

**EXPLANATORY MEMORANDUM TO  
THE HEALTH AND SAFETY AT WORK ETC. ACT 1974 (APPLICATION  
OUTSIDE GREAT BRITAIN) (VARIATION) ORDER 2009**

**2009 No. 1750**

1. This explanatory memorandum has been prepared by the Health and Safety Executive (HSE) on behalf of the Department for Work and Pensions and is laid before Parliament by Command of Her Majesty.

**2. Purpose of the Instrument**

2.1 This instrument fills two legislative gaps by making provision for:

- Specified work activities involving energy structures (such as wind farms) and related structures within a Renewable Energy Zone (an area, outside the territorial sea, designated by order under Section 84(4) of the Energy Act 2004 which may be exploited for the production of energy from water or wind) to be covered by the Health and Safety at Work etc. Act 1974;
- Specified work activities taking place on a structure in a designated area that would have been an offshore installation but for its change of use (as it is no longer undertaking any of the activities that are within the definition of an offshore installation) to be covered by the Health and Safety at Work etc. Act 1974. An offshore installation is a structure used for: the exploration with a view to the exploitation, of mineral resources by means of a well; the storage of gas in or under the shore or bed of any water or the recovery of gas so stored; the conveyance of things by means of a pipe; or the provision of accommodation for persons.

**3. Matters of special interest to the Joint Committee on Statutory Instruments**

3.1 None

**4. Legislative Background**

4.1 The Department for Energy and Climate Change (DECC) has given consent for offshore wind turbines to be constructed beyond our territorial seas and this work is likely to start in summer 2009. The Health and Safety at Work etc. Act 1974 (Application Outside Great Britain) Order 2001 extends the prescribed provisions of the Health and Safety at Work etc. Act 1974 to work activities within our territorial seas and designated areas (an area beyond the territorial sea designated by order under Section 1 (7) of the Continental Shelf Act 1964).

4.2 The Health and Safety at Work etc. Act 1974 (Application Outside Great Britain) Order 2001 applies to certain activities (such as the construction, maintenance and operation) of energy structures (e.g. wind and wave farms) and other structures within our territorial seas. However, it does not extend the Health and Safety at Work etc. Act 1974 to activities involving energy structures and related structures beyond our territorial seas, including those in a Renewable Energy Zone.

4.3 An offshore platform in a designated area which gets used for another purpose would not be covered by the Health and Safety at Work etc. Act 1974 (Application Outside Great Britain) Order 2001, the specified provisions of the Health and Safety at Work etc. Act 1974 will not be extended to such activities. One offshore installation is likely to be used for other purposes (e.g. a helicopter base) beyond our territorial seas for the first time from September 2009. The specified provisions of the Health and Safety at Work etc. Act 1974 will not apply to these activities.

4.4 Until the Health and Safety at Work etc. Act 1974 (Application Outside Great Britain) Order 2001 is amended, if a wind farm incident was to occur beyond our territorial seas, or on an offshore installation being used for another purpose beyond our territorial seas, HSE would not have the jurisdiction to enforce health and safety law and investigate incidents.

## **5. Territorial Extent and Application**

5.1 This instrument applies to a renewable energy zone or a designated area beyond the territorial seas adjacent to Great Britain.

## **6. European Convention on Human Rights**

As the instrument is subject to negative resolution procedure and does not amend primary legislation, no statement is required.

## **7. Policy background**

- **What is being done and why**

7.1 HSE has been working to amend the Health and Safety at Work etc. Act 1974 (Application Outside Great Britain) Order 2001 to ensure that it applies to emerging energy technologies and to address some operational lessons (e.g. to clarify the status of vessels used for accommodation). HSE hope to introduce a new Order by April 2011.

7.2 Because of the legislative gaps outlined in Section 4 of this Explanatory Memorandum, HSE now proposes to change the Health and Safety at Work etc. Act 1974 (Application Outside Great Britain) Order 2001 using this Order. HSE also intends to produce a new Health and Safety at Work etc. Act (Application Outside Great Britain) Order by April 2011 that will address outstanding emerging energy technology issues (e.g. related to carbon dioxide storage) and operational lessons.

7.3 To date wind farms given consent are within our territorial seas, but at least 4 are planned beyond this in a renewable energy zone. Future developments will be much larger, and are likely to be in a renewable energy zone. The government has set a target of producing 10% of the country's electricity needs from renewable sources, like wind farms, by 2010. Maintaining a safe working environment within which this form of energy production can be undertaken will ensure that the government can continue to move towards this objective. Although it is unlikely that many offshore installations will change their purpose, incidents relating to such installation generate a lot of media and political interest.

7.4 HSE will make two key changes to the Health and Safety at Work etc. Act (Application Outside Great Britain) Order 2001. The first is to include an Article to extend the Health and Safety at Work etc. Act 1974 to certain activities involving structures within a designated area that would be offshore installations if they had not changed their purpose.

7.5 Secondly, to ensure that certain activities related to energy structures and other related structures in a renewable energy zone, such as the construction and operation of wind farms, are covered by the Health and Safety at Work etc. Act 1974, the following changes are proposed to this Order:

- A definition of a renewable energy zone has been inserted; and
- A new Article has been added to this Order to extend the application of the Health and Safety at Work etc. Act 1974, to energy structure and other related structure activities in a renewable energy zone.
- **Consolidation**

7.6 HSE intends to produce a new Health and Safety at Work etc. Act (Application Outside Great Britain) Order by April 2011 to consolidate the relevant legislation and to address outstanding emerging energy technology issues (e.g. related to carbon dioxide storage) and operational lessons.

## **8. Consultation outcome**

8.1 If the legislative gaps identified are to be filled quickly, particularly before high risk construction work starts, HSE will not have time to undertake a 12 week consultation. However, HSE will:

- Introduce sunset provisions into the Health and Safety at Work etc. Act (Application Outside Great Britain) (Variation) Order 2009 that will limit the time that the new provisions will apply (until April 2011). The intention is that these provisions will be included in a new Health and Safety at Work etc. Act (Application Outside Great Britain) Order which HSE will produce by April 2011. HSE will undertake a full formal consultation on this new Order before it is introduced; and
- Write to stakeholders before this Order comes into force to explain why the Variation Order has to be introduced without consultation, highlight the main changes and give a commitment to formally consult on the new provisions at a later date.

## **9. Guidance**

9.1 HSE will produce web-based guidance on the main amendments made to the Health and Safety at Work etc. Act (Application Outside Great Britain) (Variation) Order 2001 by the 15 July 2009.

## **10. Impact**

10.1 The impact on business, charities or voluntary bodies is:

- Total costs to society of the regulation are estimated to be approximately £275,000 in present value terms over the 10-year appraisal period.
- The costs to wind farm businesses are estimated to be around £55,000 of this total, but will depend on the number of new structures built in future years over the appraisal period.

10.2 The impact on the public sector is:

- The costs to HSE of inspection and enforcement are estimated to be approximately £220,000 in present value terms over 10 years.
- The total cost does not include the costs to offshore installations that change their purpose. Consultation is continuing to determine what health and safety requirements should apply to these activities.

10.3 An Impact Assessment is attached to this memorandum.

## **11. Regulating small business**

11.1 The legislation applies to small businesses.

11.2 To minimise the impact of the requirements on firms employing up to 20 people, the approach taken is to produce guidance on this Order that is suitable for small businesses and to work with large organisations to get them to inform small businesses that are part of their supply chain and sub-contracting arrangements.

11.3 The basis for the final decision on what action to take to assist small businesses is from HSE's understanding that these amendments will mainly impact on the large organisations involved in leading the work in these two specialised areas. HSE also draws on its experience of working with the limited number of businesses working in the offshore industries and its understanding of the good practice in place in terms of co-operation and the sharing of information between them.

## **12. Monitoring & review**

12.1 Due to HSE's need to introduce these amendments without consultation, this Order will have sunset provisions that will limit the time that the new provisions will apply. HSE will give stakeholders a commitment to review these new provisions, and to formally consult stakeholders on these changes, before April 2011.

### **13. Contact**

Jim Neilson at the Health and Safety Executive can answer any queries regarding the instrument. Contact details are:

Tel: 0151 951 4434

email: [jim.neilson@hse.gsi.gov.uk](mailto:jim.neilson@hse.gsi.gov.uk)

## Summary: Intervention & Options

<b>Department /Agency:</b> <b>Health and Safety Executive</b>	<b>Title:</b> <b>Impact Assessment of a Variation Order to the 2001 AOGBO</b>	
<b>Stage:</b>	<b>Version:</b> Final	<b>Date:</b> 22 June 2009
<b>Related Publications:</b> The Health and Safety etc. Act 1974 (Application Outside Great Britain) Order 2001 (2001 AOGBO)		

### Available to view or download at:

<http://www.hse.gov.uk/ria/index.htm>

**Contact for enquiries:** Jim Neilson/Karen Daniels

**Telephone:** 0151 951 4434/3113

### What is the problem under consideration? Why is government intervention necessary?

The 2001 AOGBO extends the prescribed provisions of the Health and Safety at Work etc. Act 1974 (HSWA) to specific work activities in specified areas. Wind and wave farms in Great Britain's territorial seas are within the scope of the 2001 AOGBO, those in a Renewable Energy Zone (REZ) are not. Offshore platforms beyond the territorial seas which are no longer within scope of Article 4 of the AOGBO are also not covered by this Order. For new developments coming on stream very soon, HSE proposes to fast track some essential variations to the AOGBO to ensure it has appropriate jurisdiction.

### What are the policy objectives and the intended effects?

1. Fill these two legislative gaps by extending the scope of the 2001 AOGBO to: energy structure (including wind farms) and other related structure activities within a REZ; and Offshore installations beyond the territorial sea which cease to be used for a purpose specified in Article 4 of the 2001 AOGBO.
2. Introduce sunset provisions to limit the time new provisions will apply, and create an opportunity to formally consult stakeholders on these, and others amendments, when a new AOGBO is produced to deal with broader changes to accommodate emerging energy technologies by April 2011.

### What policy options have been considered? Please justify any preferred option.

1. No change - Adhere to the current timetable to deliver a revised AOGBO in April 2010.
2. Use DECC Orders to fill the legislative gaps identified, until the new AOGBO is ready.
3. Process a revised AOGBO as soon as possible with minimum or no consultation.
4. Fast track a 2009 Order that varies the existing 2001 AOGBO to target the legislative gaps identified and move this forward with no consultation. Work will begin on a new AOGBO incorporating these and the other intended revisions to be in place by April 2011 at the latest, on which full consultation will be carried out.

### When will the policy be reviewed to establish the actual costs and benefits and the achievement of the desired effects?

The policy will be reviewed by April 2011.

### Ministerial Sign-off For SELECT STAGE Impact Assessments:

*I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.*

Signed by the responsible Minister:

William D. McKenzie ..... Date: 3 July 2009

## Summary: Analysis & Evidence

<b>Policy Option:</b>	<b>Description:</b>
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<b>COSTS</b>	<b>ANNUAL COSTS</b>	Description and scale of <b>key monetised costs</b> by 'main affected groups' One-off costs - Wind farm businesses: £11,300 Average annual costs - Wind farm businesses: £4,800 Average annual costs - Inspection (HSE: £26,000)
	<b>One-off</b> (Transition) <b>Yrs</b>	
	<b>£ 11,300</b> 10	
	<b>Average Annual Cost</b> (excluding one-off)	
	<b>£ 31,000</b>	<b>Total Cost (PV)    £ 275,000</b>
Other <b>key non-monetised costs</b> by 'main affected groups' Costs to offshore installations that change their purpose are not quantified as consultation is ongoing to determine good health and safety practice for this sector.		

<b>BENEFITS</b>	<b>ANNUAL BENEFITS</b>	Description and scale of <b>key monetised benefits</b> by 'main affected groups'
	<b>One-off</b> <b>Yrs</b>	
	<b>£</b>	
	<b>Average Annual Benefit</b> (excluding one-off)	
	<b>£</b>	<b>Total Benefit (PV)    £</b>
Other <b>key non-monetised benefits</b> by 'main affected groups' Consistency in standards of health and safety management for wind farms and offshore installations located within and outside the territorial seas of Great Britain.		

Key Assumptions/Sensitivities/Risks

Price Base Year 2007	Time Period Years 10	<b>Net Benefit Range (NPV)</b> £	<b>NET BENEFIT (NPV Best estimate)</b> £
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What is the geographic coverage of the policy/option?	> Territorial Seas				
On what date will the policy be implemented?	5.8.09				
Which organisation(s) will enforce the policy?	HSE				
What is the total annual cost of enforcement for these organisations?	£ 26,000				
Does enforcement comply with Hampton principles?	Yes				
Will implementation go beyond minimum EU requirements?	No				
What is the value of the proposed offsetting measure per year?	£				
What is the value of changes in greenhouse gas emissions?	£				
Will the proposal have a significant impact on competition?	No				
Annual cost (£-£) per organisation (excluding one-off)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">Micro</td> <td style="width: 25%; text-align: center;">Small</td> <td style="width: 25%; text-align: center;">Medium</td> <td style="width: 25%; text-align: center;">Large £1,680</td> </tr> </table>	Micro	Small	Medium	Large £1,680
Micro	Small	Medium	Large £1,680		
Are any of these organisations exempt?	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%; text-align: center;">No</td> <td style="width: 25%; text-align: center;">No</td> <td style="width: 25%; text-align: center;">N/A</td> <td style="width: 25%; text-align: center;">N/A</td> </tr> </table>	No	No	N/A	N/A
No	No	N/A	N/A		

<b>Impact on Admin Burdens Baseline (2005 Prices)</b>		(Increase - Decrease)
Increase of    £ 3,000	Decrease of    £	<b>Net Impact    £ 3,000</b>

Key:      Annual costs and benefits: Constant Prices      (Net) Present Value

[Use this space (with a recommended maximum of 30 pages) to set out the evidence, analysis and detailed narrative from which you have generated your policy options or proposal. Ensure that the information is organised in such a way as to explain clearly the summary information on the preceding pages of this form.]

### ***Purpose and intended effect***

#### **Issue**

1. The Health and Safety at Work etc. Act 1974 (HSWA) applies to all work activities in Great Britain including land based wind farms. Certain prescribed provisions of the HSWA are applied outside Great Britain by the Health and Safety at Work Act 1974 (Application Outside Great Britain) Order 2001 (the 2001 AOGBO).

2. The 2001 AOGBO applies the prescribed provisions of HSWA to certain specified activities (such as construction, maintenance and operation) in relation to energy structures and other structures within the territorial sea (Article 8). However, it does not extend the HSWA to activities involving energy structures and related structures beyond our territorial seas, including a Renewable Energy Zone (REZ). A REZ is an area, outside the territorial sea, designated by order under Section 84(4) of the Energy Act 2004 which may be exploited for the production of energy from water or wind. The Department for Energy and Climate Change (DECC) has given consent for offshore wind turbines to be constructed in a REZ. This work is due to begin in summer 2009.

3. Under Article 4 (3) (c) ("Offshore installations") of the 2001 AOGBO, a platform would cease to be an offshore installation when it is no longer used for any of the purposes specified in the definition of an offshore installation and is used for some other purpose not so specified. Activities in relation to such platforms within the territorial sea would be covered by Article 8 of the 2001 AOGBO. However, activities in relation to offshore platforms in a designated area which are no longer offshore installations because of a change in their use would not be covered by the 2001 AOGBO and the prescribed provisions of HSWA will not apply to these activities. HSE has been made aware that there is one offshore installation, which is no longer being used for a purpose specified in the definition of an offshore installation, that is likely to be used for a different purpose (as a helicopter base) from September 2009.

4. Until the provisions of the 2001 AOGBO are updated, if an incident were to occur in relation to activities concerning a wind farm in a REZ or an offshore platform in a designated area that is no longer an offshore installation because of a change in its use, HSE is unlikely to have the necessary jurisdiction to investigate the incident or enforce health and safety law.

5. HSE has been working to amend the 2001 AOGBO to ensure that it applies to emerging energy technologies and to address some operational lessons (e.g. to clarify the status of vessels used for accommodation). HSE hoped to introduce a new AOGBO by April 2010. As HSE has now become aware of the above legislative gaps, its objectives have changed. HSE's priority is now to ensure that it has the jurisdiction to enforce health and safety law or investigate incidents in relation to these activities where they are carried out in these areas. To quickly fill these legislative gaps, HSE proposes to introduce the Health and Safety at Work etc. Act (Application Outside Great Britain) (Variation) Order 2009 (the 2009 Variation Order). HSE will then produce another AOGBO by April 2011 that will address outstanding emerging energy technology issues (e.g. related to carbon dioxide storage) and operational lessons.

6. If the legislative gaps are to be filled quickly, HSE will not have time to formally consult the stakeholders involved. However, HSE will:

- Introduce sunset provisions in Articles 8A and 8B which are to be inserted in the 2001 Order by the 2009 Variation Order that will limit the time that the provisions in these Articles will apply (until April 2011). HSE will then initiate work on a new AOGBO. The new AOGBO will include the provisions being made in the 2009 AOGBO as well as additional changes to the 2001 AOGBO. While the 2009 variations will only apply until April 2011, the intention is that they will still be in place after April 2011 by being included in the new Order. HSE will give stakeholders reassurance that it will undertake a full formal consultation on the new AOGBO before it is introduced;
- Write to stakeholders before the 2009 Variation Order comes into force to explain why the Variation Order has to be introduced without consultation, highlight the main changes and give a commitment to formally consult on the new AOGBO; and
- Produce guidance for stakeholders on the main variations to the 2001 AOGBO and place this information on HSE's website before the 2009 Variation Order comes into force.

## Options

7. HSE considered four options on how to progress this work:

- (i) Retain the present position. This would mean that the prescribed provisions of the HSWA would not apply to activities carried out in relation to energy structures in a REZ or offshore installations in a designated area which have become used for another purpose and are no longer offshore installations until a new AOGBO is made in April 2010. This option was not acceptable as HSE would not have the necessary jurisdiction to investigate incidents or enforce health and safety law.
- (ii) Use DECC orders to take prosecutions if breaches of HSWA occurred in relation to wind farms or when a platform was being used for another purpose, but legal advice was that this would not deliver the jurisdiction HSE required.
- (iii) Fast track all the 2001 AOGBO revisions required with no consultation. This would result in many new provisions being introduced on which stakeholders views were not considered.
- (iv) Fast track a few key variations to the 2001 AOGBO, with no consultation, to fill the legislative gaps identified using the 2009 Variation Order.

## Preferred Option

8. Option (iv) is the preferred option as it allows for legislative gaps to be filled quickly while keeping variations to a minimum and so limiting the impact on stakeholders. The other revisions required to the 2001 AOGBO would continue at a later stage. The proposed variations to the 2001 AOGBO by the 2009 Variation Order will:

- ❖ Extend the prescribed provisions of the HSWA to specified work activities taking place in relation to a structure in a designated area that was an offshore installation covered by article 4 of the 2001 AOGBO but has ceased to be used for any of the purposes specified in the definition of an offshore installation and has since been used for some other purpose not so specified;

- ❖ Extend the prescribed provisions of the HSWA to specified work activities (such as the construction, reconstruction, alteration, repair, maintenance, cleaning, use, operation, demolition and dismantling) involving energy structures (such as wind farms) and related structures within a REZ;
- ❖ Time limit the variations made in the 2009 Variation Order to April 2011 in order to give assurance that there will be full consultation in due course; and
- ❖ Remove the reference to specific installation towers which are mentioned in Article 4 and the Schedule of the 2001 AOGBO as these towers no longer exist.

## **Information sources and background assessment**

9. In preparing this Impact Assessment, HSE has had to assume that wind farm activities already occurring within territorial seas are broadly similar to those that would take place beyond to estimate the costs and potential benefits of the proposed changes to the legislation. HSE has been able to use the information it gathered when assessing the impact of such activities within our territorial seas in the Impact Assessment prepared for the 2001 AOGBO. HSE has also approached industry to obtain recent data (e.g. from the British Wind Energy Association on those operators currently planning to construct wind farms beyond our territorial seas). There is no information on the use of an offshore installation for another purpose (e.g. helicopter base) as this is a new development offshore. HSE has gained what information it has from the organisation who is considering this proposal. Unless stated, any costs and benefits presented in the assessment are calculated over the appraisal period 2010 - 2019.

## **Sectors Affected**

10. This section of the Impact Assessment provides a summary of the industries and activities to which the proposed variations to the 2001 AOGBO, which will be made by the 2009 Variation Order, will apply.

### **Wind farms**

11. Currently the main area of activity in the offshore renewable energy industry has been the development of offshore wind farms. There has been some development of wave and tidal systems, but these are not as advanced as wind farms. Wind farms are a relatively new industry and it is difficult to be specific on the number of companies and workers involved. The companies range from small to large multi-national companies. Many are not UK based, particularly contractors who are involved in the construction phase of the work. The wind farm developments are licensed in phases. Rounds 1 and 2 will each have 15 wind farms. Most of these are within the 12 nautical miles known as the territorial seas, but at least 4 are beyond this and others are on or straddling the area. Round 3 developments will all be much larger, and go beyond the territorial seas adjacent to Great Britain. In total there could eventually be between 8000 and 10000 offshore turbines.

12. Businesses working on wind farms within the territorial seas have performed risk assessments for these activities and early HSE operational experience has highlighted a number of potential risks associated with the operation of offshore energy structures including offshore wind farms, to sea users or to visitors whose purpose is not construction, reconstruction, alteration, repair, maintenance, cleaning, demolition and dismantling of the structure. There are limited accident records for this new industry. But there was a reported leg amputation during wind turbine erection work and an incident involving a jack up barge which suffered a punch through whilst undertaking survey work, which has the potential for multiple fatalities.

13. The industry also have trained and experienced staff (in relation to construction, maintenance and operation), and the industry will be able to apply this knowledge and experience to any work in relation to wind farms beyond our territorial seas. HSE recognises that industry will need to continue to grow its staff resources in this area to meet future demands

and that working methods will need to be reviewed as they are modified to take on board new industry developments (e.g. access during the construction and operation of wind turbines).

14. As far as the offshore renewable energy industry is concerned, the provisions inserted by the 2009 Variation Order into the 2001 AOGBO will require the companies developing or operating energy developments in a REZ to comply with the prescribed provisions of HSWA, as they are already required to do in relation to energy developments within the territorial sea. The industry associations that HSE has contacted while preparing this Impact Assessment are very keen to ensure that this happens.

## **Offshore installations**

15. Offshore data from the petroleum industry is used for the installation which will change its purpose to a helicopter base, as it is likely that the helicopter activities involved will be associated with offshore installations. In 2007/8 there was a total workforce of 28,132 offshore. No fatalities were reported in 2007/08, compared with two in 2005/06 and 2006/07. 44 major injuries were reported, compared to 39 in 2006/07. This is the second lowest in over 10 years.

16. In 2007/8 the major injury rate per 100,000 workers increased from the previous year's low of 138.4 to 156.41, but is the second lowest in over ten years. The combined fatal and major injury rate is the same as the major injury rate. 148 'over-3-day' injuries were reported, a decrease of 16 compared to the previous year. The over-3-day injury rate decreased from 582.1 per 100,000 workers to 526.1 – a decrease of 9.6% compared to 2006/07. This is 59.3% lower than the peak of 1293 in 1995/96. 509 dangerous occurrences were reported, compared to 485 in 2006/07, an increase of 24. This is 33.4% less than the peak of 764 in 2000/01.

17. The 'maintenance/construction' work process environment continued to produce the highest number of 'all injuries' and 'major injuries' this year, followed by 'deck operations'. Struck by moving or falling objects was the most common type of accident followed by 'handling, lifting or carrying' accidents and 'slips, trips and falls'. These three categories account for 84% of all injuries. The significant majority of major injuries were to limbs, with most affecting the upper limb, especially to various parts of the hand or wrist.

18. These injuries are in part due to the hostile external environment and the relatively large amount of heavy machinery involved in the energy production process. There are particular risks arising from offshore activities relating to personnel travelling from the shore, working at night, moving objects (including machinery), any diving operations that may be required, and risk of fire combined with limited means of escape.

19. The ratio of over-3-day to major injuries reduced by 20% in 2007/8. Unfortunately, this is due to a rising percentage of major injuries among the total of all injuries compared to last year for the same level of work activity. However this remains an improved ratio performance compared to the four year period 2002/03 to 2005/06 when work activity was also lower. This year the three-year rolling average of injury rate for over-3-day injuries shows a continuation of the overall downward trend over the past 10 years. Further details available on <http://www.hse.gov.uk/offshore/statistics/hsr0708.pdf>

20. The total number of installations currently operating within the UKCS is summarised below:

Oil Platforms	88
Floating Installations	18
Total Oil Installations	106
Gas Platforms	181

Total number of oil and gas installations 287

## **Benefits**

### **Health and safety benefits**

21. The proposed variations to the 2001 AOGBO will result in the prescribed provisions of the HSWA applying to activities beyond the territorial seas related to energy structures and related structures.

22. There is some recent risk data from wind farm activities within our territorial seas provided by the HSE's operational division. In general, the major risks are to sea users, during construction and to those visiting the structure for operational purposes. However, due to the relatively low number of personnel required to visit the structures for operational purposes, and the infrequency of these visits, very few accidents are predicted.

23. It is not possible to reasonably estimate the health and safety benefits of extending the 2001 AOGBO to offshore installations that change their purpose. Offshore Installations are currently covered by a permissioning regime, and consultation is currently ongoing to determine what should constitute good practice in health and safety management for offshore installations that change their purpose. To a large extent, this will depend on the new purpose of such platforms.

### **Other benefits**

24. Importantly, the changes will provide some of the legal underpinning in relation to health and safety for the emerging energy technologies (non-nuclear). In terms of HSE's activity there are benefits for the inspection function from the perspective that it will clarify the application of legislation to energy structures and other related structures beyond our territorial sea.

25. The government has set a target of producing 10% of the country's electricity needs from renewable sources by 2010. Maintaining a safe working environment within which this form of energy production can be undertaken will ensure that the government can continue to move towards this objective. Achieving this target is also consistent with reducing carbon dioxide emissions in accordance with international climate change initiatives.

## **COSTS**

26. This section estimates costs of the regulatory proposal for key industries affected by the proposed changes (the planned offshore wind farms beyond our territorial seas and conversion of an installation into a helicopter base or other activity within a designated area).

### **Wind Farms**

27. The main costs to a wind farm business in order to comply with the proposed variations to the 2001 AOGBO that will be made by the 2009 Variation Order can be divided into start-up and recurring costs. The main start-up costs are:

- ❖ Personal protective safety equipment (mainly to ensure safety during transit e.g. lifejackets)
- ❖ Time spent by managers in familiarising themselves with the requirements, organising the initial risk assessment and in review meetings before and after the assessment
- ❖ Training for engineers and technicians (again mainly relating to safe transit from the shore to the structure) visiting the relevant structures for operational purposes

28. Most of the industry's workforce will already have had protective safety equipment and training when working on wind farms within the territorial seas. However, new staff will need to be recruited in line with increased production over the next few years. Much of the existing risk assessments will still be appropriate, but will need updating. Subsequent annual recurring costs are expected to arise from reviewing and revising the risk assessment, maintaining the safety equipment and refresher training courses. Below we have given some more detailed compliance costs for a business with some experience in the offshore wind farm industry (HSE is assuming it is such a business who will be successful in gaining a wind farm contract), and then the total estimated cost for the industry.

### **Compliance costs for a 'typical' business with some experience of the wind farm industry**

29. This section makes use of cost estimates from the Regulatory Impact Assessment for Amendments to the Health and Safety at Work etc Act 1974 (Application Outside Great Britain Order) 1995<sup>1</sup>. In general, HSE has assumed that an offshore wind farm of around 100 structures would require around 10 personnel to operate it full-time. HSE has also estimated that businesses will already have trained staff with safety equipment, and a risk assessment for the activities involved. Finally, HSE estimates that organisations will need to recruit 20% more staff to deliver the work of operating the additional wind farms. As summarised above, compliance with health and safety law would require obtaining safety equipment, training of employees and producing risk assessments. However, most of these compliance costs will already have been incurred for businesses already operating offshore within the territorial seas. For these businesses, significant additional start up costs will therefore not be incurred by extending health and safety law to outside the territorial seas.

30. The additional start-up costs of compliance with extending health and safety law to outside the territorial seas are expected to arise from the updating of risk assessments and the process of familiarisation with the new requirements. These activities are expected to involve a total of approximately 22 person-days per business. This number of days has been multiplied respectively by: the estimated number of hours worked in the day, and the average gross hourly wage of £18.89 for "Production, works and maintenance managers" from the Annual Survey of Hours and Earning (2008). This is multiplied by 1.3 to include non-wage employment costs to estimate a cost of £24.56 per hour. The cost per business of familiarisation and producing the risk assessments is therefore estimated to be:

$$22 \text{ days} * 7 \text{ hours} * £24.56 / \text{hour} = £3782.24$$

31. There will also be recurring costs related to compliance. These will include costs of updating risk assessments, refresher training courses, and maintenance of safety equipment. A number of assumptions have been made as to when the planned offshore wind farms beyond our territorial seas will commence full operation, and the future profile of activity of these structures.

32. Businesses operating in the sector will need to periodically review and update risk assessments. The cost of updating the risk assessment is estimated to involve around 3 days of management time and to generate an estimated cost, using the same employment cost assumptions as above, of £687.68.

33. Information received from a previous HSE postal survey showed that firms found it difficult to separate between the cost of refresher training courses and maintenance of safety equipment. Therefore, it was estimated that the combined cost of these activities would be £2000 incurred every 3 years, increasing by a factor of 2 for every 50 towers built. Thus, the combined annual recurring cost of both activities in the appraisal year 2002/3 was equal to

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<sup>1</sup> <http://www.hse.gov.uk/ria/offshore/outside.htm>

£2000 divided by three. This annual cost was separated into training and equipment costs, by calculating a proportion based on the ratio of initial training (or equipment) costs to the sum of initial training cost and equipment costs. The estimated training cost was then updated using nominal earnings growth and real economic wage cost, and discounted to give a cost of £730. The safety equipment cost, which was discounted but not updated, was approximately £140. These costs have been updated to 2007/8 prices by applying the GDP deflator<sup>2</sup>. On this basis, annual discounted costs are estimated to be approximately £830 per business for annual training costs and approximately £160 for annual safety equipment costs. This is summarised in table 1 below.

Table 1: Compliance costs to a typical business

<b>Provision</b>	<b>Start-up Costs</b>	<b>Recurring Annual cost (2010 - 2019)</b>	<b>Present value over 10 years</b>
Costs of familiarisation and risk assessment	£3782	£688	£9,794
Training costs	£0	£832	£7,162
Safety equipment costs	£0	£160	£1,377
<b>Total</b>			<b>£18,333</b>

34. The estimates presented in table 1 above have been estimated by updating costs relating to the 2002/3 appraisal year to 2007/8 values by adjusting costs with the GDP deflator, and using updated employment cost estimates from the Annual Survey of Hours and Earnings.

35. Commencing from 2012, when the offshore wind farm beyond the territorial seas is expected to begin operation, it is expected that additional recurring costs will be incurred as further towers are built. It has been assumed that 50 towers will be constructed in 2012 with a further 50 to follow in the following year. According to industry contacts an additional 4 days of management time would be required to carry out health and safety risk assessments for every 50 towers built. Further, the annual recurring cost of training and safety equipment are both expected to double for every 50 towers built. Thus recurring costs would be expected to increase significantly in subsequent years during the appraisal period. This increase is expected to be approximately in the range of 2 to 3 times the estimate reported in table 1.

36. Table 2 presents estimated total costs to the wind farm industry based on the assumption that these costs will be three times higher than the costs presented in table 1. The present value cost to wind farm businesses over the appraisal period is estimated to be approximately £50,000 (rounded estimate).

<sup>2</sup>GDP deflator: source – HM Treasury. Calculated from Office for National Statistics data for seasonally adjusted current and constant price GDP (YBHA and ABMI)

Table 2: Total compliance costs to wind farm industry

Provision	Start-up Costs	Recurring Annual cost (2010 - 2019)	Present value over 10 years
Costs of familiarisation and risk assessment	£11,346	£2064	£29,382
Training costs	£0	£2496	£21,486
Safety equipment costs	£0	£480	£4,131
Total			£54,999

37. As indicated above, wind powered energy structures in territorial seas are designed to be grouped together in farms of up to 100. It would normally be expected that all structures would be in place within 1-2 years of operation commencing. However, in this case the operator that HSE expects to be operating the initial project beyond the territorial sea during the appraisal period will only commence large-scale operations beyond the territorial seas from around 2012, and the cost estimates above are based on this assumption.

### **Compliance costs for a 'typical' business involved in the changing of the purpose for which an installation has been used**

38. HSE has assumed that the offshore structures involved would have been "offshore installations" for the purposes of the 2001 AOGBO and so would likely have been covered by the offshore permissioning regime. This would have involved the incurring of certain costs by the organisation involved. When the use of the structure changes to a use not covered by the definition of an offshore installation, the structure is unlikely to be covered by the offshore permissioning regime and the costs to comply therefore will no longer apply in relation to that structure.

39. Estimated costs of complying with the offshore permissioning regime are reported in the Regulatory Impact Assessment for the 2005 Revision of the Offshore Installations (Safety Case) Regulations 1992<sup>3</sup>. This RIA noted that it is difficult to estimate the costs for a 'typical' business because there is a diverse range of businesses in the sector. Businesses operate fixed or mobile installations, that vary in size and in the number of installations operated and some require Combined Operations Safety Cases. Since the largest number of submissions made is in respect of fixed installations, the average costs that businesses may face for these installations were set out in this Impact Assessment.

40. The proposed variations to the 2001 AOGBO will mean that the prescribed provisions of HSWA apply to such structures, but not that these structures will be within the offshore permissioning regime. The Regulatory Impact Assessment for the 2005 Revision of the Offshore Installations (Safety Case) Regulations 1992 is therefore of limited value.

<sup>3</sup> <http://www.hse.gov.uk/ria/offshore/offshore.pdf>

41. Total costs for a structure which has ceased to be used for any of the purposes specified in the definition of an offshore installation and has since been used for some other purpose would depend on the number of fixed installations to which the changes to are expected to apply. The proposed amendments to the AOGBO would bring such structures under the HSWA, and not the offshore permissioning regime. The compliance costs associated with this are not known as activities, like using an installation as a helicopter base, have not been implemented before, and HSE is in discussion with the organisation involved to determine what good health and safety practice should be adopted. It is therefore not currently possible to estimate the net change in cost to businesses of moving from compliance with the offshore permissioning regime to compliance with other health and safety regulations.

### **Costs to HSE**

42. The major cost to HSE will relate to inspecting, and investigating accidents and complaints, in the areas concerned. These cost will comprise updating inspectors on the requirements, and additional time taken to visit the structures covered by the requirements.

### Offshore platforms and installations

43. The aim is that oil and gas installations should be inspected twice a year. This will be the same for the platforms which will change their purpose. Typically there will be a lead focal point (Inspection Management Team inspector at HSE Band 3) and two topic specialist inspectors (at HSE Band 3). Their work will be supported by three HSE Band 6 staff to record inspection reports etc. A HSE Band 6 typist will provide support in terms of drafting letters / reports/ notices etc.

44. Typically an offshore inspection takes three days / two nights offshore. However, there will also be onshore pre and post inspection activity in terms of planning, preparation, and meetings. IMT inspectors, therefore, for annual planning purposes, allow 10 working days per inspection. It is expected that topic specialists will be similar. Using estimates of average HSE salary costs, based on the HSE Salary Ready Reckoner, the cost to HSE per inspection is estimated at approximately £8000. Average salary costs for inspectors are assumed to be represented by the average salary costs for offshore inspectors for 2008/9

### Wind Farms

45. It is expected that inspection of wind farms will require one HSE Band 2 inspector for 12 days per year, one HSE Band 3 inspector for 12 days per year, and one HSE Band 3 specialist inspector for 12 days per year. The total cost of this is estimated at approximately £10,000 per year.

### Total Cost of Inspection Activities

46. The total cost to HSE, from the inspection activities identified above, is estimated at a total of £26,000 per year above existing inspection costs. Over 10 years, this amounts to a total present value of approximately £220,000.

47. There will also be a relatively small cost in developing the 2009 Variation Order, and producing guidance, by the relevant policy unit. This cost is not included in the Impact Assessment.

### **Total costs to society**

48. The total cost to society will consist of two main components: the cost to industry of complying with the new requirements, and the cost to the HSE.

49. The cost to wind farm businesses operating in the REZ is estimated to be approximately £55,000 in present value terms over 10 years from 2012. The cost to the business that will be affected initially is estimated to be around £18,000. However, this estimate is expected to increase, to around 2-3 times this amount in subsequent years, depending on the increased activity observed in wind farm operations in the REZ. Costs to offshore installations that change their purpose is not available at this stage. These changes may result in additional costs for these installations, and further information will be required in order to estimate these costs. HSE is in discussion with organisations involved to determine what should constitute good health and safety management for these activities.

50. The cost to HSE of inspection and enforcement is estimated to be approximately £220,000 in present value terms over 10 years.

51. The total cost to society is therefore estimated at approximately £275,000 in present value terms over the appraisal period 2010 to 2019.

### **Impact on Small Businesses**

52. The British Wind Energy Association has indicated that small and medium sized enterprises will be affected by the variations made to the 2001 AOGBO by the 2009 Variation Order, but there is currently very limited information on small and medium sized businesses within this developing industry. There is no evidence to suggest that small and medium sized enterprises will be disproportionately affected.

### **Impact on Competition**

53. The impact of this proposal on competition can be assessed by considering whether the proposal would directly or indirectly limit the numbers of businesses in the affected sectors, limit the ability of businesses to compete, or reduce businesses' incentives to compete. It is not expected that the proposal would significantly limit the ability of businesses to enter the industry.

### **Environmental impacts**

54. Ensuring adequate protection for the environment is one area that will be addressed by legislative change under the Energy Act 2008. Updating the 2001 AOGBO to extend the prescribed provisions of the HSWA to specified work activities (such as the construction, reconstruction, alteration, repair, maintenance, cleaning, use, operation, demolition and dismantling) involving energy structures (such as wind farms) and related structures within a REZ will assist in meeting renewable energy targets.

### **BALANCE OF COSTS AND BENEFITS**

55. It is not possible to reasonably estimate the benefits of this proposal in terms of reduced numbers of accidents and injuries in the industries to which the 2001 AOGBO, as varied by the 2009 Variation Order, will apply. However, the 2001 AOGBO, as varied by the 2009 Variation Order, will provide a statutory standard for health and safety management that does not currently apply in these areas. As reported above, the total costs to society of the variations to the 2001 AOGBO made by the 2009 Variation Order are approximately £275,000 in present value terms over the 10-year appraisal period. The costs to businesses, estimated to be around £55,000 of this total, will depend on the number of new structures built in future years over the appraisal period. As described above, this cost does not include the costs to offshore installations that change their purpose. Consultation is continuing to determine what health and safety requirements should apply to these activities.

## **ARRANGEMENTS FOR MONITORING AND EVALUATION**

56. We will confirm with HSE inspectors that monitoring will be carried out as part of their normal inspection practice. We will make arrangements to review the changes before April 2011 prior to a new AOGBO being introduced.

## USEFUL DEFINITIONS

### **Territorial sea**

For the purposes of the 2001 AOGBO the "territorial sea" means the territorial sea adjacent to Great Britain (article 2(1) of the 2001 AOGBO). The territorial sea extends 12 nautical miles seawards (section 1 of the Territorial Sea Act 1987) and is measured from baselines set out in the Territorial Waters Order in Council 1964 (as amended).

### **Designated area**

'A "designated area" is an area outside the territorial sea designated by Order in Council under section 1(7) of the Continental Shelf Act 1964 as an area within which the rights in section 1(1) of that Act are exercisable.

### **Continental shelf**

The 1958 Geneva Convention on the Continental Shelf defined this as referring to:

(a) the seabed and subsoil of the submarine areas adjacent to the coast but outside the area of the territorial sea, to a depth of 200 metres or, beyond that limit, to where the depth of the superjacent waters admits of the exploitation of the natural resources of the said areas, and

(b) to the seabed and subsoil of similar submarine areas adjacent to the coasts of islands.

### **Renewable energy zone**

'A "Renewable Energy Zone" ("REZ") is an area outside the territorial sea designated as an area by Order in Council under section 84(4) of the Energy Act 2004 as an area within which the rights in section 84 of that Act are exercisable (e.g. the right to exploit those areas for the production of energy from water or winds).

### **Great Britain and the United Kingdom**

"Great Britain" includes England, Wales and Scotland.

## Specific Impact Tests: Checklist

Use the table below to demonstrate how broadly you have considered the potential impacts of your policy options.

**Ensure that the results of any tests that impact on the cost-benefit analysis are contained within the main evidence base; other results may be annexed.**

Type of testing undertaken	<i>Results in Evidence Base?</i>	<i>Results annexed?</i>
Competition Assessment	Yes	No
Small Firms Impact Test	Yes	No
Legal Aid	No	No
Sustainable Development	No	No
Carbon Assessment	No	No
Other Environment	No	No
Health Impact Assessment	Yes	No
Race Equality	No	No
Disability Equality	No	No
Gender Equality	No	No
Human Rights	No	No
Rural Proofing	No	No

## Annexes

