

11 CONCLUSIONS AND RECOMMENDATIONS

11.1 Conclusions

The conclusions from the assessment (Sections 9 and 10) of the potential effects of implementation of the DTI draft plan for a 24th round of offshore oil and gas licensing are summarised below. These conclusions (as well as data gaps and recommendations) also draw on the participant feedback from the Assessment Workshop and Stakeholder Meeting.

Noise – In the overall context of the UKCS, the sensitivity of much of the SEA 6 area to acoustic disturbance is moderate or low, and exposure to ambient noise is high. The SEA 6 area has a limited range of marine mammals although some populations are regionally important. The potential effects of seismic and other underwater noise on cetaceans remains a significant area of uncertainty, and issue of importance for offshore exploration activities. However, the proposed level of activity is comparatively small, and past seismic survey effort does not appear to have resulted in significant changes in species composition, frequency of sightings or estimates of population size. Mitigation measures already implemented, including updated JNCC Guidelines, the use of passive acoustic monitoring where appropriate, and use of the consent procedure to manage cumulative effects, provide some degree of protection from acute effects. It is concluded that there is a low risk of potentially significant effects of underwater noise resulting from SEA 6 activity.

Physical damage at the seabed - Physical disturbance resulting from potential SEA 6 activities will be small in scale and duration (in comparison to natural disturbance and the effects of demersal fishing) and will be mitigated to acceptable levels by existing controls. Where the likelihood of sensitive biological, geomorphological or archaeological features is high, predominantly in parts of scenario areas 1, 2 and 3, the scoping of site surveys should include review by relevant conservation and heritage agencies to facilitate collection of suitable data.

Physical presence - The anticipated spatial focus and scale of exploration activity (and likely methods of development) are such that limited interaction is predicted with other existing or potential uses of the sea. There is the potential for overlap in the areas of interest for hydrocarbon and windfarm (and other renewable energy) developments. However, since the regulator for both industries is the DTI, such potential conflicts as may occur can be expected to be resolved at the licensing/leasing and project approvals stages. Although exclusion could represent a significant conflict between fishing and hydrocarbon production in intensively developed areas within established fishing grounds, the spatial extent of predicted temporary and permanent exclusion zones is unlikely to cause significant economic impacts. Additional in-field and export pipelines will be few in number, and designed to minimise risks of interactions with trawl gear. Short-term disruption to inshore fixed gear fisheries (mainly shellfish trapping) may occur during seismic survey and pipeline construction, although in view of the predicted level of activity in the SEA 6 area this disruption will be limited. The oil industry and UK fishing industry maintain consultation, liaison and compensation mechanisms, which should serve to mitigate and resolve any conflicts.

No significant visual intrusion is predicted based on the anticipated nature and scale of activities.

Discharges - The environmental effects of the major discharges from oil and gas activities have been extensively studied, and are considered to be relatively well understood. The environmental effects of produced water discharged to sea are limited, with No Effect

Concentrations attained within a few tens of metres of the discharge point. Discharges of WBM cuttings in the Irish and North Seas and other dispersive environments have been shown to have minimal ecological effects.

Emissions - Potential environmental effects of acid gas and greenhouse emissions are, respectively, regional and global in nature. Given the proximity to the coastline of some of the most prospective areas particularly in the Scenario 7 area, local environmental effects of atmospheric emissions (including odour) should be factored into activity permitting. Significant combustion emissions from flaring are not expected from potential development in the possible SEA 6 licence areas, given the availability of existing gas process and export infrastructure. However, given the slight increase in the amount of gas flared from offshore facilities during 2004 this should be monitored. In view of existing regulatory controls and commercial considerations, combustion emissions from SEA 6 power generation are unlikely to represent a major contribution to industry or national totals.

Wastes to shore – Oil based or other organic phase fluids may be needed to drill some hole sections of wells in the SEA 6 area. Rock cuttings contaminated with oil based mud (i.e. >1% oil on cuttings) may not be discharged to sea and are either reinjected into underground rock formations or shipped to land to undergo treatment prior to onshore disposal. The environmental management of treatment and disposal of such cuttings, both onshore and offshore, is strictly controlled. Sustainable options for onshore disposal of OBM cuttings remain a challenge for the industry. The transfer between installations for reinjection of OBM cuttings is now permitted under a FEPA licence. Cuttings cleaning technologies which are capable of reducing oil on cuttings to levels below 1% have been trialled. The incremental volumes of oily cuttings associated with 24th licensing round activities will be small in the context of overall waste volumes generated offshore.

Accidental events - Project specific risk is highly associated with reservoir fluid type (i.e. heavy oil >condensate>gas) and distance from sensitive receptors. The likelihood of E&P activity is highest and distances to shore are lowest from the developed areas in scenario area 7 (around the existing Liverpool Bay and Morecambe producing fields), and the adjacent coastline includes highly vulnerable bird populations and sensitive sedimentary and saltmarsh habitats. However, the Solway area (scenario area 4) is also highly sensitive; and ecological, recreational and amenity quality of the Irish and Welsh coastlines adjacent to scenario areas 1, 2, 3 and 6 is sufficiently high that there are no clear variations in overall sensitivity within the SEA 6 area.

In some cases, there is strong seasonality in sensitivities of individual scenario areas – in particular in relation to bird populations. Existing regulatory controls emphasise the risk management and contingency planning aspects of environmental management, including the timing of operations, and additional controls at an SEA level are not considered to be necessary. The persistence and biological effects of most liquid chemicals used in the oil and gas industry are lower than those of oil, and similar risk assessment conclusions will therefore apply.

Cumulative effects - To some extent, all potential sources of effect (i.e. disturbance, emissions and discharges) resulting from oil and gas activity within an area with a long history of exploration activity are cumulative, insofar as they are incremental to previously existing sources (although the net trend of overall source level may be a reduction, due to improved environmental technology, management and/or declining production levels). Therefore, effects are considered secondary, incremental, cumulative or synergistic only if the physical or contamination “footprint” of a predicted project overlaps with that of adjacent activities; or the effects of multiple sources clearly act on a single receptor or resource (for example a fish stock or seabird population); or if transient effects are produced sequentially.

No such effects are predicted from activities that could follow adoption of the DTI's draft plan considered in SEA 6. .

Transboundary effects – The SEA 6 area is contiguous with waters under the jurisdiction of Ireland and with the territorial seas of the Isle of Man (Crown Dependency), although prevailing wind and residual water circulation will predominantly result in the transport of atmospheric emissions, marine discharges and spills towards the west coast of Britain. However, SEA 6 activities may occur adjacent to the median line and sources of potentially significant environmental effects, with the additional potential for transboundary effects, therefore include: underwater noise; marine discharges; atmospheric emissions; oil spills. All of these aspects may be able to be detected physically or chemically in adjacent state territories (Ireland). The scale and consequences of environmental effects in adjacent state territories due to activities resulting from the proposed 24th Round licensing will be less than those in UK waters and are unlikely to be significant.

Socio-economic effects – The general expectation is that offshore gas output will also decline slowly in the future. Mackay Consultants (2005b) have assumed UKCS gas output will decline at an annual average of –3.0% to 2010 and by –5.0% after that year. Gas production from blocks licensed in a 24th round might begin in 2011. Under the pessimistic scenario there would be a very small increase in output with a negligible impact on UKCS production. Under the optimistic scenario SEA 6 output is substantially higher and would help slow the rate of decline. Given the earlier forecasts of declining production on the UKCS, it would be reasonable to expect employment also to decline in the future. In that context the employment created by SEA 6 activity would help to slow down the rate of decline. Any new fields and production in the SEA 6 area should help to extend the lives of existing facilities such as the gas terminals at Barrow and Point of Ayr, and therefore help to maintain employment there.

As with the economic impacts, the social impacts are likely to be incremental or marginal, rather than absolute. Some of the SEA 6 area has been involved with the oil and gas industry for up to 20 years, through the Morecambe Bay and Liverpool Bay developments and people living in towns such as Barrow and Heysham are accustomed to the industry, so for them there are unlikely to be any significant new social impacts, either positive or negative.

That would not be the case if there were oil/gas-related developments in other parts of the SEA 6 area, such as Northern Ireland, where there has been no such activity. Much of the area is rural so new industrial developments could have significant social impacts there. However, the prospects for new developments away from the existing Morecambe Bay and Liverpool Bay complexes appear to be very small.

Income levels in the SEA 6 area are generally well below the UK average, although there are a few notable exceptions. This factor and the population decline indicate a need for more economic development. In that context new oil and gas activity in the SEA 6 area could be both socially and economically beneficial.

Wider policy objectives - the SEA Directive requires that, in considering the likely significance of effects, the degree to which the plan or programme influences other plans and programmes should be addressed, together with the promotion of sustainable development. Activities which may follow licensing in a proposed 24th Seaward Licensing Round are not predicted to have a significant negative impact on UK Government or other wider policy and commitments.

11.2 Information gaps

Specific information gaps that have been identified through the SEA process for SEA 6. These information gaps could influence the controls and mitigation put in place covering specific activities in specific blocks. The most significant gaps identified were:

- The lack of seascape baseline documentation for England is noted (in contrast to the situation in Wales and Scotland), although this has not hindered the SEA assessment since most projected SEA 6 developments would be as sub-sea tiebacks.
- Common scoter are regarded as sensitive to disturbance in NW European waters in contrast to off US and Canadian coasts where they appear tolerant of disturbance. An understanding of the reasons for this dichotomy (if validated) would be useful in considering appropriate mitigation in the SEA 6 area and adjacent waters.
- The vulnerability of coastal waterbird populations (particularly in scenario areas 5 and 7) is recognised but not quantified. The lack of detailed data does not compromise the SEA process, as existing mechanisms allow for a precautionary assessment of proposed activities at a project-specific basis.
- Marine mammal calving/nursing grounds particularly for harbour porpoise and bottlenose dolphin in the SEA 6 area.

11.3 Recommendations

Previous SEAs have made a number of recommendations, and in response to an SEA Steering Group request, these have been compiled and implementation is being tracked. A number of recommendations have been implemented or otherwise closed while a number remain open. It is proposed to discuss the compilation of recommendations with the Steering Group to provide a progress update and to prioritise the remaining recommendations (including those from SEA 6 listed below).

Licensing constraints and guidance to potential applicants

1. DTI should consider providing more explicit guidance regarding the requirement for licence applicants to demonstrate an adequate appreciation of the environmental sensitivities, potential temporal/spatial constraints and information gaps relevant to the blocks in their application and their proposed approach to environmental management of the issues.
2. In some SEA 6 and other nearshore areas, temporal controls on activities may be required for example to prevent significant disturbance of divers, scoters and other seabird or as a spill risk reduction measure for areas in proximity to major seabird breeding colonies. For blocks with multiple constraints (e.g. environmental and military), the DTI should probe the operator's proposals for balancing these constraints versus operational requirements e.g. rig availability, seasonal metocean conditions etc.

Operational controls

1. The seismic survey consent process introduced under the *Offshore Petroleum (Conservation of Habitats) Regulations 2001*, does not extend to surveys wholly in territorial waters for which a notification process applies. As some areas offered for licence are within territorial limits, restrictions may be necessary on some licences if there are particular marine mammal sensitivities (in relation to seismic).
2. Where Passive Acoustic Monitoring equipment is deployed as mitigation during seismic survey in sensitive areas it should normally be on the source vessel to maximize effectiveness.

3. Removal of old wellheads should be subject to an environmental assessment process and consent to address potential impacts e.g. noise and chemicals used. There should be a presumption against explosive cutting unless effective mitigation measures to prevent fish kills and potential injury to marine mammals are demonstrated.
4. In addition to assessment of potential effects on designated or potential conservation sites under *The Offshore Petroleum Activities (Conservation of Habitats) Regulations, 2001* effects on sites of potential geological conservation importance should also be considered.
5. Within the SEA 6 area there are species and communities potentially sensitive to particulates e.g. horse mussel *Modiolus* reefs. This should be drawn to operator attention during scoping and considered in PON15B applications and Environmental Statements with respect to cuttings disposal, pipeline trenching etc.
6. Some prospective SEA 6 blocks are close to the coast with potential implications for local air quality management plans in adjacent areas and other onshore impacts such as nuisance from light, airborne noise and odour. These issues should be drawn to operator attention during scoping.
7. DTI and their advisers should encourage (during scoping and later) the incorporation of marine archaeological data requirement considerations into planned rig site and pipeline route geophysical surveys and their interpretation since the suite of techniques already used are compatible.
8. The onshore implications of offshore activities in areas where there are not established supply bases and routes (e.g. for materials transport and waste disposal) should be considered in the EIA process.
9. OSPAR have a presumption against the discharge of produced waters from new developments – the effectiveness of the trading scheme in achieving discharge reductions in line with the OSPAR recommendation should be monitored.
10. Nearshore oil and gas developments should take account of visual impact techniques and guidance developed for the offshore windfarm industry.

Understanding

1. Understanding of underwater noise characteristics from seismic survey, development activities and facility operation should be improved through further measurements of source level and frequencies. A specific example is piling noise and the potential applicability of mitigation measures currently employed in freshwater and nearshore areas.

11.4 Overall conclusion

The DTI's draft plan is to offer blocks for hydrocarbon exploration and production in a proposed 24th offshore licensing round. The potential for significant effects has been assessed through the SEA process and summarised in this Environmental Report. Alternatives to the draft plan were identified as:

1. Not to offer any blocks for Production Licence award
2. To proceed with the licensing programme as proposed
3. To restrict the area licensed temporally or spatially

After consideration of the nature of the area and the potential effects and benefits of 24th round licensing, both in isolation and in the context of existing activities in the adjacent area (as considered in previous SEAs), it is recommended that the DTI proceed with licensing under Alternative 3. Within the SEA 6 area, although the national and international importance of various populations and features is recognised (together with their statutory designations), no blocks have been identified for exclusion since individual project consenting is regarded as able to deliver adequate mitigation through spatial, temporal and operational controls. However, previous SEAs had identified a few blocks recommended for exclusion from licensing on environmental grounds or until better information becomes available. These recommended exclusions remain valid for the consideration of the blocks to be included in the 24th licensing round.

These conclusions are based on the projections of the likely scale and location of activities that could follow licensing, and would need to be revisited if activity levels were substantially greater or technologies changed.