

EIA follow-up: linking impact assessment with implementation

Environmental Impact Assessment (EIA) has revolutionised the range of environmental considerations applied to projects pre-decision. However, this emphasis on the pre-decision stages and on the preparation of the Environmental Impact Statements often deflects attention from the actual environmental impacts of a development and the effectiveness of the enacted mitigation strategies. Practitioners should not forget the important role that EIA can continue to play post-decision. In this article Ross Marshall and Angus Morrison-Saunders argue that practitioners need to pay greater attention to follow-up during the post-decision phases of EIA.

Introduction

EIA follow-up has started to attract attention from a wide body of UK and international EIA practitioners, and is becoming an increasingly important aspect of good EIA practice. For those unfamiliar with the terminology it relates to actions that seek to ensure that the terms and conditions of project approval are met; and to monitoring the impacts of development and the effectiveness of mitigation measures. These actions incorporate both voluntary actions of the proponent and imposed consented conditions post-decision. EIA follow-up can encompass tasks such as: the monitoring, auditing, evaluation, implementation of environmental management systems, and communication - the reporting of environmental outcomes (see Box 1).

The role of EIA follow-up

The role and purpose of EIA follow-up is to provide feedback on EIA outcomes. For example, what were the actual impacts of a project and were these acceptable to regulators and other stakeholders? How did they compare with EIS expectations? Were the approval conditions set by decision-makers complied with? How effective was the EIA process itself?

To address these questions, EIA follow-up draws on a broad spectrum of activities, from regular site inspections and surveillance to compliance statements, and to very formal, systematic processes of monitoring, evaluation, audit, management and communication. EIA follow-up should not be regarded as an isolated event but as part of an on-going process of integrated environmental management.

These are important matters because developers often need to prove their competence with respect to environmental affairs in the eyes of stakeholders. The objectives are to minimise residual significant environmental effects post-implementation and to provide linkage between the construction and commissioning phases, and the operational life cycles of the proposed development.

At present, EIA follow-up is not a mandatory requirement in most countries. Some exceptions are Australia, Canada, Hong Kong, the Netherlands and New Zealand. These countries do have well established follow-up requirements to provide for monitoring and the evaluation of projects beyond their construction and operational phases, and many others are currently developing or implementing new procedures.

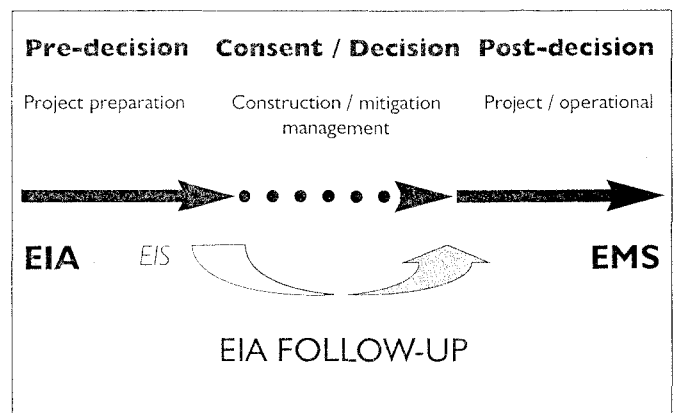
Why is EIA follow-up important?

A good EIA anticipates environmental impact, guiding a development's design pathways through its conceptual anticipation, its crystallisation during planning and its final emergence through construction and operation. What purpose does the accompanying Environmental Impact Statement (EIS) serve if its envisaged mitigation strategies are not enacted? Is

the purpose of the EIS just to gain planning consent or should we, as professional practitioners, accept and promote a wider role.

An EIS is the public reflection of a developer's anticipation of environmental effects and the conduit that seeks to explain to stakeholders how the principles of good environmental design have been incorporated into the development's objectives, fabric and structure. In this role EIA follow-up forms a strategic link between the pre-decision and post-decision phases of development (see Box 2).

Box 2: EIA follow-up as linkage between EIA and operational Management



The timeframe and context of EIA follow-up

When implementing EIA, proponents should take note of the timeframe within which the development will operate. EIA anticipated effects may be transient or permanent, and specific to particular aspects of development. Follow-up activities may need to be spread across the timeframe of the development's life - from 'cradle' to 'grave'. It is not uncommon for the consenting requirements of specific developments, such as windfarms and opencast mineral extraction sites, to require proposals outlining site decommissioning, the planned restoration or rehabilitation of the site, and details on how these will be monitored. The timeframes for EIA follow-up are thus not limited solely to the construction phase, but can encompass

Box 1: Key EIA follow-up activities

EIA FOLLOW-UP	Monitoring	The systematic, repetitive collection of data (measurements or observations) to provide information on environmental variables (in space and time), and its comparison with standards, predictions or expectations.
	Evaluation	The analysis and appraisal of the performance of the activity against predictions, expectations and standards as well as the environmental performance of the activity. Evaluation explicitly involves value judgements. It often relates to subjective policy-oriented judgements rather than purely scientific and technical analysis.
	Auditing	The comparison of monitoring observations against a set of criteria (e.g. standards, predictions or expectations), and the reporting of results. Environmental auditing may be carried out in order to facilitate management control, contingency planning and to assess compliance.
	Management	Making decisions and taking appropriate action in response to issues arising from monitoring, auditing and evaluation activities.
	Communication	A participation component in which stakeholders as well as the general public are informed about the results of EIA follow-up

all operational phases through to eventual closure. The success of EIA follow-up is dependent on the context in which it operates and the strength of the management systems that surround it.

Careful consideration needs to be given to the interplay of statutory regulations and institutional arrangements, resources and capacity, applicable techniques and approaches, and project management and stakeholder involvement. Box 3 summarises the potential barriers to EIA follow-up.

Box 3:

Barriers to the implementation of successful EIA follow-up

- Inadequate techniques for follow-up
- Organisational, economical and technological resource limitations
- Limited support or enthusiasm for conducting EIA follow-up
- Technical deficiencies in the EIS or mitigation strategies
- Unwillingness of stakeholders to participate in EIA follow-up development
- Unclear benefits and insight in how to do EIA follow-up in a cost-effective way.

The need for EIA follow-up?

The pressure for EIA follow-up will be greatest where the uncertainty in impact assessment is greatest or where stakeholders require a controlling framework for the implementation of mitigation or impact management. The regulator's motivation to impose EIA follow-up will be bound up with the desire to control compliance, to reduce uncertainty, verify earlier predictions, and ultimately to improve the management of future EIA processes.

The individual or community's desire to initiate follow-up will be based on the desire for good management and the communication of issues of concern. For developers several distinct advantages in implementing EIA follow-up can be identified (see Box 4). In addition to these, developers need to understand that follow-up and environmental improvement can produce significant financial savings.

Box 4: The advantages of EIA follow-up

- Monitoring data provides proof of compliance with specific consent requirements or mitigation action.
- Knowledge and learning from experience that can be used in future development activities.
- Management of project impacts based on monitoring results to offset future risk of liability or compensation issues.
- Cost savings through improved environmental management.
- Enhanced relationship with the public and green profile through communication and community participation in follow-up.

In general, EIA follow-up programmes should ensure that feasible and effective environmental protection measures are in place throughout all project phases, thereby allowing for the management of issues as they arise and building accountability into the EA process.

How can it be applied?

EIA follow-up can be applied in a variety of ways. The trick is to ensure that the programme fits the nature of the development, is sympathetic to stakeholder needs and to the management style that will implement it. Often follow-up can be achieved very simply by harnessing existing procedures and programmes or information sources that are already readily available rather than creating new procedures and data collection requirements. For example an environmental management system could be adapted to meet most of the EIA follow-up needs.

Two case studies

Beinn an Tuirc windfarm

Beinn an Tuirc windfarm, situated on Scotland's Mull of Kintyre is one of the UK's most productive windfarms.

However, the EIA established that the site formed part of a golden eagle's range. EIA follow-up has involved the controlled construction of the windfarm to minimise eagle disturbance and displacement, continued monitoring of eagle activity, and the introduction of an innovative habitat management plan within surrounding forest and moorland areas to increase prey availability within the range.

The follow-up process has been a success for ScottishPower, the eagles and conservationists.

The Fife 132 kV refurbishment programme

In developing this transmission reinforcement programme, ScottishPower was aware that proposals for new overhead lines would attract concerns regarding visual impact, and archaeological, electromagnetic fields and ecological disturbance.

To safeguard stakeholder concerns and to ensure that all EIS mitigation strategies and consent conditions were complied with and could be verified through one operational procedure post-construction, the company developed a project specific environmental management plan to audit and verify performance and compliance.

As a company with long-term business strategies, ScottishPower has realised that the ability to demonstrate control over impact has become an important factor in planning for successful development and one that accords with the fundamentals of sustainable development. EIA follow-up has become an important tool in ensuring this process.

Others, approaching the issue of EIA follow-up from the regulatory side, might prefer to control EIA follow-up implementation through preliminary documentation or environmental management plans. These provide a practical means of addressing what is environmentally significant in terms of consented conditions, stakeholder relations and environmental impact.

Whatever your approach, it is important that the monitoring, audit, evaluation, management and communication programmes applied are based on methodologies that are risk and site specific, and sufficiently flexible for their intended use.

What is the future?

Since the 1970s, when EIA was first introduced, practitioners have seen EIA develop into a pre-eminent regulatory requirement for major development. EIA serves to provide information to decision-making bodies, regulators and stakeholders. It also enables proponents to set their own environmental standards and to reduce adverse environmental impacts.

EIA follow-up can play an important role in this process and remove the risk of regulators refusing consents? Through monitoring, audit and management control, EIA follow-up can ensure that the expected benefits of the EIA process are achieved post-decision. It can also control the costs of implementation and improve a proponent's 'green credentials' in a community.

Applying EIA follow-up within EIA is no longer an option but a sound precaution and a pro-active measure in today's heavily regulated industrial environment. For the astute proponent, all the evidence suggests that EIA follow-up has a valuable role to play in good developmental practice, encouraging the integration of environmental perspectives into developmental programmes, the systematic implementation of mitigation, and the triggering of environmental risk responses created by construction activities.

Dr Ross Marshall

Environmental Planning Manager

SP PowerSystems, ScottishPower

tel: 0169 841 3273

email: ross.marshall@sppowersystems.com

Dr Angus Morrison-Saunders

Lecturer in Environmental Impact Assessment

Murdoch University, Australia

tel: 61 8 9360 6125

email: angus@essun1.murdoch.edu.au

Note: Further information on EIA follow-up is available at www.iaia.org/publications.htm

UniS

University of Surrey Centre for Environmental Strategy

Training in Environmental Management and Strategy

The Centre for Environmental Strategy (CES) is a multi-disciplinary research and training centre offering Continuing Professional Development (CPD), distance-learning, part- and full-time programmes of study.

Master's Programmes:

- Corporate Environmental Management**
- Environmental Life Cycle Management**
- Environmental Strategy**
- Sustainable Development**

CES runs flexible modular programmes to develop knowledge and practical skills. Modules may be taken as 'one-offs', on a part-time basis over several years, or full-time over one year to build into an MSc. Topics covered in the programmes include Environmental Management Systems, Environmental Law, Life Cycle Assessment, Sustainable Development, Environmental Business Management, and Environmental Economics. Completion of a programme offers a direct route to Associate Membership of the Institute of Environmental Management and Assessment (IEMA).

Postgraduate Certificate: Environmental Life Cycle Management

Current and future environmental legislation and management systems increasingly require implementation of life cycle approach. This part-time programme will equip you to undertake Life Cycle Assessment (LCA) studies, and apply the life cycle approach in your workplace. The programme is largely distance-learning based, and involves undertaking an LCA study directly relevant to your organisation's interests.

For more details, please contact :

Penny Savill, tel: +44-1483-689047, email: p.savill@surrey.ac.uk. Or visit our website: <http://www.surrey.ac.uk/eng/ces>.