make comment. Comment being limited to either the navigational marking of wind farms and the direction for the routing of shipping once they are in place.

The second round of offshore wind farm site leases has been the subject of what could only be described as a perfunctory consultation. On 19 March 2004 NUMAST received a document entitled, “The cumulative impact of Round 2 offshore wind farms on navigation”. It would appear that the DfT is reacting to the increased publicity brought about as a consequence of extensive lobbying by industry. This is too little, too late. The attendant documentation commissioned by the DfT from Anatec UK Ltd is somewhat disturbing in its simplistic approach with respect to merchant ship density, with little or no consideration for the difficulties associated with navigation in particular areas.

NUMAST is mindful that the development of wind farms has the potential to provide considerable employment in the United Kingdom with respect to their construction and maintenance. Notwithstanding this, it is equally important that such wind farms do not pose either a safety hazard to coastal shipping or, due to their location, have adverse economic effects upon coastal shipping as a consequence of re-routing.

NUMAST has, in particular, highlighted the problems associated with inadequacy of the marking of wind farms as required by the International Association of Lighthouse Authorities (IALA). There is a need for both additional, visual and electronic marking of wind farms. In addition, where located in close proximity to shipping lanes, consideration should also be given to the provision of “guard ships”—along the lines of the Emergency Response and Rescue Vessels that have been successfully deployed in the North Sea oil and gas fields for many years.

NUMAST affirms that the location of wind farms in close proximity to shipping lanes or at entrances to ports would not, in themselves, present a potential navigational hazard—provided vessels entering and leaving our ports were crewed by maritime professionals of high standing and who were not suffering from the adverse effects of fatigue. Unfortunately, there is considerable evidence to show that many ships operating around the UK coast do not fall into this category.

NUMAST welcomes the development of renewable energy from offshore wind farms. The potential for increased employment and the retention of UK maritime skills should not be underestimated. However, it is important that they are so located so as not to endanger coastal shipping by the presentation of an unwarranted navigational hazard. The development of offshore energy from wind farms needs to be encouraged and, with some minor adjustments with respect to location and disposition of wind farms, there is potential for extensive development around the coast of the United Kingdom without providing a serious hazard to navigation.

NUMAST believes that there has been a manifest failure within the DfT who have failed to represent the shipping industry’s interests. This is possibly as a consequence of the division of the responsibilities between DfT and the MCA. This is further compounded by a further division of responsibility to the Trinity House Lighthouse Service. It is the functional processes of government departments that have brought about the present situation. In particular, the internal processes within the DfT, all of which need to be investigated. The present situation has been compounded by the failure of the MCA to take a proactive approach, rather than a passive acceptance of the failure of the statutory consultative process.

*Allan Graveson*  
Senior National Secretary

*Andrew Linington*  
Head of Communications & Campaigns

*April 2004*

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#### **Memorandum by the Health and Safety Executive (NH 04)**

##### **OFFSHORE NAVIGATIONAL HAZARDS**

1. Through the Health and Safety at Work etc Act 1974 (HSAWA), the Health and Safety Commission (HSC) and Health and Safety Executive’s (HSE) mission is to protect people’s health and safety by ensuring that risks in the changing workplace are properly controlled. HSE advises and assists HSC and has a statutory responsibility to make adequate arrangements for the enforcement of the Act and related legislation offshore in Great Britain and other certain specified activities. The Department for Work and Pensions (DWP) is now our parent Department.

2. HSE is responsible for regulating the safety of activities on or in connection with offshore installations, wells and pipelines. Offshore health and safety legislation covers primarily the safety of offshore oil and gas operations and related activities, such as diving. This legislation, including HSAWA, applies both within

territorial waters and designated areas of the UK Continental Shelf. In addition HSE regulates the health and safety of workers involved in the construction and operation of offshore windfarms within territorial seas. Navigational issues are the responsibility of the Marine and Coastguard Agency (MCA) and the Department for Trade and Industry (DTI). HSE has established memoranda of understanding with other regulators to ensure that potential interface issues, overlaps and omissions are adequately addressed.

3. The first round of lease applications for the construction of offshore windfarms was planned for areas within territorial seas. Therefore HSAWA was extended in 2001 to apply to the operation of energy structures within the territorial sea (it already applied to their construction). It also includes the operation of a cable for transmitting electricity from an energy structure to the shore. The second tranche of leases proposes to establish windfarms beyond the existing limit of territorial waters.

4. For health and safety legislation to apply to windfarms beyond territorial seas the HSAWA will need to be extended again to cover energy structures beyond the territorial seas limit. The legal implications of doing this are under consideration.

5. Under the Petroleum Act 1987, DWP Ministers may establish a safety zone by Order around an installation that does not project above the surface of the sea. The 1987 Act automatically establishes a safety zone around every offshore (oil and gas) installation which does project above the surface of the sea. The purpose of the safety zone is for the protection of the installation. The power to make safety zones by Order would apply to windfarms within territorial seas though none have been established (or sought) to date. Under the proposed Energy Act (EA), DTI will be able to establish them around windfarms for the protection of the windfarm and shipping. HSE is liaising with DTI to ensure that, if and when the EA powers come into effect, there are arrangements to manage the interface with the 1987 Act powers to avoid any conflict of interest.

*April 2004*

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#### **Memorandum by the Royal Yachting Association (NH 05)**

##### **EXCLUSION SAFETY ZONES AND SITE SELECTION FOR OFFSHORE WINDFARMS**

1. The Royal Yachting Association (RYA) is the national body for all forms of recreational boating, under power and sail, on inland and tidal waters, with 100,000 personal members, 1,500 affiliated clubs (which in turn have over 400,000 members), and over 1,600 recognised Training Centres. The RYA represents the interests of an estimated two million participants who annually take part in recreational boating around the UK. We represent the following activities:

- Yacht Cruising
- Motor Cruising
- Yacht and Dinghy Racing
- Sportsboats and Ribs
- Powerboat Racing
- Windsurfing

2. We are the recognised national authority on training people on the safe use of all recreational craft from windsurfers, small dinghies and power boats up to ocean going yachts; over 150,000 training courses a year are delivered in the UK under RYA auspices. RYA courses are now taken as the template for training in many other countries throughout the world, and in the UK form the basis for the small craft training of lifeboat crews, police officers and the Royal Navy.

3. The RYA is a strong advocate of the principle of “Education not Legislation” as the best means of promoting recreational safety at sea. The UK has one of the lowest fatality rates in the world and is one of the least regulated in the world. We believe these two factors are closely connected, and are pleased that this policy of minimum regulation has been recognised and supported by legislators of all parties.

4. The RYA is also a strong advocate of the public right of navigation which exists on all tidal waters around the UK with a few limited exclusion zones for specific purposes. In all existing cases, the purpose of fixed exclusion zones is to protect a sensitive installation (eg, military or energy) or flora and fauna (eg, nature reserves). We are aware of no exclusion zone anywhere in UK waters which has been imposed for the safety of small craft.

5. The RYA is most concerned at the powers proposed in the Energy Bill which would enable the Minister to create an exclusion zone around wind turbines, to include small craft, not for the purpose of protecting the turbine from impact damage, but to protect the small craft themselves. The Government does not appear to grasp the significance of this unprecedented interference with the principle of free navigation. Ever since navigation began in pre-Roman times, owners of small craft have learnt to handle their boats in the vicinity of natural and man-made obstacles, including rocks, bridges, buoys, sea defences, etc, without the authorities seeking to establish exclusion zones for their own safety.

6. In any event, even if an exclusion zone were thought to be an acceptable means of protecting small craft owners from their own negligence, it is hard to see how this would work in practice. Given that the vast majority of boatowners are careful and responsible sailors, they would not choose deliberately to collide with a turbine base; if they did so accidentally (through breakdown or stress of weather) a regulation would make no difference. For the small minority who are careless or irresponsible, again a regulation will make no difference.

7. In all the circumstances, the RYA strongly urges that small craft (of a size to be agreed after consultation with the relevant agencies and NGOs) should be exempt from any exclusion zone, whether around wind-farm areas, or individual wind turbines.

8. The RYA recognised in July 2003 that the most frequented routes and areas used by recreational boating were not taken into account in the DTI Strategic Environmental Assessment for the three strategic areas identified for wind farm development. As a result recreational routes have not been included in the site selection for offshore wind. As a result the RYA has funded the collation of information on recreational cruising routes and sailing areas to inform both the RYA position on the sites selected as well as the Government's.

9. This work undertaken by the RYA recognises the fact that recreational cruising routes differ in places from commercial shipping lanes. Recreational mariners, where possible, will avoid heavily used commercial routes favouring adjacent quieter routes or taking entirely different routes to commercial mariners. Siting of offshore wind farms needs to account not only for shipping lanes but also these recreational routes.

*Edmund Whelan*  
Head of Legal and Government Affairs  
Royal Yachting Association

*April 2004*

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### **Memorandum by the Chamber of Shipping (NH 06)**

#### **OFFSHORE NAVIGATIONAL HAZARDS—WIND FARMS**

##### **1. THE ISSUE AND SUMMARY OF SHIPPING INDUSTRY POSITION**

1.1 The shipping industry supports the introduction of offshore wind farms. However, the right interface between offshore wind farms and commercial shipping activities around the United Kingdom has yet to be achieved. The present consultation and approval arrangements threaten the safety of ships and seafarers, the environment and longstanding rights of navigation.

1.2 The industry—together with the ports industry and Trinity House—has sought assurances from Government that these will be preserved in regard to future wind farm developments. In addition we are calling for proper consultation before developers are invited to put forward projects. If the shipping and ports industries had been included in the consultative process from the beginning of the current round of applications, many of the following issues could have been avoided.

##### *Safety and environment*

1.3 Explicit safeguards are necessary to ensure that the safety of shipping and the environment are protected in waters where wind farms are proposed. Government needs to ensure that established shipping routes are not unduly encroached upon and do not become exclusion zones. Currently, routes threatened include port access channels and transit routes in the Thames (London), the Wash (King's Lynn), the Humber (Immingham), and the North-West (Liverpool and Morecambe Bay).

1.4 Established shipping routes have been chosen for their directness and safety and for the shelter they afford both generally and in inclement weather. Deviation from these will result in longer journeys and increased risk for ships and seafarers.

1.5 The creation of new shipping routes will affect the marine environment. Forcing ships to take longer routes will increase their fuel and air emissions.

1.6 More study is required of the impact of wind farms on specific technical elements, including:

- adverse effects on marine radar, radio and other electronic communication systems, which are crucial to safe navigation. Ship-to-ship/shore-to-ship radio-communications and position-fixing by radar could all be undermined;
- sandbanks and navigation channels in inshore waters. Many of these move over time. The construction of wind farms will change the hydrodynamics thus potentially affecting shipping routes and port access channels.

### *International law*

1.7 Article 60(7) of the UN Convention on the Law of the Sea (UNCLOS) places an obligation on the Government by stating: “*Artificial islands, structures and the safety zones around them may not be established where interference may be caused to the use of recognised sea lanes essential to international navigation*”. Some proposed wind farms are in contention with this requirement.

### *Wider impact on the economy*

1.8 Inappropriate decisions in this area will harm UK trade. Where wind farms impinge on established shipping routes and channels and impede the passage of merchant ships, trade to and from UK ports will be affected. It should be recalled that over 95% of UK imports and exports (by volume) and some 25% of internal trade move by sea.

### *Consultative process*

1.9 The Government did not consult fully with the shipping and port industries when sites were being considered in Rounds 1 and 2 of the present offshore wind farms project. This neither makes sense, nor encourages a practical outcome. All parties affected should be consulted from the start, to ensure that any technical solutions adopted are both consistent and engender confidence among other users of the sea.

### *Industry proposals*

1.10 In order to achieve the right relationship between offshore wind farms and commercial shipping around the United Kingdom, the following are necessary:

- improved consultation procedures between Government, developers and the ports and shipping industries
- under Round 2, to assist in evaluating developers’ environmental impact assessments (EIAs), in the light of independent research on the cumulative impact of their proposals on navigation and marine safety; and
- for future rounds, from the start at the strategic planning stage;
- the use, where necessary, of traffic management tools so that wind farms and shipping can co-exist in safety; and
- explicit requirements in the Energy Bill (at present going through Parliament) that offshore renewable energy resource installations must respect safety of navigation and that orders for consents under the Transport and Works Act 1992 must not be used where proposed sites will be a danger to navigation.

1.11 The Chamber welcomes the assurances that it has received from the Minister for Energy and the Departments of Trade & Industry and for Transport that sites will not be approved where they represent a danger, but considers that these further actions are necessary in order to spell out this imperative clearly in law.

1.12 It would then be appropriate for the Government to advise the International Maritime Organization (IMO) and its members of UK policy and seek endorsement of its procedures for locating offshore wind farms and on managing risks to navigation.

1.13 This memorandum elaborates in greater detail on our experiences to date and on these proposals.

## 2. CONSULTATION

### *Round 1 Experience*

2.1 In January 2001, the Chamber first became aware of proposed offshore wind farm developments in UK waters when Government invited our views on the proposed consents process. We were not consulted on the strategic planning for these developments. Not until March 2002 was the agreed consent process clarified. In the intervening period various developers sought our views on their scoping studies and, in one case, their Environmental Impact Assessment (EIA).

2.2 Scoping studies provided details of proposed site co-ordinates and the topics to be covered in EIAs. At the scoping stage, developers invited views on whether the proposed site would interfere with shipping. We do not hold ship routing information, but confirmed our interest in also seeing this data when consulted by each developer. Subsequently, as individual EIAs were issued for comment, it became apparent that proposed sites were being presented as *a fait accompli*; no alternative positioning was being advanced to take account of the need to safeguard safety of navigation.



2.3 The impression given was that conflicts with navigation would, if necessary, be resolved by shipping deviating from customary routes. Through the Maritime and Coastguard Agency (MCA), we sought the publication of advice encouraging site location away from recognised navigational channels and shipping routes, as reflected on previous “Shipping Clearways” charts used by Government to help assess applications for oil/gas exploitation under the Coast Protection Act 1949.

2.4 This approach did not find favour with government and conflicts arose. Two typical examples (of now approved wind farms)—off North Wales and Norfolk—are described in Annex 1.

2.5 In our general experience, by the time the EIA stage is reached (when developers have expended resources in preparing voluminous assessments), it is too late to achieve significant changes. Had there been a willingness to consult with the shipping industry on site location at the strategic planning stage, solutions could have been found enabling (1) vessels to continue to use customary channels and routes and (2) developers to maximise energy capture.

### *Planning for Round 2*

2.6 In February 2003, DTI’s consultation document “*Future Offshore*” sought views on a strategic framework for offshore wind farms. Our response supported the publication of guidance on acceptable levels of risk, but pointed out that risk-evaluation could only be as good as the input data used. We identified the need to improve the quality of official data on shipping routes and the methodologies for assessing the cumulative impact on routing patterns where ships would have to deviate to avoid wind farms. We sought clarification of the statement (in “*Future Offshore*”) that “*the installation of structures, and the safety zones around them, would not be permissible where they would interfere with the use of recognised sea lanes*”. (This is a looser wording than in the UN Convention on the Law of the Sea but, as stated in paragraph 5.3 below, we are not convinced that the Government’s interpretation of Article 60(7) of UNCLOS is in the best interests of safety.)

2.7 We pointed out that economic loss by ship owners/operators resulting from vessels having to avoid wind farms would not arise if the “Shipping Clearways” concept was employed. Also, we supported the proposal for a Strategic Environmental Impact Assessment (SEA) to be undertaken for the three areas (North West, Greater Wash and Thames Estuary)—likely for Round 2 developments. However, we expressed concern that there had been no direct involvement of MCA or ourselves in the activities of the SEA Steering Group.

2.8 In commenting on “*Future Offshore*”, the MCA took up with DTI the failure to involve both the shipping industry and the Agency itself. It listed<sup>2</sup> specific issues concerning the impact of wind farms on safety of navigation which should be examined by developers in preparing future EIAs. These included: “knock-on” effects to safety created by vessels re-routing to avoid wind farms; silting or scouring resulting from the establishment of turbine structures affecting the navigable depth of adjacent waters; radio interference; and the need for up-to-date traffic surveys.

2.9 The communication alluded to a meeting of government departments (on 11 February 2003) to discuss the policy for wind farms. Following that, the MCA was to:

1. prepare guidance to developers for them to undertake (as part of their EIA tasks) an up-to-date traffic survey followed by a risk assessment “tailored” for each site proposal. This was completed and relevant advice is now included on assessing the navigational impact of wind farms; and
2. present a paper to the International Maritime Organization (IMO) seeking endorsement of the UK’s procedures for locating offshore wind farms; the management of risks to navigation; and the principles of a generic safety regime for marine works. This action awaits resolution of outstanding issues. The Chamber strongly supports this proposed course, since the developments are likely to be extensive and will affect international shipping.

2.10 Later, commenting on the output of the SEA work, the MCA consultant<sup>3</sup> pointed out that: the SEA Steering Group had not included specialists on marine safety; there were concerns that traffic information was inadequate for the three Round 2 strategic areas; the risk assessment methodologies used in Round 1 had little relevance for offshore wind farms (and Round 2) being based on those used for the offshore oil and gas industry; and safety issues had not been adequately addressed.

2.11 In responding, DTI stated that “*developers are being encouraged to discuss the impact of their proposals with the Maritime and Coastguard Agency before submitting tenders for Round 2 sites. As stated in the Round 2 announcement, the cumulative impact of all site bids on navigation will be considered by the Tender Assessment Panel*”; and later indicated that the Panel would consult MCA and DfT when considering the impact on navigation.

<sup>2</sup> Letter dated 18.02.03 from Alan Cubbin (Director Quality and Standards, MCA) to Ms Caroline Roberts (Licensing and Consents Unit, DTI).

<sup>3</sup> Letter dated 27.05.03 from Colin Brown (Consultant for Project MSA 10/6/200) to BMT Cordah Ltd.

2.12 On 15 December, replying to a parliamentary question, the Secretary of State for Transport announced that “my Department is working . . . to help direct offshore renewable energy developments towards areas of the sea associated with low numbers of ship movements. My Department wishes to obtain a full understanding of the cumulative impact on shipping caused by the potential development of the site leases and will consult the shipping and ports industries on the outcome of the . . . panel . . .”

2.13 On 18 December, DTI announced the outcome: comprising 15 projects in three strategic areas for further evaluation under Round 2. The Chamber believes that at least half of these are within areas where a significant number of shipping movements take place and where the location of offshore wind farms could infringe Article 60(7) of UNCLOS.

*Assessment of the consultative process (post the Round 2 announcement)*

2.14 The reason given by DTI for not consulting the industry at the strategic planning stage was that the information being assessed was “commercial—in confidence”. Developers were competing for site lease offers. With 40 bids received and only 15 offers ultimately made, detailed consultation was perceived difficult. However, where there are implications for safeguarding life, property and environment, it must be possible to provide a consultative mechanism that enables the industry to participate in planning without compromising confidentiality. DfT has therefore invited the Crown Estate to enter into a dialogue with us which might lead to a better outcome for future rounds.

2.15 Both DTI and DfT have indicated willing to work with the industry to better inform the SEA process (including to revive the “Shipping Clearways” concept), provided areas of the sea which have potential for renewable energy developments are not unnecessarily “blocked off”. We also welcome the publication of detailed shipping routes to assist developers in Round 2. However, we have not yet heard from Crown Estate and consider that greater certainty is needed. We therefore continue to seek an assurance that the Government will agree with us a Memorandum of Understanding on consultation with respect to the navigation implications of wind farms before any new sites are offered for tender.

### 3. NEED FOR INDEPENDENT RESEARCH ON CUMULATIVE IMPACT

3.1 Serious concerns have been voiced on certain technical elements of wind farm operations and their cumulative impact on navigation, marine safety and the environment. New research is required particularly on the potential interference with essential radio and radar communications and on the effects on the navigable depth of adjacent waters caused by the silting or scouring which results from the presence of large turbine structures. If these concerns are confirmed by appropriate technical studies, it may for example be necessary to plan for a minimum separation between shipping and installations.

3.2 These concerns have been discussed with DTI, DfT and MCA. As a result, DfT has issued a letter (on 19 March 2004) seeking opinions by end-April on the need for research. Our initial ideas on this important matter have been forwarded to Government and are attached at Annex 2. It is important that any research should be completed before individual Round 2 EIAs are evaluated in, say, 18 months time.

### 4. USE OF TRAFFIC MANAGEMENT TOOLS

4.1 Guidance issued by MCA<sup>4</sup> refers to the use only of routeing measures, eg “safety zones” and “areas to be avoided”, to protect installations and then only in their operational phase. However, unacceptable risks could arise both during the construction or de-commissioning of an installation and if shipping is required to divert in order to avoid a wind farm site. Against this background, we have proposed that the existing guidance should be reviewed to include also the possible use of:

- vessel traffic services (VTS) to monitor traffic and provide information services to shipping; and
- routeing measures (for example two-way routes, recommended tracks, traffic separation schemes) providing positive advice to shipping,

where there is a need to reduce unacceptable risks in any phase of an installation’s existence or to avoid ships “bunching” or “pinch-points” etc. Such tools would need to conform to IMO standards. We also believe that any financial implications (eg additional buoys supporting routeing measures) should be met by the developer.

4.2 The DfT and DTI have agreed to review MCA guidance and a consultation exercise has been initiated by MCA, for completion in June 2004. This is welcomed.

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<sup>4</sup> Steps taken to address navigational safety in the consent regime for establishment of wind farms off the UK coast (published 8.07.03).

## 5. THE ENERGY BILL

5.1 This Bill, which will soon have passed through the House of Lords, prescribes safety zones around offshore renewable energy installations and permits the extinguishing of public rights of navigation through sites located in territorial waters.

5.2 The Chamber supports the amendments to the Bill, agreed at Report Stage, which reflect the imperative to respect safety of navigation. These re-affirm the Government's obligations under Article 60(7) of the UN Convention on the Law of the Sea (UNCLOS) with respect to installations in territorial waters and Renewable Energy Zones beyond territorial waters.

5.3 They would also require the cumulative effects of proposed installations and safety zones on safety of navigation and the environment to be taken into account.

5.4 However, despite the adverse experience under Round 1, Government has not supported the above approach. Its interpretation of Article 60(7) appears to encourage an interface which is more likely to require ships to deviate to avoid wind farms. Its "test" of whether or not "interference" would arise appears solely dependent on whether or not an alternative sea lane is possible. We believe this "test" to be very narrow and, if followed rigidly, could lead to shipping having to take longer and indirect routes to avoid a strategic area of wind farm sites.

5.5 We welcome assurances received from DTI and DfT that the Government is committed to safety of navigation and that any deviations will be kept to a minimum. But we remain sceptical that the latter will be achieved in practice because of:

- the Government's narrow interpretation of how the article should be applied;
- the possibility that the "Shipping Clearways" concept will not find favour; and
- the possibility that, as in Round 1, many consents for sites in territorial waters will be issued through orders issued under the Transport and Works Act (TWA) 1992.

5.6 The TWA, contains no statutory requirement for wind farms causing a danger to navigation to be addressed. This is because the Coast Protection Act 1949, which requires such dangers and safety of navigation to be considered, is expressly disapplied in the TWA. While MCA will be asked to assess draft TWA orders, to be legally binding on developers, any conditions in consents would have to be inserted by the Secretary of State. Our experience in Round 1 suggests that it would be preferable to amend the Bill to stop this route being used unless the Secretary of State is satisfied that installations will not constitute a danger to navigation.

19 April 2004

Annex 1

### ROUND 1 CONSULTATIONS—TWO PRACTICAL EXAMPLES

#### *Rhyl Flats Wind Farm*

In May 2002, the Chamber wrote to DTI to enquire whether an 11-degree counter-clockwise re-orientation of the proposed site for the Rhyl Flats wind farm had been considered. Such a change would provide better alignment with shipping routes and might reduce the number of additional buoys required to "mark" the farm and also site installation costs since the site would then be in shallower water. The response from government only confirmed the views of the developers that ". . . the final layout was selected by balancing various constraints and technical issues, whilst maximising . . . energy capture, . . . to maximise the overall environmental benefit of the project."

The proposed site encroached into navigable waters used by ferries. We pointed out that resulting ship emission implications for ferries deviating and steaming an extra 0.55 miles for each of 1,440 transits per annum equated to an additional 792 miles per year and extra annual fuel consumption of 168 tonnes (equivalent to fuel for eight similar voyages) costing \$18,500 per annum. The response only reaffirmed that from the developers; namely: "this additional pollution is heavily offset by the overall emission savings which will result during the operational life of the wind farm. Carbon dioxide savings alone are estimated at just under 400,000 tons per annum."

In the event, the industry is now faced with an acceptable solution, though not ideal because of the extra operational costs it entails.

#### *Cromer Offshore Wind Farm Site*

The Chamber wrote to the MCA expressing concern over the proposed Cromer offshore wind farm site. This will straddle the middle of three adjacent, parallel shipping routes and is in an area estimated to be transited by up to 50 ships per day. In addition to requiring shipping on the middle route to deviate, this wind farm will require the establishment of new routeing arrangements—yet to be decided—between the farm and the coast in order to allow ships to use the inshore route in bad weather conditions.

Here, the industry is faced with an arrangement which could compromise safety and, arguably, is an infringement of Article 60(7) of the UN Convention on the Law of the Sea (UNCLOS). This article states that, “*Artificial islands, structures and the safety zones around them may not be established where interference may be caused to the use of recognized sea lanes essential to international navigation.*”

## Annex 2

### STUDIES ON THE CUMULATIVE IMPACT OF ROUND 2 OFFSHORE WIND FARMS ON NAVIGATION: INITIAL IDEAS FROM THE PORTS AND SHIPPING INDUSTRIES

#### 1. BACKGROUND

1.1 Discussions between DfT and the ports and shipping industries, have identified that studies are needed of the cumulative impact of offshore wind farms on:

1.1.1 Navigational safety given the potential for ships to collide with offshore structures as well as ship-to-ship collisions if in the event of vessels becoming bunched by developments and/or having to deviate from optimum routes;

1.1.2 Interference with navigation, radar and communications systems including vessel traffic systems, as well as interference with visual navigational aids;

1.1.3 Impacts on the operation of maritime emergency services;

1.1.4 Snagging of wind farm cables by anchors or fishing gear and the impact of cables on dredging operations and,

1.1.5 Seabed scouring and sedimentation affecting navigable channels including port approaches and anchorages.

In all probability there will need to be three separate and distinct studies for each of the strategic areas concerned. These studies should form part of a Regional Environmental Assessment of the cumulative and in—combination effects of all the proposed sites in each area.

1.2 Given the scale of the Round 2 proposals and the lack of knowledge, particularly with respect to impacts on 1.1.1, 1.1.2 and 1.1.5 above, the industries are advocating proper independent consultants’ studies rather than simply consultative exercises in which all interested parties are invited to offer opinions on the extent to which wind farms have an impact.

1.3 It is understood that Maritime and Coastguard Agency (MCA) will have already identified the need for (and may be pursuing) studies on some of these impacts. Notwithstanding, the industries undertook to put forward some initial thoughts on how to tackle research.

#### 2. INDEPENDENT CONSULTANTS’ STUDIES AND THEIR RELATIONSHIP TO INDIVIDUAL EIAs

2.1 The studies should be independent of the environmental impact assessment (EIA) undertaken by each developer and should certainly focus on those potential outcomes that may have generic application. However, it is for consideration whether aspects of studies (like 1.1.1 where government already has a responsibility to assess traffic volumes and risk under the SOLAS Convention) and which ordinarily would be addressed in individual EIAs, should instead be handled by Government. In any event, the studies should be completed before assessing the results of the EIAs overall (ie in 18 months time approximately) and should assist in validating objectively EIA results.

2.2 Such studies will need to be carried out for each of the three areas involved taking full account of the in—combination effects of the proposed wind farms in each of the areas involved. For wind farms proposed for bank systems, a critical issue will be whether either natural bank migration or the effects of the wind farm and associated cables and construction activities on the bank will result in problems.

2.3 Deposit monies raised by Crown Estate should be used to fund independent research in addition to the financial resources of DTI and/or DfT as appropriate.

2.4 A study of the impact on 1.1.5 (“Seabed scouring . . .”) could be undertaken quite separately to studies on 1.1.1 to 1.1.4 where results on 1.1.2 (“Interference . . .”) could have important implications on 1.1.1 (“Navigational safety . . .”) and 1.1.3 (“ . . . emergency services”).

2.5 The studies would be steered by a committee which would develop Terms of Reference for each and for each of the three areas concerned. The industries would wish to be represented on the steering committee.

### 3. STUDY OF IMPACT 1.1.1 (“NAVIGATIONAL SAFETY . . .”)

3.1 This study should be a two-part project: Phase One—a data gathering exercise to validate/supplement the vessel route data held by Anatec Ltd and MARICO for the three strategic areas; and Phase Two—where the agreed vessel route data from Phase One is fed into a ship traffic computer model (eg the MARIN “SAMSOM” model) designed to assess risks associated with offshore wind farms and the effect of policy measures concerning for example: re-routeing traffic or introducing a “shipping clearways” system in the three strategic areas.

3.2 In Phase One vessel route information, within and in the vicinity of the three strategic areas, could be obtained through:

3.2.1 Surveyors, port and deep-sea pilots requesting masters calling at ports in, or transiting, the three areas to furnish route details; and/or

3.2.2 MCA mounting a remote monitoring exercise using prototype equipment as part of the development of the UK’s Automatic Identification System (AIS) Infrastructure being established by government (by the end of 2007) to meet its obligations under Article 9 of Directive 2002/59/EC (“Establishing a Community Vessel Traffic Monitoring and Information System”).

### 4. STUDY OF IMPACT 1.1.2 (“INTERFERENCE WITH . . . RADAR . . . COMMUNICATIONS . . . VISUAL NAVIGATIONAL AIDS”)

4.1 This study, because of the importance of communications for position—fixing, surveillance and information exchange, is the most crucial to get right in order to ensure that safety is not compromised. The study should be a three-part project: Phase One—research to identify, for example, other countries (eg Denmark) experience with offshore wind farm induced communications interference and the potential critical parameters; Phase Two—“in-field” observations utilising vessels and equipment of varying size/types in the vicinity of Round One wind farm sites under construction and in operation; and Phase Three—from the Phase One and Two results, identifying the controlling operational parameters to ensure that interference will not become a problem in practice.

### 5. STUDY OF IMPACT ON 1.1.3 (“ . . . EMERGENCY SERVICES”)

5.1 This study should also consider the impact on ships since situations might arise where a ship could possibly be under an obligation to assist in rescuing those seeking assistance in, or in the vicinity of, wind farm sites.

### 6. STUDY OF IMPACT ON 1.1.4 (“SNAGGING OF . . . CABLES . . .”)

6.1 This study could possibly be included in Phase Two of the study of the impact on 1.1.1.

### 7. STUDY OF IMPACT ON 1.1.5 (“SEABED SCOURING . . .”)

7.1 This independent study should be undertaken by an organisation such as HR Wallingford using any relevant data provided by for example ports and the Hydrographic Office. The organisation selected should be independent of the developers promoting the various schemes.

7.2 The scope should be extended to include: potential sea bed stability in the offshore bank areas proposed for the works and, thereby, the influence of the wind farms on seabed and navigation channels scour/stability under a range of possible future sea bed scenarios at the wind farm site (ie what happens if the bank migrates slightly as a result of “natural” or other forcing? Does the potential interaction of the wind farm in this scenario increase?)

7.3 The scope should also cover construction effects, in particular the requirements for “safe” cable burying/placement across shipping channels in morphologically active areas. To achieve the desired safety, is there a risk of the construction activity itself having a significant potential impact?

#### **Memorandum by the British Wind Energy Association (NH 07)**

1. The BWEA welcomes an opportunity to contribute to discussions on the siting of offshore wind farms in the context of shipping lanes. This memorandum has been prepared in some haste following the BWEA’s discovery on 14 April of the topic being explored by the Committee on 28 April. The BWEA would welcome the opportunity to give oral evidence.

2. The BWEA represents over 315 companies involved in all aspects of the wind power industry, many of which are focused on the offshore sector. It is the primary voice of the industry in the UK. The association recognised several years ago that offshore wind power should play a key part in meeting the Government’s renewables targets and hence the UK’s commitments on climate change. With the programme of offshore development now in hand, about half of the wind capacity expected to be built up to 2010 is likely to be in

the sea. Indeed, if considerable offshore capacity is not realised, then the UK will miss its targets for renewables by a considerable margin. Offshore wind is also a huge opportunity for the UK to establish itself as a world leader in a new industrial activity, with the potential to become a major export sector.

3. In 2001, Crown Estate awarded 18 site leases under “Round One” of the offshore wind programme, with each project limited to 30 wind turbines. One of these projects, North Hoyle, is now complete, and a second, Scroby Sands, is under construction. These developments have capacity of 60MW each. The BWEA expects a further five projects to be completed by the end of 2005, totalling about 450MW. More Round One projects will be built in 2006. By the end of next year, the UK should be the world leader in terms of installed capacity offshore.

4. Recognising the appetite for offshore wind development, in 2003 the Government and Crown Estate launched “Round Two”. Unlike the first round, these projects have no upper limit on size, though bids were only invited for sites in three “strategic areas”: the Thames Estuary, the Greater Wash and off the north-west coast of England and Wales. In December, the results of this round were announced—15 projects totalling a maximum of 7,200MW were awarded options to lease sites.

5. The BWEA and its members have been aware from the outset of offshore Round One of the need to address the legitimate requirements of all of the users of the sea in the contexts of both environmental impact assessment and the legal framework. There have been extensive dialogues with representatives of fishing interests, the Maritime and Coastguard Agency, the Royal Yachting Association, and a number of other key bodies.

6. It should be noted that collision is a key risk for wind farm operators as well as shipping, and the wind industry has an interest in minimising the likelihood of these events. Most areas chosen for wind farm development are relatively shallow, and thus less favourable for shipping—in some places a wind farm will indicate to ships an area that they would wish to avoid in any case. All projects are subject to environmental impact assessments, which contain collision risk studies and are subject to wide consultation, including with shipping interests. Once the Energy Bill is given Royal Assent, these assessments will also include consultation on any proposed exclusion zones.

7. Evidence of the professional and thorough approach of Round One offshore developers to these issues can be found within the Environmental Statements submitted with applications for offshore consents. Specifically, the Environmental Statements submitted demonstrate:

- a process of early and continuous consultation with relevant interests;
- a clear appreciation of the legal framework for the consideration of navigational concerns;
- an appreciation of the need for the wind energy industry to co-exist with the many other users of the sea;
- the engagement of appropriately qualified experts to undertake navigational risk assessments; and
- a realistic appreciation that risk to navigational safety may arise and require careful management during both the construction and operation of offshore wind farms.

8. The BWEA supports, in the context of all that has been said so far in this memorandum, the Government’s proposals within the Energy Bill relating to navigational issues. Specifically, the BWEA strongly supports the framework within the Bill for safety zones. It acknowledges and supports the need for consultation in relation to proposed safety zones. It acknowledges the need to consider an extinguishment or suspension of navigational rights in circumstances where this is necessary, and supports the proposals for consultation in relation to any extinguishment or suspension. The proposals in the Energy Bill display a cautious but positive approach to the issues that need to be addressed, and the BWEA looks forward to working with Government and with all relevant interests to enable the implementation of consented Round One projects and the development and implementation of the 15 Round Two projects in respect of which terms have been offered by the Crown Estate.

9. The BWEA is aware of the need to maintain and deepen dialogue with all parties during the Round Two process. Offshore wind energy development is here to stay, and is a key component in the Government’s climate change programme. The development of Round Two projects will generate substantial employment within the UK, and will thus bring substantial economic as well as environmental benefits.

10. The agenda to be followed should be one of consultation and co-operation, not confrontation. BWEA believes that a satisfactory outcome can be achieved for all parties and looks forward to a constructive process.

*April 2004*

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**Memorandum by Powergen UK plc (NH 08)**

**OFFSHORE NAVIGATIONAL HAZARDS**

1. Powergen welcomes the opportunity to provide the committee with evidence for its enquiry into whether the siting of offshore wind farms take account of shipping lanes.

2. The UK has one of the best offshore wind resources in Europe and the emerging offshore wind generation industry has the potential to make a significant contribution to the achievement of the Government's renewable energy and climate change targets. Offshore wind offers a number of advantages in the delivery of renewable power, including its potential for scale and reduced visual impact compared to onshore developments. However, the industry is currently in its infancy and will require fostering if it is to become established and fulfil its potential.

3. Powergen is a leader in the development of offshore wind generation in the UK. We were the first developer to receive consent for a commercial scale offshore wind farm with our Scroby Sands project near Great Yarmouth. This 60 MW Round 1 wind farm is currently under construction and is expected to be commissioned later this year. We are also actively developing the Robin Rigg wind farm in the Solway Firth, which consists of two thirty-turbine Round 1 schemes and which we would expect to commission in 2006. As part of the London Array consortium, we have also been awarded a Round 2 licence for a 1,000 MW development in the Thames Estuary.

4. Development of an offshore wind farm requires consideration of a range of constraints, of which the impact on shipping is key. As part of our assessment of the suitability of a site for wind generation, studies of shipping densities are used to ensure that any impact on the maritime industry is minimised. We also seek to work closely with the shipping community during the development phase of projects to ensure that we continue to address their concerns.

5. All three of our offshore wind projects are situated in areas of very low shipping density. Whilst the London Array project is bordered on three sides by busy shipping lanes, the buffer zones included within the site boundary ensure that the turbines will be situated some distance from shipping traffic. Following risk assessment studies, modifications have been made to the site boundaries to ensure further clearance from lesser used shipping lanes to the south of the site. In addition, the turbines are to be situated on and between two major sandbanks which provide a natural and effective defence against collisions. Whilst we are confident that the project will not present a hazard to shipping, we will continue to address any concerns as development of the project progresses.

6. It should be borne in mind that the award of a Crown Estate Agreement for Lease does not represent the go ahead for an offshore wind development, which still needs to secure approval from the relevant consenting authorities. The Energy Bill extends the requirement for consent from the Secretary of State under Section 36 of the Electricity Act 1989 to wind farms in Renewable Energy Zones and confirms that this regime applies in territorial waters adjacent to Great Britain. It is for these authorities to balance the conflicting demands from different interest groups and assess the benefit of the scheme on its merits. Ultimately this process represents the safeguard for the shipping industry, as it is for all other interested parties.

7. The expansion of the offshore wind industry also represents an opportunity for the shipping industry, as an increasing number of ports, construction vessels and operations and maintenance vessels will be required to build and service the wind farms.

Powergen

19 April 2004

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**Memorandum by Professor Glen Plant (NH 09)**

**THE ENERGY BILL'S PROVISIONS FOR ACCOMMODATING OFFSHORE RENEWABLE ENERGY SOURCE DEVELOPMENT WITH NAVIGATION INTERESTS**

*General*

The Bill's primary method for accommodating Offshore Renewable Energy Source (RES) development with navigation interests is through the use of safety zones (Clause 95). A secondary method, employed only in territorial waters and only in relation to domestic (non-international) rights of navigation, is the provision of a power to extinguish, suspend or restrict the right at the location of RES installations (Clauses 101 and 102). Two other methods appear in Clauses 99 and 100, inserted following a division on amendments proposed by Lord Higgins (Cons.) at Report Stage. Clause 99 relates only to international navigation rights, preventing development in recognised sea lanes essential to international navigation, Clause 100 applies more generally. The duty it imposes on the Secretary of State to ensure that cumulative effects of RES development on safety of navigation are taken fully into account is of potential utility, but perhaps insufficiently specific.

These, and additional measures that need to be considered, are discussed below in relation to international and to domestic rights of navigation respectively:

## INTERNATIONAL NAVIGATION RIGHTS

The discussion below concentrates on the 200 mile zone, where the greatest problems are likely to occur.

*Foreign Ships' Rights of Innocent Passage in Territorial Waters*<sup>5</sup>

Before consenting to development or imposing any restrictions on navigation rights, the authorities are bound to consider whether or not this would have the practical effect of denying or impairing foreign ships' right of innocent passage. Factors to consider in deciding whether or not consents or restrictions would be reasonable include: existing traffic patterns (as far as they are known); the proximity of port facilities or roadsteads; the positions of shipping channels and fairways; and the location and extent of ships' routeing and other ship traffic systems.<sup>6</sup> The general test to be applied is that of "reasonableness". It is significant, therefore, that Clause 99 applies the Art. 60(3) UNCLOS prohibition against installations and the safety zones around them being established where interference may be caused to the use of recognised sea lanes essential to international navigation to territorial waters, as well as the 200 Mile Zone. The implication is that development there would be inherently unreasonable. The problem lies in identifying such sea lanes.

*Foreign ships' freedom of navigation in the 200 Mile Zone*

Although the primary method for accommodating RES development with navigation interests in the Bill is the safety zone, it is doubtful that safety zones (combined with notice and installation marking requirements) are an adequate protection against ship-platform allision.<sup>7</sup> Each zone's design is required to be "reasonably related to the [platform's] nature and function", and its extent is limited to a maximum of only 500m measured from each point of its outer edge,<sup>8</sup> except where "authorized by [as yet non-existent GAIS] or as recommended by the [IMO]."<sup>9</sup> The UK follows most other States in restricting its petroleum safety zones to 500m. Even with these restrictions, moreover, there have been many complaints of safety zone infringements,<sup>10</sup> and flag State action against infringers has often been inadequate.<sup>11</sup>

It is in any event difficult to decide on the appropriate size of safety zones. The Government has calculated the "potential generating capacities of the [three Strategic Areas by] assuming that 3MW turbines are installed at a separation of 500m".<sup>12</sup> If, as it suggests, wind farms in the 200 mile zone will consist of hundreds of turbines, and if a 500m (or even a 250m) safety zone were declared around each, the effect would be to close off large areas of sea to navigation. Offshore RES generating stations are, however, likely to differ greatly in design and extent and in the number and spacing of installations comprising each, so that the numbers and sizes of safety zones justified around individual installations might vary greatly. This is perhaps illustrated by Clause 95's statement of the purpose of a safety zone to be to secure the safety not only of the renewable energy installation around which it is established (and persons on board it), but also of other installations *in the vicinity of* that installation.<sup>13</sup> This might at first appear to be an unjustified extension of Art. 60(3) UNCLOS, which refers only to the safety of the installation itself and of ships in the vicinity, but may be excused when one considers the unique nature and size of renewable energy generating stations. The Maritime and Coastguard Agency's Proposed UK Offshore Renewable Energy Installations (OREI)—[Marine] Guidance [Note] on Navigational Safety Issues suggests, moreover, that zones might be limited to 50 m around high or medium risk wind farm installations only. This might be too narrow to add anything to the rotor height clearance requirements.

It is, as noted above, far from easy to identify sea lanes essential to international navigation or, conversely, areas within 200 NM zones where the risks of ship/turbine allision, and of consequent environmental damage, would be "acceptably" low. This requires extensive and continuing monitoring and analysis of traffic patterns and of the effects of offshore development on ship behaviour. It is not clear that Clause 100 goes far enough to promote this.

<sup>5</sup> I do not discuss the right of transit passage afforded foreign ships in certain adjacent straits.

<sup>6</sup> An appropriate procedure in the light of which to conduct the inquiry is the Formal Safety Assessment. It would appear to be preferable to conduct such assessment *in advance* of the granting of wind farm consents, as was done with respect to Germany's Borkum West farm.

<sup>7</sup> C/G Ulfstein, "The Conflict between Petroleum Production, Navigation and Fisheries in International Law", 19 *ODIL* (1988) 229, 244.

<sup>8</sup> The breadth of 500m appears to have been adopted originally as a result of the 1953 report to the ILC of the Special Rapporteur on the Regime of the High Seas, J. François, noting that several countries had already adopted 500m "no smoking" zones around their land-based rigs.

<sup>9</sup> Art 60(5) UNCLOS.

<sup>10</sup> See IMO Res A.671(16), 9th preambular para.

<sup>11</sup> *Ibid*, 11th preambular para, and Annex 2, para 2.

<sup>12</sup> *Future Offshore*, at 27.

<sup>13</sup> Clause 95(2)(b).



In the past, the UK and Netherlands have supplemented continental shelf safety zones with “clearway” systems. UK “clearways” (areas believed to coincide with the main shipping routes above the shelf, or in territorial waters) were an administrative device to assist the offshore petroleum licensing process,<sup>14</sup> and where IMO-adopted ships’ routing systems lay within clearways, there was a presumption against licensing. When, however, in 1995, it became clear that the clearways were “not necessarily a sufficient or accurate guide to the presence, absence or level of likely obstruction or danger” to navigation,<sup>15</sup> the UK switched to the present system of case by case assessment. Significantly, the presumption against licensing in the areas of IMO-adopted routing systems is nevertheless retained,<sup>16</sup> and is coupled with efforts to establish as far as possible a general definition of those areas where danger or obstruction to navigation is likely to be most significant.<sup>17</sup> Clearways should, it appears, also be rejected for, and the above-mentioned presumption and efforts applied to cover, wind energy development in the 200NM zone, unless recent efforts to bring them up to date in digitalised format improve their reliability.

There is still insufficient information on traffic patterns in waters off the UK to ascertain whether petroleum licenses have been awarded in low collision-risk locations or not.<sup>18</sup> The same problem (and adverse liability insurance-related consequences) might well come to dog offshore wind farms. It is, perhaps, significant that the German and Dutch Governments have already launched inter-Departmental processes to identify “potentially suitable” or “priority,” because *low use-conflict* as well as windy, EEZ areas for wind farm development.<sup>19</sup> These identification processes have been aided by specialist software developed through government-supported research.<sup>20</sup> The UK is less far advanced in its equivalent process: the DTI adopted the three Strategic Areas “on the basis of analysis of the Windbase database and provisional indications of interest from industry”.<sup>21</sup> As Windbase incorporates very limited navigational data, however, the Strategic Areas do not necessarily coincide with areas of low collision risk. Perhaps the UK Government should now develop or promote development of specialist software, employing even more comprehensive datasets than COAST, as an aid to identifying low use-conflict areas for all offshore development. In addition to this, the Government should require a FSA into the collision/collision-risk posed by individual wind farm projects, *in advance* of granting consents to each.

Short of finding a reliable method for identifying low-use conflict areas in general or of locating individual wind farms sufficiently far from shipping routes to remove any serious collision risk,<sup>22</sup> the best means of controlling that risk appears to be the employment of “traffic measures” additional to safety zones.

Most useful, because most likely to assist in the identification of (or even to embody, at least in part) “sea lanes essential to international navigation”, are likely to be “positive” ships’ routing systems.<sup>23</sup> A number of IMO-adopted TSSs and related non-mandatory routing measures lie in waters off the UK and Continental

<sup>14</sup> They were guides to those areas where the Government could reasonably issue licenses, with or without conditions, for exploration or exploitation, having regard to whether or not this would cause or be likely to cause obstruction or danger to navigation (*cf.* S. 34 CPA), and where licensee oil companies were required to give six months’ notice, through notices to mariners, before establishing platforms.

<sup>15</sup> DoT Guidance, *Coast Protection Act 1949: Consent to Locate Offshore Installations*, Aug 1995, para 1.14.

<sup>16</sup> *Ibid.*, para 1.10.

<sup>17</sup> *Ibid.*, paras 1.14 and .1.

<sup>18</sup> A 1984 study of the UK North Sea continental shelf suggested that “if a platform is near a route likely to be used by passing traffic in significant numbers, the risk of a collision between a passing vessel and the platform is high, and a matter of major concern”: Technica Ltd. Report to the DoT, “Risk of Collision between Passing Vessels and Platforms in the UK Sector of the North Sea”, 1984. In recent years better traffic data have been compiled, including in the COAST database, and computerised collision/allision frequency prediction models have been developed, such as Safetec’s “COLLIDE” and Technica’s “CRASH”. These are, however, of limited utility with respect to (more extensive and closer inshore) RES developments.

<sup>19</sup> Germany has already identified areas of the North Sea north of Borkum and west of Sylt and of the Baltic Sea north of Rügen and west of Adlerrund, capable of accommodating up to 6,500 MW installed-capacity by 2010, and is looking at other North Sea areas capable of adding up to 35,740 MW to this: *New Energy*, 2/2002 (April 2002), p 62. The Netherlands has likewise identified some 10,500km<sup>2</sup> of priority areas.

<sup>20</sup> See Germanischer Lloyd, *Annual Report 2001*, pp 64–65, available on-line at <http://www.germanlloyd.org/facts/magazines/ann—01/services01.pdf> and the Netherlands Energy Research Centre web-site at <http://www.ecn.nl/unit-de/wind/main.html> (sites visited 25 July 2002). The Bergen North Sea Ministerial Declaration (*supra* n 27) invited OSPAR, in cooperation with the EC institutions, to “develop a comprehensive set of criteria to assist competent authorities when deciding on applications for the development of offshore wind energy installations”: para 72. These criteria could be integrated into such programmes.

<sup>21</sup> *Future Offshore*, at 41.

<sup>22</sup> The “Borkum West” farm will be sited between the two main East-West ships’ routing systems into and out of the environmentally sensitive German Bight. The BSH’s Director concluded from the Germanischer Lloyd risk assessment that “[t]he probability of a wind farm causing a shipping accident with a subsequent discharge of hazardous materials is one in 112,000 years in the case of an oil tanker and one in 28,000 years in the case of a freighter”. He added, “We think that’s a reasonable level”: *New Energy*, 3/2001 (May 2001). Whether or not a statistically-defined risk analysis is acceptable in principle and whether or not the particular statistically-determined risks in this case are acceptable are matters of political and professional judgement.

<sup>23</sup> Indeed, thought was given to adopting such routing systems in the North Sea as soon as the first offshore petroleum exploration operations began there. In 1965, a marine insurance congress in Lucerne recommended that “access channels” be adopted; and, in 1966, a joint working group of the British, French and German institutes of navigation suggested that shipping patterns be studied at an early stage of exploitation and that extensive consultation be undertaken preparatory to adopting routing measures over shelf areas: “The Separation of Traffic at Sea”, 19 *Jo Ins Navigation* (1966), 414, 418. Care must be taken, however, not to equate “recognised sea lanes essential to international navigation”, simply on grounds of linguistic similarity, to either routing systems or the “sea lanes” “channels”, “route[s].. of similar convenience”, “routes normally used for international navigation”, “international sea lanes” or “established international shipping routes” referred to in Arts 22, 38(1), 41, 53(12) (but see Art 53(4)), 147(2)(c) and 261 UNCLOS.

Europe, although only a few overlap with the three Strategic Areas. “Negative” routeing measures are likely to be of less utility, if only because such measures established around wind farms are likely to be regarded by mariners as devices to circumvent the size limits of 500m safety zones. On the other hand, areas to be avoided (ATBAs) have been designated around the Louisiana Offshore Oil Port and petroleum platforms in the Bass Straits, and the UK supplements its continental shelf safety zones with “development areas” around groups of petroleum platforms. Ships not having business in these are recommended to keep clear. They are in effect non-IMO-adopted “ATBAs” intended to prevent ships “rig running” through small gaps between adjacent safety zones. The Government might, therefore, come to consider ATBAs’ use appropriate to supplement 200NM zone wind installation safety zones. If it did, it would seek their adoption by the IMO before implementing them. That ATBAs of any great size around offshore installations are regarded as inappropriate by the majority at the IMO (possibly because proposals are, indeed, seen as a ruse to escape the normal size limit for safety zones) is illustrated by recent opposition to a 10 NM radius ATBA proposed by Canada around its Terra Nova Floating Production Storage and Offloading Vessel.<sup>24</sup> Less restrictive measures, such as no anchoring areas (NAAs) might, however, play a useful role. Finally, in appropriate circumstances, SRS or VTS (though probably not compulsory pilotage or tug-escort for ships) might also serve as reasonable measures to enhance wind farm safety.

In principle, ship traffic systems beyond territorial waters are not binding upon passing foreign ships, but a coastal State is able to seek IMO adoption of mandatory routeing and SRS systems.<sup>25</sup>

The only example to date of a “positive” mandatory routeing system of this kind is in point, because it passes over EEZ areas where many petroleum platforms are present. It is the “Mandatory Route for Tankers from North Hinder to the German Bight and *Vice Versa*”,<sup>26</sup> consisting in a connected series of routeing measures (two DWRs, three TSSs and a Precautionary Area) which runs parallel to the Dutch and German coasts. Ships joining and leaving it are advised to be aware that platforms might be encountered in its vicinity, and tankers are required too to avoid the sea areas between the mandatory route and the adjacent Frisian Islands, where platforms may be encountered, except when passing between the route and ports. Whether or not it increases safety in the area remains controversial,<sup>27</sup> but it is a model to study with wind farms in mind. There are also examples of NAAs adopted as mandatory by the IMO, which might serve as useful precedents for study.<sup>28</sup> The ships’ routeing situation off the UK might soon become more complicated, moreover, by the advent of a national system of “Marine Environmentally High Risk Areas” (MEHRAs).<sup>29</sup> These are conceived as voluntary measures, but with the option of moving to mandatory routeing if monitoring shows that shipping is not keeping clear of them.<sup>30</sup>

Of the IMO-adopted mandatory ship reporting systems (SRSs) established off Western Europe, those “In the Dover Strait/Pas de Calais”, “Off Ushant”, “In the ‘Off Finisterre’ [TSS]” and “Off Casquets” extend beyond territorial waters.<sup>31</sup>

The criteria for IMO adoption of mandatory routeing systems and SRSs are, however, strict and aimed primarily at environmental protection rather than ship or platform safety *simpliciter*. It follows that the IMO is likely to adopt a mandatory traffic system primarily aimed at guarding against ship-platform allision only where such allision would give rise to high risks of environmental pollution, for example where wind turbines are erected in environmentally sensitive waters frequented by tankers.

The operation of a VTS system to enhance safety may be required as a condition for obtaining a RES generating station licence,<sup>32</sup> but participation in it by foreign passing vessels must be voluntary beyond territorial waters.

<sup>24</sup> IMO doc. NAV 47/14, 4 July 2001, para. 4.16–20.

<sup>25</sup> Respectively under SOLAS Reg V/10 and /11, implemented in the UK by the Merchant Shipping (Safety of Navigation) Regulations 2002, SI 2002/1473.

<sup>26</sup> IMO, *Ships’ Routeing*, loc cit, Part G, p II/1.

<sup>27</sup> Aline de Bièvre “Voyage Planning: Maximum Flexibility or Regulatory Diktat”, *Lloyd’s List*, 6 January 1997, p 16.

<sup>28</sup> The “Mandatory [NAAs] on the US Flower Garden Banks Coral Reefs” (IMO doc SN/Circ 216) and three “Mandatory [NAAs] in the Tortugas Ecological Reserve and the Tortugas Bank in the Florida Keys” (IMO doc SN/Circ 220).

<sup>29</sup> These were proposed by *Safer Ships and Cleaner Seas: the Report of Lord Donaldson’s Inquiry into the Prevention of Pollution from Merchant Shipping* (17 May 1994, Cm. 2560) as “comparatively limited areas [extending along no more than 10% of the UK coast] of high [environmental] sensitivity which are also at risk from shipping”: see paras 14.119–125. Accepted in principle by the UK Government, these are to be marked on charts (and in the UK *Seaway Code*), in order to inform ships’ masters of areas “where there was a real prospect of a problem arising”. See further Plant, “A European lawyer’s view of the Government response to the Donaldson Report”, 19 *Marine Policy* (1995) 453, 459–60. Following a consultation exercise based upon a report by Safetec (“Identification of Marine Environmental High Risk Areas (MEHRA’s) in the UK”, 7 December 1999: reproduced at: <http://www.defra.gov.uk/environment/consult/mehra> (site visited 9 May 2003)), the Government intends to hold a further consultation on proposals to designate individual MEHRAs: “Proposals at Last On Marine Environment High Risk Areas”, *ENDS Report* 301, Feb. 2001, at 39. A particular conundrum will be what to do about areas found to qualify for MEHRA status in which IMO-adopted “positive” routeing measures are established and recommended for use by ships or certain classes of ship: the area of the IMO-adopted DWR for tankers “West of the Hebrides” (*Ships’ Routeing*, Part B, p II) is a real possibility. The Government has been accused of dragging its feet over MEHRAs, possibly for this reason: “Ecosystems approach promised in marine stewardship report”, *ENDS Report* 328, May 2002, at 48.

<sup>30</sup> *ENDS Report* 301, loc cit.

<sup>31</sup> See IMO, *Ships’ Routeing*, loc cit, supra n 68, Part G, pp I/2, /3 (also IMO docs. NAV 47/14, para 5.12–13) and /4 and IMO Res MSC.100(73), 1 December 2000.

<sup>32</sup> The operation of VTS is required, as a licensing condition, of a number of petroleum platforms on the North Sea continental shelf.

Further discussion is necessary, involving both the offshore wind and the domestic and international shipping industries, as to which additional traffic measures might be suitable in the UK's 200NM zone.

#### DOMESTIC (COMMON LAW) PUBLIC RIGHTS OF NAVIGATION

*Clauses 101 and 102 Energy Bill: Extinguishment etc. of public rights of navigation and Further provision relating to public rights of navigation*

Clause 101 inserts into the Electricity Act 1989 a new Section 36A entitled "*Declarations extinguishing etc public rights of navigation*" and makes consequential amendments. Under this an applicant for a consent under Section 36 of that Act in respect of a British territorial waters generating station partly or wholly comprised of renewable energy installations may apply at the same time for a declaration. The Secretary of State (DTI) (or the Scottish Ministers) may then make such a declaration extinguishing, suspending or placing restrictions and/or conditions on "rights of navigation" passing through the places where the installations in question are or are to be situated. The intention is to affect only the waters occupied or to be occupied by the installation and not the waters around it.<sup>33</sup> As an application for a declaration is to be treated as part of the application for the consent, the procedural safeguards of Schedule 8 to the 1989 Act will apply.

Clause 102 makes similar provision in relation to generating stations that obtain a Section 36 consent before the commencement of Section 101, except that different publicity requirements and fewer procedural safeguards apply.<sup>34</sup>

The background to these provisions is the suggestion in the DTI consultation paper, *Future Offshore*, that British territorial waters consents procedures might be improved by removing disincentives to use the Electricity Act, etc procedural route, which is in general less costly and time-consuming than the TWA Order route available in England and Wales and the Private Member's Bill route available in Scotland. The DTI decided to amend the 1989 Act, because "[i]t is not clear... whether the grant of a consent under section 36 of the Electricity Act extinguishes the public right of navigation. There is no explicit reference in the Act to such extinguishment which could be used as a statutory defence to a claim that the generating station is causing a public nuisance and it is open to doubt whether there is an implied statutory defence. We take the view that developers should be able to protect themselves against [possible] claims for nuisance or damage".<sup>35</sup>

It might have added that the same is true of Section 34 Coast Protection Act 1949, but that it chose to amend the 1989 rather than the 1949 Act because of the procedural advantages this offers.<sup>36</sup>

It is now clear that the new power is intended to permit the extinguishment, etc of only the common law public right of navigation within territorial waters. Lord Triesman has explained that the Clause "relates to the extinguishment of domestic public rights of navigation, not international rights. It is not intended to touch upon international rights. Public rights will be extinguished out only to the limits of the territorial sea and not beyond in the renewable energy zone",<sup>37</sup> to which the Government does not consider the common law rights to extend.<sup>38</sup> The headings to Clause 101 (and 102) and new Section 36A accordingly refer to "*public rights of navigation*" (emphasis added).

This means that the Clause will not affect the public international law rights of innocent or transit passage enjoyed by foreign ships in UK territorial waters,<sup>39</sup> nor the wider freedom of navigation enjoyed by them in REZs. This approach is consistent with the care with which other UK statutes preserve such public international law rights<sup>40</sup> and the DTI's position that "[i]n view of our international obligations in regard to the freedom of navigation it would not be appropriate to extend [the Section 3 TWA power of extinguishment, etc] beyond territorial waters".<sup>41</sup>

<sup>33</sup> Statement by Lord Triesman at HL Debate, 23 March 2004, col 644.

<sup>34</sup> In particular they make no provision for the possibility of a public inquiry.

<sup>35</sup> DTI Seminar paper, 'Planned Legislation on Offshore Renewable Energy', Sep. 2003, para. 38.

<sup>36</sup> *Future Offshore*, at pp. 67-68. Notwithstanding the insertion of the new provision in the 1989 Act, however, it appears that a Section 34 CPA consent will still be required. The Bill contains no equivalent to Section 19 TWA, which exempts TWA Orders from this requirement, through an amendment to Section 35. Since, as Lord Whitty asserted in HL Deb. 4 Feb. 2004, col. GC 366, "the controls [under the TWA and CPA] are equally stringent and ensure that marine safety is not compromised", the opportunity should perhaps be taken to simplify the Electricity Act etc. procedural route by making similar provision. But see Lord Greenway's and Lord Higgins's concerns: HL Deb., 23 March 2004, cols. 625 and 638.

<sup>37</sup> HL Deb. 23 March 2004, col. 644.

<sup>38</sup> Lord Davies of Oldham HL Deb. 23 March 2004, col. 654.

<sup>39</sup> It follows that a foreign State will be able to make a diplomatic complaint to the UK if the exercise of the power were to have an unreasonable impact on its vessels' right of innocent passage, or unlawfully infringe its vessels' right of transit passage, in UK territorial waters, or is without due regard to their freedom of navigation in the REZ. It seems highly unlikely, however, that a foreigner could successfully pursue a civil action in the British courts in respect of interference with his public international law rights.

<sup>40</sup> Eg Section 85(1A) and (B) Merchant Shipping Act 1995.

<sup>41</sup> Seminar paper, note 31 above, para. 23.

The text (as opposed to the heading) of new Section 36A refers only to “rights of navigation” *simpliciter*. In view of the above-noted intention, it might be better to refer explicitly to “public rights of navigation” in the text. As it applies only to rights seaward of the mean low water mark (MLWM), it does not need, like Section 3 TWA, to use language broad enough to cover rights of navigation on inland waterways as well as the public right in territorial waters.<sup>42</sup>

As to compensation for loss of rights, the Government takes the view that “the public rights of navigation [in question] are unlikely to be ‘possessions’ within the meaning of Article 1 of the First Protocol” to the ECHR (right to peaceful enjoyment of possessions), and that in any event “a fair balance is struck between the rights of the wider community, and an individual’s right of navigation”.<sup>43</sup> Lord Kirkland, on the other hand, inclined to the view in the Grand Chamber that a public right of navigation (“PRN”) can constitute a possession: ‘First, a recurring theme in case law for determining possession is the concept of an established interest with economic value. I would expect that those exercising a PRN, especially if they were doing so as part of a commercial enterprise, could rely on the [ECHR] decisions of *Pine Valley Developments v Ireland*<sup>44</sup> and *Tre Traktorer Aktiebolag v Sweden*<sup>45</sup>. In my opinion, the broad interpretation of a ‘possession’ is likely to encompass a PRN and, ultimately, it may turn on the particular facts: namely, the number of individuals that would be affected; whether there were other convenient navigation alternatives; and the scale of detriment to any commercial enterprise’ (endnotes inserted).<sup>46</sup> In such a case, he considered, reasonable compensation would be due and should be provided for in the Bill. The Government’s response was that, if it was wrong and a PRN was a “possession”, “the question would [arise] whether its extinguishment is a deprivation or control of use.. and whether that would amount to a control of use for which compensation would be appropriate”. In practise, in its view, “the restriction would be pretty limited and therefore the degree of deprivation, which could be established in terms of commercial loss, would be fairly small in relation to the rights of navigation”.<sup>47</sup>

The Government also considers that the procedures provided for, together with the potential for judicial review, meet the requirements of Art. 6(1) ECHR (“right to a fair and public hearing”).<sup>48</sup> This might be correct of Clause 101, although it should be noted that the procedure involves a declaration by the Secretary of State rather than an Order in Council. It might be recalled that the TWA Order procedures replaced Private Bill procedures in England and Wales, and that the reduction of opportunity for Parliamentary scrutiny thereby entailed was the cause of much concern in Parliament.<sup>49</sup> It would be surprising were the movement even further from Parliamentary scrutiny to go unremarked upon. Indeed the Opposition Spokesman in the House of Lords stated at the Second Reading of the Bill, “To the extent that compensation under Article 1 of the First Protocol is required to be paid to an individual as a consequence of the extinguishment of a public right of navigation, doubts must be raised about the adequacy of the procedure provided in Schedule 8 to the [1989 Act] with respect to Article 6 [ECHR]”,<sup>50</sup> and Lord Kirkland considers that Article 6 would not be satisfied in cases where the Government decided not to hold a public inquiry.<sup>51</sup> It is not possible, moreover, to argue entirely convincingly that the procedures to be applied by virtue of Clause 101 are acceptable on the ground that *R. (on the Application of Alconbury Developments Ltd.) v. Secretary of State for the Environment, Transport and the Regions and other cases*<sup>52</sup> held that section 3 TWA Orders were consistent with article 6. In most instances TWA Orders involve inferior procedural safeguards,<sup>53</sup> but in some instances TWA safeguards are superior.<sup>54</sup>

<sup>42</sup> It is likely that the TWA refers expressly to “rights of navigation” rather than “public rights of navigation”, in order to cover both rights. The DTI seems to take this view: see DTI “Guidance on the Offshore Windfarm Consents Process”, January 2003, paras 3.2.7 and 4.3, available at <http://www.dti.gov.uk/energy/leg—and—reg/consents/guidance.pdf> (site visited 20 November 2003). This refers, in the context of common law actions for public nuisance caused by offshore installations, to “public rights of navigation” affected by TWA Orders.

<sup>43</sup> Explanatory Notes to the Bill, para 16, and statement by Lord Whitty in HL Debate, 4 February 2004, col GC390.

<sup>44</sup> Case no. 43/1990/234/300, 9 February 1993 (outline planning permission).

<sup>45</sup> Case no. 4/1988/148/202, 7 July 1989 (licence to sell alcoholic beverages).

<sup>46</sup> HL Debate, 4 February 2004, col GC389 and 390–91.

<sup>47</sup> Statement by Lord Whitty, HL Debate, 23 March 2004, cols 659 and 660.

<sup>48</sup> Explanatory Notes to the Bill, para 16.

<sup>49</sup> See, e.g., HC Debate, 20 December 1992, col 517 *ss*, when as a result several requests were made for the affirmative rather than the negative Parliamentary resolution procedure to be applied.

<sup>50</sup> Statement of Baroness Miller, HL Debates, 11 December 2003, col 835.

<sup>51</sup> HL Debate, 4 February 2004, cols GC389 and 391. The Government will consider whether or not an amendment is necessary: Lord Whitty, *ibid*, col GC 390.

<sup>52</sup> [2001] UKHL 23.

<sup>53</sup> The possibility of a public inquiry appears smaller under the TWA. Under the TWA the DTI need hold no public inquiry or hearing, unless this is requested by any person whose land is being compulsorily acquired to enable the land-based elements of a wind farm development to be put in place or by any local authority in whose area these are being put in place: Section 11. Under the 1989 Act, the Secretary of State (DTI) must not only hold a public inquiry where a relevant planning authority objects (Schedule 8, para 2(2), as amended) but must consider objections from other specified persons, together with all other material considerations, with a view to determining whether a public inquiry should be held in other cases (para 3(2)).

<sup>54</sup> If a TWA Order is proposed that includes the compulsory acquisition of common land, public open space or inalienable land of the National Trust, Special Parliamentary Procedures must be used, unless the Secretary of State’s (or Welsh Assembly’s) approval is sought for the terms of the proposal: Section 12.

In any event, the claim of consistency with Art. 6(1) is less reasonable in relation to Clause 102. Since the DTI considers that “[t]he removal of public rights of navigation should not be undertaken lightly and full public consultation with all interested parties will be necessary before a decision is made on an application”,<sup>55</sup> it would appear to be consistent to make provision for the possibility of public inquiries in all cases, including where a Section 36 consent has already been obtained.<sup>56</sup>

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April 2004

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**Memorandum by the Department of Trade and Industry and the Department for Transport (NH 10).**

**OFFSHORE NAVIGATIONAL HAZARDS**

**GOVERNMENT POLICY ON RENEWABLE ENERGY**

1. Climate change poses a real threat to our world. In response the Government is committed to a 60% reduction in carbon emissions by 2050. Renewable energy can deliver vitally important environmental benefits on our way to meeting this goal as well as making a valuable contribution to the diversification of the UK's energy supplies. In the short term the Government has set itself the target of ensuring that renewables will supply 10% of UK electricity by 2010 and aspires to double this share of electricity supplied by renewables by 2020.

2. The UK has considerable wind energy resources, both onshore and offshore, and also has the potential to be a world leader in the development of wave and tidal resources. The onshore wind energy sector is now well established. The offshore wind sector is still in its infancy, but has significant growth potential and is expected to make a significant contribution to meeting the Government's 10% target for renewables. The first commercial scale, 30 turbine, offshore wind farm at North Hoyle off the north Wales coast began producing electricity last Autumn. A second wind farm is under construction at Scroby Sands off Great Yarmouth and a further 10 similar projects at various locations in territorial waters around Great Britain have received development consent.

3. The growth of the offshore wind energy sector will inevitably have an impact on other users of the sea in areas where projects are located. The Government is committed to ensuring that such impacts are minimised and that development proceeds in a controlled and proportionate manner. Marine safety is of paramount importance and projects which present a danger to navigation will not be allowed to proceed.

**DEVELOPMENT CONSENTS FOR OFFSHORE RENEWABLE ENERGY PROJECTS**

4. The Government has a range of legislative controls to regulate the development of offshore wind farms and other renewable energy projects in territorial waters. Before such projects can be built a consent has to be granted under section 36 of the Electricity Act 1989 (for the construction, extension and operation of a generating station), a licence under section 5 of the Food and Environment Protection Act (FEPA) 1985 (to ensure protection of the marine environment) and a consent under section 34 of the Coast Protection Act (CPA) 1949. The purpose of the CPA consent is to ensure that installations do not obstruct or present a danger to navigation. As an alternative to this consents route developers of projects in English and Welsh territorial waters can choose to apply for an Order under the Transport and Works Act (TWA) 1992 which disappplies the CPA, although a FEPA licence is still required. The same stringent level of consideration is given to navigational safety whether the applicant chooses the TWA route or the Electricity Act/CPA consents route.

5. The applicant must carry out an assessment of the impact of the proposed project on the environment and the means by which any such effects could be mitigated. The “environment” is defined in broad terms and includes the possible impact on other users of the sea including the ports and shipping industries, the fishing community and recreational sailing. A proper assessment of the impact of the proposal would require thorough consultation with stakeholders with an interest. An Environmental Statement which brings together the conclusions of the assessment must be submitted to Ministers with the application for consent.

6. As part of the consents process the Environmental Statement is subject to public consultation and all stakeholders have an opportunity to give their views. Ministers including Scottish Ministers for projects in Scottish territorial waters and the Welsh Assembly Government for projects seeking a TWA Order in Welsh territorial waters must consider all these views in reaching a decision on the application. The Maritime and

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<sup>55</sup> Seminar paper, n 31 above, para 40.

<sup>56</sup> It is unconvincing to argue that making the successful possessor of a Section 36 consent run the risk of a negative outcome of a public inquiry in terms of the extinguishment of navigation rights would be to deprive him of an acquired right and be unfair, since an existing (territorial waters) developer concerned about navigation rights would have followed the TWA Order procedural route in any event.

Coastguard Agency (MCA) is consulted on all applications for a CPA consent or TWA Order and has not objected to any of the 12 offshore wind farms which have received development consents to date under the first round of development.

#### GOVERNMENT'S STRATEGIC APPROACH TO OFFSHORE RENEWABLE ENERGY DEVELOPMENTS

7. Under the first round of offshore wind farms developers were free to choose the location of their proposed projects anywhere within the territorial waters of England and Wales and Scotland. While this round was successful in bringing forward proposals for the first offshore commercial scale wind farm developments, the Government recognised that for the future a more strategic approach to the development of offshore wind resources was needed to make optimal use of those resources, particularly as the industry was interested in developing much larger scale projects. Following consultation with a wide range of stakeholders including other sea users through its Future Offshore consultation document<sup>57</sup> the Government decided that The Crown Estate as the landowners of the seabed in the territorial sea would be invited to offer site leases for projects in fixed leasing rounds based around defined areas of the sea.

8. The Greater Wash, outer Thames estuary and the North West (from the North Wales coast to the Solway Firth) were chosen as the first three strategic areas off the coast of England and Wales for the second round of development, because of their favourable wind resources combined with shallow water and good connections to the onshore electricity grid, all key features for wind farm development. A Strategic Environmental Assessment of these three areas was undertaken, which included an evaluation of the potential impact of development on navigation, to inform decisions about which areas of the seabed in the three strategic areas would be suitable for site leases. An environmental report which consolidated the information and analysis made in the Strategic Environmental Assessment was published for consultation in May 2003.<sup>58</sup> In the light of responses to that consultation, in July 2003 it was decided to ask The Crown Estate to invite applications for sites leases in all three strategic areas, but, as a result of the feedback received from consultation on the environmental report, a coastal zone with a minimum width of 8 kms but extending to 13 kms in areas of particular sensitivity was excluded from the competition because of the impact which the large wind farms it was anticipated would come forward in the round would have on a wide range of factors including seascape, birdlife, fishing and recreational navigation.

9. Developers showed considerable interest in the Crown Estate's invitation to bid for site options and 40 bids were received for projects totalling 26 gigawatts of electricity generation. The bids were assessed against a number of criteria including the way in which the applicant intended to limit the impact of their proposals in relation to the conclusions of the Strategic Environmental Assessment. The Crown Estate consulted the Department for Transport (and other Government Departments with an interest) on the impact which the proposed sites would have on navigation, which enabled some of those sites which were most likely to be problematic from a navigational perspective to be screened out by the tender assessment panel. It was not possible in the middle of a confidential tender process to consult more widely with marine users at that stage. In December 2003 the Crown Estate announced that it had offered site leases for 15 projects out of the 40 bids received.

#### CURRENT POSITION ON ROUND 2 PROJECTS

10. A Crown Estate lease option gives a developer certain rights over a site but a project cannot be built until such time as all the necessary consents outlined in paragraph 4 above have been granted. Prior to making an application for these consents those developers who were successful in obtaining a site option must gather the information necessary for them to prepare an Environmental Statement on their proposed project, following discussion with all stakeholders including other marine users. The MCA is consulting at the moment on revised guidance on the navigational safety issues which developers will need to take into account in seeking consent for their projects.

11. The Environmental Statement must consider the impact on navigation at both the individual site level and at the level of the cumulative impact with neighbouring proposed wind farms. Such an analysis would need to address the issue of whether shipping would have to re-route itself around the installation. Where such new patterns of ship traffic could be achieved without compromising navigational safety, Ministers will want to consider such a possibility, on a case by case basis, as part of their assessment of whether consent should be given to the project.

12. The Department for Transport is currently consulting the shipping and ports industries on the potential cumulative impact on navigational safety of wind farms being developed on the sites for which The Crown Estate has offered leases. In the light of the outcome of this exercise, developers are able to apply to The Crown Estate, within a time window from 1 September to 31 December 2004, to move the location of their proposed wind farm within the strategic area.

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<sup>57</sup> Future Offshore: A Strategic Framework for the Offshore Wind Industry. November 2002. URN 02/1327. A copy is available in the libraries of the Houses of Commons and Lords.

<sup>58</sup> Copy available at <http://www.og.dti.gov.uk/offshore-wind-sea/process/envreport.htm>

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THE ENERGY BILL

13. The main purpose of the offshore renewable energy part of the Energy Bill is to facilitate the development of the UK's considerable energy resources beyond territorial waters, in a Renewable Energy Zone. To ensure that development is appropriate the Bill also provides the powers necessary to regulate projects in the Zone to the extent that existing legislation does not apply beyond territorial waters. (FEPA and the CPA both already apply beyond territorial waters). Development of the Renewable Energy Zone will take place within the strategic framework outlined in paragraphs above. (Three projects which have obtained site options in round 2 are outside territorial waters.) A flow chart which outlines the process is attached at Annex A.

14. Certain provisions of the Bill, namely safety zones and extinguishing the public right of navigation, relate specifically to navigational matters.

(i) *Safety zones*

15. The United Nations Convention on the Law of the Sea (Unclos) allows the UK to establish safety zones around renewable energy installations in the Renewable Energy Zone. The safety zone is designed to keep vessels and the installation at a safe distance apart so that the risk of collisions is minimised. Unclos specifies that the safety zone is not to exceed a distance of 500 metres from the installation unless the International Maritime Organisation agrees that it can be larger.

16. The Government considers that safety zones provide a valuable contribution to ensuring maritime safety. For this reason it is essential to set up a safety zone scheme for offshore renewable energy installations, both in the Renewable Energy Zone and in territorial and certain internal waters. Safety zones have been employed to good effect for many years in helping to prevent collisions with oil and gas installations, so there is a useful precedent.

17. The applicant for a safety zone will have to make a case based on safety grounds alone to the Secretary of State for Trade and Industry. The safety zone will only become a real prospect if the renewable energy installation around which it will be placed is likely to receive all necessary development consents. So the location of the installation will have been considered to make sure that it is not inherently a danger to navigation.

18. The case for the safety zone will be assessed by the DTI in conjunction with the MCA. Full consultation will take place with all interested parties before the Secretary of State takes a decision on an application. The process which is set out in Schedule 16 of the Energy Bill, includes provision for a public inquiry to be held where the issues raised are deemed to be of particular importance.

19. It may be the case that a safety zone is not needed at all if the installation is to be located where there is minimal traffic and the waters are judged to be safe. Where a safety zone is considered to be necessary it will be tailored to the particular circumstances of the installation and the waters in which it is to be located. A safety zone notice will be issued which declares the extent of the safety zone and whether there are any circumstances in which vessels may enter into the zone itself. Such permissions could relate to the size of the vessel, whether it is under sail or power, or the activities to be carried out in the zone. These permissions will be decided on the basis of safety considerations alone and will be tailor-made for each renewable energy installation. There will also be standard permissions established by regulation under clause 96 which will relate to all safety zones. These will cover, for example, vessels which are providing assistance to a ship in distress or vessels which are providing maintenance services to the operator of the installation. Where permissions are set out in the safety zone notice or in regulations no permit will be required and no payment will be necessary for vessels to enter into the zone.

(ii) *Extinguishing the public right of navigation*

20. As the legislation stands it is not entirely clear whether a consent for the construction and operation of a generating station under section 36 of the Electricity Act 1989 extinguishes public rights of navigation. The result for the developer is that although there is a statutory consent from Government to build, say, a wind farm in territorial waters, there is the possibility of being sued repeatedly in the courts for causing a public nuisance because the wind farm is interfering with the public right of navigation. This situation is not conducive to attracting investment in offshore renewable energy projects. Investors need certainty before they will commit the significant funds needed to bring a wind farm to fruition.

21. The power to extinguish the right of navigation proposed in the Energy Bill applies only to the physical structure itself. It does not extend to any of the waters around the installation, so that if they are small enough, vessels can continue to navigate through a wind turbine array, as long as a safety zone is not in place which prevented their entry.

22. Extinguishing a public right of navigation is a serious matter and there must be a robust, fair and open process in place for the Secretary of State or Scottish Ministers as appropriate to decide whether the issue of a declaration is justified. Clause 101 amends section 36 of the Electricity Act, so that the well-tryed and tested process for deciding whether to grant a consent for the construction and operation of a generating

station will apply also to applications for a declaration extinguishing rights of navigation. There will be full consultation with all stakeholders with an interest in the matter and there is provision for the holding of a public inquiry where the issues raised are of particular importance.

23. The power to extinguish rights of navigation extends only to public rights in territorial waters and not to international rights of navigation whether they apply in territorial waters or beyond. The Government remains committed to upholding its international obligations in respect of rights of navigation, including the obligation set out in Article 60(7) of Unclos not to establish installations and structures and the safety zones around them in the Renewable Energy Zone where interference may be caused to the use of sea lanes essential to international navigation.

#### CONCLUSION

24. The Government is determined to use its energy policy as a contribution to tackling the issue of climate change. The Government is also committed to maintaining a dialogue with all users of the sea to find ways in which the new offshore wind industry can co-exist with traditional maritime industries and recreational use of the sea.

April 2004

#### Annex A

#### FLOW OF ACTIONS IN DEVELOPING OFFSHORE RENEWABLE ENERGY

1. Identification of most promising areas suitable for renewable energy technologies within the area to be designated as the REZ, and also in territorial waters, by DTI, following resource mapping study.

2. *Strategic Environment Assessments (SEAs)* consider impacts of development scenarios in specified areas. Consultation with NGOs and others on *SEA*.

3. DTI considers results of *SEAs* and requests Crown Estate to invite bids for site leases within suitable defined areas, in a series of “rounds”. Fixed option fees and rental charges are made known at this stage. Applicants take into account findings of *SEAs* in identifying specific sites.

4. Crown Estate award agreements for site lease (allowing only exploration and investigation) to best quality bids as assessed by DTI and The Crown Estate, following high level consultation with key stakeholders.

5. Developers undertake *Environmental Impact Assessments (EIAs)* on their individual sites to support applications for consent (see below).

6. Applications for *development consents* are submitted to DTI (section 36/Schedule 8 Electricity Act), Defra (Food and Environment Protection Act) and DfT (Coast Protection Act).

Note: Developers can also apply for Safety Zones under Energy Bill, and also extinguishment of public right of navigation but only in territorial waters.

7. Departments consider how to decide the applications taking into account any objections or other representations arising from public consultation, including those from any statutory bodies consulted.

*Development consent, Safety Zone and extinguishment of public right of navigation* decisions made. If consents granted, monitoring conditions may be attached. (Full site leases can then be granted.)

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#### Memorandum by Sea and Water (NH 11)

#### NAVIGATIONAL HAZARDS—OFFSHORE WIND FARMS

#### INTRODUCTION

Sea and Water is a pan-industry membership organisation which has the core aim of increasing the amount of freight carried by water in and around the UK and to mainland Europe. Its areas of interest cover short-sea shipping routes (ie routes to Ireland, Scandinavia, mainland Europe, and into the Mediterranean Sea); routes around the coast of the UK and use of the UK’s inland waterways.

Sea and Water’s membership comprises a broad cross-section of the industry and includes ship and barge operators, ports, track providers, agents, brokers, consultants and service providers such as maritime lawyers and insurers. The siting of offshore wind farms is high on our members’ agenda and this note represents a wide cross-section of their views.



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## BACKGROUND

In today's climate it is almost impossible to question the validity of utilising any source of renewable energy. But the sea must not be perceived as a lunar desert possessing no commercial value. It is an important economic and social asset and a vital element in the development of the UK transport system. The sea is the track around the coast of the UK essential to all shipping but particularly to coastal and short-sea vessels. Ships carry almost all the UK's imports and exports and interfering with the smooth operation of the UK's maritime industry has the potential to reduce the effectiveness and future development of this essential service.

In general, Sea and Water is in favour of seeking alternative and renewable sources of energy for the UK. But we are concerned that locating offshore wind farms very close to—or even overlapping—established and regularly-used shipping routes will seriously affect the efficiency of ships and ports and could possibly endanger the lives of seafarers (and passengers).

The second round of proposals for the construction of offshore wind farms indicate that these structures will encroach upon a number of current shipping routes.

We understand that the Government seeks to use offshore wind farms to increase the proportion of the country's power being generated by renewable sources to as much as 8% by the end of this decade and possibly to as much as 30% by 2020. Wind farms occupy a considerable footprint and with the possibility of significant numbers of installations being built in the future, it is important that the views of the shipping industry be considered at the earliest opportunity.

Sea and Water would like to highlight the following:

## LOCATION OF OFFSHORE WIND FARMS

It should be understood that locating an offshore wind farm is not the same as locating an oil or gas installation. Oil and gas rigs have much smaller footprints than wind farms; they also have a finite life. Rigs are generally only in situ until the local fossil reserves run dry but wind farms, once built, are likely to stay in place for the foreseeable future. Unlike oil rigs, wind turbines operate in relatively shallow water making navigation around them more difficult, a problem exacerbated by the current proposals to locate the farms adjacent to busy shipping waters which will inevitably mean more vessels navigating in areas restricted by a combination of shallow water and fixed structures leading to an increased risk of collision or grounding.

Current proposals suggest the siting of offshore wind farms around current shipping routes including those serving major ports in the Thames, Humber, Mersey, Wash and Morecombe Bay together with several transit routes. UK operators of small ships have voiced concern over these proposals which might include a blanket ban on all vessels sailing on inshore routes—particularly in the Humber and Wash areas. Small ships are more susceptible to bad weather and being forced offshore would compromise their safety. It would also increase their passage times and economic and commercial costs which for a small ship operating on short coastal routes is highly significant.

## CONSULTATION WITH THE SHIPPING INDUSTRY

We understand that in Denmark, where offshore wind farms have been operating for some time, applications to build farms are subject to a public hearing process which gives all interested parties the opportunity to submit reasoned opinion well in advance of permission being granted.

So far, in the UK, it appears that the initial consultation process is limited to the DTI, Crown Estates and the wind farm developers—or their consultants. The secondary round of consultation is usually much wider but at that stage there is often little opportunity to make significant changes to installations which have the potential to impact adversely on the maritime industry.

Moreover, Sea and Water would like to see the consultation process undertaken when stakeholders are in a position to view the complete picture. Those that were given the opportunity to comment on the location of the initial round of offshore wind farms did so without appreciating the effect the second phase would have on their earlier decisions. An example is the current site at Barrow. The first site for an offshore wind farm, proposed by Warwick Energy, required a small compromise to the shipping routes into and out of Barrow and Morecombe Bay. The minor compromise was accepted by the majority of stakeholders. When it came to consultation for the second phase of installations it was discovered that that shipping was allocated only a narrow corridor between the initial site and the proposed second site which also includes a dog-leg and possible obstruction of view (visual and radar) in an area with crossing traffic and contra flow. If the industry had been consulted on both proposed locations at the same time they would probably have taken a different view on the accepting the initial wind farm location. And, more positively, they could have explained the difficulties and suggested alternative locations away from established shipping routes.

#### SAFETY

Shipping routes are usually selected for their directness and the shelter they give to vessels in bad weather. Interfering with these routes and forcing ships to operate in less sheltered waters will increase the risk to seafarers.

Offshore wind farms located between a port or harbour and a shipping lane will present a physical barrier making it difficult for a vessel to reach safety in the event of bad weather or a mechanical problem occurring whilst at sea.

Sea and Water believe that off shore wind farms, wherever they are located, will prevent a potential hazard to safe navigation and that these structures should be marked visually and electronically. Consideration should also be given to providing a guard ship where these farms are located close to recognised shipping lanes—this is particularly important during construction, renewal and demolition phases when more vessels will be working in the vicinity of the farms the risk of collision is likely to be even greater. It would be appropriate that the costs of marking the wind farms be financed by the developer.

In addition to marking the wind farms, consideration should be given to implementing effective traffic management tools so that wind farms and ships can operate safely together. These should conform to international standards and, again, be financed by the developer.

Although commercial shipping should keep clear of offshore installations and their safety zones vessels might stray accidentally into the vicinity through mechanical failure, bad weather or human error. Consideration should be given to how large rotating turbines might interfere with any rescue attempts by lifeboat or helicopter should these craft find themselves in difficulties.

#### EFFECTS ON ON-BOARD ELECTRONIC EQUIPMENT

There is concern (following experience gained by vessels sailing close to offshore wind farms built under the first round) that vessels sailing in close proximity to a wind farm might suffer interference to their communications equipment or electronic navigation aids such as radar. Reliable communications equipment is vital to the safety and commercial operation of any vessel and navigation aids such as radar are used for collision avoidance as well as position fixing—particularly in periods of poor visibility. At this early stage we don't know the true effects an offshore wind farm will have on a ship's electronic equipment and in-depth studies have yet to be carried out. Sea and Water would want to see a comprehensive and independent study undertaken to understand the precise effects wind farms have on a vessel's electronic equipment. It is important that such a study is commissioned before permission is granted to developers to build any offshore installation.

It is understood that wind turbines paint a very large image on a radar plot and small ship operators sailing in waters adjacent to offshore wind farms fear that their own radar image will be obliterated making them invisible on radar. This has the potential to compromise the safety of these vessels, particularly in conditions of poor visibility.

#### ENVIRONMENTAL IMPACT

It is generally acknowledged that shipping is an environmentally friendly form of transport when compared to other modes, particularly road. Ship owners operate their vessels at the most economical and fuel-efficient speed and send them on routes which use the least fuel. If vessels are forced to deviate from their usual routes to avoid wind farms they will burn more fossil fuel which will add to atmospheric pollution.

#### CONCLUSION

Sea and Water is concerned that locating offshore wind farms without proper, in-depth and early consultation with the shipping industry will affect the efficiency and safety of the shipping industry.

We would like to see:

- The introduction of a comprehensive and early consultation process.
- A study of recognised shipping lanes around the UK and an undertaking to protect these from development. This would eliminate industry concerns and should also help wind farm developers to plan with more certainty.
- A study of the effects offshore wind farms have on on-board electronic equipment.
- An undertaking that offshore wind farms will be appropriately marked and that due consideration will be given to all aspects of search and rescue in the vicinity of these installations.

*April 2004*

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## Memorandum by Trinity House Lighthouse Service (NH 12)

### 1. INTRODUCTION

#### *The functions of Trinity House*

1.1 The Corporation of Trinity House is a private chartered Corporation carrying out a number of functions compatible with the aims of its Charters. Trinity House performs its duties and discharges its functions as Trinity House Lighthouse Service (THLS)—a General Lighthouse Authority (GLA) under Part VIII of the Merchant Shipping Act 1995 (MSA 1995), with a duty to discharge a public undertaking to deliver an aids to navigation service for the safety of the mariner.

1.2 These functions are financed wholly from private revenue derived from the commercial shipowner with no burden on the Treasury or the UK taxpayer. The Secretary of State for Transport (DfT) acts as trustee of the General Lighthouse Fund (GLF) under the MSA 1995 to ensure the fair and sufficient distribution of funds for the efficient and effective operation of THLS and the GLAs for Scotland and Ireland, for the benefit of the mariner. The aim has been to ensure accountability to Parliament by providing the best value for money service by the most appropriate means, commercial or otherwise, without compromising the safety of the mariner and to improve compliance with the Governments obligations in the SOLAS Regulation V/13.1 “. . . to provide . . . such aids to navigation as the volume of traffic . . . and . . . degree of risk requires”.

### 2. BACKGROUND

2.1 Trinity House had, as early as March 1999, received enquiries from power companies who might be potential developers of offshore wind farms in United Kingdom waters. In response we developed a requirement for the minimum marking to guide these companies and it was this scheme that was taken to IALA in order that international adoption would mean that all mariners would see the same system and standard of marking for wind farms anywhere in the world. In July 2000 the IALA Council agreed the standard for marking offshore wind farms as proposed by Trinity House.

2.2 The first two offshore wind turbines in United Kingdom waters were established off Blyth in 2000 and marked in accordance with our requirements as above. Following this the Government announced that The Crown Estate had granted leases for the development of 18 offshore wind farms—generally of 30 turbines each—as part of the United Kingdom commitment to the Kyoto Treaty to provide 10% of its energy needs by renewable sources by 2010, for which around 3,000 wind turbines will be needed.

2.3 These Round 1 sites are at varying degrees of development with only the North Hoyle Wind Farm complete and producing wind energy at this time.

### 3. ROUND 2 SITES

3.1 A further 15 leases of varying size, were announced in December last and are in the three strategic areas for development of renewable energy sites identified by Government. These are: the North West, The Thames Estuary and The Greater Wash and these sites are shown in red on the chartlets.

3.2 Whilst Trinity House and the shipping and port industries fully support wind farm developments, the General Lighthouse Authorities together with representatives of mariners, ports and other stakeholders have pressed Government for early consultation on the position of these offshore wind farms, in an attempt to avoid conflict between traffic routes and other high risk areas of marine use. The use of a revised version of shipping “clearways”, a tool previously used by Government in the development of the offshore oil and gas, was recommended at an early stage, but has not been taken up.

3.3 The confidential nature of negotiations between the Department of Trade and Industry, The Crown Estate and the developers/power companies—have so far restricted the user consultation we sought. This has, and will continue to cause, major concern in maritime circles. The risk of incidents between vessels and wind farms has not been sufficiently addressed at the planning stage, therefore there has to be attempts to mitigate the assessed risk once the wind farm has been granted approval for construction, many of them lying in, or close to, areas of high traffic density. The only means, for marine users, of addressing these issues is to lodge objections at the consent stage of the development, in the hope of bringing about a Public Inquiry.

### 4. CONCERNS

4.1 We have a number of major concerns:

- Building wind farms next to or across recognised routes will constrain shipping to fewer, more crowded routes, with consequent bunching and pinch-points increasing collision risk between ships and between ships and wind turbines.

- Consecutive rounds of development will compound this problem with the cumulative impact on safety of navigation. Some Round 2 farms will have more than 200 turbines consequently covering large areas of navigable water.
- Diverting shipping further offshore, to avoid wind farms, increases energy usage and increases sea safety implications for smaller vessels in adverse weather.
- The introduction of “exclusion zones” around wind farms may well exacerbate the impact on smaller vessels, causing further diversion, bunching etc.
- Insufficient research has been conducted into the effect of wind farms on ships radar and radio, and such systems providing vital data for Vessel Traffic Services (VTS).
- Insufficient research has been conducted on the effect these structures may have on our natural seabed stability, or lack of it, and thus the path of future channel / sea lanes.
- There is a risk that certain Articles of the United Nations Conference on the Law of the Sea (UNCLOS) may be compromised if the Energy Bill clauses on “extinguishing the rights of public navigation” are made statute.

## 5. ACTIONS

5.1 With the other maritime stakeholders (including the Chamber of Shipping, the UK Major Ports Group and the British Ports Association) we continue to lobby the Department for Transport and the Department of Trade and Industry for a more logical approach to offshore planning so that safety and navigational aspects are considered before the consent stage. With up to four further rounds of wind farm leases yet to go we are in danger of establishing an immensely more complicated offshore tapestry that has had little strategic planning or coordinated development.

5.2 Trinity House has a regulatory role in the marking of wind farms and is keen to assist the Government and developers by advising, at an early stage, on those areas where offshore renewable developments will least impinge on safety of navigation. Clearly there is a need to plan marking and routing requirements necessary to mitigate the risk created due to siting wind turbines in navigable water. The assessment of the risk must be realistic and born of experience in similar areas, such as offshore oil and gas development. Our Statutory Powers, under the Acts that wind farms can be developed, are clear and must be adhered to. In Round 1, although site leases had been granted without consultation, we were able to advise developers on the orientation of a number of individual wind farm sites in order to help reduce the impact on safety of navigation. This initiative went a long way toward reaching the optimum in respect of the marking—including daymark, lights, sound signals etc. We aim to assist in this way with Round 2.

5.3 In an attempt to raise awareness of our concerns, the Corporation of Trinity House held a seminar on “Collision Risk Management” in November 2003 where the past 25 years experience in the southern North Sea oil and gas fields was examined, assessed and compared with the offshore renewable developments we are now addressing. The conclusions were circulated widely to government ministers, the maritime industry and renewable energy developers.

5.4 Promoting the concerns of maritime stakeholders, as described above, a number of amendments to the Government’s Energy Bill, currently passing through its report stage in the House of Lords, have been moved with varying degrees of success. Two amendments have been passed; one ensuring that wind farms are not established in recognised sea lanes and the other requiring the Secretary of State to ensure that the cumulative effect of wind farms on safety of navigation is taken into account before developments are granted consent. We feel it is essential that these amendments are retained in the final version of the Energy Bill.

5.5 It is expected that further amendments to the Bill will be moved at the Third Reading. During the summer the debate on the Bill will pass to the House of Commons. We will continue to work for the assurances the maritime stakeholders need to ensure that all users of the offshore environment can operate safely and in harmony.

## 6. ATTACHMENTS

6.1 The attached chartlets with their traffic overlays and tables are the best way to portray the concerns we have over the manner in which sites for development of offshore wind farms have been selected by the developers and their leases granted by The Crown Estate.<sup>59</sup>

6.2 They cover the three Strategic Areas selected by Government for renewable energy development. They are, obviously, close to concentrations of population for energy transmission purposes and this places them in some of the busiest of our coastal waters.

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<sup>59</sup> Not printed.

6.3 The data contained in the tables, showing the ship routes and densities that are overlaid on the chartlets—which show the Round 2 sites in red—is derived from commercial shipping movements calculated from ship operator and port information. This “Ship Routes” data does not contain, or portray, movement or numbers of fishing vessels, dredgers, small craft or the substantial numbers of leisure craft that use our coastal and estuarial waters.

6.4 We are pleased to acknowledge the sources of charts and information displayed on the attachments and thank them for their cooperation.

*Duncan Glass*

Director of Navigational Requirements  
Trinity House Lighthouse Service  
Tower Hill  
London EC3 4DH.

April 2004

## Annex 1

### SHIP ROUTES—ROUND 2 OFFSHORE WIND FARM STRATEGIC AREAS

*Acknowledgements:*

*Wind Farm Sites*—Crown Estates.

*Shipping Data*—Shiproutes software by Anatec Ltd.

*Charts*—reproduced from Admiralty charts by permission of the Controller of Her Majesty’s Stationery Office and the UK Hydrographic Office.

#### NORTH WEST STRATEGIC AREA

##### ShipRoutes Passing within 10.00nm of Barrow Round2 WF at 54°2’N 3°30’W

Route No	Description	CPA (nm)	Bearing (°)	Ships per Year	% of Total
1	Ramsey-Morecambe Bay*	0.0	211	264	5%
2	Solway Firth-Mersey*	0.2	256	64	1%
3	Belfast-Heysham SeaCat*	1.5	37	420	8%
4	Fleetwood-Larne POIS Route 3*	1.6	38	1,812	33%
5	Douglas-Heysham Steam Packet Co*	3.3	197	1,440	26%
6	Dublin-Heysham Norse Merchant*	7.5	177	1,468	27%
7	Solway Firth-Llanddulas	7.7	271	12	0%
TOTAL				5,480	100%

Key: \* in the table indicates where two or more routes have identical Closest Points of Approach and Bearings and have been grouped together.

##### ShipRoutes Passing within 10.00nm of Barrow Round2 WF at 53°28’N 3°36’W

Route No.	Description	CPA (nm)	Bearing (°)	Ships per Year	% of Total
1	Dover Strait-Mersey LYNAS*	1.5	352	683	5%
2	Ouessant-Mersey DOUGLAS S*	2.1	359	2,277	16%
3	Mersey-Dover Strait DOUGLAS S*	2.2	6	1,621	12%
4	Dublin-Liverpool Norse Merchant*	2.5	357	850	6%
5	Liverpool-Dublin Norse Merchant*	2.7	3	850	6%
6	Liverpool-Dublin POIS	2.7	5	600	4%
7	Dublin-Liverpool POIS	2.8	10	600	4%
8	Mersey-Llanddulas	3.2	147	76	1%
9	Solway Firth-Llanddulas	3.4	268	12	0%
10	Mostyn-Belfast*	3.6	218	72	1%
11	Heysham-Liverpool Bay Fields BHP*	3.9	18	182	1%
12	Douglas Field-Liverpool BHP*	3.9	22	26	0%
13	Mersey-Mostyn*	3.9	117	112	1%
14	Mersey-Dover Strait DOUGLAS N*	5.0	1	567	4%
15	Dublin-Mostyn POIS*	5.0	195	1,468	10%

<i>Route No.</i>	<i>Description</i>	<i>CPA (nm)</i>	<i>Bearing (°)</i>	<i>Ships per Year</i>	<i>% of Total</i>
16	Mersey-Drogheda*	5.3	5	28	0%
17	Dundalk-Mersey*	5.8	16	84	1%
18	Belfast-Liverpool Norse Merchant*	6.1	28	1,656	12%
19	Hamilton Field-Liverpool BHP*	7.8	47	26	0%
20	Belfast-Llanddulas*	7.9	223	24	0%
21	Mersey-Belfast*	8.6	26	800	6%
22	Llanddulas-Dover Strait*	8.8	211	348	2%
23	Douglas-Liverpool Steam Packet Co*	9.2	43	1,040	7%
24	Hamilton North Field-Liverpool BHP*	9.7	50	26	0%
<b>TOTAL</b>				<b>14,028</b>	<b>100%</b>

Key: \* in the table indicates where two or more routes have identical Closest Points of Approach and Bearings and have been grouped together.

### THAMES ESTUARY STRATEGIC AREA

#### ShipRoutes Passing within 20.00nm of Thames at 51°41' N 1°48' E

<i>Route No.</i>	<i>Description</i>	<i>CPA (nm)</i>	<i>Bearing (°)</i>	<i>Ships per Year</i>	<i>% of Total</i>
1	Tees-Dover Strait d*	0.2	97	4,853	4%
2	Thames-Rotterdam Gat*	1.3	144	4,728	4%
3	Ostend-Felixstowe Cork*	1.6	243	688	1%
4	Humber-Dover Strait c*	2.5	106	959	1%
5	Felixstowe-Ostend S Chan*	2.5	250	724	1%
6	Felixstowe-Dover Strait DW*	4.1	262	3,428	3%
7	Dover Strait-Thames Black Deep*	4.1	262	428	0%
8	Dover Strait-Blackwater	4.4	255	36	0%
9	Felixstowe-Flushing S Chan*	4.5	32	2,780	2%
10	Thames-Flushing N2 Princes*	7.0	161	4,060	3%
11	Rotterdam-Thames Black Deep*	8.4	352	276	0%
12	Thames-Flushing N1 Princes*	8.7	166	4,060	3%
13	Blackwater-Rotterdam	8.7	358	12	0%
14	Felixstowe-Rotterdam S Chan*	9.1	10	9,164	7%
15	Thames-Humber c*	10.9	306	1,386	1%
16	Thames-Hamburg Black Deep*	11.0	316	1,721	1%
17	Thames-Hamburg Barrow Deep*	12.9	310	3,501	3%
18	Ostend-Thames	13.0	180	160	0%
19	Blackwater-Humber	13.3	323	8	0%
20	Baltic-Blackwater*	13.3	325	32	0%
21	Felixstowe-Thames Cork*	13.5	293	174	0%
22	Humber-Flushing g*	13.7	63	715	1%
23	Felixstowe-Thames S Chan*	13.8	307	262	0%
24	Thames-Ostend	14.0	185	144	0%
25	Blackwater-Felixstowe S Chan	14.2	319	2	0%
26	Rotterdam-Dover Strait*	14.7	131	28,542	23%
27	Flushing-Dover Strait*	16.5	158	11,800	9%
28	Blackwater-Felixstowe Cork	16.8	305	6	0%
29	Gothenburg-Harwich DFDS	17.8	331	150	0%
30	Harwich-Gothenburg DFDS	17.8	332	150	0%
31	Hamburg-Felixstowe*	18.5	324	5,454	4%
32	Dover Strait-Thames Princes*	19.6	222	5,952	5%
33	Flushing-Hamburg*	19.7	131	22,459	18%
34	Ouessant-Rotterdam Sandtette DWR*	19.7	132	7,103	6%

Key: \* in the table indicates where two or more routes have identical Closest Points of Approach and Bearings and have been grouped together.

## GREATER WASH STRATEGIC AREA

## ShipRoutes Passing within 20.00nm of Wash Round2 WF at 53°17' N 0°58' E

<i>Route No</i>	<i>Description</i>	<i>CPA (nm)</i>	<i>Bearing (°)</i>	<i>Ships per Year</i>	<i>% of Total</i>
1	Immingham-Rotterdam DFDS Tor Line South*	2.4	48	300	1%
2	Immingham-Rotterdam DFDS Tor Line North	2.6	29	150	0%
3	Rotterdam-Immingham DFDS Tor Line North	2.6	29	150	0%
4	Rough-Great Yarmouth BG	2.7	54	26	0%
5	Humber-Amsterdam d	2.8	28	56	0%
6	Amsterdam-Humber d	2.8	30	63	0%
7	Humber-Flushing e*	2.8	49	2,850	9%
8	Humber-Amsterdam c	2.9	24	56	0%
9	Rotterdam-Hull P&O North Sea*	2.9	26	513	2%
10	Humber-Rotterdam c*	2.9	29	1,053	3%
11	Humber-Rotterdam d*	2.9	34	2,150	7%
12	Rotterdam-Humber d*	2.9	35	1,961	6%
13	Hull-Rotterdam P&O North Sea	3.0	29	450	1%
14	North Killingholme-Hook of Holland Stena Northern Route	3.9	26	44	0%
15	Hook of Holland-North Killingholme Stena Northern Route	4.1	27	44	0%
16	Rotterdam-Humber c*	5.8	51	1,725	6%
17	Flushing-Tees b*	7.0	60	8,038	27%
18	Rotterdam-Humber g*	8.2	222	5,959	20%
19	Hamburg-Wash	8.8	302	688	2%
20	N Norway/Russia-Wash*	9.5	285	100	0%
21	Wash-Tees*	11.3	263	156	1%
22	West Sole/Hyde-Great Yarmouth BP	13.6	73	52	0%
23	Wash-Rotterdam*	16.4	188	1,292	4%
24	Humber-Dover Strait b*	17.1	1	311	1%
25	Ems-Humber b*	17.2	358	202	1%
26	Humber-Dover Strait a*	17.5	351	157	1%
27	Humber-Hamburg e	18.2	350	260	1%
28	Hamburg-Humber e	18.2	351	345	1%
29	Dover Strait-Humber a Sandettie DWR*	18.2	353	132	0%
30	Immingham-Cuxhaven DFDS	18.6	347	250	1%
31	Humber-Hamburg d*	19.6	341	324	1%
32	Hamburg-Humber d*	19.7	345	463	2%
<b>TOTAL</b>				<b>30,318</b>	<b>100%</b>

Key: \* in the table above indicates where two or more routes have identical Closest Points of Approach and Bearings and have been grouped together.

## ShipRoutes Passing within 15.00nm of Humber Round2 WF at 53°45'N 0°20'E

<i>Route No</i>	<i>Description</i>	<i>CPA (nm)</i>	<i>Bearing (°)</i>	<i>Ships per Year</i>	<i>% of Total</i>
1	Humber-Sullom Voe	0.1	266	12	0%
2	Humber-Lerwick*	0.4	262	32	0%
3	Harding Field-Humber*	0.8	94	48	0%
4	N Norway/Russia-Humber*	1.2	97	320	1%
5	Tees-Humber*	1.5	253	2,916	8%
6	Tees-Dover Strait e*	2.1	64	1,624	4%
7	Great Yarmouth-Aberdeen(GBR)*	2.9	68	24	0%
8	Rotterdam-Tees f*	4.0	50	782	2%
9	Humber-N Norway/Russia*	4.2	120	584	2%
10	Humber-Egersund*	4.5	123	60	0%
11	Farsund-Humber*	5.0	130	24	0%

<i>Route No</i>	<i>Description</i>	<i>CPA (nm)</i>	<i>Bearing (°)</i>	<i>Ships per Year</i>	<i>% of Total</i>
12	Immingham-Kristiansand/Brevik DFDS Brevik*	5.4	137	200	1%
13	Göteborg-Immingham DFDS*	5.7	150	700	2%
14	Humber-Norway S*	5.9	143	468	1%
15	Rough-Great Yarmouth BG	6.1	61	26	0%
16	Baltic-Humber a*	6.1	146	1,895	5%
17	Baltic-Humber b*	6.2	149	802	2%
18	Baltic-Humber c*	6.4	153	379	1%
19	Ouessant-Humber a1 Sandette DWR*	6.5	162	14	0%
20	Hamburg-Humber a*	6.7	162	303	1%
21	Flushing-Tees b*	8.9	48	5,216	13%
22	Cuxhaven-Immingham DFDS	10.3	161	250	1%
23	Esbjerg-Immingham DFDS*	10.5	161	700	2%
24	Humber-Hamburg b*	10.8	148	146	0%
25	Hamburg-Humber b*	10.8	149	181	0%
26	Forth-Flushing d*	11.5	58	1,592	4%
27	Montrose-Dover Strait*	11.8	59	188	0%
28	Hamburg-Humber c	11.9	157	345	1%
29	Rotterdam-Humber d*	12.2	179	4,561	12%
30	Humber-Hamburg c	12.4	153	260	1%
31	Humber-Rotterdam d*	12.8	195	5,361	14%
32	Rotterdam-Humber g*	12.8	196	4,189	11%
33	Humber-Rotterdam g*	12.8	196	3,823	10%
34	Dover Strait-Aberdeen(GBR)*	13.4	65	464	1%
35	Dover Strait-Peterhead*	14.3	69	96	0%
36	Iceland-Rotterdam*	14.6	70	256	1%
<b>TOTAL</b>				<b>38,839</b>	<b>100%</b>

Key: \* in the table above indicates where two or more routes have identical Closest Points of Approach and Bearings and have been grouped together.



Supplementary note by the British Wind Energy Association (NH 07A)

COMPANY	PROJECT NAME	STRATEGIC AREA		TOTAL MW AWARDED		Array Area if 3 Mw Turbines Used	Array Area if 5 Mw Turbines Used	Total Leased Area	% covered if 3Mw turbines used	% covered if 5Mw turbines used
		MW AWARDED < 12nm	MW AWARDED > 12nm	MW AWARDED < 12nm	MW AWARDED > 12nm					
Airtricity-Fluor	Greater Gabbard	TH	300	200	500					
AMEC	Docking Shoal	GW	500	-	500					
AMEC	Race Bank	GW	-	500	500					
Delatic	Gunfleet Sands II	TH	64	-	64					
DOONG/Statkraft	Walney	NW	450	-	450					
Ecoventures	Sheingham	GW	315	-	315					
Humber Wind Limited	Humber	GW	300	-	300					
London Array	London Array	TH	1,000	-	1,000					
National Wind Power	Gwyn't y Mor	NW	750	-	750					
National Wind Power	Triton Knoll	GW	-	1,200	1,200					
Offshore Wind Power	Lincs	GW	250	-	250					
Scottish Power	West Duddon	NW	500	-	500					
Total	Westarmost Rough	GW	240	-	240					
Warwick Energy	Thanet	TH	300	-	300					
Warwick Energy	Dudgeon East	GW	-	300	300					
			4,969	2,200	7,169					
<b>REGIONAL:</b>										
<b>GREATER WASH</b>										
AMEC	Docking Shoal	GW	500	-	500	54.0	30.0	74.87	72%	40%
AMEC	Race Bank	GW	-	500	500	54.0	30.0	52.77	102%	57%
Ecoventures	Sheingham	GW	315	-	315	32.0	18.0	34.99	91%	51%
Humber Wind Limited	Humber	GW	300	-	300	30.0	18.0	34.99	86%	51%
National Wind Power	Triton Knoll	GW	-	1,200	1,200	135.0	79.0	206.9	65%	38%
Offshore Wind Power	Lincs	GW	250	-	250	25.0	14.0	34.96	72%	40%
Total	Westarmost Rough	GW	240	-	240	24.0	14.0	34.99	69%	40%
Warwick Energy	Dudgeon East	GW	-	300	300	30.0	18.0	34.97	86%	51%
			1,605	2,000	3,605					
<b>THAMES</b>										
Airtricity-Fluor	Greater Gabbard	TH	300	200	500	54.0	30.0	102.305	53%	29%
Delatic	Gunfleet Sands II	TH	64	-	64	6.0	3.0	14.98	40%	20%
London Array	London Array	TH	1,000	-	1,000	112.0	65.0	244.69	46%	27%
Warwick Energy	Thanet	TH	300	-	300	30.0	18.0	34.92	86%	52%
			1,664	200	1,864					
<b>NORTH WEST</b>										
DOONG/Statkraft	Walney	NW	450	-	450	48.0	27.0	74.8	64%	36%
National Wind Power	Gwyn't y Mor	NW	750	-	750	84.0	48.0	120.53	70%	40%
Scottish Power	West Duddon	NW	500	-	500	54.0	30.0	66.68	81%	45%
			1,700	-	1,700					
							Average		72%	41%

Assume the layout is square - which is a fairly open packing  
 Long rows and so less rows, facing the prevailing winds would give a denser packing  
 500 Assume distance between turbines in a row is  
 750 Assume distance between a row is

Crown estates have provided the leased areas, which include any buffer zones  
 and which are approximate and possibly still subject to slight changes

I have deliberately made the areas covered by the array approximate by assuming  
 the a square array, and then adding extra turbines on as an extra row.

**Supplementary memorandum by the British Wind Energy Association (NH 07B)**

**THE CURRENT ECONOMICS OF WIND FARM DEVELOPMENTS**

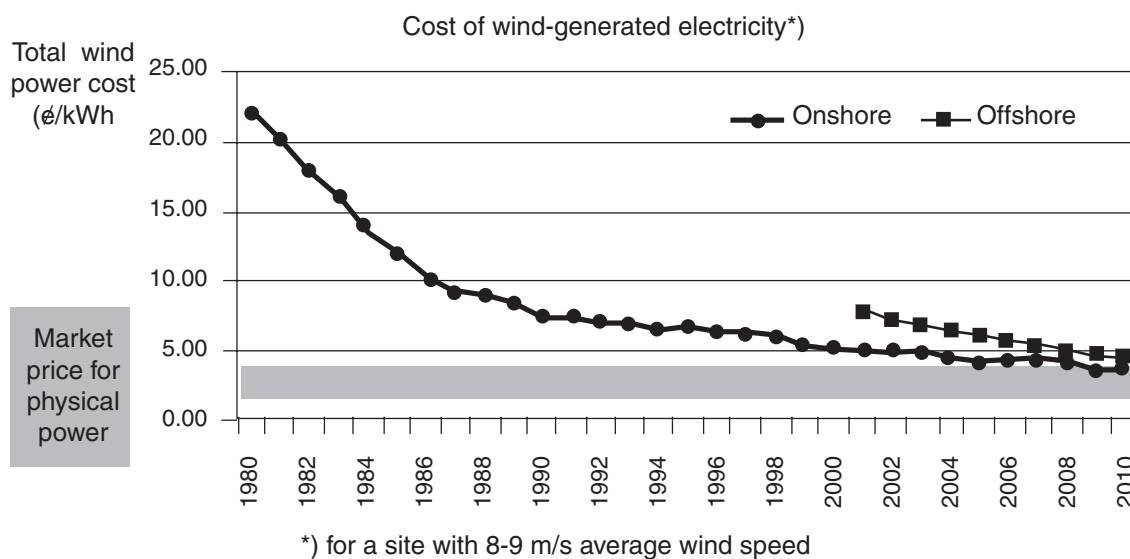
**1. BACKGROUND**

Development of wind energy technology over the last 15 years has resulted in a significant reduction in the unit cost of generation capacity for typical onshore wind farm applications. In addition investment decisions have been assisted with incentives driven by the Renewables Obligation mechanism. In combination, onshore wind farm developments are generally considered to be relatively secure with medium to low returns, depending on site specific conditions.

Offshore wind farm developments, however have additional layers of complexity, largely resulting from the marine environment in which they operate. The main features of this complexity are engineering development and logistics, both of which translate to additional cost and time to implementation. The resulting increase in capital and operating costs are not proportionally balanced by the increase in the available wind resource with a consequent negative impact on project economics.

This note provides a brief overview of the economics for offshore wind farm developments.

**Wind becoming cost competitive**



**2. POSSIBLE ECONOMICS FOR OFFSHORE WIND FARMS**

Round 1 offshore wind farm development economics were assisted by the provisions of capital grants. These were necessary in order to achieve an acceptable return on investment. Round 2 developments would similarly benefit from capital grants, however given the scale of investment, this is an unlikely scenario that would be considered. It is likely that other investment incentives may be applied to the developments and these may include:

- The provision of non-project funded grid interconnections.
- The provision of enhanced capital allowances.

Additionally extending the obligation to 20% to 2020 would increase confidence in longer term ROC values and enabling generators to monetise ROCs through a centralised market would overcome the difficulty of securing long term power purchase agreements.

The table overleaf provides an indication of a possible investment scenario for an offshore wind farm project.

<i>Project Description</i>	<i>Unit</i>	<i>Offshore Wind Farm Development (incl. £29.25 million NPV Incentive)</i>
Windpark Size	MW	100
Net Capacity Factor		39.56%
Production	GWh	346.55
<b>CAPEX</b>		
Turbines	GBP M	£49.07
All Other Costs	GBP M	£41.58
<b>Total Cost</b>	GBP M	<b>£90.65</b>
Incl Contingency	GBP M	£2.64
Cost/MW	GBP M	£0.91
Cost/MW Incl Grant	GBP M	£0.61
<b>OPEX</b>		<b>NPV</b>
Total Per Year	GBP M	£4.87
Cost/MW	GBP M	£0.05
<b>Revenue</b>		<b>RT</b>
Physical Power	GBP/MWh	£15.00
ROCs	GBP/MWh	£27.90
Smear-Back	GBP/MWh	£0.00
CCLs	GBP/MWh	£4.30
		<b>NPV</b>
Gross Revenue pa	GBP M	£13.83
Revenue/MWh	GBP/MWh	£39.92
<b>Post Tax Project Returns</b>		
IRR		10.76%

May 2004

#### Supplementary note by the Department for Transport (NH 10A)

##### NAVIGATIONAL HAZARDS

The Committee requested that the Department for Transport submit one piece of additional information as a result of the hearing on Navigational Hazards on 28 April 2004. Enclosed is the information requested on when the shipping and ports industry groups were consulted in the Round 1 offshore wind farm consenting process.

In April 2001 the Crown Estate announced that 18 companies had pre-qualified for site development under the first round of UK offshore wind farm development. Round One aimed to provide the UK with a demonstration round, enabling prospective developers to gain the necessary technological, economic and environmental expertise in projects limited in size to less than 10 square kilometres, a maximum of 30 turbines and a minimum installed capacity of 20 MW.

Round One sites were put forward by potential developers on the basis of a range of relevant factors, including a water depth of less than 20 metres, wind conditions and connectivity to the electricity grid. Areas of high nature conservation value were avoided, as were areas of seabed where existing uses were potentially incompatible with offshore wind farm development. No strategic environmental assessment preceded this Round and there was no systematic consultation with the shipping and ports industries in the *early* stages of this Round of development.

In seeking consent to build Round 1 wind farms, developers have had to assess the environmental impact of their arrays during the phases of construction, operation and decommissioning. Developers had to collate and evaluate existing site knowledge and information, conduct a wide range of environmental investigations and undertake monitoring studies. Public consultation with all user and interest groups, including the ports and shipping industries, was part of that process. Developers had to place public notices in local and national newspapers inviting representations to be made to the Secretary of State for Trade and Industry. These were copied to the developer and to the appropriate Government Department.

For each application, Government Departments (DTI, DEFRA and DfT, co-ordinated by DTI) consulted a range of stakeholders. These included in all cases the Maritime and Coastguard Agency, Trinity House Lighthouse Services, the National Federation of Fishermen's Organisations and the relevant port or harbour authority as appropriate and, in all but two of the applications, the Royal Yachting Association and the Chamber of Shipping.

The Maritime and Coastguard Agency (MCA) raised concerns with developers over the safety of navigation in respect of several Round 1 proposals. MCA's concerns primarily related to the need for developers to put safety measures in place to deal with, for example, search and rescue (SAR) requirements (shutdown procedures, communications with SAR authorities), and marking and lighting of individual turbines. These concerns were resolved before the consents were issued. The only development to which the Maritime and Coastguard Agency continues to object is Scarweather Sands in the Bristol Channel, where the developers wish to declare a safety zone prior to the necessary legislative machinery being created by the Energy Bill.

Logistics and Maritime Transport Directorate

30 April 2004

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### **Supplementary memorandum by the Department of Trade and Industry (NH 10B)**

#### NAVIGATIONAL HAZARDS

The Committee asked that the Department of Trade and Industry should submit additional information on several issues relating to its deliberations about the impact of wind farms on navigational safety at its hearing on 28 April 2004. This note sets out information about Government support for the cost of wind farms, the experiences of other Governments in assessing wind farm locations and the incidence of bird strike at North Hoyle wind farm (the first major offshore wind farm development off the British coast).

#### FINANCIAL SUPPORT FOR WIND FARMS

The Committee asked about the Government's support for offshore wind farms. The DTI understands the British Wind Energy Association is submitting separately a worked-up example of how an individual wind farm might fare under the support mechanisms so the comments here provide an overview of the mechanisms that the Government has put in place to support the development of renewable energy sources.

There are several strands to the support available which are intended to provide flexibility in stimulating the renewables industry. The precise level of Government support for wind farm developments will vary from project to project and in accordance with the performance of the Renewables Obligation Certificate and the long term market for renewable energy.

As was mentioned during the Committee session, the Renewables Obligation (RO) is the key policy mechanism by which the Government is encouraging the growth necessary to reach the UK's renewable energy targets. It requires all licensed electricity suppliers in England and Wales to supply a specific proportion of their electricity from renewable energy sources and provides a number of paths by which compliance with that requirement can be met—they can supply renewable energy from RO eligible technologies, they can buy Renewables Obligation Certificates (ROCs—see below) under which each ROC equals 1 Mega Watt hour (MWh) of renewable generation and they can pay a buy-out price of £30.51/MWh.

Individual suppliers are responsible for demonstrating compliance to Ofgem through the ROCs system. In order to provide a stable and long-term market for renewable energy, the Obligation will remain in place until 2027. Yearly targets have been set up to 2015, when 15.4% of electricity supplied must come from renewable sources eligible for ROCs.

ROC prices have been around £44—£49 over the last six months for each MWh of renewable energy generated—though this will vary as it is dependent on trading within the ROC market, and, more generally, on how much renewable generation takes place relative to the obligation for that year. Estimates of future ROC prices have been made but because of the likely variability in prices, it is difficult to estimate the exact value this provides to a developer over time. It is important to note that the value of ROCs to developers is not a direct subsidy from Government—it is an increased cost on the supply of electricity that is ultimately passed on to the consumers.

Direct Government support is provided through exemption from the Climate Change Levy. The Levy is a tax on commercial energy use of 4.3 pence per Kilo Watt hour. Using renewable energy allows an exemption from the Levy. Certificates which allow the exemption are worth £4.30 for each MWh of renewable energy generated.

The DTI's Capital Grants Scheme has funded a number of demonstration projects to help reduce the costs and risks involved in certain renewable energy developments, including offshore wind. The primary aim is to stimulate early development of offshore wind farms to provide a learning experience which will increase confidence in the sector and reduce costs. Those offshore wind farm developments granted leases in the Round 1 competition and which have received the necessary statutory consents, have been offered capital grants of up to a maximum of £10 million per project with a total commitment so far of £117 million.

No decision has been made on whether any capital grant will be available for Round 2 offshore wind farm projects.

In addition, the DTI is in discussion with OFGEM about implementation of the regulatory regime for offshore transmission of renewable energy that will be introduced through the Energy Bill. Included in these discussions is consideration of charges for connections that generators of offshore renewable energy will face.

#### INTERNATIONAL SITE ALLOCATION PROCESSES

The Committee was interested in how other countries, particularly Holland and Germany, determined site allocations for offshore wind farm developments.

In the time available, it has not been possible to produce a detailed analysis of the processes that are followed in other countries. The following information, therefore, relies on a literature search carried out by DTI officials on the position in Holland and Germany.

The Dutch target is for 6000MW of electricity to be supplied by offshore wind by 2020. An offshore wind farm location policy is being developed to help achieve the target. It is anticipated that the policy will not permit wind farms within Dutch territorial waters (out to 12 nautical miles). (The UK's Round 2 offshore wind farm competition similarly had a zone of between 8km and 13km from the coast in which no development proposals were sought.)

There are no wind farms on the Dutch Continental Shelf at present although a single permit has been issued which might be acted upon in 2004 or 2005.

Another aspect of the Dutch approach is that the formal process of consultation does not begin until the development application is submitted. In the UK, developers are expected to have undertaken extensive consultation prior to the submission of any application for consent.

In Germany, there is a split of responsibility for consenting to wind farms in the marine environment off Germany: the German Federal Government is responsible for areas beyond the territorial limit, while the Lander have responsibility for areas within territorial waters.

The Federal Government is responsible for the identification of suitable areas for wind farm development beyond the 12 nautical mile limit. Large areas of the North Sea and the Baltic Sea have been identified as being suitable for wind farm development.

Until recently, the Federal Government was only able to evaluate individual project proposals rather than taking a more strategic view of the impacts that might arise from such placements. However, the Government now has much greater control over development areas and, in exercising this control, takes account of the interaction of a wide range of other activities and interests in the marine environment.

#### NORTH HOYLE

Finally, the Committee was interested in the incidence of bird strike at the recently completed North Hoyle offshore wind farm—the first major wind farm development off the coast of Great Britain.

The North Hoyle wind farm received a suite of statutory consents that provide the permissions necessary to proceed with its development. One of these consents is a licence under the Food and Environment Protection Act (issued by the Department for the Environment, Food and Rural Affairs). The licence includes conditions relating to a range of issues, one of which is “Ornithological Monitoring”.

The conditions do not contain a specific requirement to monitor bird strikes because studies carried out by the wind farm developer prior to consent being sought, indicated that there were no significant movements of birds through the North Hoyle site. The full specification of the bird monitoring programme was set by agreement between Defra, the Centre for Environment, Fisheries and Aquaculture Studies and the Countryside Council for Wales. However, there was provision for the introduction of monitoring of collisions if both of the following situations occurred:

- the monitoring of bird avoidance and disturbance and the barrier effect shows that populations of conservation concern are attracted to the wind farm, or changes in distribution result in such populations being present in future years; and
- the birds' behaviour (flight height) puts birds at risk from collision.

Defra have not needed to introduce the relevant “bird strike monitoring” provisions.

Director, Electricity Consents

4 May 2004