

Uncharted Waters: Strategic Environmental Assessment in the UK Offshore Area

Richard Caddell

Introduction

Despite its clear significance for the myriad economic, developmental and infrastructure policies of the Member States, the Strategic Environmental Assessment Directive¹ remains one of the more mysterious and underappreciated elements of EU environmental law. This has proved to be especially true in the context of the offshore environment. Indeed, while the maritime implications of pertinent nature conservation and planning-orientated EU legislation have been chronically overlooked generally,² there has been minimal consideration of the application of the principles of strategic environment assessment (SEA) within the marine environment worldwide,³ and virtually no evaluation of this issue in the specific case of the various EU seas. The lessons learned from SEA practices in the offshore environment, and their wider implications for ‘certain plans and programmes’ undertaken in both a marine and a terrestrial setting, have therefore been chronically neglected to date. This oversight is indeed regrettable for, as this Chapter seeks to illustrate, particular EU Member States have demonstrated a largely unheralded history of innovation in addressing SEA concerns in relation to their offshore activities.

To this end, this Chapter presents an appraisal of the SEA practices of the United Kingdom in respect of its key offshore industries. As this Chapter demonstrates, while the UK authorities have been justifiably criticised for a ‘somewhat schizophrenic approach to SEA’,⁴ these principles were deliberately introduced and implemented in the national offshore energy sector a considerable period of time before the Directive entered into effect. Accordingly, the innovative regulatory framework governing the UK offshore energy industries has generated extensive assessment experience that may be of considerable value in framing SEA-related practices in other jurisdictions and sectors. Indeed, as this Chapter outlines, particular advances have occurred in relation to the administration of the SEA process and public and expert participation, alongside a strong culture of institutional reflection to facilitate targeted improvements in SEA practices. Despite these laudable developments, as with terrestrial SEA practices, a number of shortcomings and challenges have been encountered in the marine context, notably concerning the acquisition and management of environmental data and its practical application to the decision-making process. To this end, this Chapter provides an

¹ Directive 2001/42/EC of the European Parliament and of the Council on the Assessment of the Effects of Certain Plans and Programmes on the Environment [2001] OJ L197/30 [hereinafter ‘SEA Directive’].

² On the challenges raised by the marine application of EU nature conservation law see Richard Caddell, ‘The Maritime Dimensions of the Habitats Directive: Past Challenges and Future Opportunities’ in Gregory Jones QC (ed), *The Habitats Directive – A Developer’s Obstacle Course?* (Hart Publishing 2012) 187.

³ The current literature on offshore SEA has generally concerned the Arctic region. For a helpful overview in the specific context of Canada, see Meinhard Doelle, Nigel Bankes and Louie Porta, ‘Using Strategic Environmental Assessments to Guide Oil and Gas Exploration Decisions: Applying Lessons Learned from Atlantic Canada to the Beaufort Sea’ (2013) 22 *Review of European Community and International Environmental Law* 103. On the multilateral application of SEA in this region see Gunnar Sander, ‘International Legal Obligations for Environmental Impact Assessment and Strategic Environmental Assessment in the Arctic Ocean’ (2016) 31 *International Journal of Marine and Coastal Law* 88.

⁴ William R Sheate, Helen J Byron and Steven P Smith, ‘Implementing the SEA Directive: Sectoral Challenges and Opportunities for the UK and EU’ (2004) 14 *European Environment* 73, 74.

appraisal of SEA practices in the offshore energy sector, evaluating the lessons that have been forthcoming to date and considering their implications for the further refinement of the offshore SEA process in respect of the UK's traditional and emerging marine industries.

Offshore Waters and Strategic Environmental Assessment

What are (UK) Offshore Waters?

As a matter of general international law, offshore waters are usually considered to encompass those situated between the seaward side of the territorial sea (which traditionally extends up to twelve nautical miles from the national baseline⁵), up to the outer limits of the exclusive economic zone (EEZ), which subsequently extends out to a maximum of 200 nautical miles to sea.⁶ Technically speaking, however, the precise parameters of the UK offshore area have traditionally been somewhat more complex than this general model would suggest. The UK government formally established a national EEZ only as recently as 2014,⁷ instead favouring a series of alternative jurisdictional designations, christened with varying nomenclature,⁸ to regulate economic activities associated with the exercise of EEZ powers within the 200-mile offshore limit. Accordingly, the prior concept of the 'offshore marine area' within which pre-2014 SEA procedures were conducted was instead framed by the parameters of UK fisheries jurisdiction.⁹

For the current purposes of UK law, the concept of offshore waters thereby generally excludes the territorial sea,¹⁰ an area commonly referred to as 'coastal' or 'inshore' waters.

⁵ UN Convention on the Law of the Sea (10 December 1982) 1883 UNTS 396, 21 ILM 1261 (entered into force 16 November 1994) [hereinafter 'LOSC'] art 3. National territorial seas nonetheless vary in size and some coastal states claim substantially more than twelve miles, an exercise ultimately in enterprising illegality. Other coastal states may claim significantly less, primarily for reasons of geography or by virtue of a judicial delimitation settlement or an agreement with neighbouring jurisdictions. The UK acceded to the LOSC on 25 July 1997. SEA is not explicitly considered within the LOSC, although Article 206 requires states to 'assess' as far as practicable the potential effects of planned activities under their jurisdiction or control where there are grounds for believing that they may 'cause substantial pollution' or 'significant and harmful changes to the marine environment'. Commentators have however urged a conservative interpretation of this provision, noting that the drafting intent at the material time may not necessarily have considered SEA a vital component of the assessment process: Sander (n 3) 109.

⁶ LOSC, art 57.

⁷ Legal powers to rectify this rather convoluted position by re-designating these waters as an EEZ were created under s 41(3) of the Marine and Coastal Access Act 2009. This was duly elaborated by virtue of the Exclusive Economic Zone Order 2013 SI 2013/3161, under which the UK EEZ entered into effect on 31 March 2014.

⁸ These included a 'renewable energy zone' (Energy Act 2004, s 84), which was subsequently rescinded by the Exclusive Economic Zone Order 2013, and a 'pollution zone' (Merchant Shipping (Prevention of Pollution) (Limits) Regulations 1996 SI 1996/2128 and 1997 SI 1997/506), neither of which were within the explicit contemplation of the LOSC, although coastal states do exercise sovereign rights over energy production and jurisdiction over the protection and preservation of the marine environment under art 56 of the Convention. This approach arguably represented an incomplete application of national EEZ powers and generated occasional legal complications in neighbouring jurisdictions: David Anderson, *Modern Law of the Sea: Selected Essays* (Martinus Nijhoff 2008) 460-476. Such difficulties should now accordingly be largely settled, although the prior consent of Denmark is still needed for renewable energy and gas storage projects undertaken adjacent to the limits of the jurisdictional waters of the Faeroe Islands.

⁹ Offshore Marine Conservation (Natural Habitats, etc.) Regulations 2007 SI 2007/1842 (as amended) reg 2(2).

¹⁰ Discrete powers over appropriate areas of the territorial sea are exercised by each of the devolved administrations. Powers over elements of the marine area that may eventually be remodelled as the UK EEZ can also be devolved to the nominated institutions of Scotland, Wales and Northern Ireland respectively: Marine and

Exceptionally, however, in the context of the marine energy sector, ‘offshore activities’ are construed as encompassing the entire sweep of the jurisdictional waters of the UK, including the territorial sea.¹¹ Hence, as far as UK energy production is concerned, all marine activities are inherently ‘offshore’ in nature. This position notwithstanding, as noted below, it is the current policy of the UK government to sanction energy development where possible solely within areas beyond the territorial sea and upon the UK continental shelf (UKCS).¹²

The distinction between inshore and offshore waters has a practical significance primarily in the context of EU fisheries. In this regard, the Member States have relinquished competence over fisheries management in their respective EEZs but retain regulatory powers in respect of their territorial waters. Notably, the SEA Directive applies solely to the Member States; SEA is not a broad requirement for the EU institutions. Despite some agitation towards revisiting this position during the renegotiation of the Common Fisheries Policy and an extension of these competences to aquaculture, SEA considerations were omitted from the final terms of the legislation.¹³ There is accordingly little scope to advance fisheries SEAs within EU waters, aside from within inshore areas, as has been conducted by the UK authorities to a limited degree, and in the riverine industries of landlocked Member States, thereby missing an opportunity to promote a more strategic approach to fisheries management on an EU level.¹⁴ In contrast, SEAs have been conducted for the offshore energy sector throughout the full range of UK jurisdictional waters.

The Offshore Application of the SEA Directive

The SEA Directive was broadly inspired by pioneering US Federal legislation and purports to expose certain plans and programmes undertaken by the Member States to an environmental assessment procedure before such initiatives are formally approved.¹⁵ In this way, and in

Coastal Access Act 2009, s 41(4). Nevertheless, these are limited in scope: under s 113 of the 2009 Act, oil and gas activities remain at present the exclusive preserve of the central UK government.

¹¹ Petroleum Act 1998, s 10(7).

¹² The continental shelf of a coastal state ‘comprises the seabed and subsoil of the submarine areas that extend beyond its territorial sea throughout the natural prolongation of its land territory to the outer edge of the continental margin, or to a distance of 200 nautical miles from the baselines from which the breadth of the territorial sea is measured where the outer edge of the continental margin does not extend up to that distance’: LOSC, art 76(1). In essence, marine energy production – especially in relation to hydrocarbons – is centred upon the national continental shelf; the EEZ regime addresses the water column as opposed to the ocean floor. A state may apply to claim an extended area of continental shelf of up to 360 nautical miles from the national baseline if particular geographical criteria are met: LOSC, arts 76(4)-(10). Ownership of the continental shelf in the Hatton-Rockall area has yet to be resolved between the UK, Ireland, Denmark and Iceland, for which periodic quadrilateral discussions have been ongoing since 2001. Within the twelve-mile territorial limit, the seabed constitutes a material part of the territorial sea and is accordingly subject to the sovereignty of the coastal state: LOSC, art 2(2).

¹³ Regulation (EU) No 1380/2013 of the European Parliament and of the Council on the Common Fisheries Policy, amending Council Regulations (EC) No 1954/2003 and (EC) No 1224/2009 and repealing Council Regulations (EC) No 2371/2002 and (EC) No 639/2004 and Council Decision 2004/585/EC [2013] OJ L354/22 (as amended).

¹⁴ The limited fisheries SEA experience that does exist on a global basis suggests that, while individual legislation may be flawed in certain respects, it has nonetheless added a valuable tier of oversight to the process: Simon Marsden, ‘Strategic Environmental Assessment and Fisheries Management in Australia: How Effective is the Commonwealth Legal Framework?’ in Simon Marsden and Stephen Dovers (eds), *Strategic Environmental Assessment in Australasia* (Federation Press 2002) 47, 66.

¹⁵ On the origins of the SEA Directive – and the political adjustments to its eventual scope – see Jane Holder, *Environmental Assessment: The Regulation of Decision Making* (Oxford University Press 2004), 60-64.

terminology highly familiar to offshore operators, the SEA process is considered to be the ‘upstream’ element of the environmental assessment process. SEA therefore prescribes a consideration of the best strategic options at a preliminary stage in the planning process, so as in principle to inform decision-making to ensure that the environmental integrity of national and transnational development projects is maintained.

The Directive accordingly works in tandem with a host of other EU environmental assessment processes, notably those contemplated under the Environmental Impact Assessment Directive¹⁶ and the Habitats Directive.¹⁷ The SEA Directive mandates that an assessment should be undertaken in respect of any plan or programme that is explicitly identified within the Directive as being likely to have ‘significant environmental effects’,¹⁸ or is otherwise considered by an individual Member State to require such a process.¹⁹ To this end, two broad categories of plans or programmes are considered to require SEA. In the first instance, SEA is mandatory for all plans and programmes that are prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use and, in addition to this criterion, ‘set the framework for future development consent of projects’ as required under the EIA Directive.²⁰ Secondly, SEAs are necessary where the plan or project, by virtue of its prospective impact upon protected areas established pursuant to EU nature conservation law, ought to be subject to the particular assessment process prescribed under Articles 6 and 7 of the Habitats Directive.²¹ Member States are permitted derogations to these general requirements in respect of the use of small areas at a local level, and for minor modifications to be made to plans and programmes if their environmental effects are unlikely to be ‘significant’.²²

The issue of whether SEA is formally required in a particular context is, therefore, often a matter of considerable uncertainty. Questions may be raised as to whether a particular plan or programme ultimately sets a framework for future development consent, while the nomenclature attached to certain industrial initiatives by the national authorities may also require complex legal²³ – or, indeed, constitutional²⁴ – interpretation.²⁵ Likewise, Article 6 of

¹⁶ Council Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment [1985] OJ L175/40 [hereinafter ‘EIA Directive’]. The Directive was substantively revised in April 2014: Directive 2014/52/EU of the European Parliament and of the Council of 16 April 2014 amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment [2014] Official Journal L124/1. The new Directive entered into effect in May 2014.

¹⁷ Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora [1992] OJ L206/7 [hereinafter ‘Habitats Directive’]. The application of the Habitats Directive to UK offshore waters was only recognised judicially in 2000: *R v Secretary of State for Trade and Industry, ex parte Greenpeace Ltd (No 2)* (2000) 2 CMLR 94 (QBD). Indeed, the 1994 version of the Offshore Marine Conservation (Natural Habitats, etc.) Regulations had expressly confined the application to the Directive to the territorial sea, thereby imposing significantly fewer environmental constraints on offshore energy operators than is currently the case.

¹⁸ SEA Directive, art 3(1).

¹⁹ *ibid*, art 3(4).

²⁰ *ibid*, 3(2)(a).

²¹ *ibid*, 3(2)(b).

²² *ibid*, 3(3).

²³ See Gregory Jones QC, Ned Westaway and Roger Watts, ‘Why *Central Craigavon* was Wrongly Decided (and Other Problems with the Incorporation of the Strategic Environmental Assessment Directive into Domestic Law)’ [2013] *Journal of Planning and Environment Law* 1074, 1078-1081.

²⁴ Notably *R (on the application of HS2 Action Alliance Limited) v Secretary of State for Transport and Another* [2014] UKSC 3 (‘*HS2*’) [78]-[79].

²⁵ See in particular the chapters by David Elvin, Liz Fisher, Simon Ricketts & Juliet Munn, Eloise Scotford, and Valerie Fogelman in the current volume.

the Habitats Directive is a notoriously poorly drafted provision,²⁶ which offers limited assistance to public authorities in determining whether their assessment obligations are engaged in respect of protected sites and species.²⁷ Given the potential for resultant loopholes, the SEA Directive does not elaborate further on the specific industrial activities and processes that may fall within its regulatory purview. The EU institutions have subsequently acknowledged that significant interpretive difficulties have been raised by the transposition of the Directive within the various Member States.²⁸ SEA requirements under the Directive accordingly constitute some of the more confusing procedural elements of EU environmental law.

Notwithstanding this general uncertainty, the Directive generates comparatively fewer interpretive difficulties at sea. Unlike the terrestrial context, the practical and commercial challenges incumbent in offshore operations ensure that relatively few industrial sectors are active in these waters. Beyond shipping activities, the primary offshore industries in UK waters are energy production and fishing, each of which is expressly within the contemplation of the SEA Directive (even if the latter is subject to an alternative regulatory approach due to the prevailing EU competences over this sector). In this context, the legal question is generally not whether an SEA is formally required, but whether it has been correctly and effectively implemented by the competent authorities in question.

Nevertheless, some questions remain in respect of the precise SEA requirements in relation to more nascent offshore industries, such as carbon capture and storage ('CCS'), deep-seabed mining and the controversial practice of hydraulic fracturing or 'fracking' of the seabed in the pursuit of shale gas. Some doubt was initially raised as to whether carbon capture and storage falls within the ambit of the SEA Directive,²⁹ although an arguable case could be made that it constitutes 'waste management' for SEA purposes. The explicit application of pertinent environmental assessment requirements to CCS was subsequently confirmed through specific EU legislation on the issue.³⁰ Prior to this, SEA was conducted on a proactive basis for CCS, evidenced for example in the Netherlands³¹ and, as noted below, in the UK.

Likewise, the environmental assessment obligations associated with fracking have proved to be a matter of considerable uncertainty. Indeed, controversial loopholes under UK law have been exploited to evade environmental assessment processes for terrestrial fracking, with

²⁶ André Nollkaemper, 'Habitat Protection in European Community Law: Evolving Conceptions of a Balance of Interests' (1997) 9 *Journal of Environmental Law* 271, 286.

²⁷ On this issue generally, see Stephen Tromans QC, 'The Meaning of "Any Plan or Project" Under Article 6(3)' in Jones (n 2) 91.

²⁸ Commission, 'Report on the Application and Effectiveness of the Directive on Strategic Environmental Assessment (Directive 2001/42/EC)' COM(2009) 469 final, 11.

²⁹ Anton Ming-Zhi Gao, 'The Application of the European SEA Directive to Carbon Capture and Storage Activities: The Issue of Screening' (2008) 17 *European Energy and Environmental Law Review* 341, 343.

³⁰ Directive 2009/31/EC of the European Parliament and of the Council on the geological storage of carbon dioxide and amending Council Directive 85/337/EEC, European Parliament and Council Directives 2000/60/EC, 2001/80/EC, 2004/35/EC, 2006/12/EC, 2008/1/EC and Regulation (EC) No 1013/2006 [2009] OJ L140/114, recital 17 and art 11(2). On the regulation of CCS in the North Atlantic region, see Susanna Much, 'The Emerging International Regulation of Carbon Storage in Sub-Seabed Geological Formations' in Richard Caddell and D Rhidian Thomas (eds), *Shipping, Law and the Marine Environment in the Twenty-First Century* (Lawtext 2013) 255.

³¹ Joris Koornneef, André Faaij and Wim Turkenburg, 'The Screening and Scoping of Environmental Impact Assessment and Strategic Environmental Assessment of Carbon Capture and Storage in the Netherlands' (2008) 28 *Environmental Impact Assessment Review* 392, 410 (noting that environmental assessment obligations at the material time could nonetheless 'be interpreted ambiguously' in this context).

‘exploratory’ endeavours, as opposed to commercial activities, not subject to these requirements.³² The EU Commission has since issued a Recommendation stating that Member States ‘should’ subject such initiatives to a process of SEA.³³ This provision ultimately fell rather short of the moratorium on shale fracking advocated by the Parliament and the current EU legal regime governing unconventional fossil fuels remains somewhat ambiguous.³⁴ Offshore fracking for shale gas has not yet proceeded, largely as a result of overriding commercial considerations. From an environmental assessment standpoint, however, the first ever offshore exploration licence was issued by the UK authorities in February 2014 and was subject to a preceding SEA.³⁵

Deep-seabed mining rather exposes the territorial limitations of the SEA Directive, as well as the paucity of SEA practice at an international level.³⁶ In recent years, the pursuit of deep-seabed mineral wealth has become more commercially viable, with a wide range of states keen to conduct or, alternatively, to sponsor extractive activities within the International Seabed Area (‘the Area’).³⁷ The jurisdictional parameters of the SEA Directive are limited to the ‘environment in the Member States’,³⁸ while transboundary consultation is restricted to impacts upon other Member States,³⁹ hence there is little explicit obligation to apply SEA to operations occurring in remote pockets of the high seas in locations significantly beyond EU boundaries. Such matters will instead be regulated by the International Seabed Authority (‘ISA’), which is charged *inter alia* with assessing the environmental implications of activities in the Area.⁴⁰ Given that strong international obligations towards EIA have been established, both under the general rules of the ISA and by international courts,⁴¹ SEA requirements may be considered likely to be rather more circumspect in this context in the

³² Andreas Kotsakis, ‘The Regulation of the Technical, Environmental and Health Aspects of Current Exploratory Shale Gas Extraction in the United Kingdom: Initial Lessons for the Future of European Union Energy Policy’ (2012) 21 *Review of European Community and International Environmental Law* 282, 284.

³³ Commission Recommendation on minimum principles for the exploration and production of hydrocarbons (such as shale gas) using high-volume hydraulic fracturing (2014/70/EU) [2014] OJ L39/72.

³⁴ On these developments, see Elen Stokes, ‘New EU Policy on Shale Gas’ (2014) 16 *Environmental Law Review* 42. Ultimately, the EU may need to fall back on other elements of its competence, such as broader and more binding considerations of energy, environmental and possibly water policy to advance a more comprehensive regime to address fracking.

³⁵ ‘Shale Gas Pioneer Plans World’s First Offshore Wells in Irish Sea’, <http://www.bbc.co.uk/news/business-26157228> (accessed 6 May 2016).

³⁶ Constraints of space and focus preclude a full examination of pertinent international obligations incumbent upon the UK concerning the use of SEA, since this Chapter addresses the EU dimensions of these processes. Few specific multilateral treaties have been developed to expressly promote SEA practices, the most notable example being the 2003 Protocol on Strategic Environmental Assessment to the Convention on Environmental Impact in a Transboundary Context (25 February 1991) 1989 UNTS 309, 30 ILM 800 (entered into force 10 September 1997) [hereinafter ‘Espoo Convention’]. The UK is a signatory to the Protocol but has not yet ratified it, although the EU is a full party. Nevertheless, it has proved generally unsuited to the demands of marine activities due to contradictions in the subsequent listing process: Sander (n 3) 115.

³⁷ Defined as the ‘seabed and ocean floor and subsoil thereof, beyond the limits of national jurisdiction’: LOSC, art 1(1). The Area is managed by the International Seabed Authority. The first deep-sea mine appears likely to open in Papua New Guinea, following a sponsorship agreement concluded on 25 April 2014: Agreement reached on deep sea mining; <http://www.bbc.co.uk/news/science-environment-27158883> (accessed 6 May 2016). The UK is currently considering its sponsorship options in this respect.

³⁸ SEA Directive, recital 4.

³⁹ *ibid*, art 7.

⁴⁰ LOSC, art 165(2)(e).

⁴¹ Notably by the International Court of Justice, *Case Concerning Pulp Mills on the River Uruguay (Argentina v Uruguay)* [2010] ICJ Rep 14 [197] and the International Tribunal for the Law of the Sea, *Responsibilities and Obligations of States Sponsoring Persons and Entities with Respect to Activities in the Area* (ITLOS Case No 17. 1 February 2011) [141]-[150].

mid-term future. Indeed, as Johnstone notes in the context of the offshore hydrocarbon industry, '[u]nder international law the evidence to support the duty to conduct SEAs as a binding legal obligation is sparse'.⁴² This has been reflected in recent domestic developments: while national legislation governing deep-seabed mining remains in its comparative infancy, requirements towards SEA are nonetheless conspicuous by their current absence.⁴³

Notwithstanding consideration of these specific activities, the long-term ecological health of the marine environment is not threatened solely by at-sea activities. Indeed, a significant proportion of marine degradation is attributable to land-based sources.⁴⁴ Hence an integrated approach towards the protection of the offshore environment also necessitates consideration of the marine implications of land-based activities.⁴⁵ The projected impact of terrestrial development projects upon marine sites, both near-shore and offshore, may therefore also require consideration from an SEA perspective. While reasons of space and focus preclude an analysis of SEA practice in this regard in this Chapter, the alleged necessity for assessments to gauge the impact of terrestrial plans and programmes upon protected marine sites has already provided the basis for one recent (and unsuccessful) review of development frameworks in a UK coastal context.⁴⁶ It is unlikely to be the last such challenge to land-based activities with a marine bearing.

Offshore Energy Production and Strategic Environmental Assessment

Given the breadth of assessment practice in this sector, offshore energy production represents the clearest example of the application of SEA principles to the marine environment of the UK. Three main energy industries have an active presence within national waters, to varying degrees of maturity: petroleum (oil and gas); renewable energy, especially in the form of

⁴² . Rachael Lorna Johnstone, *Offshore Oil and Gas Development in the Arctic under International Law: Risk and Responsibility* (Brill 2015) 172. Current developments towards the elaboration of a legally-binding instrument to address the conservation needs of biodiversity beyond national jurisdiction envisage a central role for 'environmental impact assessment', although it is as yet unclear as to how significant a role (if any) will be allocated to SEA in this regard, or how it will be implemented: see UN Document A/69/780 of 13 February 2015: Outcome of the Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction and Co-Chairs' summary of discussions.

⁴³ As a case in point, on 20 August 2014, Tonga enacted the most comprehensive current legislation to regulate deep-seabed mining in the form of the Seabed Minerals Act 2014. Notwithstanding a vague commitment to 'employ best environmental practice' (s 2(2)(f)), the Act is silent on SEA requirements, although the role of EIA is emphasised throughout the legislation.

⁴⁴ Indeed, one of the leading judgments on SEA determined at an EU level, Joined Cases C-105/09 and C-110/09 *Terre Wallonne ASBL and Inter-Environnement Wallonie ASBL v Région Wallonne* [2010] ECR I-5611, concerned the implications of agricultural run-off into the water column, a notorious if indirect source of offshore pollution.

⁴⁵ Strong concerns over the impacts of land-based pollution on marine ecosystems have been raised by the UN's leading forum on the marine environment, the Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP). Indeed, in its most recent global assessment of the impact of land-based pollution on the marine environment, while not explicitly referring to SEA by name, GESAMP considered that the 'incorporation of environmental considerations into all projects, policies, and programmes' constitutes a key strategic element in addressing this issue: GESAMP, *Protecting the Oceans from Land-Based Activities: Land-Based Sources and Activities Affecting the Quality and Uses of the Marine, Coastal and Associated Freshwater Environment* (UNEP 2001) 78.

⁴⁶ *No Adastral New Town Ltd v Suffolk Coastal District Council and Secretary of State for Communities and Local Government* [2014] EWHC 223 (Admin). The case concerned the potential impact of a housing development upon a Natura 2000 site established in the Deben Estuary in respect of migratory waterbirds.

offshore wind; and, prospectively, shale fracking. Each of these industries has, in recent years, been subject to SEA processes prior to the grant of an operative licence by the appropriate national authority.

The oil and gas sector is, by some considerable margin, the most mature offshore extractive industry in UK waters. Offshore hydrocarbon licensing has been within the contemplation of the UK authorities for over a century, first as an aspect of the domestic front during the First World War,⁴⁷ latterly regularised in peacetime,⁴⁸ and now governed through the framework of the Petroleum Act 1998. The basic tenets of UK oil and gas law have altered remarkably little during this time: all petroleum deposits are vested in the Crown, which, through the appropriate government representative, may grant a licence to ‘search, bore for and get’ petroleum deposits either on land or at sea.⁴⁹ The current supervisory authority in this regard is the Department of Energy and Climate Change (DECC). The first offshore licences were issued in 1964, for a period of 46 years, expiring in 2010. Licences are awarded through a competitive process of periodic ‘Rounds’, issued on an approximately biennial basis, and have the overarching objective of ensuring maximum productivity and penalising inactivity. The conduct of the operator is controlled on an essentially contractual basis, through mandatory adherence to a series of ‘model clauses’ imposed by DECC within the licence. These obligations establish the core environmental commitments of the operator and vary in accordance with the type of operation undertaken and the location in which it is conducted.

In contrast to onshore activities, offshore fracking has yet to be attempted in any marine area globally. In principle, offshore fracking in UK waters will be governed by a materially similar licensing process to that of other hydrocarbons, subject to the ongoing development of specific rules and procedures for this nascent sector. In contrast, with regard to offshore windfarms, regulatory requirements vary with the operational capacity of the development in question. The establishment of an ‘offshore generating station’ capable of producing over 100 megawatts of energy⁵⁰ requires development consent.⁵¹ Such initiatives are therefore governed by DECC on the advice of the Planning Inspectorate.⁵² Smaller developments are subject to approval by the Marine Management Organisation (MMO), although commercial considerations ensure that few proposed windfarms appear likely in practice to generate less than 100 megawatts. A marine licence is required for activities ancillary to windfarm construction,⁵³ which will be issued by either the Crown Estate, which manages the seabed up to the 12-mile territorial limit, by or the MMO within its broad areas of jurisdiction.⁵⁴

The emergence of a large-scale offshore energy sector neatly exemplifies the value of the SEA procedure to regulatory oversight and environmental management. The licensing

⁴⁷ Defence of the Realm Act 1914, as amended; Petroleum (Production) Act 1918, s 2.

⁴⁸ Petroleum (Production) Act 1934, s 2.

⁴⁹ Petroleum Act 1998, s 2(1).

⁵⁰ Planning Act 2008, s 15.

⁵¹ *ibid*, s 31.

⁵² On these regulatory steps, see Olivia Woolley, ‘Trouble on the Horizon? Addressing Placed-Based Values in Planning for Offshore Wind Energy’ (2010) 22 *Journal of Environmental Law* 223, 234-240. This framework streamlines the previous regime established under the Energy Act 2004; on this process see Karen N Scott, ‘Tilting at Offshore Windmills: Regulating Windfarm Development Within the Renewable Energy Zone’ (2006) 18 *Journal of Environmental Law* 89, 97-99.

⁵³ Marine and Coastal Access Act 2009, s 66.

⁵⁴ Marine Scotland is responsible for licensing activities in Scottish inshore and offshore waters, while the devolved administrations of Wales and Northern Ireland exercise these powers within their respective inshore waters.

procedure, especially as applied to hydrocarbons, involves the release of large portions of acreage upon the UKCS within particular geographical locations for exploration and exploitation. Until 2001, environmental oversight of these activities would essentially proceed *ex post facto*, with the successful operator subject to EIA requirements and the ecological demands of the model clauses within the specific area of operation. Beyond the appraisal of individual EIAs in particular marine locations, the decision to sanction wholesale industrial activity within a specific area would accordingly have been taken with minimal consideration of cumulative environmental impacts, effects upon species with an extended or idiosyncratic range or the wider ecological health of a maritime region, thereby providing little scope for meaningful strategic oversight. Although of limited concern in the early years of oil and gas licensing, the advancing offshore presence of the hydrocarbon industry has subsequently necessitated a more strategic approach to marine spatial planning. Norway was the first major offshore hydrocarbon producer to reject this piecemeal assessment in favour of a more integrated regional approach,⁵⁵ swiftly followed by the UK. Nevertheless, in many marine regions – especially where industrial improvisation and ecological sensitivity maintain an uneasy coexistence – offshore operators largely continue to proceed on a project-by-project basis.⁵⁶ Indeed, despite the clear drawbacks of an individual project approach, even in jurisdictions that are favourably pre-disposed to the merits of SEA, ‘large hydrocarbon programmes continue to unfold offshore without adequate strategic thinking’.⁵⁷

As Long observes in the context of offshore windfarms in Irish waters, ‘[i]f implemented rigorously’, SEA could mitigate these problems by helping to facilitate effective marine management, and may also help to reduce the cumulative impacts of proliferating development projects, provide for effective stakeholder participation and can therefore constitute a vital mechanism for efficient marine planning.⁵⁸ Nevertheless, few concerted studies have evaluated the rigour with which SEA processes have been applied in an offshore context and, accordingly, whether such projected advantages have ultimately been delivered. Even where regulators have established a clear framework for facilitating SEA, ‘the opportunities and risks associated with SEA offshore are unclear and linkages between SEA and other forms of planning and impact assessment remain elusive’.⁵⁹ The energy licensing practices of the UK accordingly provide a valuable opportunity to assess the development and performance of SEA as a regulatory tool in the offshore context.

⁵⁵ On the Norwegian arrangements, see Geir Ottersen et al, ‘The Norwegian Plan for Integrated Ecosystem-Based Management of the Marine Environment in the Norwegian Sea’ (2011) 35 *Marine Policy* 389.

⁵⁶ Courtney Fidler and Bram Noble, ‘Advancing Strategic Environmental Assessment in the Offshore Oil and Gas Sector: Lessons from Norway, Canada and the United Kingdom’ (2012) 34 *Environmental Impact Assessment Review* 12, 13.

⁵⁷ Bram Noble et al, ‘Strategic Environmental Assessment Opportunities and Risks for Arctic Offshore Energy Planning and Development’ (2013) 39 *Marine Policy* 296, 297. Indeed, consideration of SEA-style approaches was expressly omitted from a post-*Deepwater Horizon* review of the hydrocarbon licensing process in at least one major offshore energy jurisdiction: Will Amos, ‘Development of Canadian Arctic Offshore Oil and Gas Drilling: Lessons from the Gulf of Mexico’ (2011) 20 *Review of European Community and International Environmental Law* 39, 42-43.

⁵⁸ Ronán Long, ‘Offshore Wind Energy Development and Ecosystem-Based Marine Management in the EU: Are the Regulatory Answers Really Blowing in the Wind?’ in Myron H Norquist, John Norton Moore, Aldo Chircop and Ronán Long (eds), *The Regulation of Continental Shelf Development: Rethinking International Standards* (Martinus Nijhoff 2013) 15, 40. Long observes that the Irish offshore wind SEA experience has been broadly positive; there has, however, been little other forensic evaluation of offshore SEA practices in Ireland. On Irish SEA implementation generally, see the Chapter by Aine Ryall in this volume.

⁵⁹ Noble et al (n 57) 297.

SEA of Offshore Energy Plans in the UK

SEA processes in the UK offshore energy sector significantly pre-date the application of the Directive 2001/42/EC. In 1999, as part of the national ‘Greening Government’ initiative, the UK authorities were encouraged to undertake Environmental Appraisals of major plans and programmes to be approved under their auspices.⁶⁰ In this respect, the Department of Trade and Industry (DTI), the body then charged with oversight of the energy sector, undertook to subject all future licensing Rounds for oil and gas to a process of SEA, pending the formal conclusion of the EU provisions. This new strategy was first implemented in 2001 in the government’s Nineteenth Oil and Gas Round,⁶¹ a process that addressed a comparatively modest geographical area formerly known as the ‘White Zone’ in the northern segment of Scottish waters, following agreement with Danish officials over the official seabed boundary between the UK and the Faeroe Islands. A further three SEAs were conducted in the offshore area prior to the formal conclusion of the Directive: the Twentieth⁶² and Twenty-First⁶³ Oil and Gas Rounds in 2002 and 2003, each of which engaged substantial areas of the North Sea (with SEA2 subsequently extended into the ecologically and economically significant Moray Firth area), and the Second Offshore Wind Leasing Round,⁶⁴ addressing windfarm development in three discrete locations. With limited legislative guidance available at an EU level, these initial SEA processes involved a mixture of practices adapted from comparable jurisdictions, prospective EU rules and principles and a concerted degree of indigenous improvisation. Subsequently, SEAs have been conducted in respect of all further Oil and Gas Licensing Rounds,⁶⁵ while in 2009 SEA was applied to both the hydrocarbon and offshore wind sectors as a strategic whole (‘OESEA’).⁶⁶ In 2011, this process was extended even further to address oil and gas, renewable energy and, for the first time, prospective carbon capture and storage activities (‘OESEA 2’).⁶⁷ In early 2015, given that the time horizon for OESEA 2 extended for five years from its initial publication, initial scoping activities were launched in relation to a further exercise (‘OESEA 3’),⁶⁸ for which the SEA process had yet to conclude at the time of writing.

⁶⁰ Despite these pioneering endeavours, however, the pre-Directive SEA initiatives were conducted on a voluntary basis and accordingly had ‘none of the regulatory weight that gives EIA such importance’: Stephen Jay, ‘Strategic Environmental Assessment for Energy Production’ (2010) 38 *Energy Policy* 3489, 3491.

⁶¹ Strategic Environmental Assessment of the Deep Water Area along the UK and Faroese Boundary (19th Oil and Gas Round; 2001) [‘SEA1’]. This process was complemented by a separate academic exercise examining the ‘holistic environmental assessment of UK offshore oil’: Jay, *ibid*.

⁶² Strategic Environmental Assessment of the Mature Areas of the Offshore North Sea (20th Oil and Gas Round; 2002) [‘SEA2’].

⁶³ Strategic Environmental Assessment of Parts of the Central & Southern North Sea (21st Oil and Gas Round; 2003) [‘SEA3’].

⁶⁴ Strategic Environmental Assessment of Three Strategic Regions Off the Coasts of England and Wales in Relation to a Second Round of Offshore Wind Leasing (2nd Wind Leasing Round; 2003) [‘R2’].

⁶⁵ Strategic Environmental Assessment of the Area North and West of Shetland and Orkney (22nd Oil and Gas Round; 2004) [‘SEA4’]; Strategic Environmental Assessment of Parts of the Northern and Central North Sea to the East of the Scottish Mainland, Orkney and Shetland (23rd Oil and Gas Round; 2005) [‘SEA5’]; Strategic Environmental Assessment of Parts of the Irish Sea (24th Oil and Gas Round; 2006) [‘SEA6’]; Strategic Environmental Assessment of the Offshore Areas to the West of Scotland (25th Oil and Gas Round; 2008) [‘SEA7’].

⁶⁶ Strategic Environmental Assessment of UK Offshore Waters and Territorial Waters of England and Wales (26th Oil and Gas Round and 3rd Wind Leasing Round; 2009) [‘OESEA’].

⁶⁷ Strategic Environmental Assessment of UK Offshore Waters and Territorial Waters of England and Wales (27th and 28th Oil and Gas Rounds; 2011) [‘OESEA 2’].

⁶⁸ UK Offshore Energy Strategic Environmental Assessment: Future Leasing/Licensing for Offshore Renewable Energy, Offshore Oil and Gas, Hydrocarbon Gas and Carbon Dioxide Storage and Associated Infrastructure [OESEA 3’]. The consultation period for OESEA 3 closed on 29 April 2016.

In assessing the broad outcomes of these initiatives, two core trends are apparent. In the first instance, it can be seen that offshore SEA has been generally friendly towards proposed marine licensing activities. Thus far, the SEA process has not discouraged development proposals, although it has assisted the regulatory authorities in identifying a series of locations within which – for now – licensing ought in principle to be precluded for reasons of environmental or socio-economic sensitivity. Moreover, the regulatory authorities have explicitly identified an overarching ethos for offshore licensing practices, with DECC having advanced a broad commitment towards adopting a precautionary approach to offshore industrial activities,⁶⁹ alongside a general presumption against locating installations within inshore areas, especially in relation to extractive industries and, where feasible, renewable energy activities.⁷⁰ Nevertheless, as discussed below, concerns may be raised that the current application of SEA in the UK offshore environment has been characterised by a tacit bias towards development and, arguably, a somewhat *laissez-faire* approach to precautionary management in the face of chronic shortfalls in baseline data in sanctioning the release of acreage for offshore energy development and a limited assessment of alternatives to the proposed development strategies.

Secondly, the application of SEA by the national authorities⁷¹ in the UK offshore environment has been an evolutionary process, with experiences from earlier and more experimental SEA initiatives having informed and improved successive procedures in subsequent licensing Rounds. This has facilitated a constant and critical process of procedural refinement, not least in the coordination of SEA methodologies, endeavours to improve data generation and in promoting strong culture of institutional learning and a generally inclusive approach towards public and expert participation. The various offshore SEA initiatives have also been of considerable practical utility in framing the subsequent stages of the licensing procedure by advancing a series of operative recommendations in respect of future activities. These recommendations have evolved from somewhat vague and rudimentary ‘bullet-point’ conclusions in earlier SEAs, into clear and targeted proposals within latter SEA initiatives to facilitate environmental monitoring of the area in question, to address gaps in the knowledge base and to improve further the offshore SEA machinery in general. To this extent, the SEA process can be seen as a broadly productive addition to the overarching regulatory framework, which has helped to facilitate a more coordinated approach to the licensing procedure, notwithstanding apparent difficulties in the management and processing of information, and in tracking the ultimate progress of SEA initiatives.

Approval, uncertainty and the limits of precautionary management

⁶⁹ This was first mandated within SEA1 where, ‘[i]n the absence of conclusive data, which is unlikely to be forthcoming for technical and ethical reasons, a precautionary approach is justified’: DTI, *Strategic Environmental Assessment of the Former White Zone: Volume Three – Assessment* (DTI 2001) 64. This broad approach has been maintained in the recommendations of all subsequent SEA initiatives.

⁷⁰ This principle was most explicitly iterated during the OESEA processes: see Recommendation 3 of OESEA and Recommendation 4 of OESEA 2. Few energy projects have as yet been sanctioned within the territorial sea.

⁷¹ The eleven separate SEA processes initiated thus far in the UK offshore environment have been instituted by a number of different government bodies. Having conducted the assessment processes for SEAs 1-6 and R2, the DTI was disbanded in June 2007 and was briefly replaced with the Department of Business, Enterprise and Regulatory Reform (BERR), under whose auspices SEA7 was performed. All subsequent initiatives (OESEA, OESEA 2 and OESEA 3) have been undertaken by DECC.

A central purpose of SEA in the context of an eventual licensing process is to identify the core areas of sensitivity and the major environmental impacts likely to ensue from the plan or programme in question, so as to concentrate industrial activities within areas of lesser ecological concern. To this end, the offshore SEA initiatives have considered that a series of environmental pressures may be generated by prospective energy licensing, including the physical presence of installations, increased vessel traffic and an enhanced risk of pollution, both as a by-product of drilling and the prospect of oil spills. Nevertheless, although the SEA processes have identified a series of ecological risks, a considerable degree of uncertainty has been raised concerning the threats posed by the prospective activities in question, both as isolated sources of potential environment harm, as well as their cumulative and combined effects.

In this respect, as an individual ecological concern, the myriad SEA documentation has consistently identified ocean noise as the most significant and pernicious by-product of purported marine energy development, although the treatment of this issue within the SEA processes has been decidedly mixed. Despite being a relatively poor conductor of heat and light, the ocean is a highly efficient medium through which to transmit sound. While a considerable degree of ambient sound is ever-present within the marine environment, strong concerns have been raised in recent years over the proliferation of anthropogenic marine noise and its impacts upon aquatic species, especially marine mammals.⁷² Ocean noise is now considered a marine pollutant of considerable potency,⁷³ with particular reservations expressed over the impact of oil and gas exploration and exploitation, especially with regard to seismic surveying of the seabed, as well as noise attendant to the installation and operation of windfarms.⁷⁴ In this regard, the SEA process could in principle be seen to exhibit considerable value in addressing anthropogenic noise proactively, identifying areas in which noise-creating activities are likely to be most prevalent, as well as locations of primary importance to sound-sensitive species, thus allowing for future licensing decisions to be taken in an informed and environmentally-sympathetic manner. The SEAs conducted to date have observed the prospective problems posed by ocean noise, as well as a general absence of data concerning the levels of anthropogenic sound in the marine environment and difficulties in assessing its precise effects upon affected species. Nevertheless, in approving prospective offshore energy projects considerable faith has been placed by the various SEA documents in the EIA process to address these problems and, in particular, in mitigation measures, which may include soft-start techniques, temporal or spatial restrictions and technical fixes. Scientific opinion has however proved to be rather more circumspect concerning the efficacy of such measures, the parameters of buffer zones and the preparedness of the industry to proactively implement mitigation strategies.⁷⁵ Moreover, concerns have been raised that subsequent EIAs have deployed flawed modelling processes to assess the prospective impacts

⁷² For a comprehensive analysis of the impacts of ocean noise, see W John Richardson et al., *Marine Mammals and Noise* (Academic Press 1995) 387-424.

⁷³ See especially Harm M Dotinga and Alex G Oude Elferink, 'Acoustic Pollution in the Oceans: The Search for Legal Standards' (2000) 31 *Ocean Development and International Law* 151; Alexander Gillespie, 'Noise Pollution, the Oceans, and the Limits of International Law' (2010) 21 *Yearbook of International Environmental Law* 114. Ocean noise is widely considered to meet the definition of 'pollution' prescribed under art 1(1)(d) LOSC as entailing the deleterious introduction of 'substances or energy' into the marine environment.

⁷⁴ Noise impacts include death, injury and hearing loss, habitat avoidance, stress and disruption to vital life cycle events: John Harwood and Ben Wilson, 'The Implications of Developments on the Atlantic Frontier for Marine Mammals' (2001) 21 *Continental Shelf Research* 1073, 1087-8.

⁷⁵ Ross Compton et al, 'A Critical Examination of Worldwide Guidelines for Minimising the Disturbance to Marine Mammals during Seismic Surveys' (2008) 32 *Marine Policy* 255, 261-62.

of noise, offering little methodological transparency to decision-makers and stakeholders,⁷⁶ and ultimately failing to provide concerted protection against noise sources originally identified within the SEA processes.

An issue of significant allied concern has been consideration of the cumulative effects of offshore industrial activities. This issue has bedevilled SEA practices generally, not least since there is little consensus on a universal understanding of the meaning of this term.⁷⁷ This has been particularly problematic in the context of ocean noise, which the regulatory authorities consider to be ‘fraught with difficulty’.⁷⁸ This is a considerable problem, given that cumulative impacts will stem from multiple sources ‘and are typically not detected within the footprint of any individual project assessment’,⁷⁹ yet individual EIAs are conversely considered to be a main mitigation strategy for aggregated environmental effects. Notwithstanding the overarching UK objective of adopting a precautionary outlook to offshore SEA, many such documents have ultimately endorsed potential development plans while concurrently lamenting substantial and substantive shortfalls in the data acquired through the SEA processes.

Assessment of Alternatives

One particular feature of SEA methodology that has proved problematic in assessing offshore plans is the assessment of alternatives. A core requirement of the SEA process is the consideration of alternative development possibilities. This may be considered, however, to be among the weaker aspects of current UK offshore SEA practices. Thus far, there has been relatively little deviation from the proposed licensing programmes. Indeed, the oil and gas licensing Rounds surveyed under SEAs 1-3, as well as the offshore windfarm surveys conducted under R2 endorsed the proposals in full. However, this is perhaps unsurprising since they addressed areas of significant pre-existing activity or, in the case of SEA1, acreage for which extensive licensing had been approved in an adjacent location by a neighbouring state. Since SEA4, there has been broad endorsement of development proposals, balanced by the withdrawal of a limited amount of acreage from potential licensing activities.

Particular concerns have been raised by a perceived absence of meaningful discussion of alternatives. In earlier processes, alternatives were either practically discounted,⁸⁰ or relegated to a superficial table-based survey,⁸¹ although a discernible commitment towards improving the process was made at SEA6.⁸² Adjustments have been made in the subsequent

⁷⁶ Adrian Farcas, Paul M Thompson and Nathan D Merchant, ‘Underwater Noise Modelling for Environmental Impact Assessment’ (2016) 57 *Environmental Impact Assessment Review* 114, 114 (noting that ‘[i]n practice, noise modelling for EIAs is often carried out using simplistic models, with limited environmental data, and without field measurements to ground-truth predictions’).

⁷⁷ Indeed, ‘there is neither a legal definition of cumulative and synergistic effects nor a uniform understanding in the specialist world about what is really to be understood by these terms’: Ulrike Weiland, ‘Strategic Environmental Assessment in Germany – Practice and Open Questions’ (2010) 30 *Environmental Impact Assessment Review* 211, 212.

⁷⁸ DTI, *SEA6: Post-Consultation Report* (DTI 2006) 19.

⁷⁹ Noble et al (n 57) 298.

⁸⁰ For instance, the SEA processes conducted pursuant to R2 only sanctioned consideration of wind development in three specific sites. However, as is the case with joint-EU funded initiatives, the ability of SEA consultants to assess alternatives in government-directed projects is decidedly limited.

⁸¹ As exemplified in SEA3: DTI, *Strategic Environmental Assessment of Parts of the Central & Southern North Sea: Assessment Document* (DTI 2003) 197.

⁸² DTI, *SEA6: Post-Consultation Report* (n 78) 8.

SEAs, including the inclusion of a somewhat more nuanced explanation of the potential value of alternatives, although consideration of alternatives has generally continued to err on the side of brevity. This has been especially true in the context of the traditionally marginalised ‘do nothing’ option: consultees have consistently complained of a tacit bias towards the socio-economic benefits of production in the most widely-read segments of SEA reports to the virtual exclusion of ecological merits,⁸³ while there has been peripheral consideration of the implications of eschewing development beyond a vague discussion of wilderness values in SEA1.⁸⁴ Indeed, in the context of renewable energy projects, concerns have been raised that the various OESEA processes ‘were conducted not as enquiries into the environmental effects of plans for offshore wind farm development and how these might be minimised, but as information-gathering exercises to support future planning processes’.⁸⁵ Although an exhaustive appraisal of alternatives risks generating unfocussed, sprawling and unwieldy documentation, there is nonetheless a clear case for a more extensive treatment of these issues as advocated by many stakeholders.

Data generation and management

As with comparable SEA regimes,⁸⁶ the UK offshore initiatives have generated an extensive array of data, while conversely demonstrating that the overall knowledge base concerning the marine environment is ultimately variable and patchy. In this respect, the UK practice demonstrates a somewhat mixed record of managing development projects in the context of scientific uncertainty. On the one hand, a number of environmentally-beneficial developments have subsequently emerged from the extensive research exercises that have characterised SEA practices in the offshore environment. Indeed, having established the unique ecological value of cold-water coral in the White Zone, a considerable proportion of the data yielded during SEA1 was ultimately submitted in support of the designation of the Darwin Mounds as a Special Area of Conservation (SAC) under the Habitats Directive.⁸⁷ Moreover, the SEA process has constituted a valuable, if irregular, source of governmental funding for marine environmental research in offshore waters.⁸⁸ Indeed, research has been conducted not only into the more obvious impacts of offshore energy production, but also on the wider threats facing key species to establish an overall picture of ecosystem health.⁸⁹ Beyond strict environmental considerations, a somewhat unexpected beneficiary of the SEA process has been marine archaeology. Cultural heritage is perhaps one of the less prominent elements requiring consideration under the SEA Directive.⁹⁰ However, while archaeological

⁸³ BERR, *SEA7: Post-Consultation Report* (BERR 2007) 6.

⁸⁴ DTI, *Strategic Environmental Assessment of the Former White Zone: Volume Three – Assessment* (n 69) 70-72.

⁸⁵ Olivia Woolley, ‘Ecological Governance for Offshore Wind Energy in United Kingdom Waters: Has An Effective Legal Framework Been Established for Preventing Ecologically Harmful Development?’ (2015) 30 *International Journal of Marine and Coastal Law* 765, 772-773.

⁸⁶ Doelle, Bankes and Porta (n 3) 111.

⁸⁷ SEA1 asserted that the area ‘should be subject to stringent control measures to prevent direct and indirect effects’: DTI, *Strategic Environmental Assessment of the Former White Zone: Volume 1 – An Overview of SEA Process, Key Issues and Findings* (DTI 2001) 21.

⁸⁸ This has been particularly valuable in marine mammal research, which is notoriously expensive to conduct on a widespread basis: BERR, *Environmental Report: Twenty-Fifth Offshore Oil and Gas Licensing Round* (BERR 2007) 56.

⁸⁹ Most notably in the context of by-catches, widely considered to constitute the most pressing threat to marine mammals: DTI, *Strategic Environmental Assessment of Parts of the Central & Southern North Sea: Assessment Document* (n 81) 107-08.

⁹⁰ SEA Directive, Annex I(f).

requirements may constitute a more limited conservationist preoccupation, this is no trivial issue: recent judicial reconsideration of the concept of ‘military remains’ has ensured that a significantly larger number of war wrecks will require formal protection than had previously been considered the case.⁹¹ Indeed, since SEA6, archaeological interests have gained a steady degree of prominence within the SEA process, with SEA requirements having since facilitated a closer engagement between archaeological interests and the offshore industry, for which some progress has been made towards the development of a future code of conduct for marine artefacts.⁹²

Concerns have nonetheless been raised over the quality of certain aspects of the acquisition and dissemination of the data generated under the various offshore SEA initiatives conducted to date. There has been some question of the validity of the methodologies employed in the various SEAs, albeit that this is an occupational hazard inherent in any major scientific research. Stakeholders have regularly criticised the loose terminology used within particular SEAs in approving licensing activities.⁹³ There has also been a notable reluctance to consider the potential impacts of future decommissioning activities for installations that have reached the end of their economic utility, which represents a significant omission in current SEA practice. Likewise, while the offshore SEAs have addressed a number of environmental factors at sea, little consideration has been given to the onshore implications of servicing significant marine infrastructure projects.⁹⁴

Of greatest concern in this regard, however, substantial knowledge gaps remain in relation to critical species, the core areas of habitat that may overlap with licensable areas and, especially, the cumulative impact of offshore activities upon the marine environment. The marine SEA initiatives have consistently illustrated the considerable practical challenges incumbent in gathering effective baseline data for a number of key species affected by offshore industrial activities. Indeed, many species of marine mammals defy attempts to monitor their movements effectively, since they exhibit poor site fidelity and undertake extensive movements, while offshore conditions further render them difficult to identify and track.⁹⁵ There is a similar paucity of data on migratory birds due to the considerable research challenges experienced in monitoring the types of offshore locations suitable for windfarm development⁹⁶ and thereby assessing optimal location and licensing options.

These shortcomings and challenges in offshore SEA processes have also exposed further difficulties in managing the data that has been generated within SEAs conducted to date and

⁹¹ *R (Fogg and Another) v Secretary of State for Defence* [2006] EWCA Civ 1270. The judgment advanced a reinterpretation of the Protection of Military Remains Act 1986 to include convoy casualties involving past or serving military personnel.

⁹² BERR, *Post-Consultation Report: Twenty-Fifth Offshore Oil and Gas Licensing Round* (BERR 2007) 7.

⁹³ For instance, a number of documents refer to an ‘acceptably low risk’ of harm to the environment, without articulating further how a particular impact would be deemed acceptable: DTI, *Strategic Environmental Assessment Area North and West of Orkney and Shetland: Consultation Document* (DTI 2004) 148. Likewise, OESEA Recommendation 3 suggests the ‘bulk of’ windfarm developments should be located offshore, without quantifying further what this might mean in practice.

⁹⁴ Terrestrial concerns have been conspicuous by their absence in many of the SEA documentation produced to date, while in OESEA 3 it was observed in response to stakeholder questions concerning implications for port activities that the developers had “not commissioned specific work but build on that of others”: DECC, *OESEA 3: Stakeholder Workshops* (DECC 2016), 3.

⁹⁵ Clare B Embling et al, ‘Using Habitat Models to Identify Suitable Sites for Marine Protected Areas for Harbour Porpoises’ (2010) 143 *Biological Conservation* 267, 267-68.

⁹⁶ AD Fox et al, ‘Information Needs to Support Environmental Impact Assessment of the Effects of European Marine Offshore Wind Farms on Birds’ (2006) 148 *Ibis* 129, 141.

in identifying clear lines of responsibility for addressing information gaps. While deficiencies in the available data and resulting ongoing core research needs have been identified clearly within many of the SEAs conducted to date, there has been little information within subsequent initiatives, or indeed the designated SEA platforms, as to whether these gaps have been filled and to what extent.⁹⁷ More recent SEAs have advanced a commendable commitment towards securing a more integrated approach to data collection between relevant government bodies, conservationists and independent researchers and offshore operators.⁹⁸ While the UK Joint Nature Conservation Committee (JNCC) has advocated that a willingness to engage with researchers ought to be an operative factor in determining the selection of licence holders,⁹⁹ operators have in turn raised legitimate concerns as to the commercial sensitivity of environmental information.¹⁰⁰ Significant problems have also been encountered in maintaining the data generated to date. There are few central databases and repositories for this material, which remains scattered among a wide range of outlets with varying degrees of public availability. There is some circularity in approaches to the ultimate responsibility for data management: operators view this as a broad task of the JNCC which has, in turn, stated that it lacks the resources of offshore operators in order to fulfil this function effectively.¹⁰¹ Concerns have also been expressed as to a lack of a clear forum to prioritise ongoing research needs, an issue that is likely to be addressed in future – to some extent, at least – under the auspices of the MMO.¹⁰²

Administration and Review

Despite questions as to the treatment of scientific uncertainty in the SEAs conducted to date, a particular strength of UK offshore practice has been reflected in clear commitments towards institutional review and the ongoing procedural refinement of the SEA process. In marked contrast to other industrial initiatives subject to SEA requirements, the offshore energy sector has been subject to a strong degree of administrative oversight and reflective practice since SEA was introduced as a core requirement of the pre-licensing procedure. Unlike many other sectors, offshore energy has seen the establishment of a central repository of SEA documentation and a targeted forum for the review of both previous practice and ongoing requirements. This has allowed the process to evolve significantly since its inception, by identifying and addressing shortcomings in methodology, structure and other institutional challenges encountered in the course of successive SEA proceedings.

By 2001, with the commencement of the initial investigations of SEA2, a dedicated Steering Group had been established to oversee the wider process of offshore SEA, comprising representatives of pertinent stakeholders, as well as experts in EIA practices, SEA processes, environmental management, conservation and industry regulation. The Steering Group was given the broad remit of providing ‘objective technical and general advice to facilitate the DTI SEA process, to promote stakeholder involvement and to achieve timely preparation of

⁹⁷ This has also been a significant problem in comparable jurisdictions: Doelle, Bankes and Porta (n 3) 111.

⁹⁸ See OESEA Recommendations 7, 8 and 21 and OESEA2 Recommendation 17.

⁹⁹ BERR, *SEA7: Post-Consultation Report* (n 83) 21.

¹⁰⁰ DECC, *OESEA: Post-Consultation Report* (DECC 2009) 112. From the developer’s perspective, there is also a strong risk that heavy investment in species monitoring might generate precisely the level of data that would justify withdrawing a commercially valuable site from industrial use.

¹⁰¹ *ibid*, 101.

¹⁰² DECC, *OESEA2: Post-Consultation Report* (DECC 2011) 61. Nevertheless, the MMO Offshore Renewables Research Steering Group currently provides automatic access only to public authorities and other budget holders, a position that will need to be reviewed to ensure a meaningful contribution from other experts.

quality documents to inform licensing decisions'.¹⁰³ While responsibility for the publication of the assessment documentation remains vested in the regulatory authority, the Steering Group plays a key role in the scoping phase of the SEA process and in facilitating the circulation of information, securing public and expert participation and reviewing the resulting documentation.

A strong commitment to reflective practice has served to refine the process significantly, to the considerable advantage of subsequent SEA procedures. A more integrated approach to offshore SEA can be seen to have emerged as a result, especially in relation to regulatory coordination to streamline governmental administration,¹⁰⁴ and to allay concerns over the shortcomings of an overly narrow sectoral focus.¹⁰⁵ Indeed, assessment undertaken for individual energy sectors in a multi-use environment is considered 'inherently restrictive and challenges the delivery of effective SEA'.¹⁰⁶ Accordingly, recent SEAs have adopted a more coordinated outlook, culminating in the OESEA initiatives examining a range of energy options within the same broad location, an approach that is likely to characterise future SEA for the offshore sector. The Steering Group is also seemingly well-placed to monitor the overall progress of SEA to date, especially the various recommendations that have been formulated throughout the process, not least in respect of identifying the extent to which data gaps have been addressed and in streamlining and improving administrative practices. Nevertheless, despite some initial progress towards mapping the outcomes of earlier recommendations, this process appears to have stalled more recently. Notwithstanding an ongoing commitment by DECC to collate and publicise this information, little headway has been made since OESEA, hence progress towards the implementation of operative recommendations remains difficult to accurately assess.

Public and Stakeholder Participation

Consultation with public authorities and the general public, including relevant NGOs and other interested organisations,¹⁰⁷ as well as neighbouring states that may be potentially affected by the development in question,¹⁰⁸ remains a key requirement under the SEA Directive. The precise arrangements for the transmission of information and the organisation of appropriate consultation are to be determined by the individual Member States.¹⁰⁹ The EU institutions have placed considerable emphasis upon the value of effective consultation at an early stage, but have noted that practice in this respect has been decidedly variable.¹¹⁰ In the context of the UK offshore energy industry, a series of concerns have been raised in relation to the consultation process, both in regard to public and expert participants.

¹⁰³ DTI, *Strategic Environmental Assessment of the Mature Areas of the Offshore North Sea: SEA 2 – Consultation Document* (DTI 2001) 8.

¹⁰⁴ This was a particular concern of SEA3, identifying a need to coordinate SEA at several governmental levels 'to ensure the sharing of information and experience, the avoidance of duplication of effort and stakeholder confusion and fatigue': DTI, *Strategic Environmental Assessment of Parts of the Central & Southern North Sea: Assessment Document* (n 81) 197.

¹⁰⁵ *ibid.*

¹⁰⁶ Noble et al, (n 57) 300.

¹⁰⁷ SEA Directive, art 6(4); see also recital 18.

¹⁰⁸ SEA Directive, art 7.

¹⁰⁹ SEA Directive, art 6(5).

¹¹⁰ Commission, 'Report on the Application and Effectiveness of the Directive on Strategic Environmental Assessment (Directive 2001/42/EC)' (n 28) 5.

Consultation practices have developed significantly since SEA1, which was considered with some understatement to be ‘inadequate’,¹¹¹ and are now streamlined to include both stakeholder and expert meetings. Engaging the general public with offshore SEA processes has proved challenging due to a general ‘out of sight, out of mind’ philosophy that is less apparent with terrestrial development.¹¹² Improvements have been made since SEA2, for which participants were considered ‘too self-selecting’,¹¹³ and successive SEAs have identified the need to include additional participants from related sectors. Indeed, concerns have been raised at varying stages over a lack of engagement with environmental NGOs, local government, military authorities, archaeological specialists, fishermen, and leisure and tourism interests, all of whom have been duly canvassed and engaged in subsequent processes. Despite criticism over a lack of publicity for such events – in marked contrast to the apparent ability of developers to mobilise effective information campaigns – attendance from the general public has improved significantly in recent years. It may be speculated as to whether this is attributable to more effective outreach and a growing public appreciation of the SEA process, or whether the inclusion of offshore wind in the latter SEA initiatives has provoked greater public mobilisation – the seascape implications of wind turbines having generally proved a considerably less palatable prospect than the trickle-down economic impact of the hydrocarbon industry in coastal communities. Stakeholder meetings have generally served to educate the public further about SEA initiatives, notwithstanding some suggestion that this enlightenment has been focussed more on the SEA process generally than the specific developmental initiative at hand.¹¹⁴

The consultation processes have also generated a significant volume of information, although until SEA4 this documentation was confined to the rather cryptic internet domain of www.habitats-directive.org, an obscure designation that was seemingly derived from the titular focus of SEA1. Since 2004, the more intuitive choice of www.offshore-sea.org.uk has received substantial web traffic, indicating that interested parties are accessing vital information, especially the non-technical reports, which suggests engagement with a lay audience. The timing and structure of public consultation meetings have, however, raised some concerns – SEA3 was conducted at the height of the summer holiday period and duly secured minimal participation – while stakeholder and expert feedback suggests that meetings have to a degree lacked focus, been unduly brief, overly reliant upon prior electronic communication and conducted as if a pre-development formality.¹¹⁵

Concluding Remarks

The UK offshore energy sector provides an illuminating case study of the role of SEA processes generally, and their application to the marine environment specifically. Although UK offshore SEA practices pre-date the formal requirements of Directive 2001/42/EC by some margin, the impending legislation clearly exerted a strong influence on licensing decisions at the material time. Since the entry into force of the Directive, offshore SEA in the

¹¹¹ DTI, *SEA2: Stakeholder Dialogue Meeting Report* (DTI 2001) 4. Indeed, the process of consultation pursuant to SEA1 was largely an ‘internal exercise’: Fidler and Noble (n 56) 17.

¹¹² *ibid.*, 15.

¹¹³ DTI, *SEA2: Stakeholder Dialogue Meeting Report* (n 111) 42.

¹¹⁴ DTI, *SEA3: Stakeholder Dialogue Meeting Report* (DTI 2003)16; DTI, *SEA5: Stakeholder Dialogue Meeting Report* (DTI 2005) 11.

¹¹⁵ BERR, *SEA7: Post-Consultation Report* (n 83) 10, in the context of SEA7. Indeed, one prominent NGO equated the process to ‘box-ticking’: *ibid.*, 4.

UK has evolved considerably. Notwithstanding certain ongoing challenges that are inherent to many comparable SEA processes, the UK offshore system represents an effective procedural model for the preliminary assessment of major infrastructure projects. A strong culture of reflective practice has helped to refine and streamline the process considerably, while there has been a continued improvement in baseline marine environmental data generated by these initiatives. These practices accordingly provide enhanced scope for offshore licensing decisions to proceed in a more environmentally-informed manner, especially in relation to hydrocarbons, in line with the original legislative intent of the Directive.

Significant challenges remain, however, concerning subsequent decision-making based on the SEA process in a manner that is sensitive to the needs of precaution and the ecosystem approach to the management of marine resources. In this respect, licensing decisions have often been made in the context of limited information as to the offshore ecosystem itself and the prospective impact of specific pollution sources and the cumulative impacts of large-scale industrial developments. Strong concerns have been raised that approval has been granted to projects irrespective of the prevailing uncertainty surrounding potential threats to the marine environment, which accordingly impacts upon the ability of the pertinent authorities to design and implement appropriate mitigation measures and policies.¹¹⁶ Moreover, notwithstanding the laudable culture of institutional learning, procedural difficulties continue to create practical impediments to the effective discharge of SEA obligations. The more recent OESEA initiatives have strongly mandated a coordinated approach between developers and other marine interests; a degree of investment is accordingly necessary in maintaining central data requirements and in securing an effective and accessible platform for the review of environmental information. The assessment of alternatives would also appear to require some reconsideration, either as an extended standing appendix to SEA documentation or as a more overt theme within current reporting processes. Tracking the implementation of specific recommendations arising from previous SEA procedures, and the progress of initiatives to address core data shortages are also significant operational and managerial tasks. Future SEA processes ought also to consider decommissioning issues more explicitly, which have been marginalised to date, as well as the onshore implications of offshore development projects.

In principle, the offshore energy SEA process may be considered to represent a broadly effective platform to guide future licensing decisions. Considerable faith has nonetheless been placed in the role of EIA and in technical solutions to address aspects of the environmental impacts identified by the combined SEA initiatives. Monitoring data as to the efficacy of these mitigation and assessment strategies will accordingly frame the environmental regulation of the offshore industries in the mid-term and will also guide the focus of future SEA processes and reassessments. If the OESEA processes are a reliable barometer of regulatory intent, future and more experimental industrial developments – such as fracking and other seabed activities – will be consolidated and coordinated through even broader SEA initiatives in the coming years. The UK has adopted a proactive national approach to emerging industries, for which the SEA requirements under EU law are subject to some uncertainty. Further clarification of SEA obligations is likely to be forthcoming through specific EU legislation for these industries, as evidenced by CCS issues and the nascent regulatory position on fracking. Offshore fisheries will, however, remain outside the

¹¹⁶ This has been particularly apparent in UK practices concerning offshore wind energy: see Woolley (n 85) 775.

purview of SEA requirements due to the nature of regulatory competences, a position that could merit legislative reconsideration in future revisions to the Common Fisheries Policy.