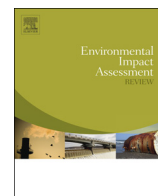




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Strategic environmental assessment (SEA) for wind energy planning: Lessons from the United Kingdom and Germany

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ABSTRACT

This paper reports on SEA applied in the wind energy sector in the UK and Germany. Based on a review of 18 SEAs, it is found that the quality of SEA documentation is variable, with over a third of them being deemed unsatisfactory. Furthermore, SEA processes are conducted to varying degrees of effectiveness, with scoping a strength but impact prediction and mitigation weaknesses. Generally speaking, the influence of SEA on German wind energy plan making was found to be low and the influence of SEA on UK plans deemed to be moderate. The German plans had a low influence mainly because of a perceived high environmental performance of the underlying plans in the first instance. Substantive outcomes of SEA are not always clear and the influence of SEA on decision making is said to be limited in many cases. Finally, a lack of effective tiering between SEA and project level EIA is also observed. In addition, our findings echo some of the weaknesses of SEA practice found in previous studies of SEA effectiveness, including poor impact prediction and significance sections and a lack of detailed monitoring programmes for post plan implementation.

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Introduction

Both the UK and Germany have ambitious plans for the expansion of wind energy generation in their territorial and marine jurisdictions. Associated plans and programmes are subject to the terms of the European Directive, 2001/42/EC 'on the assessment of the effects of certain plans and programmes on the environment' (i.e. the SEA Directive). Fig. 1 shows the current status of current UK and German installed wind energy capacities in relation to other EU countries. Germany has currently the biggest capacity, followed by Spain and then the UK. Fig. 2 illustrates the projected installation of wind energy in both countries. Environmental impacts of wind farm development include, amongst others, visual and noise, ecological, land use and marine impacts (see Toke, 2005). SEA effectiveness can be judged by the extent to which these impacts are mitigated against through sound plan and programme formulation.

The overall focus of this paper is on three aspects of SEA effectiveness in wind energy plan making, including: (1) the quality of SEA documentation; (2) the extent to which SEA procedural stages are covered; and (3) the perceived influence of SEA on decision making. These aspects draw on prior studies of SEA effectiveness. Retief (2007) and Fischer (2007), for example, suggested that the quality of documentation is an important basis for overall effectiveness. Furthermore, the extent to

which procedural stages are covered has also been observed to be connected with effectiveness (see e.g. Fischer, 2001; Bina et al., 2011). Finally, the perceived influence of SEA on decision making has been examined by e.g. Fischer (2002b), and Stoeglehner, 2010. All three aspects currently remain under-researched.

The aim of this paper is to establish the effectiveness of SEA applied to wind energy related plans and programmes in the UK and Germany, complementing an earlier paper on wind energy EIA effectiveness for projects (Phylip-Jones and Fischer, 2013). In the UK, SEAs at a variety of scales are considered, including the now abolished regional plans for guiding the development of wind energy and also local plans, including supplementary planning documents for wind energy. Furthermore, national planning policies are considered, which in the UK are also subject to SEA. In Germany, regional plan SEAs which allocate areas for wind energy development are reviewed. Furthermore, experiences and opinions of main stakeholders are reflected upon. These include the policy, plan or programme makers, i.e. those responsible for the production of the policy, plan or programme and for commissioning SEA, and the relevant consultees to the SEA process. Map 1 shows the geographical coverage of the UK policies and plans and their SEAs, including 5 onshore and 4 offshore SEAs.

German plans and their SEAs are shown in Map 2. These include five regional SEAs and two marine SEAs. In the case of the German onshore SEAs, consultees included in the analysis are neighbouring regional authorities and authorities within a planning region. In the case of the UK onshore SEAs, consultees involved in the analysis included the Local Planning Authorities (LPAs) and the Environment Agency and Scottish Environmental Protection Agency (SEPA).

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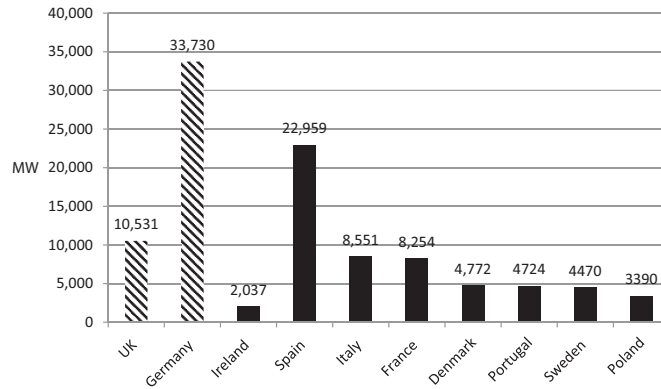


Fig. 1. Wind energy installed capacities across EU countries.

SEA report reviews

Fischer's SEA report quality review table (2010a,b) (see also Fischer et al., 2011; Fischer, 2012a,b) was used to establish the quality of the SEA reports. This is based on the requirements laid out by Directive, 2001/42/EC 'on the assessment of the effects of certain plans and programmes on the environment' (i.e. the SEA Directive; see Table 1). This consists of six main evaluation sections, comprising a total of 43 questions.

Each section includes a range of questions that are the basis for evaluating the quality of the environmental reports. All questions are graded, based on the reviewer assessment. Grades are assigned to each section, ranging from A (well performed) to G (task not attempted) (see Table 2).

Evaluation of the SEA process

Based on a review of the professional SEA literature, a set of criteria was developed for evaluating the SEA process. In this context, each evaluation criterion represents an idealised statement. A Likert scale scoring system was used, involving 4 choices. The responses most in conformity with a criterion were weighted with a score of 3 and responses least in conformity were given a score of 0. Then, for each procedural stage total scores were calculated. The maximum score possible for the combined responses from the stakeholders for each procedural stage was 30. A percentage figure for each SEA from the maximum score was then assigned based on the accumulated individual scores (see Table 3).

Interviews

Stakeholders were asked about their views on the effectiveness of the SEAs they had been involved in. For the procedural stages, questions

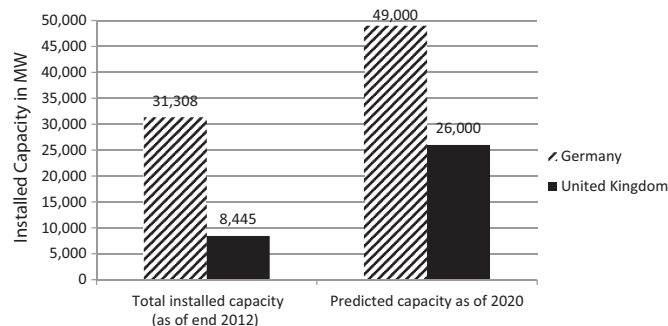


Fig. 2. Installed and predicted wind energy capacity (UK/Germany).

on the effectiveness of scoping, the consideration of alternatives, the quality of the SEA report, impact prediction, public participation and consultation, mitigation and monitoring were asked. Substantive effectiveness was understood in terms of the influence of SEA on decision making. In this context, the contribution of SEA to environmental protection and the associated learning outcomes (see also Fischer et al., 2009) of SEA application were looked at. Interviews provided an opportunity to clarify any issues with the responses received in relation to the effectiveness criteria survey. The stakeholders interviewed in the UK and Germany are shown in Tables 4 and 5. The questionnaire is presented in Table 6.

Results

Table 7 and Fig. 3 present the results of the reviews of the SEA report quality. Of the 18 reports reviewed, 11 (61%) were deemed of a satisfactory quality and 7 (39%) of an unsatisfactory quality. None of the SEAs reviewed obtained an A grade, indicating that none of them were without omissions or inadequacies. Improving the standards of report preparation should therefore be a priority.

The majority of the SEAs were found to have undertaken scoping following established procedures. Generally speaking, stakeholders were positive that scoping had been undertaken diligently by the plan makers. One UK onshore SEA was found to have weaknesses with regard to scoping, though. The main issue was a lack of clarity as to what impacts were being prioritised in the assessment. In this context, a consultee stated that: "The SEA did not provide a sense of which impacts were the main focus of the assessment, the SEA was very qualitative in nature and did not provide sufficient focus on the key environmental impacts" (UK Onshore Consultee, 29.1.12).

Three SEAs obtained particularly high scores, including the Scottish Planning Policy SPP6 SEA, the German Brunswick Region Plan SEA and the BSH North Sea SEA scoping exercises, attaining 93% compliance of the maximum possible scoping evaluation score. Here, scoping was conducted at a time in the policy and plan formulation processes when the views of consultees could still be incorporated into the assessments, sufficient time was provided for consultees to respond and as such the information provided was incorporated into the assessment.

There was some variance in the opinions of statutory consultees with regard to the manner in which their scoping opinions had been included in SEA. Of the 34 statutory consultees who responded to the question: "Were you satisfied that your responses to scoping were adequately incorporated into the SEA?", 20 (59%) said they were satisfied, but 14 (41%) said they weren't.

With regard to the consideration of alternatives, 17 (82%) had examined the 'no proposal alternative', i.e. the environmental baseline without a proposal. Furthermore, 29% said they had examined other

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