



# Achieving Environmental Assurance



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## Overview

- Rising importance of the environment, drivers and influences
- MoD & environment
- MoD environmental approach to projects
- POEMS
  - Key POEMS components
  - Effort and requirements
  - Approaches





# Why Consider the Environment?

The *Environment* is an increasingly important issue

- Scientific Research
- Societal Awareness
- European Union
- UK Government
- Economics - Business
- Insurance Premiums
- Information Availability & Accessibility





## Environment and the MoD

### **Secretary of State's for Defence Safety, Health and Environmental Protection in the Ministry of Defence (Dec 2006):**

*“.... and protecting the environment through the implementation of sustainable development policies.”*

*“I expect the Ministry of Defence and the Armed Forces in their organisation and processes to:*

*Ensure that in the acquisition of materiel and equipments of all kinds, safety and environmental management begins at the definition stage and is carried forward through service to disposal. This includes all aspects of maintenance and operation.”*



## MoD Response – POEMS

### ***Project-Orientated Environmental Management System (POEMS) 2.1e May 2005***

To assist in the management of environmental performance through the identification of potential / actual environmental impacts and risks associated with equipment and systems acquisition projects and their elimination or effective management throughout the life cycle of the project.

POEMS is based upon ISO 14001.



## POEMS overview

- Applicable to DE&S Project Teams (IPTs), contractors or consortia working for them;
- Applies to all stages of equipment / system CADMID life cycle including development, trials and end of life disposal;
- Is aligned with the main phases & stages within the CADMID life cycle with opportunities to combine with safety, and health & safety, where practicable;
- Does not seek to directly manage the operational use of the equipment, but should assist the operational community in managing environmental impacts arising from equipment use;
- Is designed to encourage a proportional response to the size, complexity and environmental challenge of projects;
- Is not mandatory for defence suppliers, however meeting POEMS objectives is increasingly advocated by IPTs.



# The Environmental Impact Assessment Process

## **Screening & Scoping**

Identify project activities, environmental aspects and associated environmental impacts

## **Define Baseline**

Establish scope, legislation, standards to comply with and collect and collate applicable data and information

## **Predict / Evaluate**

Assess the environmental impacts using gathered data and results of screening and scoping study

## **Mitigation**

Identify measures to eliminate, reduce or manage adverse environmental impacts

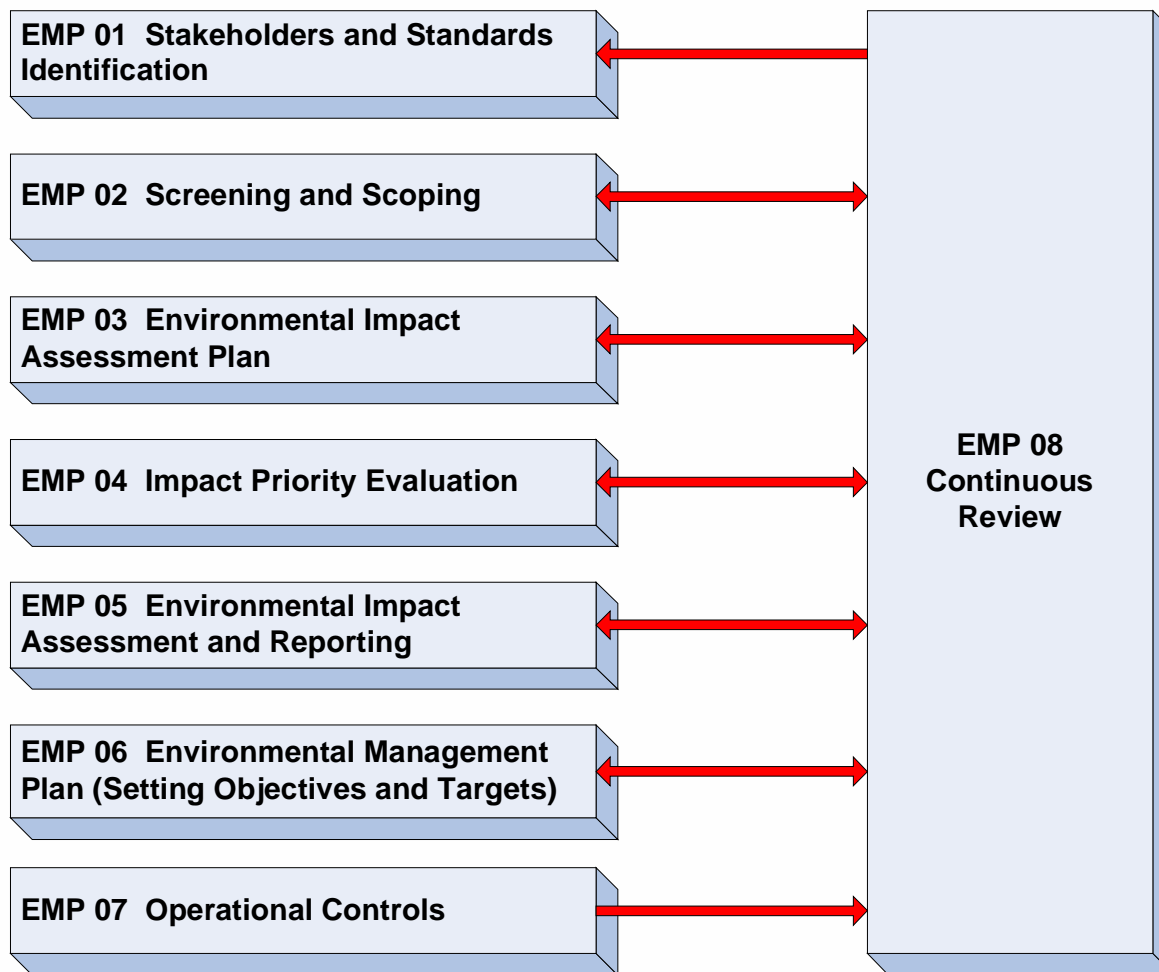
## **Report**

Present methodology, assumptions and findings in an EIA report

Source: POEMS Release version 2.1e May 2005



# POEMS - What is involved?



Source: POEMS Release version 2.1e May 2005



# Key Components

## *1: Standards and Stakeholders Registers (EMP01)*

- Identify, document and maintain information
  - on applicable legal requirements and MoD policy requirements;
  - Stakeholders - their requirements and contribution.



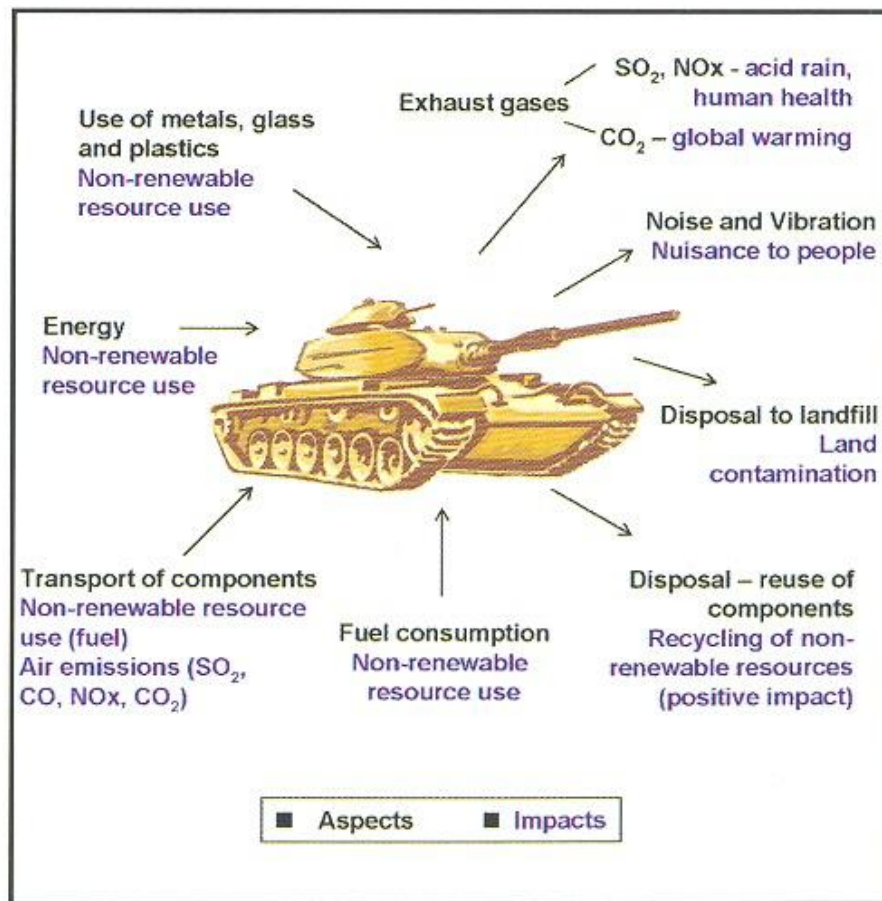
# Key Components

## *2. Screening and Scoping Study (EMP02)*

- to gain an understanding of the Project's activities.
- to identify environmental aspects of the activities, that occur within the project scope, e.g in-service during normal and abnormal situations and in emergency events and other aspects that could be of influence e.g. financial risk, PR, prosecution etc., as well as the environmental impacts arising from them.



# Environmental Aspects & Impacts



Source: An Introduction to Environmental Management in the MOD Acquisition Process Issue 2 July 2005



## Key Components

### *3. Impact Priority Evaluation (IPE) (EMP04)*

- to determine the significance of the environmental impacts arising from the identified environmental aspects, based on technical analysis and judgement.
- Involves establishing or estimating:
  - the frequency at which the environmental impact occurs or is likely to occur;
  - the severity of the environmental impact – the degree of environmental damage that the impact represents or could represent.



## EIA Example

- *Environmental Aspect:* In-service: Consumption of fuel.
- *Main Direct Environmental Impacts:* Non-renewable resource use.
- *Supporting information:* Single Vehicle. Fuel tank capacity: 120 litres. Consumption: 35 litres / 100 km. Envisaged life expectancy of vehicle = 20 years. Planned utilisation = 7,500km per annum. Estimated fuel consumption = 2,625 litres per annum, 52,500 litres in lifetime of a single vehicle.



# Evaluation

		Frequency Designation					
Severity Designation		1	2	3	4	5	6
	A (=1)	1	2	3	4	5	6
	B (=2)	2	4	6	8	10	12
	C (=3)	3	6	9	12	15	18
	D (=4)	4	8	12	16	20	24
	E (=5)	5	10	15	20	25	30
	F (=6)	6	12	18	24	30	36

The priority of the impact is determined by the formula:  

$$\text{Impact Priority} = \text{Impact Frequency} \times \text{Impact Severity}$$

**Frequency:** Occurs at least once in a 24 hour period

**Severity:** Notable but limited environmental impact, negligible but widespread

Value	Impact classification
1 to 10	Low Priority
12 to 20	Medium Priority
24 to 36	High Priority



## Key Components

### *Cumulative Impacts & Mitigation Measures:*

- Consideration of cumulative impacts
- Identification / establishment of measures to eliminate or where this is not possible, mitigate or manage the environmental aspect giving rise to the environmental impact or the environmental impact itself: e.g.
  - At early stages of the project, establish engine type e.g. EURO 4, explore feasibility of upgrading vehicle engines or other fuels to reduce its fuel consumption.
  - Investigate the feasibility of including economic driving practices within the body of training deliverables to aid in reducing MoD fuel consumption and would may also have potential to extend vehicle servicing intervals.



## Effort & Requirements

Influenced by:

- Complexity of equipment or system;
- Single equipment or group of different equipments;
- If project is 'stand alone' or is a 'system of systems'
- COTS / MOTS / PFI / PPP / collaborative projects / UOR
- Phase of the CADMID cycle
- Quality / extent of EIA from supplier
- Alignment with Safety

Example: Single vehicle, In-service & Disposal CADMID Phases only, EMP01 to EMP05 = between 15 and 20 working days



## Approaches

- Key: Meeting POEMS objectives, approval of approach taken to fulfil them by TES (ASEG) e.g. development spreadsheet approach to record standards and stakeholders information (EMP01);
- Opportunities to streamline i.e. to direct resources to stage(s) of project CADMID life cycle that have potential to cause the highest environmental impact;
- Innovative approaches e.g. generic approach with grouping of legacy fleet, using representative vehicle in EIA.



## Summary

- The Environment is and will continue to become an important consideration when procuring equipment and systems;
- Drivers and influences are numerous but legislation and policy will bring increasingly stringent requirements;
- MoD is committed to the protection of the environment;
- POEMS introduced by the MoD to enhance environmental performance and reduce environmental liabilities of equipment and systems throughout their CADMID life cycles;
- Standards identification, the screening and scoping study, the IPE and mitigation measures are key components to determine the significance of the equipments' environmental impacts and improve environmental performance;
- Effort required dependent on range of factors;
- Some flexibility, opportunity for innovative solutions.



# And Finally.....

