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## 7. Environmental Impact Management

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Summary:

This procedure focuses on the management and reporting of high and medium priority environmental impacts associated with the project.

### 7.1. Summary

#### 7.1.0.1.

This procedure will assist Delivery Teams to appropriately manage their medium and high priority environmental impacts. It also requires teams to continue to document and act where appropriate in relation to their low priority and positive environmental impacts and produce appropriate environmental reports.

### 7.2. Procedural Overview

#### 7.2.0.1.

This procedure focuses on the reporting and record keeping of the environmental impacts associated with the project.

### 7.3. Procedure

#### 7.3.0.1.

Environmental Impact Management is the POEMS approach for assessing impacts alongside mitigating measures.

#### 7.3.1. Step 1: Document low priority environmental impacts

##### 7.3.1.1.

On completion of [EMP04 Impact Screening and Scoping](#) [1], impacts will have been prioritised into 3 categories:

1. Low Priority;
2. Medium Priority;
3. High Priority.

##### 7.3.1.2.

All low priority environmental impacts shall be listed in the Report. Although no further analysis of them is necessary at this point, the priority evaluation of these impacts should be reviewed throughout the life of the project.

#### 7.3.2. Step 2: Consider medium priority and high priority environmental impacts

##### 7.3.2.1.

Where Procedure [EMP04 Impact Screening and Scoping](#) [1], [2] has shown that there is a potential for adverse environmental impacts of medium priority or high priority, then appropriate actions to eliminate, reduce and/or monitor the associated environmental aspects, shall be formulated. The categorisation of impacts into medium priority and high priority will assist Delivery Teams to make appropriate management decisions for addressing the impacts.

##### 7.3.2.2.

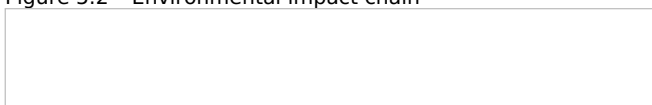
For each impact, or group of similar impacts, evaluated as medium or high priority both the assessment methodology and the assessment criterion adopted must be identified. Where a number of assessment methodologies exist it will be necessary to provide a justification for the one chosen. However, in some cases it may be advisable to use more than one assessment method for the same issue to provide corroboration of the results. This shall ensure that readers of the Environmental Impact Management Report, or Environmental Case Report can understand the level of reliance that can be given to any forecasts or predictions used.

An assessment of the life cycle implications of mitigation measures can be useful where proportional and relevant

##### 7.3.2.3.

The Source-Pathway-Receptor Model illustrated below, may be useful in formulating appropriate mitigation measures for both medium priority and high priority impacts.

Figure 5.2 – Environmental impact chain



##### 7.3.2.4.

The cause (“**source**”) of the environmental risk follows a route (“**pathway**”) to the ecosystem (“**receptor**”) which could come into contact with the environmentally damaging/polluting substance. A “pollution linkage” occurs when all three components of the Model are in place. Therefore, elimination of any of these three components will break the pollution linkage and mitigate or eliminate the environmental risk. Attention should be placed initially at eliminating or reducing the environmental impact at source before examining

ways of removing/protecting the pathway or receptor. Form [Environmental Feature Matrix](#) [3][4], will help with this. Actions identified at this stage shall be recorded in the Environmental Impact Management Report, Environmental Case Report, Objectives and Targets register and Operational Controls Log as appropriate.

#### 7.3.2.5.

If, even after this consideration, it is established that no mitigation measures are available to counter any residual adverse impact, then the nature of the residual risk shall be recorded and explained in the appropriate Report.

#### 7.3.2.6.

Note - environmental management has not failed in any way if environmental impacts cannot be removed or mitigated against. Providing there is an operational case that outweighs the environmental issues, the project can still proceed provided that the POEMS assessment has been conducted and provides evidence that the environmental impacts have been considered. This will demonstrate that practical and reasonable measures have been put in place to eliminate all but the unavoidable adverse environmental impacts. It is here where there may be benefits from managing 'Normal' impacts separately to the abnormal and emergency events that may be experienced In-Service. Care must be taken to identify aspects that can be controlled by procurement Delivery Teams, and full recording and justification of decisions must be carefully described.

### **7.3.3. Step 3: Consider cumulative impacts**

#### 7.3.3.1.

Where an impact is unique to each life cycle stage the assessment of that impact can be straightforward and in some cases may even be trivial. However, in some projects the importance of individual impacts may only become evident when the cumulative effects are considered. In most cases this is taken care of by the frequency and duration element that shall be entered in Form [Environmental Feature Matrix](#) [3].

#### 7.3.3.2.

There may be occasions when a project has a number of impacts that occur in the same life cycle stage which arise from the same activity. This could include burning of fuel, consumption of engine oil and use of electricity all of which contribute to CO2 emissions to air. Where mitigation measures are introduced which mitigate collectively, it may be more sensible to group these impacts and discuss the aspect (e.g. emissions to air from maintenance which are mitigated by a longer maintenance cycle).

### **7.3.4. Step 4: Identify ways to enhance any positive environmental impacts**

#### 7.3.4.1.

If having undertaken Procedure [EMP04 Impact Screening and Scoping](#) [5], positive environmental impacts have been identified, ways of enhancing these positive effects shall now be identified and recorded for inclusion in the appropriate Report.

### **7.3.5. Step 5: Produce Report**

#### 7.3.5.1.

There are many formats that the EIM Report may follow and it shall be used either as a specification for commissioning assessments of environmental impacts or for use as a guide for internal Environmental Impact Management. A full claims arguments and evidence approach can be described and added to a combined Safety and Environmental Case Report, or Environmental Case Report. A copy of the EIM Report shall be stored in the project's Environmental Case.

### **7.3.6. Step 6: Prepare Environmental Impact Statement**

#### 7.3.6.1.

The Environmental Impact Statement shall be presented at the front of the Environmental Case report. Essentially, the Environmental Impact Statement is a non-technical summary of the Environmental Impact Management findings and therefore should avoid technical jargon and lengthy explanations. It shall cover the key points of the issues covered in the assessment along with an overview of any recommended mitigation measures. A copy of the Environmental Impact Statement shall be stored in the project's Environmental Case. Formats of Environmental Impact Statement may vary, however the following headings shall be included as a minimum requirement:

1. Description of the equipment or service;
2. Life cycle stages covered;
3. Environmental features, adverse and beneficial impacts;
4. Review of environmental impacts including any residual impacts;
5. Outline of mitigation measures;
6. Those responsible for managing mitigation measures.

### **7.3.7. Step 7: Approval and Authorisation of an Environmental Impact Statement by the Environmental Delegation Holder Team Leader**

#### 7.3.7.1.

The Environmental Impact Statement must be authorised by the member of the Project with formally-delegated Environmental responsibilities, at a particular point in a project's life cycle. This indicates their satisfaction with the progress of the project's Environmental Management System, and specifically the Environmental Impact Management Processes. Authorisation by the environmental delegation holder also indicates their acceptance that the environmental risks described in the Environmental Impact Statement and associated with the project, and any control or mitigation measures, are appropriate for that stage of the project's life cycle. The Authorised Environmental Impact Statement shall form an auditable project record.

#### 7.3.7.2.

Before authorisation, the environmental delegation holder shall ensure the satisfactory resolution of any deficiencies or observations raised through the project's Environmental Committee or by parties engaged by the Project to undertake independent audits or assessments.

## 7.4. Responsibilities

### 7.4.0.1.

The Delivery Team Leader is responsible for ensuring adequate resources are dedicated to the management of safety and environmental protection within their area of responsibility, and for facilitating appropriate arrangements to discharge responsibilities relating to this procedure in an efficient and effective manner.

### 7.4.0.2.

Responsibility for ensuring those arrangements are implemented, and achieve outputs which fully satisfy legislative and departmental requirements for safety and environmental protection (including compliance with this procedure), shall be formally delegated in writing to a named, competent individual within the team.

## 7.5. Procedure Completion

### 7.5.0.1.

It is unlikely that the Delivery Team will carry out and report the assessments unless the situation is straightforward. Delivery Teams can task advisors or consultants to conduct an Environmental Case Report. It may be possible to involve potential system suppliers/contractors as they may have existing studies available, or even to require system suppliers/developers to provide Environmental Case Reports to the Delivery Teams as part of any contractual arrangements.

## 7.6. When

### 7.6.1. Initial Application

#### 7.6.1.1.

For complex or strategically important capabilities an initial EIM Report may be carried out as early as the Concept Stage prior to Initial Gate approval. However, in most cases the EIM Report is likely to commence in the Assessment Stage and some may not be necessary until the Demonstration or even the Manufacturing Stage.

#### 7.6.1.2.

Where an incremental or structured Environmental Case Report has been developed, it is possible the Environmental Case Report will need to be initiated at each stage of CADMID or CADMIT.

### 7.6.2. Review

#### 7.6.2.1.

The outputs of this procedure will require periodic review and revision throughout the lifetime of the project. This is relevant where objectives or targets have been set early within the project for later life cycle stages. The appropriate timings for such reviews will be determined through following Procedure [EMP09 - Continuous Review](#) [6]. Timings of the reviews should be recorded in the Environmental Management Plan.

## 7.7. Required Inputs

### 7.7.0.1.

#### The 'Common Documents'

1. User Requirement Document;
2. [JSP 418 \(UK legislation and MOD policy\)](#) [7];
3. [DSA 01.1 Defence policy for health, safety and environmental protection](#) [7]

Outputs from Procedures:

1. [EMP01 - Environmental Management Planning](#) [8]
2. [EMP02 - Stakeholder communications](#) [9]
3. [EMP04 - Impact Screening and Scoping](#) [5]

## 7.8. Required Outputs

### 7.8.0.1.

At this point the Environmental Case, should be largely complete and contain the following documentation:

1. Environmental Management Plan;
2. Suitably Qualified and Experienced Personnel meeting minutes;
3. Full justification of decisions made;
4. The fully completed Environmental Impact Statement (the non-technical summary based upon the EIM Report);
5. The Environmental Case Report.

### 7.8.1. Records and Project Documentation

#### 7.8.1.1.

Where relevant, the outputs from this procedure should feed into the following:

1. System Requirement Document (SRD) - for any specific environmental performance requirements;
2. Customer Supplier Agreement (CSA) - to document agreements on environmental studies to be delivered by the Delivery Team;
3. Through Life Management Plan (TLMP);
4. Input report for Initial or Main Gate.

A copy of the information produced from following this procedure shall be stored in the project's Environmental Case.

## 7.9. Further Guidance

### 7.9.1. Aligning Safety and Environment

#### 7.9.1.1.

The key alignment opportunity in [EMP06](#) [10] shall be to ensure that opportunities for combining environmental and safety reporting are explored and where possible are achieved by the same action.

### 7.9.2. Guidance for Different Acquisition Strategies

#### 7.9.2.1.

The objectives for this procedure apply to all acquisition strategies. It is MOD policy that the same standards are met, and that assurance that these standards have been met can be demonstrated for all projects. In many cases EIM will be completed by contractors and/or equipment suppliers that have knowledge of the specific issues and areas.

### 7.9.3. Legacy Systems

#### 7.9.3.1.

Outputs from this procedure for legacy systems should be neither over-engineered nor incomplete (the outputs from [EMP02](#) [9], [EMP03](#) [11] and [EMP04](#) [1] will help define the most appropriate extent and nature of the work required). In all cases it will be important to ensure that all applicable legislative and other requirements have been identified to confirm that all appropriate mitigation measures have been identified and shared with the stakeholders or are now agreed and actioned. Only in cases where a mid-life update or similar is planned would there be a need to look at possible elimination of impacts. Thus it will be seen that for many legacy systems, with limited life, it will be appropriate to concentrate on disposal arrangements and impacts especially where there is no evidence of environmental incidents or accidents associated with the system.

### 7.9.4. Warnings and Potential Project Risks

#### 7.9.4.1.

If this procedure is not completed, and reviewed (see [Procedure EMP09 – Continuous Review](#) [6]), in a timely manner there will be an increase in risk that subsequent work will go ahead with unrecognised environmental liabilities. Any short comings in this could compromise Main Gate procedures and approvals. In addition, short comings could also result in costly reworks, especially where opportunities to influence design decisions are missed.

### 7.9.5. Environmental Case Report Guidance

#### 7.9.5.1.

#### Statement of Need

Information about the need for the equipment or service and any alternatives that have been considered (the URD (User Requirement Document) and SRD (System Requirement Document) should form the basis of this).

#### 7.9.5.2.

Description of the Product, System or Service and Potential Priority Impacts should include:

1. The methodology or methodologies that have been used for the assessment including a summary of the scope of the assessment;
2. A description of the equipment's or service's physical characteristics;
3. A description of the main characteristics and impacts of any proposed testing, trials or demonstration activities;
4. A description of the main characteristics and impacts of the manufacturing processes, for instance the nature and quantity of the materials used;
5. An estimate, by type and quantity, of expected releases and emissions (including water, air and soil pollutants, noise, vibration, light, heat and radiation) from the in-service stage for the system. NB the in-service stage includes: Operation, (Normal, Abnormal, Emergency) and Maintenance (Routine, Deep/Repair, Up-grade);
6. Consideration of issues and impacts associated with the disposal of the system at the end of its life highlighting where impacts may exceed regulatory requirements.

#### 7.9.5.3.

For each of the Priority Impacts identified above the Report should include:

1. Reference to relevant legal and policy requirements highlighting where impacts may approach or exceed regulatory thresholds;
2. Quantitative information on the predicted scale of each impact (allowing for the incorporated mitigations);
3. Consideration of how individual impacts may combine to produce cumulative effects.
4. A description of receptors where there is the potential to be significantly affected by the project (in particular - population, fauna, flora, soil, water, air, climatic factors, material assets (including heritage), and any interaction between them);
5. A description of the forecasting methods used;
6. An indication of any difficulties (technical difficulties or lack of know-how) encountered in compiling the required information;
7. An outline of any missing or incomplete knowledge.

### 7.9.6. Suggested content for EIM Report

#### 7.9.6.1.

1. Statement of Need
  1. Information about the need for the equipment or service and any alternatives that have been considered (the URD (User Requirement Document) and SRD (System Requirement Document) should form the basis of this).
2. Description of the Equipment or Service and Potential Priority Impacts
  1. The methodology or methodologies that have been used for the assessment including a summary of the scope of the

- assessment.
- 2. A description of the equipment's or service's physical characteristics.
- 3. A description of the main characteristics and impacts of any proposed testing, trials or demonstration activities.
- 4. A description of the main characteristics and impacts of the manufacturing processes, for instance the nature and quantity of the materials used.
- 5. An estimate, by type and quantity, of expected releases and emissions (including water, air and soil pollutants, noise, vibration, light, heat and radiation) from the in-service stage for the system. NB the in-service stage includes: Operation, (Normal, Abnormal, Emergency) and Maintenance (Routine, Deep/Repair, Up-grade).
- 6. Consideration of issues and impacts associated with the disposal of the system at the end of its life highlighting where impacts may exceed regulatory requirements.
- 3. For each of the Priority Impacts identified above the Report should include:
  - 1. Reference to relevant legal and policy requirements highlighting where impacts may approach or exceed regulatory thresholds.
  - 2. Quantitative information on the predicted scale of each impact (allowing for the incorporated mitigations).
  - 3. Consideration of how individual impacts may combine to produce cumulative effects.
  - 4. A description of receptors where there is the potential to be significantly affected by the project (in particular - population, fauna, flora, soil, water, air, climatic factors, material assets (including heritage), and any interaction between them).
  - 5. A description of the forecasting methods used.
  - 6. An indication of any difficulties (technical difficulties or lack of know-how) encountered in compiling the required information.
  - 7. An outline of any missing or incomplete knowledge.
- 4. Mitigation and monitoring
  - 1. Details of mitigation measures that can be incorporated into the design of the proposed development.
  - 2. Details of mitigation measures that can be applied to the system to reduce environmental impacts.
  - 3. A list of any potential mitigation measures that it has not been possible to include, and the reasons why.
  - 4. Statement of any residual impacts.
  - 5. Suggested monitoring regimes.
  - 6. Suggested plan for undertaking any suggested mitigation measures.
  - 7. An indication of any difficulties (technical difficulties or lack of know-how) encountered in compiling the required information.
  - 8. Consideration of any positive environmental impacts the project may have and ways in which these can be optimised.
- 5. Conclusion
  - 1. Conclusion that outlines for each known or potential priority impact whether:
    - 2. Suitable mitigation is identified; or
    - 3. No suitable mitigation is available: the EIM Report should provide evidence that all reasonable and practicable alternatives were explored in a structured and documented manner; and
    - 4. The nature and scale of any residual impacts.

#### **7.9.7. Checklist for EIM Report**

##### 7.9.7.1.

EIM Reports can vary widely in layout and content. However, the list below can be used to check that the Report meets existing good practice.

1. Does the report include a systematic approach to the gathering and analysis of information?
2. Is the information presented in a clear, comprehensive and objective manner?
3. Is there a relatively concise main report that draws on the technical studies and summarises them as necessary?
4. Is there sufficient cross referencing for the reader to make the links between the Non-Technical Summary (EIS), the main report, appendices, and any separate studies?
5. Is the attention given to environmental issues proportional to their potential impacts, and are those aspects with insignificant impacts also identified?
6. Are mitigation measures presented as a prioritised list?
7. Are mitigation measures described in appropriate detail and timetabled?
8. Does it state the means by which monitoring will be carried out?
9. Are the methods by which the analysis was carried out and the EIM Report prepared explained?
10. Are the credentials of the authors/contributors involved stated?
11. Are detailed technical studies contained in appendices?
12. Is the 'Non Technical Summary' (EIS) a summary in every-day language?

Note: The above has been developed using existing good practice from a range of Standards Bodies and Government Departments including the MOD.

#### **7.10. Version Control**

##### **7.10.1. Version 2.3 to 3.0 uplift**

###### 7.10.1.1.

Major uplift from the Acquisition System Guidance (ASG) to online version. POEMS has undergone major revision. Refer to the [POEMS Transition Document](#) [12] for details.

##### **7.10.2. Version 3.1 to 3.2 uplift**

###### 7.10.2.1.

Update to EFM Matrix links to point to new SP EFM Matrix as part of the SP Tool release.

##### **7.10.3. Version 3.2 to 3.3 Uplift**

###### 7.10.3.1.

Minor text changes to align with ASP taxonomy.

##### **7.10.4. Version 3.3 to 3.4 Uplift**

###### 7.10.4.1.

Text change replacing Project Team with Delivery Team.

Text changes to align with EMP04 update.

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- [5] <https://www.asems.mod.uk/guidance/poems/emp04#>
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