

Professional practice

Environment agency scoping guidance on the environmental impact assessment of projects

Alan Bond and Gerard Stewart

Scoping the impacts on the environment of proposed development projects is key to the good practice of environmental impact assessment (EIA). The Environment Agency is the most important environmental advisor and regulator in England and Wales and a statutory consultee in the EIA process. It has produced generic Scoping Guidance for its own staff, external developers and their consultants, and other stakeholders. This is intended to help identify opportunities and constraints early in development planning and help avoid inconsistencies in scoping practice. The Guidance addresses specific impacts and associated mitigation measures for 72 different project types and four categories of site operations. In this paper, the development of this Scoping Guidance is discussed and its format explained. The implications for scoping potential impacts on the environment in England and Wales (and elsewhere) are discussed.

Keywords: scoping; environment agency; mitigation; environmental impact assessment

Alan Bond (contact person) is at the EIA Unit, Institute of Biological Sciences, University of Wales Aberystwyth, Aberystwyth, SY23 3DD, UK; Tel: +44 1970 622387; Fax: +44 1970 622307; E-mail: alan.bond@aber.ac.uk. Gerard Stewart is at the Environmental Policy Centre for Risk and Forecasting, Environment Agency, Kings Meadow House, Kings Meadow Road, Reading, RG1 8DQ, UK.

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THIS PAPER DESCRIBES the Scoping Guidance¹ produced by the Environment Agency (the 'Agency') (England and Wales) and considers the likely implications of the Guidance for the efficacy of the environmental impact assessment (EIA) process in England and Wales and (very briefly) beyond their borders. After a brief consideration of the role of scoping within the EIA process, the role of the Agency in the EIA system is explained.

Although it is not the aim of this paper to carry out a detailed critical review of scoping guidance currently available in the UK and elsewhere, a brief review is presented to demonstrate the need for the new Guidance. This discussion is followed by an explanation of the approach used in the development of this Scoping Guidance, including an example of the format adopted. Finally, the possible uses and benefits of having this Guidance (in addition to guidance already available from other sources) are considered.

Scoping is a critical stage early in the EIA process. It provides an opportunity for developers and their consultants to identify and assess key potential environmental impacts and issues of concern through consultation with decision makers, statutory and non-statutory consultees, non-governmental organisations (NGOs), and the public. Scoping thereby ensures that competent authorities make their decisions whether to allow projects to proceed only after the relevant environmental information is assessed.

A full description of the role of scoping and associated activities within an EIA can be found in several texts (see, for example, Canter, 1996; Glasson *et al*, 1999; Jones, 1999; Bond, 2000; Environmental Resources Management, 2001). Most commonly,

however, scoping is used to identify key issues to be considered in detail during EIA for a particular project. It is this aspect of scoping that is the focus of the Guidance described in this paper.

In relation to England and Wales, the 1997 revisions to the EIA Directive (Council of the European Union, 1997) introduced several changes to the original Directive 85/337/EEC (Council of the European Communities, 1985), including a requirement for the competent authority to give a "scoping opinion", when required, on the information to be supplied by the developer. As a consequence, various regulations that implemented Directive 85/337/EC in England and Wales have also been amended.

The regulations require the competent authority to consult with the developer and the statutory consultees in identifying issues that should be addressed in an EIA. The competent authority has five weeks to produce a scoping opinion. If an opinion is not forthcoming within the five-week period, the developer may request "scoping direction" from the Secretary of State in England or the National Assembly for Wales (NAW) in Wales.

The aspects of the environment that must be considered during an EIA are set out in the various sets of implementing regulations. Consideration of population, fauna, flora, soil, water, air, climatic factors, material assets, including the architectural and archaeological heritage, and the interrelationships between them is required. The scoping opinion needs to cover all issues in sufficient detail to meet these broad regulatory requirements.

To meet the requirements of the regulations, only the developer, the competent authority, and the statutory consultees are required to be involved in producing a scoping opinion. However, to be fully effective, scoping should address the concerns of all those likely to be affected by the proposals, including non-statutory consultees, NGOs and, in particular, the public (Palerm, 2000). Thus, good practice requires that the opinion of stakeholders be sought at this stage.

There has been a proposal recently for another amendment to the EIA Directive (Commission of the European Communities, 2001), which, at the time of writing, is going through the co-decision procedure that precedes adoption of new environmental Directives. It addresses the requirements of the Århus Convention (United Nations Economic Commission for Europe Committee on Environmental Policy, 1998). If adopted, the amendment to Article 6 of the Directive will require Member States to take measures to provide for early and effective public participation in EIA. It is possible that this requirement will provide an opportunity to involve the public at the scoping stage of the procedure.

The recent adoption of a Directive on strategic environmental assessment (European Parliament and Council of the European Union, 2001) is also of relevance since issues identified by environmental

assessment at strategic levels will inform the scoping of projects. This Directive must be implemented in Member States by 21 July 2004.

Environment Agency and its role in EIA

In England and Wales, the Agency has a remit to "achieve major and continuous improvements in the quality of air, land and water" and has a general role in terms of managing the environment (Environment Agency, 1998). The Agency had about 10,500 staff by the year 2000 (Environment Agency, 2000) working in seven regional offices in England and one in Cardiff representing Environment Agency Wales. The regions are split into 26 areas.

While the Agency has a very broad remit, of specific relevance for this paper is its pivotal role with respect to EIA in England and Wales, including the scoping process. The Agency, however, often finds that it is involved too late in the EIA process to influence it effectively. The Agency has addressed this problem over the years by providing Scoping Guidance to its staff and promoting it externally (see, for example, Environment Agency, 1996). Such Guidance cannot be prescriptive as development issues have a very site-specific context. This paper describes the latest developments in the provision of Scoping Guidance, explaining the approach taken to promote good practice and consistency.

The Agency has advisory, operational, and regulatory roles relevant to EIA. It is a consultee for most EIAs and prepares EIAs for other projects (in particular flood defence). The Agency is a statutory consultee (assuming that it is not the developer itself) for certain types of development specified in legislation and when a competent authority is formulating a scoping opinion (Department of the Environment Transport and the Regions/National Assembly for Wales, 2000).

The Agency can recommend to the competent authority that an EIA is likely to be required for a given project, advise what should be included in a scoping opinion, comment on the quality of the environmental statement (ES) after it has been submitted, and suggest that further information is necessary. However, the Agency's role is advisory

There were three main objectives for the Agency's Guidance: to update the existing guidance to look at a wider range of impacts; to extend the range of development types covered; and to reflect the Agency's sustainable development duties

only, and the decision-making responsibilities in these areas lie with the competent authority.

The Agency's 1996 scoping guidance (Environment Agency, 1996) was well received, but it covered impacts on the water environment only as it was developed by the Agency's predecessor body, the National Rivers Authority (NRA). It was decided that this guidance should be extended to encompass the much wider responsibilities of the Agency, as defined under the Environment Act 1995. There were three main objectives:

- To update the existing guidance (of water-related development types) to look at a wider range of impacts that had become the concern of the Agency (including impacts on air, land, and water);
- To extend the range of development types covered (partly in response to feedback forms received from the original scoping guidance reports that noted various omissions); and
- In terms of the range of impacts addressed, to reflect the Agency's sustainable development duties.

Brief review of scoping guidance

While over 100 countries have formal EIA procedures (Bond, 2000), evidence from a study of EIA procedures in 25 European countries, if typical, indicates that many countries do not have published guidance on scoping or EIA (O'Sullivan *et al.*, 1999a; 1999b). Jones (1999) includes a discussion of some of the most widely used guidance (for example, Council on Environmental Quality, 1981; New Zealand Ministry for the Environment, 1992; Environment Agency, 1996; European Commission, 1996).

More recently, the European Commission has updated its scoping guidance to reflect amendments to the EIA Directive and improved practice since its implementation within Member States in 1988 (Environmental Resources Management, 2001). A review of guidance documents like these reveals that they are useful, but are restricted to advising on good principles for scoping because of both the complexity of advising on sector-specific projects and the scale of the advice needed.

The guidance produced by the President's Council on Environmental Quality in the USA (Council on Environmental Quality, 1981), for example, is mainly procedural. It indicates the steps to be taken to gather data from an appropriate range of stakeholders. It does not, however, offer advice on what specific impacts might be expected or the kinds of mitigation measures that might be appropriate.

Similarly, the updated European Commission scoping guidance (Environmental Resources Management, 2001) provides advice on how to carry out the scoping process and even gives a very useful template with which to identify impacts of concern.

The template, however, is blank and needs to be filled in for different project types.

The International Study of the Effectiveness of Environmental Assessment recognised that scoping was a weakness of EIA around the world and listed as its first key action to remedy this: "Pre-identify the possible range of issues and impacts associated with a proposed activity" (Sadler, 1996). The suggestion was that guidance needs to be more detailed in identifying specific impacts associated with specific project activities.

The UK Department of the Environment (DoE) did go further in the guidance they produced (DoE, 1995). Different impact types are described in the appendices to the guidance. Typical impacts are set out along with mitigation measures. The guidance is, however, broad and does not cover specific impacts that might be associated with specific activities and the appropriate techniques that might be used to mitigate them.

In addition, in some cases, the techniques for mitigation described are now a common design feature for many types of development in the UK, but were not common when the guidance was produced. One example is sustainable drainage systems (Construction Industry Research and Information Association, 2000; 2001).

More detailed guidance was produced in Malaysia for some project types (see, for example, Environmental Impact Assessment Unit (Malaysia), 1990) that indicate specific impacts associated with different stages of a development and provide advice on what the EIA should consider. Even this guidance, however, does not assist in identifying mitigation measures.

Existing guidance indicates the value of scoping, of stakeholder involvement, where appropriate, and the need to cater for each project on an individual basis. No guidance to date has been developed to a point where specific development types and activities are associated with specific impacts and where appropriate mitigation measures are suggested, thereby allowing EIA to be better used as a design tool.

Approach developing scoping guidance

A variety of techniques can be used to facilitate the scoping stage of an EIA. It is possible to identify, and produce a checklist of issues, by discussion or 'brainstorming'. Other, more formal methods of scoping and impact identification can be used, including tools such as, matrices and networks (Carter, 1996; Jones, 1999).

The checklist is one of the most commonly used scoping methods (Glasson *et al.*, 1999). In its simplest form, it is a list of either sources of impacts (that is, project activities) or aspects of the environment likely to be affected by a project (that is, project receptors). The Agency's new Scoping

Guidance builds on its 1996 guidance, which itself was based primarily on a variation of checklists referred to as “prompt lists”. This term is preferred by the Agency because it emphasises that projects must be considered on a case-by-case basis. Impacts may be listed on the prompt list that are not applicable to a specific development and/or there may be impacts that are not listed. The main advantages and limitations of prompt lists, such as the Agency’s Scoping Guidance, are summarised in Table 1.

In preparation for the development of the new guidance, a review of previous Agency (1996) guidance was undertaken to determine its usefulness. Effectiveness was assessed from the feedback forms that appeared at the back of the guidance and other feedback received via the EIA and Town and Country Planning staff networks in the Agency. Also, three national workshops were held at the initial phase of the development of the new Scoping Guidance.

Overall, the review showed that the existing guidance was considered to be good, with some very positive feedback being received especially from environmental consultants. There were also several enthusiastic users within the Agency itself and those who used it found it to be very comprehensive with regard to impacts on the water environment. Some were worried that it might be seen as prescriptive guidance, although this was never an objective and it was made clear that individual developers and their consultants should make contact with the respective area office, as well as consulting the guidance. The general view was that the 1996 guidance should be updated as soon as possible to cover the full Agency remit.

Perhaps the most common feedback identified the need to combine the scoping prompt lists and further (narrative) guidance, while at the same time reducing the bulk of the guidance and having a more user-friendly table of contents. The latter desire was met with the new Scoping Guidance by the use of new technology — a CD ROM for guidance notes directed to external audiences and use of an intranet for Agency staff. The guidance notes have been produced in CD ROM format to reduce the cost and bulk of the publication. The format also allows interactive use of the material and easy navigation via

hyperlinks. Individual notes can be read on screen, printed, or e-mailed as needed (copyright permitting).

Description of the new Scoping Guidance

The new Guidance comprises three elements:

1. *Scoping Handbook*. The Handbook covers issues common to all development types and also examines scoping methods and describes environmental legislation and associated permits that influence EIA;
- 2a. Specific Guidance Notes for activities that are an integral part of many development types, which are described as relating to “Site Operations”;
- 2b. Development Type-Specific Guidance Notes, which provide a focused introduction to the issues that should be considered for specific types of development.

The Site Operations Guidance Notes encompass activities that, while they are not subject to EIA in their own right, are integral components of many development types. Rather than incorporate every aspect of scoping in all Guidance Notes for individual development types, key aspects of scoping were brought together in generic Guidance, which needs to be used in conjunction with Notes on particular development types.

The purpose of both the Site Operations Guidance Notes and the Development Type-Specific Guidance Notes is to examine in more detail the potential environmental impacts of each development type. The format of both sets of notes is consistent throughout the series and is as follows:

- Section 1: a brief introduction and description of the development type.
- Section 2: an explanation of the EIA regulations and a statement of the EIA thresholds for that type of development. Prior to identifying potential environmental impacts, each note highlights some of the additional environmental protection authorisations that may be required.
- Section 3: a descriptive account of the potentially significant environmental effects linking these to specific development activities. This section contains a summary matrix of the potential impacts. The summary sets out:
 - potential sources of impact (or activities) and
 - potential receptors of impacts.
- Section 4: mitigation measures appropriate for this type of development.
- Section 5: references and further reading that will help in the scoping exercise.

The development of the Guidance involved the production of a prompt list for the sources of impacts associated with the construction, operational, and decommissioning phases of development, and

Table 1. Advantages and limitations of using prompt lists for scoping

Advantages	Limitations
- Good for identifying a wide range of issues to be considered	- May be used too mechanically – if it is not on the list, it is not considered
- Useful for inexperienced staff	- Does not indicate significance
- Help to ensure a systematic approach	- Does not consider the location of the development and site specific details
- Help to ensure a consistent approach.	- Cannot address cumulative or indirect impacts

Potential receptors of impact		Activities and potential impacts		
		Construction phase	Operation phase/ on-going site maintenance	Post-operation/ decommissioning phase
WATER	surface water hydrology & channel morphology			
	surface water quality			
	groundwater hydrology			
	groundwater quality			
LAND	Landscape			
	soils			
	geology			
AIR	local air quality			
	regional / global air quality			
FLORA & FAUNA	aquatic ecology			
	terrestrial ecology			
HUMAN ENVIRONMENT	socio-economics			
	health and safety			
	amenity			
	nuisance			
	architectural and archaeological heritage			

Figure 1. Example of a scoping matrix

Note: Based on prompt lists of project actions and potential impacts

another detailing the potential receptors of impact that covers all the impacts listed in the EIA regulations. These prompt lists were developed from a combination of:

- Receptors listed in previous guidance (Environment Agency, 1996);
- Receptors set out in EIA legislation;
- Broader sustainability issues;
- Matching Agency functional concerns;
- The outcome of discussions at three workshops; and
- The need to keep the number of categories manageable.

The prompt lists, which are detailed in the *Scoping Handbook* (Environment Agency, 2002), were used as the basis for the individual Guidance Notes and, in particular, they form the basis of the axes of an impact matrix developed in each of the Guidance Notes, an example of which is provided in Figure 1. To fill the impact matrices for different development types, the prompt lists are used as guides to help fill in the individual cells that identify project-specific activities and environmental receptors.

The full list of Scoping Guidance Notes is reproduced in Table 2 (a matrix following the format contained in Figure 1 was developed for each one of these Guidance Notes). The development types for which Guidance was produced were selected to reflect the range of projects addressed in EIA and

other environmental legislation. They are listed alphabetically under general categories, which are in turn listed in alphabetical order. Each Guidance Note has a unique identifier, for example, F2 = Golf Courses.

The intention is that each Development Type-Specific Guidance Note is used in conjunction with the *Scoping Handbook* because the issues that are common to many development types are addressed in the *Handbook* rather than in individual Guidance Notes to avoid duplication. In addition, scoping of particular development types will require reference to some or all of the Site Operations Guidance Notes.

For individual projects, it can be useful to refer to Guidance Notes on other types of development on a case-by-case basis. Thus, other Guidance Notes that may be relevant are listed on the first page of each

A prompt list cannot be completely definitive for every individual development in any location: it is intended that the user should use the prompts as an *aide memoir* and as a stimulus for considering each project on its own merits

Guidance Note. The intention is that users will not feel constrained to referring only to the recommended notes.

Each Guidance Note has a common format and is typically about 15 pages long. Each one was reviewed by experts in that particular field within the Agency and by external experts to ensure that the

advice is up-to-date and that the best practice in terms of mitigation is advised.

A prompt list cannot be completely definitive for every individual development in any location. Thus, it is intended that the user should use the prompts as an *aide memoir* and as a stimulus for considering each project on its own merits. It is not the intention

Table 2. List of development types addressed in this series of Scoping Guidance Notes

<p>Site operations</p> <p>A Site operations</p> <ol style="list-style-type: none"> 1. Construction work 2. Demolition and decommissioning works 3. Redevelopment and clean-up of contaminated land 4. Vegetation management and conservation enhancements <p>Development type-specific</p> <p>B Agriculture, forestry, aquaculture, pest control</p> <ol style="list-style-type: none"> 1. Afforestation and deforestation 2. Arable farms and the intensification of previously uncultivated land 3. Control of pest species, including disease vectors 4. Deliberate introduction of non-native and genetically modified species 5. Freshwater and marine fish farms 6. Intensive horticulture, including greenhouses 7. Livestock units (including pigs, cattle, sheep and poultry) <p>C Coastal and estuarine developments</p> <ol style="list-style-type: none"> 1. Barrages (see also note I6, Tidal power developments) 2. Coastal defence, including beach nourishment 3. Ports, shipyards, harbours, piers and jetty developments (including navigation works) 4. Sea outfalls <p>D Extraction of natural resources and their primary processing</p> <ol style="list-style-type: none"> 1. Dredging of riverine, estuarine and marine sediments (including commercial dredging and dredging for navigation) and reclamation 2. Opencast mining and quarrying for coal, minerals, ores etc. 3. Petro-chemical industry — offshore developments, including exploration 4. Petro-chemical industry — onshore developments, including exploration 5. Restoration of mineral extraction sites <p>E Infrastructure developments (see also Section K, Multi-modal transport)</p> <ol style="list-style-type: none"> 1. Business parks (ie office buildings or repairs or servicing facilities) 2. Pipelines (oil and gas) 3. Residential developments 4. Retail and out-of-town shopping parks <p>F Leisure and tourism</p> <ol style="list-style-type: none"> 1. Camping and caravan sites 2. Golf courses 3. Leisure centres and swimming pools, holiday complexes and hotels 4. Marinas (see also notes C3 and J6) 5. Off-road recreation activities 6. Water-based recreation 7. Angling and sport fishing, including fish stocking 	<p>G Manufacturing industries</p> <ol style="list-style-type: none"> 1. Abattoirs 2. Animal feed manufacture 3. Chemical manufacture, processing and storage (see also Section L, Waste management) 4. Food and drink manufacture 5. Industrial estates for light manufacturing 6. Leather manufacture 7. Mineral production and processing (eg coke ovens, glass, ceramics, cement, asbestos) 8. Motor vehicle, aircraft and train manufacture 9. Natural timber, and man-made wood products (eg medium density fibreboard) 10. Production and processing of metals 11. Pulp, paper and board production 12. Rubber manufacture 13. Textile manufacture <p>H Other sectors</p> <ol style="list-style-type: none"> 1. Cemeteries and crematoria 2. Kennels, catteries and stables <p>I Power generation and transmission (see also note L1, Incineration)</p> <ol style="list-style-type: none"> 1. Hydroelectric power developments, including dams and reservoirs 2. Nuclear facilities, construction and decommissioning 3. Overhead transmission lines 4. Reprocessing of nuclear fuel 5. Thermal power stations (non-nuclear) 6. Tidal power developments (see also note C1, Barrages) 7. Windfarms, both on-shore and off-shore <p>J River and water management</p> <ol style="list-style-type: none"> 1. River channel works and bank protection 2. Discharges to surface waters 3. Flood diversion channels 4. Flood storage areas and flood embankments 5. Interbasin transfer of water 6. Navigation works and canal restoration 7. Reservoirs (see also note I1, Hydroelectric power developments) 8. Restoration and enhancement of river channels 9. Surface water abstractions 10. Groundwater abstractions 11. Bridges and culverts <p>K Multi-modal transport (see notes C3 and J6 water transport issues)</p> <ol style="list-style-type: none"> 1. Airports and airfields 2. Light transit systems and tramways 3. Motorway service areas, petrol stations and vehicle maintenance facilities 4. New roads, road widening and other road improvement schemes 5. Railways and railway stations (including rail freight terminals) 6. Underground transit systems 7. Vehicle parks and park-and-ride schemes <p>L Waste management</p> <ol style="list-style-type: none"> 1. Incineration, including animal carcasses and incineration with energy recovery 2. Landfill sites 3. Sewage treatment works (extension and installation) 4. Solid waste management facilities 5. Composting of organic waste
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that the user should feel constrained by the prompt lists provided in this Guidance.

Given the statutory obligations on competent authorities to offer an opinion (if requested) on the scope of EIAs, each Guidance Note includes a matrix of the form shown in Figure 1 that can be annotated as required. It is suggested that these matrices be used to stimulate discussion on the impacts of particular developments between interested parties.

Use of the Scoping Guidance

For each scoping opinion, any member of staff within the Agency will be able to refer to the Development Type-Specific Guidance Notes in conjunction with the *Scoping Handbook* and the Site Operations Guidance Notes as a starting point for issuing their advice. The intention is still that internal consultation within the Agency would take place and the Notes allow for annotations to add impacts that were overlooked or new ideas for mitigation measures. There are over 1,200 pages of scoping advice, but structured in such a way that only a few easily located pages need be read.

The published version will make information available directly to developers, consultants and so on. It will not replace the need for consultation with the Agency and others but should inform this process. The Guidance therefore has the potential to improve EIA practice in England and Wales by improving the scoping advice provided by stakeholders involved in the process at an early stage.

The wider implications should be felt in terms of the incorporation of appropriate mitigation measures into developments to alleviate predicted impacts. Furthermore, it is hoped that the Guidance will become widely used as a reference source in EIA in general and will facilitate improved development planning and design from the outset in England and Wales but also further afield (section 2 is the only country-specific section in each of the Notes).

Scoping Guidance has developed a great deal within the Agency since the first notes were produced in 1991. Knowledge of impacts associated with different types of development activity and of appropriate mitigation measures for specific impacts, improves all the time. The Guidance represents a good practice snapshot in time and it is the intention of the Agency to incorporate improvements to the Guidance when necessary; a form is incorporated into the *Handbook* to facilitate comments from users.

Note

1. The Scoping Guidance was published in May 2002 and can be obtained for £95.00 from the Commercial Policy Unit, Environment Agency, 2440 The Quadrant, Aztec West, Almondsbury, Bristol BS32 4AQ; Tel: +44 1454 878 582; Email: commercial.policy.unit@environment-agency.gov.uk.

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