

EIA–EMS link efficiency through Viridor’s ODMP

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Abstract

An ‘operations development management plan’ (ODMP), created by Viridor in a waste management project, links EIA and EMS efficiently for the specific application.

1 The problem

The concern (Y) of a unified and coherent approach to project impacts is explored in a case study from Viridor, in the UK. The objective (Z) of the case study is the link between a project’s *ex-ante* EIA and the *ex-post* EMS, so the main task (X) of the case study is to design that link appropriately. The outcome (Z’) is an ‘operations development management plan’ (ODMP), which should be the implementation of the objective (Z) — Figure 1.

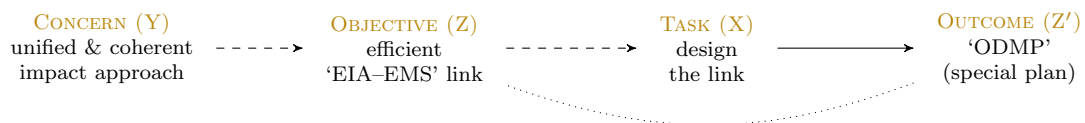


FIGURE 1 The problem of the case study in an ‘XYZ’ configuration (Perdicoulis, 2013, 2010)

2 The concern (Y)

For the sake of efficiency, a *unified and coherent* approach to the environmental impacts of development projects — e.g. power stations, airports, wastewater treatment plants, or quarries — is likely to be preferred over a *fragmented or ‘piecemeal’* alternative. At least this is indicated by the ongoing efforts in many European countries aiming to the integration of (a) the *planning process*, primarily *ex ante* and concerned with whether a particular development should proceed, and/ or how it should be designed for optimum performance, often involving environmental impact assessment (EIA), and (b) the *pollution control process*, mainly *ex post* and focusing on the methods

or techniques required to enable a consented development to operate in a way that protects the environment, in respect of which companies may operate an environmental management system (EMS) (ERM, 2004; GHK Technopolis, 2008). While the two processes have the potential to complement each other around common interfaces such as EIA and EMS respectively, certain hindrances have surfaced and remain as challenges to be resolved — Figure 2.

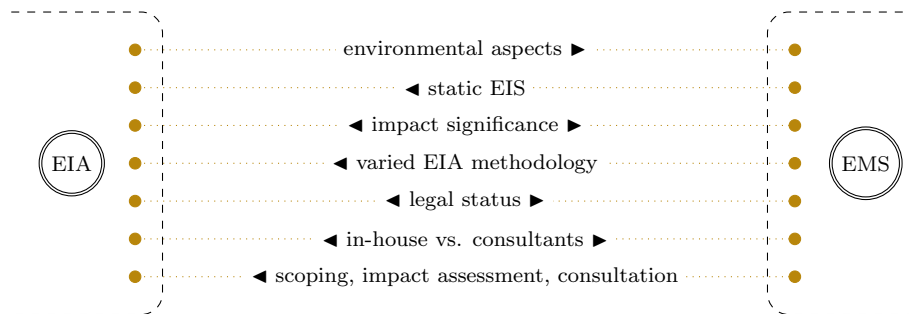


FIGURE 2 Identified pending protocol issues regarding the link between EIA and EMS may require attention (▶) to one or both sides for their resolution; adapted from Perdicoulis (2012)

The pending issues of the EIA–EMS link (Figure 2) are of the *protocol* type — i.e. regarding a system of rules that govern formal procedures such as EIA and EMS. Hence, such issues are capable of affecting the efficiency of the EIA–EMS link, directly or indirectly — for instance, through the reluctance that they may provoke to the developers (Slinn et al., 2007) or through operational constraints — Figure 3.

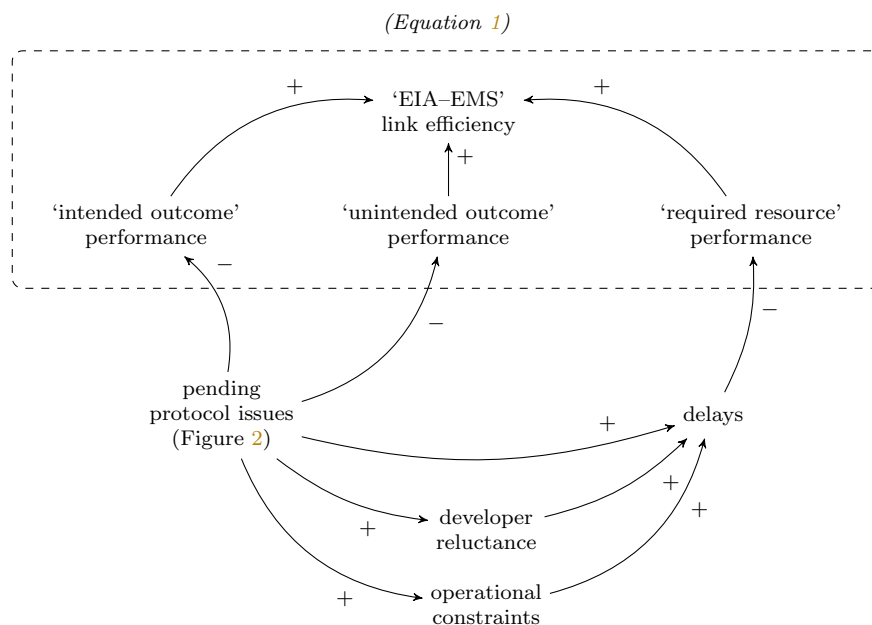


FIGURE 3 The pending protocol issues of the EIA–EMS link (Figure 2) affect the efficiency of the link in more than one (path)way

3 The objective (Z)

The concern (Y) of a unified and coherent approach to project impacts calls for an objective (Z) of an ‘efficient EIA–EMS link’. To facilitate implementation, the general objective translates into a number of more specific requisites, or ‘design intents’, some of which provide valuable *input* to the link, while others are *achievements* of the link — Table 1.

| DESIGNATION | INTENT | CONTRIBUTION |
|---------------------------------------|--|--------------|
| EIA mitigation | Pass the ownership of the actions needed to minimise impacts to those responsible for implementation — i.e. at the operational (as opposed to the ‘design’) phase of the project | Input |
| Environmental risk assessment | Assess and evaluate the key environmental risks which may be posed by the project | Input |
| Experience bank | Enable use of information from past experience to inform the application for the variation of the permit and mitigation proposed by the EIA, thereby informing the EMS (Palframan, 2012) | Input |
| Environmental permit | Provide information to the regulator [Environment Agency] regarding the content of the permit | Achievement |
| Environmental Management System (EMS) | Set out how general and technical [Environment Agency] standards will be achieved during the operation | Achievement |

TABLE 1 Design intents of an efficient EIA–EMS link

4 The task (X)

The pursuit of the general objective (Z) has seen many ‘EIA–EMS link’ interpretations through notable attempts, both in general link frameworks (Perdicoulis, 2012; Perdicoulis and Durning, 2007) and specific but *ad hoc* efforts among various practitioners and academics, albeit without a *universal* satisfactory solution (Perdicoulis et al., 2012).

Along the path of individual innovation initiatives, and with reference to a planning application to extend an existing landfill site, Viridor prepared a specific *operations development management plan* (ODMP) to create an efficient link between the project EIA and the company’s ISO 14001–certified EMS. Seen in context, Viridor regularly develop waste projects in England (Palframan, 2012), which are subject to both the EIA Regulations (HM Government, 2011) and the Environmental Permitting regime (HM Government, 2010b). The latter require that an *environmental permit* be applied for before certain waste management activities can operate. Virtually all landfilling activities require a ‘bespoke’ permit with conditions tailored to the site, rather than a ‘standard’ permit (Environment Agency, 2013a).

Viridor’s ODMP was prepared in parallel with the EIA process, ensuring that (a) the information gathered for EIA was kept ‘live’ and (b) even if different staff were involved during project planning and operation, there would be a means to ensure that EIA actions (e.g. mitigation) were communicated and acted upon later in the project lifecycle.

5 The outcome (Z')

The ODMP features the links (i.e. information flows) between the design intents — Table 1. A notable feature is a feedback loop that provides for continuous improvement: relevant data gathered through the ongoing operation of the EMS can feed into the ‘experience bank’, to be used in the environmental studies undertaken for new development applications — Figure 4.

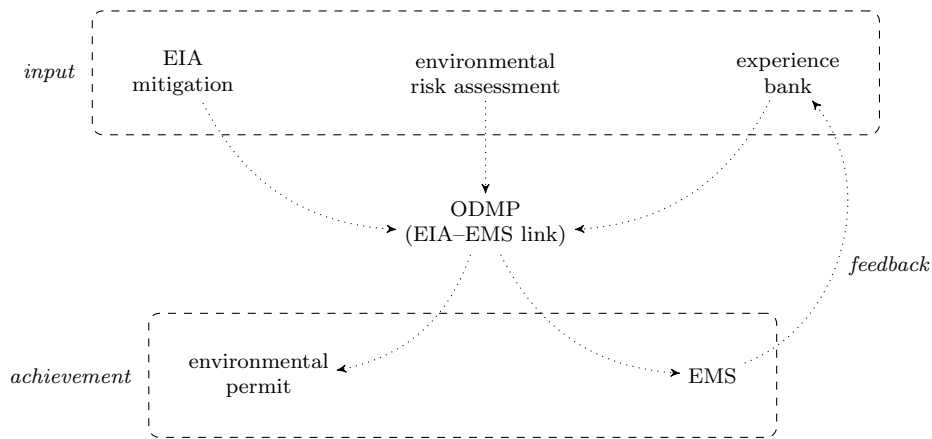


FIGURE 4 Information flows of the ODMP, including valuable feedback for continuous improvement

6 Assessment

In the accounting perspective of Equation 1, the ODMP appears to be efficient because: (a) it achieves its intended outcome to link EIA and EMS; (b) it appears to have no unintended outcomes (e.g. side effects); (c) re-uses information and thus saves valuable resources — i.e. time and money. However, being a succinct mathematical expression of efficiency, Equation 1 fails to capture important dynamics such as (a) the ODMP’s learning capacity (Figure 4), and (b) *the way* through which the ODMP achieves its objective: not by resolving any of the pending protocol issues (Figures 2 and 3), but by setting a ‘hardwired’ direct input–output link between EIA (mitigation) and EMS — Figure 4.

$$\underbrace{\text{Efficiency}}_{\text{of the EIA-EMS link}} = \frac{\overbrace{\text{Intended Outcomes}}^{\text{achieved by the ODMP}} - \overbrace{\text{Unintended Outcomes}}^{\text{produced by the ODMP}}}{\underbrace{\text{Resources}}_{\text{required by the ODMP}}} \quad (1)$$

Besides the efficiency of the ODMP (Equation 1), the process of its creation warrants two complementary assessments: effectiveness and fulfilment (Figure 5). Indeed, the outcome Z' of the process (Figure 4) comes very close to the objective Z (Table 1), so the solution is efficacious. And since the ODMP (Z') provides a link between EIA and EMS, it fulfils the concern (Y) of a ‘unified and coherent’ approach to the environmental impacts of development projects.

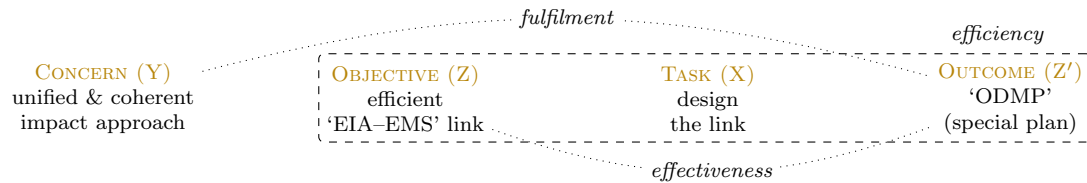


FIGURE 5 Efficiency of the ODMF, alongside the ‘fulfilment’ and ‘effectiveness’ assessments

7 Discussion

The ODMF could be described as an environmental management plan (EMP) — a document which is sometimes considered as a less formal substitute for EMS which helps ensure that proposed mitigation measures are implemented. Marshall (2004) describes environmental management plans as an ‘EMS-lite’ approach, because they are used by some companies as a simpler and less bureaucratic alternative to a formal EMS. In Viridor’s case, the ODMF links to the externally audited EMS/ BMS rather than substituting for it, providing a more robust approach.

In a wider context, as governments move towards a stronger emphasis on self-regulation (CEC, 2007; HM Government, 2010a)¹, regulators are moving towards a risk based approach which allows companies demonstrating sound management to be inspected less frequently and at lower cost (Environment Agency, 2013b). There is a growing emphasis on the use of EMS to manage not only environmental impacts but also ensure legal compliance — an example being the ‘EMS Plus’ trial which encourages companies to strengthen compliance arrangements beyond ISO 14001 (IMPEL, 2012). Companies which recognise this development and join-up their use of existing tools are likely to benefit from the efficiency gained — i.e. sound control with fewer inspections.

8 Conclusion

Viridor’s ODMF links EIA and EMS in an efficient way, notably through the use of information. The idea (e.g. link protocol) is transferable to other organisations, who could benefit from using their EIA both as a starting point for a permit application (or equivalent disclosure to the regulator) and for formulating practical arrangements for sound management (as part of the EMS) in anticipation of the site’s operation. The Viridor case also suggests advantages in investing resources to prepare a link document even in the absence of certainty that development will proceed.

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¹NB: The Government has recently published a Regulators Code which emphasises that regulators should support economic growth in carrying out their activities (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/300126/14-705-regulators-code.pdf). The Infrastructure Bill which is currently going through the House of Lords will make this consideration a statutory requirement.

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