

Health and Safety Executive Board		HSE/13/96	
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Ensuring the continued effectiveness of regulation of the renewable energy sector

Purpose of the paper

1. This paper updates the Board on progress since the last report on this issue submitted to the June 2012 meeting (HSE/12/48) to ensure HSE continues to deliver proportionate, effective regulation of the renewable energy sector.
2. It complements the separate paper (HSE/13/91) entitled '*Emerging Energy Technologies-Update on Developments with Unconventional Gas*' which was considered by the Board on 25 September 2013.

Timing: Routine

Recommendation

3. That the Board notes the work undertaken since the last update and agrees HSE's current approach remains appropriate to regulating the renewable energy sector.

Background

4. The renewable energy technologies covered in this paper are wind (both onshore and offshore), solar, wave, tidal, waste-to-energy and energy from biomass.
5. A European Directive (2009/28/EC) requires the UK to meet 15% of its energy demand from renewable sources by 2020. Energy production, storage and distribution are a devolved matter within the UK, and Scotland aims to generate 100% of its electricity from renewables by this date. In 2012 renewables accounted for over 11% of electricity generated in the UK with wind making a significant contribution - the UK has the largest offshore wind farm in the world (the London Array) and the largest onshore wind farm in Europe (outside Glasgow).
6. Following the publication of the report from the Emerging Energy Technology programme in 2010, the Board (HSE/10/93) concluded that the current health and safety arrangements were satisfactory to regulate new energy sectors, including renewable energy. HSE, in line with the recommendations in the report, has continued to work with stakeholders to monitor the health and safety performance of the sector during this period of significant expansion.

7. HSE has developed 16 sector strategies to guide its proactive work within the framework of the HSE Strategy. The electricity supply industry strategy and the waste and recycling strategy provide the focus for work relating to relevant parts of the renewable energy sector.

Health and safety performance of the sector

8. Whilst the sector continues to expand, analysis of relevant data, from both internal and external sources, does not highlight any cause for concern and indicates a sector that is taking health and safety seriously. Provisional figures for the year indicate one fatality associated with renewable energies (a fall from height associated with solar technology) and 20 major injuries. All incidents were associated with well-understood hazards not unique to renewable energy industries.
9. HSE continues to engage with key players in the sector to encourage a proactive approach to managing risks. We work with The Crown Estate (TCE), the Office of Gas and Electricity Markets, the Department for Energy and Climate Change, the Maritime and Coastguard Agency, the Department of Communities and Local Government (DCLG), the Civil Aviation Authority and trade associations including Renewable UK (RUK) to share intelligence and best practice. For example:
 - TCE collects health and safety incident data in the offshore renewables sector through contractual arrangements. In June 2013 TCE was in a position to share a summary of this information with HSE, with a view to providing more in-depth information during 2013. Although it is early days, HSE hope to work with TCE to assess how this information can be best utilised to support duty holders within the offshore renewable energy sector and target future HSE interventions.
 - The Renewable Industry Safety Exchange (RISE) is an industry initiative that facilitates the collation, sharing and dissemination of incidents (for wind, wave and tidal technologies). HSE is supportive of the initiative and will continue to work with the sector in encouraging the promulgation of good working practices, and inform future HSE work.
10. Key Emerging Energy Projects (KEEPs) have been undertaken by HSE '*To help assess the best means to regulate major and significant hazards and risks across the range of activities without restricting EET activity unnecessarily*'. The projects were developed with stakeholder engagement to promote openness and to get an accurate picture of the industry from 'cradle to grave', providing a benchmark for good risk management and working practices. KEEP2 and KEEP4 were specific to the renewable energy sector (offshore wind and energy-from-waste respectively) and work is now complete. HSE is analysing the information collected to see how best to increase inspector knowledge of these topics.
11. Further technology specific details are summarised below:
Onshore wind
12. Intelligence gathered by HSE during a programme of proactive inspections in 2011/12 suggests that larger companies operating wind turbines on dedicated sites control risks well.
13. The rapid expansion of onshore wind means that turbines are being erected in areas close to the public. Objections to turbines at the planning stage have

included health and safety concerns, citing incidents involving failures of blades, ice throw or tower collapse.

14. Planning policy is the responsibility of DCLG in England and the Scottish and Welsh Governments. In July 2013 DCLG published '*Planning practice guidance for renewable and low carbon energy*' which strengthens the requirement for developers in England to consult local communities before they submit a planning application. For each technology, the guidance sets out the requirements that need to be addressed as part of the application, including those relevant to health and safety. Both the Scottish and Welsh Government have also recently published updated planning policies on renewable energy technologies.
15. HSE will continue to develop its intelligence base on onshore turbine incidents in order to inform future interventions.

Offshore wind

16. HSE has developed an inspection strategy for offshore renewables. It will be used to establish and apply suitable benchmark standards, by investigating accidents and cases of ill health and carrying out inspections of offshore renewable energy installations throughout their life cycle.
17. Initial findings from KEEP2 suggest that there is good industry leadership and commitment, with competent health and safety professionals. Clients are keen to be exemplars and maintain/protect their reputation.
18. The rapid expansion of construction within the offshore wind sector may give rise to a potential increase in numbers of hazards. HSE will continue to work with key stakeholders to encourage the development of safe working practices.

Solar energy technology

19. Solar continues to generate the highest numbers of health and safety incidents in the renewable energy sector, primarily associated with falls from height. HSE has investigated a number of serious accidents at both domestic and commercial premises, and has taken enforcement action as a result.
20. In February 2013 a Domestic Solar/Thermal Photovoltaic (PV) Safety and Health Awareness Day (SHAD) was held in Paisley, Scotland attended by approximately 100 installers. The practical sessions covered work at height, asbestos, manual handling and electrical safety.

Waste-to-Energy

21. To increase its knowledge in this sector, HSE has looked to other member states where the industry and regulatory framework is well established. In October 2012, a HSE inspector visited Germany under the Senior Labour Inspectors Committee exchange programme to explore the regulation of Anaerobic Digestion (AD) installations.
22. KEEP4 confirmed the HSE 2006 Expert Report conclusions that there are no immediate concerns and that the equipment poses no significant increase in risks. The risks are known and manageable, but HSE will continue to monitor developments.
23. HSE is reviewing these findings in the context of our strategy for dealing with importers of AD plant and the adoption of AD technology especially by farmers and waste management companies, which is predicted to rise significantly.

Wave/tidal

24. Permission has been granted for the first deployment of wave and tidal devices off the coast of Scotland over the next few years. HSE Inspectors have visited test centres, including the European Marine Energy Centre Ltd, Orkney, where the devices have been developed, and have gained a good understanding of the risks associated with their wider deployment. The Orkney centre has developed guidelines for health and safety in the marine environment jointly with RUK. Several of these guidelines have progressed, via the International Electrochemical Commission, for global adoption as the first international standards for the marine renewable energy industry.

Research relevant to the renewable energy sector

'Green jobs and occupational safety and health: Foresight on the new and emerging risks associated with new technologies by 2020'

25. The European Agency for Safety and Health at Work published this report in Spring 2013 with HSL making a significant contribution. The report acknowledged the significantly different environments for working offshore and onshore, including transportation and changing weather conditions.

'Study and development of a methodology for the estimation of the risk and harm to persons from wind turbines' (RR968)

26. This study was conducted on behalf of HSE by MMI Engineering Ltd to help develop its knowledge on risks from large onshore wind turbines. The report drew data from HSE incident reports, trade association and published papers (UK and internationally) and developed a methodology for the assessment of harm to people from wind turbine failures. The report was published in April 2013.

Stakeholder Knowledge Mapping

27. Further research by HSL will take forward several of the recommendations from the KEEP reports, including to provide an overview of European and wider international developments. The project will identify best practice/drivers for risk management, including engagement with regulators in countries where the use of the technologies are further advanced.

Legislative changes affecting the renewable energy sector

Health and Safety at Work etc Act 1974 (Application outside Great Britain Order 2013 (AOGBO))

28. A revised AOGBO came into force in April 2013. This ensures the continued and proportionate protection of workers within the Renewable Energy Zone outside territorial waters.

Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR)

29. Revised regulations will come into force in October 2013. Changes include updated definitions and improved clarity for offshore renewable workplaces, consistency of approach with their onshore equivalents and making a clear distinction from the oil and gas sector.

Gas Safety (Management) Regulations 1996 (GS(M)R)

30. In 2013 HSE issued a class exemption to GS(M)R to allow all gas conveyors to transport biomethane with an oxygen content of up to 1%. The class exemption

removes the need for gas conveyors to submit individual exemption requests to HSE and so removes a regulatory and financial barrier, and provides investors with compliance certainty.

Action

31. For the Board to note the work undertaken since the last position paper in April 2012 and confirm they are content for HSE to continue to monitor the effectiveness of regulation of the renewable energy sector in this way.

Paper clearance

Cleared by the Jane Willis on 24 September 2013 and the Senior Management Team on 2 October 2013.