



Global
Standards™

Reducing risk ✓ people
integrity
processes

Environmental Management Systems

Training

Aligned to ISO 14001:2015

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- Are there any fire drills planned today?
- Should a fire alarm be sounded, everyone should evacuate the building to the muster point following the evacuation instructions.
- Refreshments are provided throughout the day and there will also be comfort breaks at approx. 10.30am and 3.00pm
- Lunch break will be 12.30 to 1.00pm, with training commencing at 1.05pm (please be prompt)
- Mobile phone should be switched to silent, but it is fully accepted that calls may need to be taken from time to time, if that is the case please leave the room to take your call



- The style of training that will be delivered over the course of the next 3 days will be;
 - Presentation around power point slides
 - Demonstration of elements of an EMS through an FQM software product
 - Open dialogue of questions and answers through out the training. Please don't wait to be asked if you understand, please ask any questions you wish. If I can not answer I will ensure to provide you with an answer by email or follow up call
 - Open dialogue between peers to gain an understanding of the differences of locations within the agency, positions within the agency and the behaviours within the room





**About
Us**

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Oil and Pipelines Agency

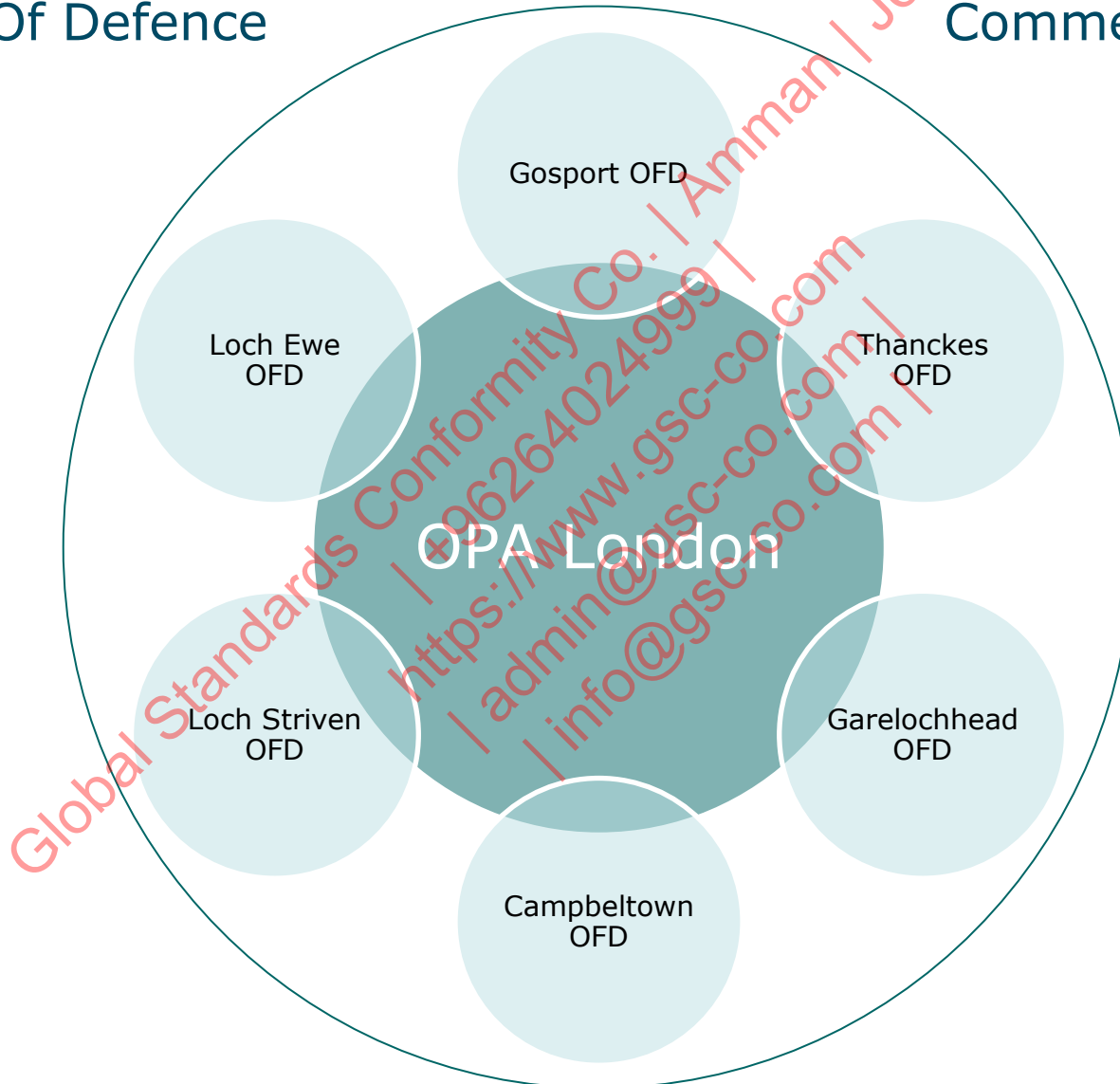
The OPA operate 6 Oil Fuel Depots (OFD) around the UK and their aim is to;

- provide a marine fuel receipt, storage, delivery and jetty service
- manage, operate and maintain the OFDs safely and securely in accordance with all regulatory requirements
- manage and maintain those sites previously in GPSS which were not part of the recent GPSS sale, safely and efficiently

Is this correct?

Ministry Of Defence

Commercial Clients



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- **ISO 14001:2015 Introduction** (Day1)
 - ✓ Background and Evolution of Standard
 - ✓ Overview of Principles
 - ✓ Overview of the Family of Standards
 - ✓ Detailed Review of the Requirements
- **Implementing an EMS** (Day 2)
 - ✓ Gap Analysis Process
 - ✓ Roles and Responsibilities
 - ✓ System Design, Development and Implementation
 - ✓ Example systems
 - ✓ Certification Process
- **Implementing an EMS** (Day 3 – Half day)
 - ✓ Management of the system
 - ✓ Development workshop
 - ✓ Questions / Answers

- Get an insight in to what ISO14001:2015 is
- Greater understanding of an Environmental Management System
- The benefits of an EMS system
- How it may apply to your company
- Roles and Responsibilities
- Provide you with information on the requirements of the standard
- Understand what EMS documentation is needed (minimum)
- Give understanding of Environmental Legislation
- What a good implementation looks like
- What a Electronic system looks like
- Understand how to prepare and manage a system for certification
- Why continual improvement is important



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Environmental Management System (EMS)

Introduction Training (day 1)

Aligned to ISO 14001:2015

Delivered by: Karam Malkawi

European public authorities spend each year over €1,800 billion on goods and services (14% -16% of the GDP). Directing this spending power towards the purchase of greener products and services can:

- Achieve huge direct environmental benefits
- Help drive the market for greener products
- Result in considerable cost saving
- Set an example for corporate and private consumers

For example, the EU Public authorities buy 2.8 million computers annually, which is 12% of the European computer market. If the European market could be moved to producing slightly more efficient computers then over 8 million tonnes CO₂ could be saved - equivalent to the emissions of almost 1 million people.

- ✔ An international standard for requirements of an environmental management system.
- ✔ Produced by the International Organisation for Standardisation.
- ✔ Adopted by greater than 300,000 companies globally
- ✔ Used as basis for third party and accredited certification of environmental management systems.

Part of an organisation's management system used to develop and implement its environmental policy and manage its environmental aspects.

(ISO 14001:2015)

- ✔ A demonstrable system to direct and control an organisation with regard to the environment
- ✔ What your company does to minimise the harmful effects on the environment caused by its activities
- ✔ To conform to applicable regulatory requirements
- ✔ To manage its environmental risks
- ✔ To achieve continual improvement in its environmental performance

- ✔ ISO 14001 is a generic standard
- ✔ Can be applied to any organisation large or small, using any product or service, in any sector of activities
- ✔ You can be a private business, government department. It does not matter!
- ✔ The ISO 14001 standard tells you what the requirements are but not how to apply them. This is because every organisation is different in some way and it must interpret how to meet the requirements of the standard from their risks to the environment.
- ✔ The 2015 version of the standard provides much more flexibility for the organisation;
 - Decrease the emphasis on Documentation
 - Increase the emphasis on Achieving Value for the Organisation and its customers
 - Increase emphasis on Risk Management to achieve objectives

ISO 14001 was developed in response to the environmental problems that the world face today. First published in 1996, the latest improved version is ISO 14001:2015 and was only released in September 2015. The new standard takes the basis of the 2004 standard and brings it in line with the Risk and Process approach to management systems and uses the Annex SL platform;

- Mandated by ISO's Technical Management Board (TMB)
- High level structure, identical core text and common terms and core definitions for use in all Management System Standards
- Purpose - Enhance the consistency and alignment of different management system standards
- Organisations who implement a single system addressing multiple standards (e.g. QMS, EMS, HSMS, ISMS etc.) will see the most potential benefit

As of December 2014 – more than 10,000 companies in the UK have been certified to ISO 14001, with companies in over 138 countries taking up certification and many more apply the principals of an EMS but choosing not to have their system externally certified.

It is the most recognised Environmental Standard globally

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- Improve management of environmental impacts
- Set targets to reduce energy use, water use & waste to landfill
- Initiate and maintain procedures to improve efficiencies including:
 - Use a quality approach to drive continual improvement
 - Use of less evasive chemicals
 - Risk management approach to Environmental incidents
 - Work with contractors to ensure your expectations are driven down through the supply chain
 - Preferred business travel option
- Define key responsibilities for achieving targets
- Promote a culture of environmental awareness among staff and contractors to encourage good adoption of the EMS, but also gain knowledge on improvement ideas
- Monitor and measure environmental performance against key indicators
- Regularly assess progress towards achieving set objectives

- Ensure due diligence and ongoing consideration of legal and other environmental requirements
- Assist with environmental reporting as required by DECC
- Driven by government policy and communicates good practise to industry and communities
- Contribute to preferred employer status
- Achieve cost savings
- Show leadership, nationally and/or internationally
- Obtain competitive advantage
- May be required by clients, customers and/or regulators
- Build goodwill from customers, employees and stakeholders

There are moral, legal and financial reasons why MOD has to strive to make its equipment environmentally robust throughout the lifecycle

MOD and other UK employers have a legal duty to ensure that their activities do not cause environmental damage

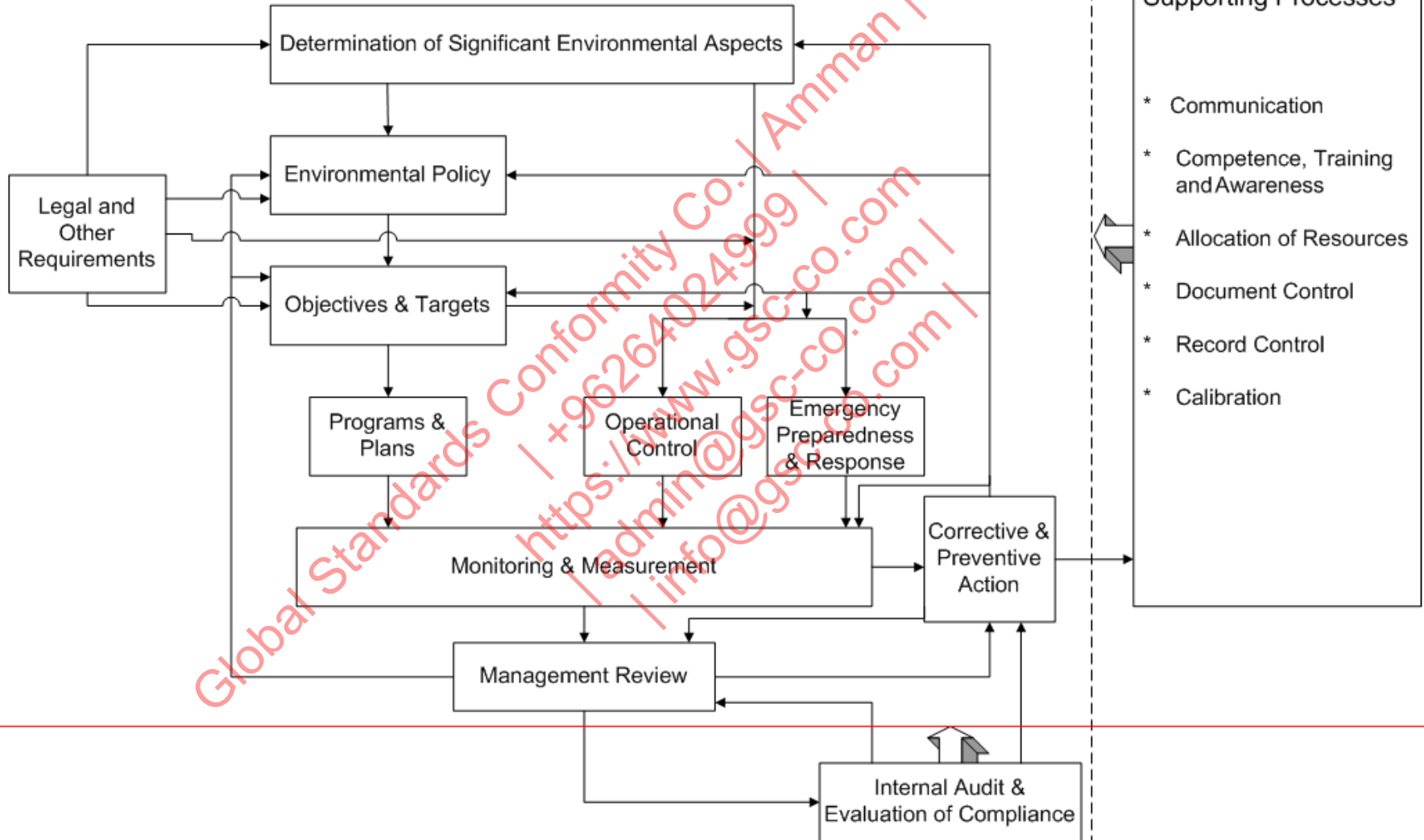
MOD activities are not immune from UK law, unless there is a clear case that complying with the legislation compromises national security

EU and UK legislation is considered to be more wide-reaching and stringent than in other areas of the world, therefore the MOD strives to comply with this legislation in the first instance

The MOD has a national commitment to climate change and carbon emissions as it contributes 1% to the UK's Carbon Budget targets

Environmental risk increases during times of conflict or abnormal situations caused by operating in less controlled circumstances when compared to training

During conflict or abnormal situations the Secretary of State for Defence can 'disapply' legislation on the grounds of national security



Role of Management

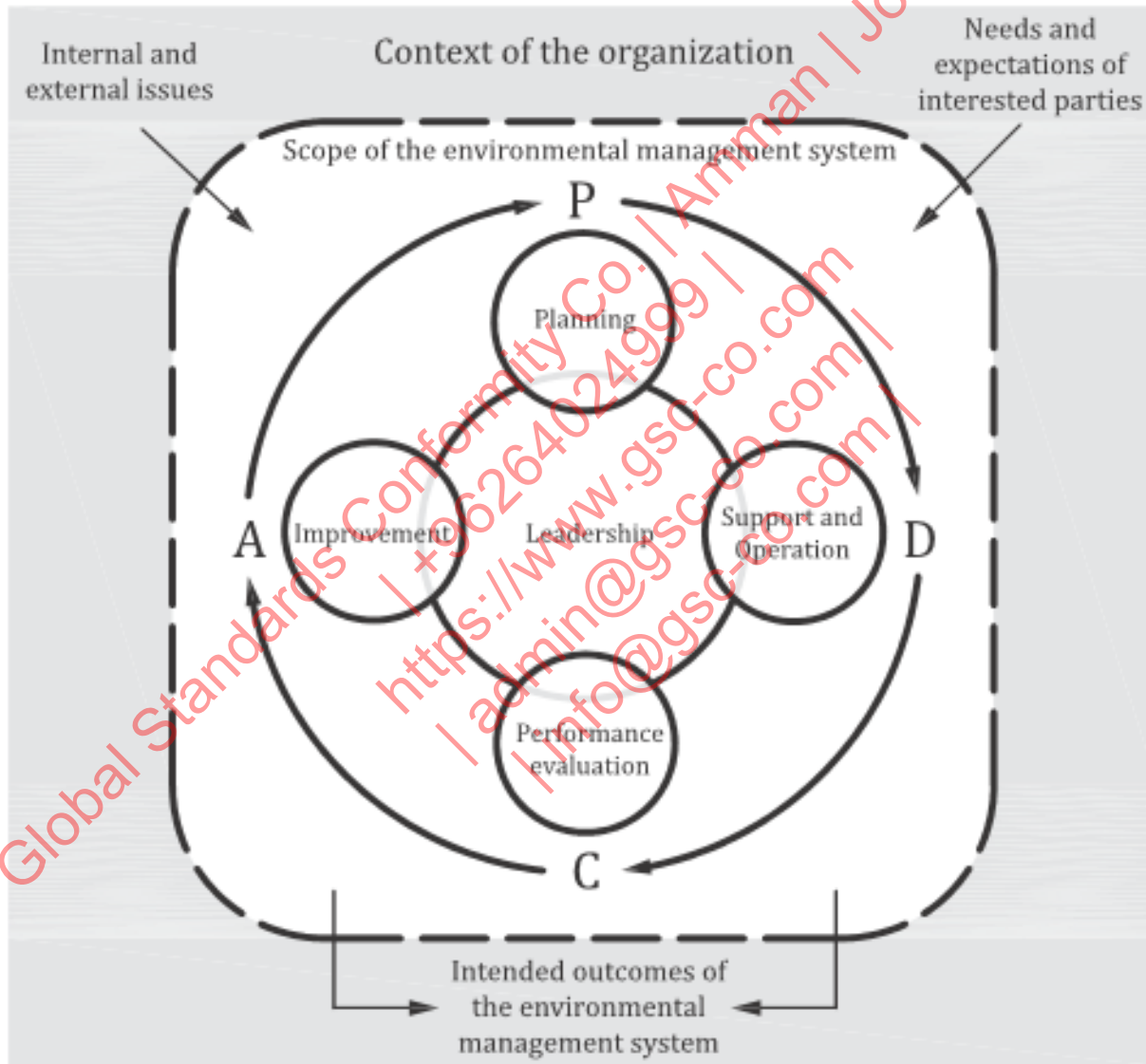
- ✔ Develop & approve environmental policy as a statement of commitment
- ✔ Provide the necessary resources
- ✔ Provide the budget to train resources or appoint external support
- ✔ Take responsibility to ensure EMS is established, implemented and maintained, and to report on performance of EMS including recommendations for improvement (Management may wish to appoint a management representative)
- ✔ Be a constant advocate of the EMS, it's benefits and need
Provide regular communication for employee engagement
- ✔ If a management representative is appointed, ensure they understand that they are acting on behalf of the management and accountability for establishment, implementation and continual improvement remains with the management
- ✔ Provide the necessary support to overcome barriers
- ✔ Regularly review the EMS to ensure its continuing suitability, adequacy and effectiveness.

Top Level Structure

ISO14001



Plan Do Check Act (PDCA)



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Plan Do Check Act (PDCA)

- Plan
 - To determine scope of the system during the initial phase, which will continually develop throughout the lifecycle
- Do
 - To develop appropriate documentation and assign responsibilities in order to ensure that relevant issues are managed effectively
- Check
 - Period monitoring and checking to ensure the system is working efficiently and effectively to meet the requirements
- Act
 - Appropriate measures to rectify any shortfalls and updating where the circumstances change or incidents / findings need actions taken

Key Elements

- Policy Statement
- Identification of Significant Environmental Aspects
- Development of Objectives and Targets
- Implementation Plan to Meet Objectives and Targets
- Training and Competence
- Management Review
- Improvement



- How you meet the elements is up to you

3 Terms and Definitions

- Terms related to the organisation and leadership
- Terms related to planning
- Terms related to support and operations
- Terms related to performance evaluation and improvement

4 Context of the Organisation

- Understanding the organisation and its context
- Understanding the needs and expectations of interested parties
- Determining the scope of the EMS
- The Environmental Management System

5 Leadership

- ✔ Leadership and commitment
- ✔ Environmental Policy
- ✔ Organisational roles, responsibilities and authorities

6 Planning

- ✔ Actions to address risks and opportunities
 - ✔ General
 - ✔ Environmental Aspects
 - ✔ Compliance obligations
 - ✔ Planning action
- ✔ Environmental objectives and planning to achieve them
 - ✔ Environmental objectives
 - ✔ Planning actions to achieve environmental objectives

7 Support

- ✔ Resources
- ✔ Competence
- ✔ Awareness
- ✔ Communication
 - ✔ General
 - ✔ Internal
 - ✔ External
- ✔ Documented Information
 - ✔ General
 - ✔ Creating and updating
 - ✔ Control of documented information

8 Operations

- ✔ Operational planning and control
- ✔ Emergency preparedness and response

9 Performance evaluation

- ✔ Monitoring, measurement, analysis and evaluation
 - ✔ General
 - ✔ Evaluation of compliance
- ✔ Internal Audit
 - ✔ General
 - ✔ Internal audit programme
- ✔ Management Review

10 Improvement

- ✔ General
- ✔ Nonconformity and corrective action
- ✔ Continual improvement

- Management's declaration of commitment to the environment.
- Policy Statement
 - 3 Main Elements (Big 3)
 - Commitment to Compliance
 - Commitment to Prevention of Pollution and Accident
 - Commitment to Continual Improvement
- Broader definition of pollution prevention
- Must be appropriate to the nature, scale and environmental impacts of the organisation's activities, products or services
- Provides a framework for setting and reviewing objectives and targets
- Way of communicating environmental mission internally and externally
- Can be cascaded down from higher level group (government) statements



- An organisation evaluates and addresses its own significant aspects, including non-regulated aspects
- May be positive or negative
- Think from the fence line:
 - Aspect: Cause or Input: Element of an organisation's activities, products, or services which can interact with the environment
 - Impact: Effect or Output: Any change to the environment, whether adverse or beneficial, resulting from an organisation's activities, products, or services



Consider:

- Air emissions
- Solid/hazardous waste
- Water effluents
- Contamination of land
- Noise, vibration and odour
- Land use, energy use, water use
- Raw material and resource use
- Positive environmental issues



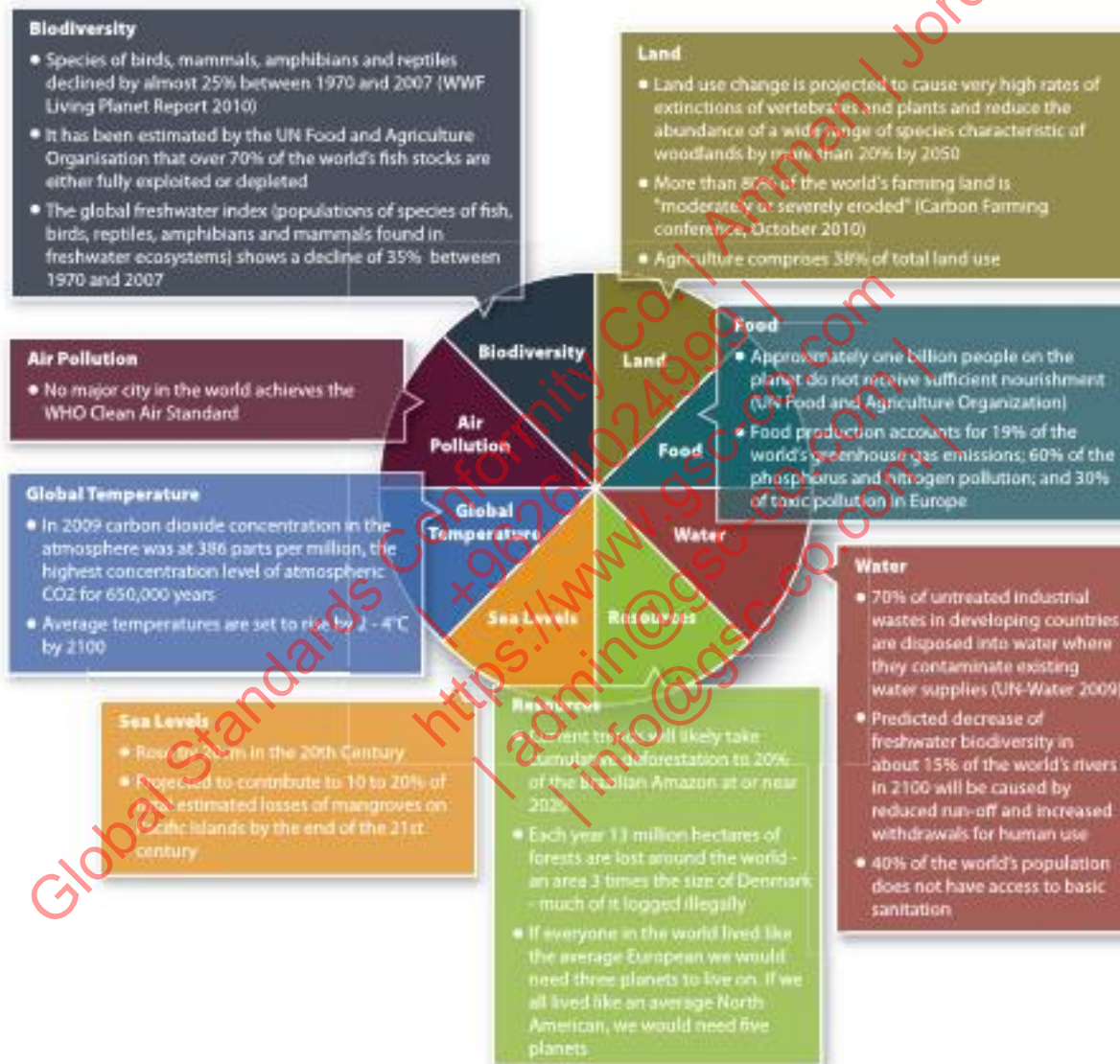
Example:

- Aspect: Radioactive material
- Impact: Transportation and storage issues;
Environmental contamination in storage,
Likelihood of incident in transportation

Ranking of Aspects:

- The organisation shall establish a documented procedure to identify its environmental aspects in order to determine those which can have a significant impact on the environment
- Ranking/Significance Scoring, consider:
 - Environmental Concerns
 - Regulatory/legal exposure; health/env - Risks and Conservation
 - Business Concerns:
 - Effect on the public image; community concerns
 - Cost savings; cost recovery period; equipment/facility
 - Other issues:
 - Scale, duration, and zone of impact
 - Probability of occurrence - frequent, likely, possible, rarely, unlikely
 - Severity of impact - catastrophic, severe, moderate, minor

Aspects and Impacts



- ✔ Setting legal framework for the EMS
 - have a process to identify and access the legal requirements: local, national and international
 - have a documented system for keeping up-to-date
 - communicate to the right people
- ✔ Industry-specific requirements
- ✔ Other voluntary requirements



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Objectives and Targets

- ✔ The organisation shall establish and maintain documented environmental objectives and targets.
- ✔ Can include commitment to:
 - reduce waste
 - reduce or eliminate release of pollutant
 - design product to minimise environmental impact in production, use, and disposal
 - improve efficiency in operation to reduce environmental impact
 - Implementation of a certified EMS
- ✔ Be realistic. Keep objectives simple, flexible, measurable and achievable.
- ✔ Consider alignment with group / government objectives

Objectives and Targets

- ✔ Objective: Reduce Electricity Use in Office
- ✔ Target: Reduce Electricity Use by 15% by year end 2015 by introducing a policy to turn off all computer monitors, install energy efficient light bulbs and install heat exchange pumps
- ✔ Objective: Reduce company fuel use
- ✔ Target: Reduce fuel use by 20% by year end 2015 by reducing the amount of business travel by 10% and increasing the use of web or tele based meetings, by using contractors with fuel efficient plant and equipment.

Exercise 1:

What potential objectives & targets could your department, division, subsidiary, organisation, group possibly implement?

Utilise existing action plan process to help achieve the objectives and targets e.g.

Traffic Light System

Do you have a similar action plan system?

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Terms and Definitions

✔ Terms related to support and operations

- Competence
- Documented information
- Life cycle
- Outsource
- Process approach

✔ Terms related to performance evaluation and improvement

- Audit
- Conformity
- Non Conformity
- Corrective action
- Continual improvement
- Effectiveness
- Indicator
- Monitoring
- Measurement
- Performance



Context of the Organisation

- ✔ Understanding the organisation and its context
- ✔ Understanding the needs and expectations of interested parties
- ✔ Determining the scope of the EMS
- ✔ Environmental Management System



Leadership

- ✔ Leadership and commitment
 - Must be demonstrated and lead from the top
 - No longer able to delegate accountability
- ✔ Environmental Policy
- ✔ Organisational roles, responsibilities and authorities



Planning

- ✔ Actions to address risks and opportunities
 - General
 - Environmental Aspects
- ✔ Compliance obligations
 - Planning action
- ✔ Environmental objectives and planning to achieve them
 - Environmental objectives
 - Planning actions to achieve environmental objectives



Support

- ✔ Resources
- ✔ Competence
- ✔ Awareness
- ✔ Communication
 - General
 - Internal
 - External
- ✔ Documented Information
 - General
 - Creating and updating
 - Control of documented information



Operations

- ✔ Operational planning and control
- ✔ Emergency preparedness and response



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Performance evaluation

- ✔ Monitoring, measurement, analysis and evaluation
 - General
 - Evaluation of compliance
- ✔ Internal Audit
 - General
 - Internal audit programme
- ✔ Management Review



Improvement

- ✔ General
- ✔ Nonconformity and corrective action
- ✔ Continual improvement



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- The organisation shall establish and maintain documents (Processes / Procedures) to monitor and measure the key characteristics of its operations that can have a significant impact on the environment.
- Track how well the system is working
- Measure the key characteristics of those activities that can have significant impacts
- Analyse the root causes of problems

Evaluation of Compliance

- Develop a process / procedure for periodically evaluating compliance with applicable legal requirements
- Keep records of evaluations.
- Can be done during EMS Internal Audits

Non Conformity and Action

- ✔ Develop processes / procedure for investigating, correcting, and preventing system deficiencies
- ✔ Set up process for assigning responsibilities for and tracking completion of corrective action
- ✔ Set up process to revise EMS processes / procedures based on corrective actions

- The organisation shall establish and maintain processes / procedures for the identification, maintenance and disposition of environmental records
- Include - training records, audits, management reviews

- ✔ Develop internal EMS audit program
- ✔ Are all EMS requirements met?
 - (*Are we meeting the standard?*)
- ✔ Is the system working?
 - (*Are we doing what we said we would?*)
- ✔ Determine audit frequency and procedures; train auditors; keep records of audits, findings, and follow up actions

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- ✔ Reviews EMS to ensure its continuing suitability, adequacy and effectiveness
- ✔ Reviews process to ensure necessary information is collected for evaluation
- ✔ Review must be documented
- ✔ Consider changes to:
 - policy
 - objectives
 - other EMS elements

Overlapping Requirements

The following requirements are found as general requirements across many different standards, including ISO 14001 and ISO 9001:

- Control of Documents
- Control of Records
- Internal Auditing
- Management Review
- Corrective and Preventive Action
- Competence, Training and Awareness
- Improvement

Guidelines for Auditing

- The general principles contained in BS EN ISO 19011: 2002 embrace well proven and accepted practices in the performance of management system audits.
- BS EN ISO 19011: 2002 provides useful guidance on the procedures to be adopted to ensure a satisfactory EMS audit process for both auditor and auditee.

Source of environmental legislation

International:	Rio, Kyoto, Agenda 21, Montreal Protocol
National:	Air, Water, Land
Local:	Noise, Nuisance, Litter

- ✔ Statutes (acts)
- ✔ Statutory instruments (regulations)
- ✔ Local by-laws
- ✔ Land Use – Town and Country Planning Act 1990

For example:

- ✔ Land use - the town and country planning regulations requires developers of major projects to produce an environmental statement – a detailed EIA.

Air Pollution: regulates atmospheric emissions leading to acid rain, global warming, air pollutants, solvent release, ozone depletion and vehicle emission pollutants. European directives and international agreements reinforce the EPA 1990 and Environment Act 1995.

In the UK, two pollutant control regimes operate in the areas of **LAPC** (Local Air Pollution Control) and **IPC** (Integrated Pollution Control).

- ✔ EC Directives – NO₂, SO₂, particulates, CFCs, Lead, vehicle exhausts
- ✔ Environmental Protection Act 1990 – IPPC, Parts A1, A2, B
- ✔ Environmental Act 1995 – Part 4 Air Quality
- ✔ Climate Change Legislation

Effluent and Water: there are a number of legislation control discharge to water and require consent in advance. The EPA 1990, Water Act 1989, Water Industry Act 1991, Water Resources Act 1991 and in Scotland, Control of Pollution Act 1974, Sewerage (Scotland) Act 1968 and Water(Scotland) Act 1980.

Discharges of effluent to sewer, water courses and the sea are subject to consent for levels of **COD** (Chemical Oxygen Demand), **BOD**, Ph level, mineral content and other chemical constituents.

- EC Directives – water quality, sea water, groundwater, urban waste, water treatment
- Environmental Protection Regulations – Red list of prescribed substances 1991, black list EU
- Water Resources Act 1991
- Control of Pollution Act 1974 – consent to discharge
- Sewerage (Scotland) Act 1968
- Water (Scotland) Act 1980
- Water Act 1989 – water quality

Waste Management : Waste disposal comes under the EPA 1990 where it imposes a 'duty of care' on all producers of waste. A licensing system regulates the consigning and disposal of various types of waste.

'Special Waste' – hazardous, 'Controlled Waste'.

Management of landfill sites is regulated through Part 2 of EPA 1990.

'Packaging Waste' – is regulated through the Producer Responsibility Obligations (Packaging Waste) Regulation 1997, under the Environmental Act 1995.

The control, storage and handling of hazardous substances under the **COSHH 1994 Regulations**, places the responsibility for protection of employees on the Employers.

Control measures include: information and training as well as routine monitoring and health surveillance.

- Noise and Statutory Nuisance Act 1993 give local authorities power to deal with noise or vibration which is prejudicial to health.
- Occupational noise is covered by the Health & Safety at Work Act 1974.
- Statutory Nuisances – state of premises, odours, gases, accumulations, animals and others which create a nuisance.
- EU ECO-Labeling – is a voluntary scheme administered by an independent board. This needs a Life Cycle Analysis of the products evaluating environmental impacts from birth to death of the products.
 - Life-cycle analysis – researching through raw material usage, manufacturing, distribution, use, maintenance and disposal.
- Others – Air quality, Sox, Nox, greenhouse gases, vehicle CO2 emissions, electrical and electronic waste disposal etc.

EU Legislation:

- EU Regulations – mandatory
- EU Directives – national legislation to schedule
- EU Recommendations – no legal enforcement

Regulatory Agencies:

- Environment Agency (EA) – England & Wales
- Scottish Environment Protection Agency (SEPA)
- Department of Energy and Climate Change (DECC)
- Environment and Heritage Service (EHS) – Northern Ireland
- Local Councils
- Water Authorities

- ✔ IDENTIFICATION OF RELEVANT LEGISLATION
- ✔ COMPLIANCE ISSUES
- ✔ UPDATING ROUTINE
- ✔ REPORTING AND COMMUNICATION

Documentation importance:

- Provides signposting to system components
- Must comply with ISO 14001 Requirements
- Align with system operations
- Definitive criteria for audit

A thorough knowledge of the system documentation is essential for the EMS Manager and for the individual auditors.

- ✔ Control function reference
 - ✔ Can be hard/soft copy format
 - ✔ Controlled Issue as required by Document Control
 - ✔ Available to all Users
 - ✔ Appropriate Coverage for understanding
-
- ✔ Environmental Initial Review
 - ✔ Environmental Manual
 - ✔ Environmental Procedures
 - ✔ Environmental Registers – ASPECT, LEGISLATION
 - ✔ Environmental Records

Document Structure

Document / Document set	Components						
Preliminary Environmental Review	Data gathering and analysis. Relevant data held by all employees. This review will locate the documents needed to determine your aspects and impacts. This is done during implementation phase						
Environmental System	<p>Environmental policy Provides the documentary basis for auditing the EMS Refers to other systems - quality, health & safety, etc Address all clauses of the standard Where appropriate, refers to procedures, registers and records Describes document control system</p>						
Environmental Processes / Procedures	<p>Provide the means of implementing the EMS policies Process for assessing environmental aspects Process for assessing relevant regulations Process for developing objectives and targets Auditing procedures Effluent disposal procedures etc.</p>						
Environmental Registers	<p>Authorisations and consents from the statutory bodies Policy documents from parent organisation Register of regulations Register of objectives and targets</p>						
Environmental Records	<table border="0"> <tr> <td>Electricity and fuel bills</td> <td>Air emissions analysis</td> </tr> <tr> <td>Waste disposal</td> <td>Accident reports</td> </tr> <tr> <td>Effluent analysis</td> <td>Audit reports</td> </tr> </table>	Electricity and fuel bills	Air emissions analysis	Waste disposal	Accident reports	Effluent analysis	Audit reports
Electricity and fuel bills	Air emissions analysis						
Waste disposal	Accident reports						
Effluent analysis	Audit reports						

Minimum Requirements

There are certain necessary requirements in ISO 14001:

- ✔ Identification of environmental aspects & determination of significance.
- ✔ Identification of legislation and regulations and the associated procedure for maintaining the currency of the information.
- ✔ Communication within the organisation and with customers, suppliers, the general public and regulatory agencies.
- ✔ Document Control
- ✔ Emergency preparedness and response – environmental risk assessment with the methodologies for reducing the risk and mitigating the associated environmental impacts.
- ✔ Non-conformance and Corrective Actions - methodology for information of non-conformances and providing the follow-up to ensure appropriate corrective actions are applied.

There are certain necessary management requirements in ISO 14001:

- ✔ Maintenance of environmental records – methods of storing, retrieving, updating and destruction of records of environmental importance.
- ✔ Audit Process - providing a consistent framework for the conduct of audits on the system or operational components of the environmental management system.

Operational Procedures:

- ✔ Solid Waste Management
- ✔ Effluent Management
- ✔ Monitoring of Emissions
- ✔ Spillage Containment
- ✔ Ground Contamination Assessment

Review of Documentation

In working with documentation in preparing for the audit, the auditor needs to consider the value of the procedure.

- Management or Operational?
- Roles and responsibilities
- Prescribed or Non-prescribed?
- Recognised Format?
- Understandable Language?
- Referenced Correctly?
- Records Identified?

Questions ??

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Environmental Management System (EMS)

Implementation Training

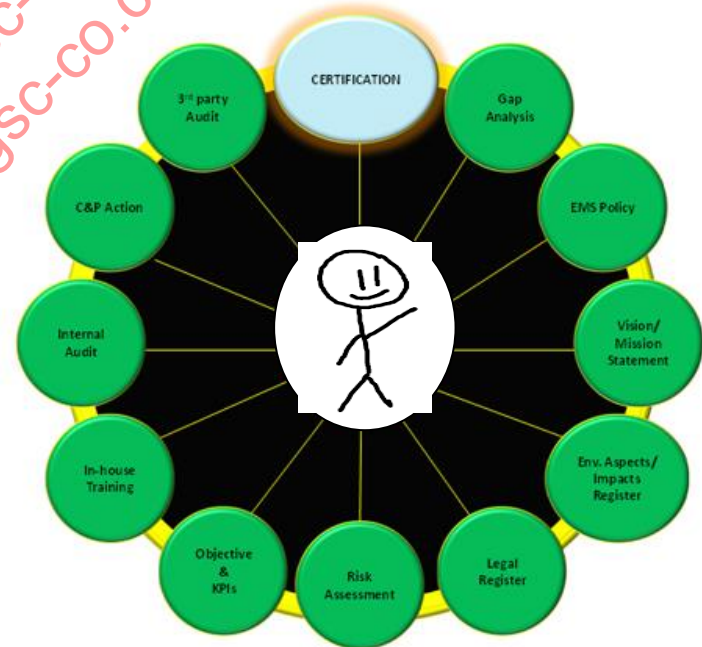
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An organisation can have the best processes, procedures and supporting documentation and equipment in the world. But without the correctively trained, competent and motivated people, the system will not be effective.

YOU MUST CONSIDER THE HUMAN AS PART OF THE SYSTEM!!

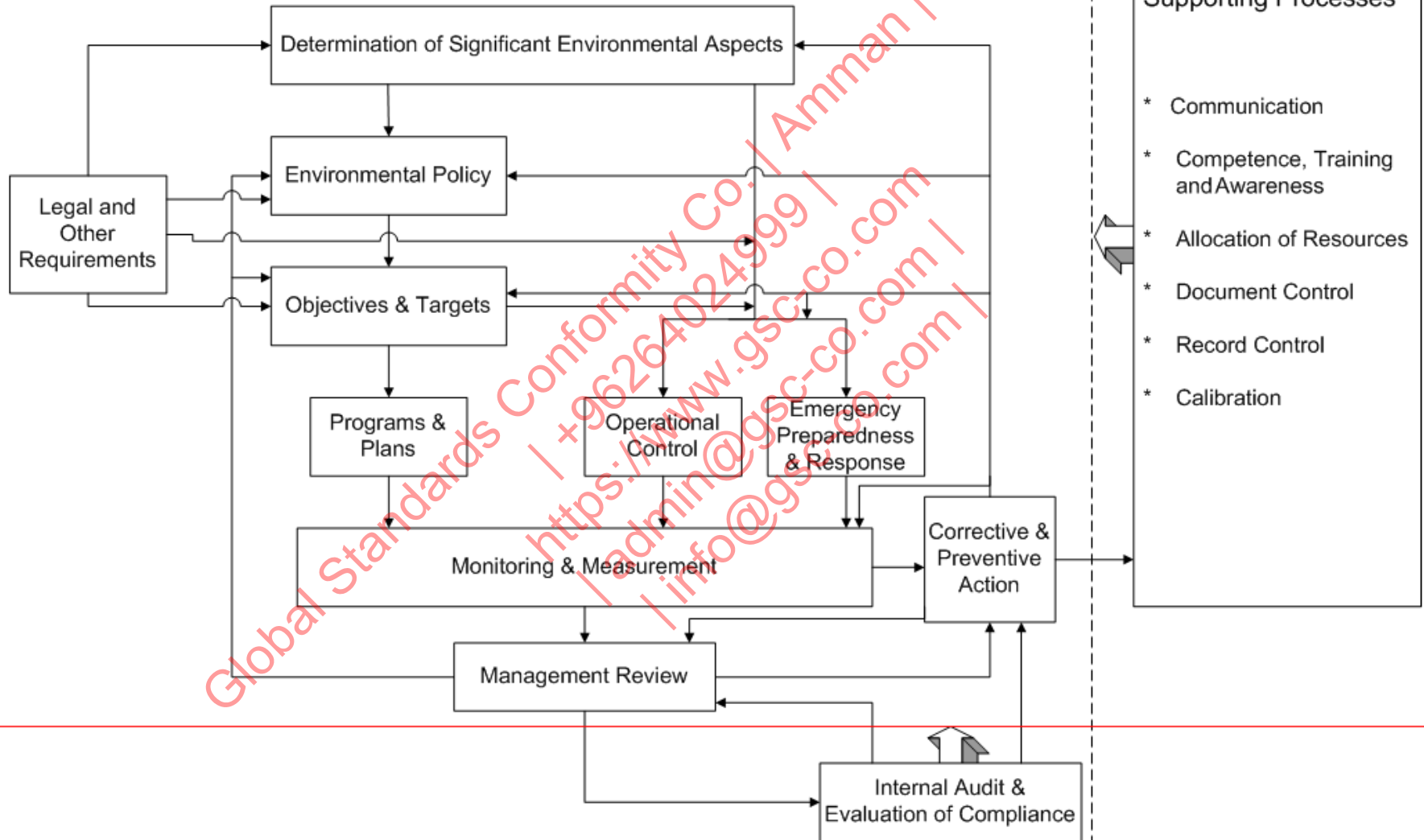


- Improve management of environmental impacts
- Set targets to reduce energy use, water use & waste to landfill
- Initiate and maintain procedures to improve efficiencies including:
 - Use a quality approach to drive continual improvement
 - Use of less evasive chemicals
 - Environmentally friendly purchasing procedures
 - Work with contractors to ensure your expectations are driven down through the supply chain
 - Using more innovative equipment to reduce impact
- Define key responsibilities for achieving targets
- Promote a culture of environmental awareness among staff and contractors to encourage good adoption of the EMS, but also gain knowledge on improvement ideas
- Monitor and measure environmental performance against key indicators
- Regularly assess progress towards achieving set objectives
- Ensure due diligence and ongoing consideration of legal and other environmental requirements

- Assist with environmental reporting as required by law
- Driven by government policy and communicates good practise to industry and communities
- Contribute to preferred employer status
- Achieve cost savings
- Show leadership, nationally and/or internationally
- Obtain competitive advantage
- May be required by clients, customers and/or regulators
- Build goodwill from customers, employees, stakeholders (Including the public)







- At the earliest stage develop internal engagement process taking in to consideration the impact of the EMS and how wide spread it will be
- Decide how to keep the engagement process open and positive, thus ensuring that you learn from your workforce and external parties you interact with
- Using a communication strategy and process may be a good approach to ensure open, often, consistent and provide positive leadership direction.
- Engagement with external parties is undertaken should this be deemed necessary at the early stage of implementation



- The impact on an organisation can often be far deeper than anticipated at the early stages. Fear of the unknown can drive resistance
- Sharing of information, experiences and concerns is a good way to ensure that plans are well placed for success. It also allows for open dialogue and removes fear



- Often something new can bring about lots of questions. Utilise resources at your disposal to understand the unknown
- Understand why you are doing what you are doing, what it is you are going to undertake, when and by whom
- Make your plans dynamic, but ensure all stakeholders are engaged and in agreement



Steps to Establish an EMS

1. Obtain commitment from top management.
2. Define responsibilities, appoint management team or delegate to a representative(s), establish EMS steering committee, develop implementation plan, initial training on EMS.
3. Planning—identify environmental aspects, legal & other requirements; formulate environmental policy; establish environmental objectives & targets & programs.
4. Implementation & operation—develop documentation & processes
5. Checking—develop processes for monitoring & measurement & corrective & preventive action
6. Develop and deliver presentation on awareness of the EMS in the agency.

Steps to Establish an EMS

7. Establish internal audit program, including training; conduct initial internal audit to evaluate conformity to requirements of ISO 14001, including evaluation of compliance
8. Follow up internal audit with improvements to system
9. Conduct initial management review of EMS
10. Implement improvements from management review
11. Continuous communication and employee engagement to ensure effective implementation of the system
12. Ongoing analysis, engagement and improvement

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- On-site gap analysis (Phase 1)
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- Internal audit of implemented system (Phase 3)
- Management Review of 'implemented' system (Phase 3)
- Certification management (Phase 4)

Gap Analysis

- Audit of existing processes, procedures, supporting documents, records and delivery within an organisation against ISO 14001 standard (Or any other standard)
- Gap analysis checklist used to facilitate this process by identifying gaps from ISO 14001
- Gap Analysis Report documents the gaps and gives advice as to how to close the gaps
- Project Tracker (traffic light system) – Action Implementation Plan used for managing the project, which includes identified gaps from gap analysis and delegates actions to individuals



Gap Analysis

A systems-based technique that looks at the differences between an organisation's current systems and those required for a particular standard such as ISO 14001.

A gap analysis is often used to determine the steps that need to be taken in order to move from "where we are" towards "where we want to be".

Clause	ISO 14001 Requirements	0	1	2	3	4
4.2	Environment Policy					
4.3	Planning					
4.3.1	Environmental Aspects					
4.3.2	Legal and other targets					
4.3.3	Objectives and targets					
4.3.4	Environmental management programme					

- Simple, flexible, 'traffic light' system for managing implementation
- Identifies responsibilities
- Used as main tool during regular project progression meetings
- Gives 'Green' for 'Go' for full implementation and project completion



Project Action Plan

QHSE Manager : Joe Bloggs				ISO Tracker
Consultant : Michael Freeman				Issue 8
Item No	Element	Actionee	Status	Comments
1	Documentation Review	MF	Green	This includes streamlining existing manual and drafting new process map. Modify 6 required documented procedures.
2	Audits and preparation for Management Review	MF	Green	M.R set for 03/10/07. Audit management system using existing procedures. MR took place on the 13th Nov.
3	Preparation for Management Review	TMG/MF	Green	Ensure available documentation is ready. Agenda from standard etc Data being collected - Ongoing- Prep will include the review of ATEX
4	Results of Internal Audits	TMG/MF	Green	Collate results, enter into CAPA system - new IT logging system being developed- reamaining audits to be done w/c 19th Nov. Follow up audits we 7 th Dec
5	Customer Feedback	TMG	Green	Customer satisfaction forms, obtain data back 1 week prior to M.R Complete by next MR 5 th Nov.Completed
6	Analysis of NCR system	TMG/MF/E	Green	Give output from this for analysis and inclusion into MR 1 week prior to M.R - Analysis will be avaiable for MR 2 on the 5th Nov
7	Status of preventive & corrective actions	TMG/FM	Green	Include in pack for M.R - information currently being collated
8	Follow up actions from previous reviews	TMG	Green	Copies of previous sales reviews, meetings since no previous M.Rs - Infomration being collated - Ongoing next meeting set for 3rd week jan 08
9	Housekeeping prior to audit	ALL	Red	Require complete blitz including office areas 1 week prior to final audit
10	Notification to staff and availability for audit	ALL	Yellow	Communication to staff audit taking place 2 weeks before final audit
11	Records in Management System	TMG/MF/E	Green	Review for evidence against measurement as part of audit- underway and ongoing - to be completed within 10 days
12	Notice Board	TMG/RH	Green	Require notice board for quality policy and measures of performance. Populate with information. Quality Policy to be signed
13	Administration for day of audit	TMG	Yellow	Ensure all staff know auditor is coming and why
17	Print out of Documentation	TMG	Green	Ensure clear, quality copy available for audit. Do on week of audit.
18	Review and finalise objectives & Policy	TMG/MF/R	Green	Finalise quality objectives, include achievement of UKAS ISO 9001:2000. & policy statement. To be completed w/c 19 nov.
19	Provide performance measurements against objectives	TMG/MF/R	Yellow	Provide information as to how we are performing against these now & set targets . Do in consultation with MF- 3 main objectives will be in line with financial/eng/QA and will be documented
20	Review customer returns process	TMG/MF	Green	Establish what status is. Analysis of customer returns and create for MR - Work instruction being collated
21	Review non conforming product	TMG/MF/A	Yellow	What is decision of this material, scrap, rework, how is this recorded ? List created / material still to be reviewed. -
22	Review non conforming process	TMG/MF/A	Green	Establish if practice follows current written process and provide feedback.
25	Audit maintenance in terms of internal audits	TMG	Yellow	Ongoing - revieved schedule 26/09/07. 13th Nov identified another 4 audits to be completed. Deadline 21st Nov
26	Contact FM approvals to confirm scope of registration	TMG	Green	Application form completed. Awaiting FM response
27	Practical Management on day of audit i.e. Who	ALL	Red	Create list of audit areas against responsibilities
28	Training Matrix and records	TMG	Green	Populate training matrix and create records to support categories in matrix . MF to audit HR on 24 th Oct 07- Ongoing
29	Updated documentation	TMG	Yellow	Ensure updated documentation is transferred onto network
30	Hard copy updated documentation	TMG	Yellow	Ensure updated documentation is transferred onto network

Role of Management

- ✔ Develop & approve environmental policy as a statement of commitment
- ✔ Provide the necessary resources
- ✔ Provide the budget to train resources or appoint external support
- ✔ Take responsibility to ensure EMS is established, implemented and maintained, and to report on performance of EMS including recommendations for improvement (May wish to appoint a management representative)
- ✔ Be a constant advocate of the EMS; it Provide regular communication for en
- ✔ If a management representative is ap understand that they are acting on be and accountability for establishment a remains with the management
- ✔ Provide the necessary support to over
- ✔ Regularly review the EMS to ensure it adequacy and effectiveness.



- On-site gap analysis (Phase 1)
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- Sets the direction for the way the organisation plans to manage its environmental impacts
- Set by top management with input as required from appropriate people in the organisation
- Acts as the pinnacle of the EMS
- Includes commitments to pollution prevention, legal compliance, communication & continual improvement
- Includes framework for objectives & targets
- Must be effectively communicated through employee and contractor engagement & importantly it must be maintained to reflect changes





Policy and Commitment Statement Health, Safety, Environment and Quality Performance

The Oil and Pipelines Agency's primary aim is to safely manage the Navy Oil Fuel Depots (OFDs) in order to provide a fuel storage and pipeline delivery service that meets the requirements of our customers and stakeholders.

As a COMAH Operator the Agency operates within the major hazard industry. The successful management of Health, Safety, Environment and Quality performance is fundamental to our success and our reputation.

The Agency is committed through effective management of our business and with the support of all personnel to meet or exceed our HSE and Quality objectives while striving continually to improve our performance. Our Quality and HSE Management System provides a structured approach to the management of the risks inherent in our activities. Accountability for the provision of a safe and healthy working environment through active process safety leadership, sound procedures and guidelines, effective training programmes and good communications are cascaded through all levels of management and staff. The Agency strives to provide a generative safety culture that encourages open reporting at all levels in order to identify and reduce risks within our business and create opportunities for learning. The Agency operates a just culture which promotes a questioning attitude committed to safety excellence.

In the management of all our activities, The Agency aims to have HSE and Quality performance we can be proud of, to earn the confidence of customers, shareholders and society at large, to be a good neighbour and to contribute to sustainable development.

The Oil and Pipelines Agency:

- Commits to the prevention of ill-health, injury and harm to the environment and the measures necessary to prevent major accidents and limit the consequences to persons and the environment.
- Commits to the delivery of the Continuous Improvement via its Annual Business Plans (in pursuit of an incident-free business).
- Requires Line Management to demonstrate the delivery of excellent HSE performance through defined accountabilities and responsibilities.
- Requires each employee to work together in the identification, removal or mitigation of hazards. As HSE and Quality management is the responsibility of all employees.
- Requires its contractors to manage HSE and Quality in line with this policy. They are expected to work in a manner that safeguards themselves, co-workers, the environment and all those connected with our business.
- Commits to comply with applicable legal requirements and any additional requirements stated in the HSEQ Management System.
- Facilitate a learning environment linking the major accident hazards (MAH) to the assured performance of all employees engaged in safety related tasks associated with those hazards.
- Promotes honest and open incident reporting and the sharing of lessons learned both internally and externally.
- Includes HSE and Quality performance in the appraisal of all staff and rewards them accordingly.
- Provides an environment of ownership allowing anyone to prevent work starting or to stop any work in progress, where activities are not in compliance with this commitment and policy statement.

The Agency requires all staff and contractors to work within this HSE and Quality Policy and Commitment and firmly believe that there is nothing more important than performing every job in a safe manner. Operational performance and costs are important, but we always have the time and the money to work safely.

	Adrian Jackson	Chief Executive
	Lisa England	Assurance Manager HSE&Q
	Sue Jemmett	Human Resources Manager
	Paul Grange	Operations and Commercial Manager
	Tim Backhouse	Financial Controller
	Anthony Small	Engineering Manager
	Paul Tudor-Williams	IT Manager
	Ronnie Fulton	Maintenance Manager
	Andy Gaffney	Capital / Minor Works Project Manager
	Billy McVie	Regional Operations Manager

The Oil and Pipelines Agency 18 May 2015

Objectives and Targets

- *Objective:* overall goal consistent with environmental policy that the agency wants to achieve
- *Target:* detailed performance requirement to achieve objective
- Consider how your supply chain and contractors fit within these.



Objectives

- ✔ *Policy statement indicates what is important for the organisation in general terms, Environmental objectives must show specific goals to be achieved within a certain time frame, and must be measurable*

Examples are:

- ✔ *reduce scrap by 10% within the next 6 months;*
- ✔ *increase recycling by 50% in next year;*
- ✔ *remove repeat Env incidents within the next year;*
- ✔ *reduce number of nonconforming products by 15% within the next year;*
- ✔ *Implement supply chain environmental plan in next year*

Start small ... and build on a firm foundation. You should have at least one 'macro' level objective regarding supplier performance, overall system effectiveness, and customer satisfaction – you will be required to monitor and measure performance in these areas anyway



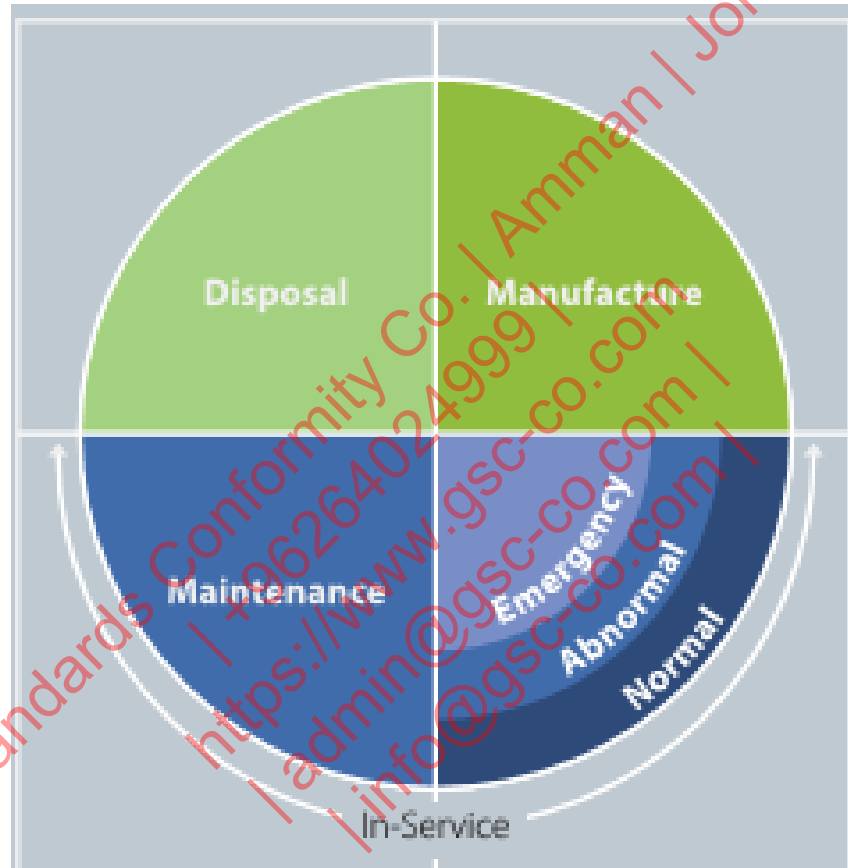
- ✔ Identify environmental aspects
- ✔ Determine aspects with *significant* environmental impact
- ✔ Document & maintain in an aspects register
- ✔ Ensure that significant environmental aspects are the focus of the rest of the EMS



High Level Aspects & Impacts

Activity	Aspect	Environmental Receptors							Impacts
		Human	Land	Water	Air	Flora	Fauna	Climate	
Operation / Training	Noise, energy/fuel use and emissions	✓	✓	✓	✓	✓	✓	✓	Nuisance upon human / fauna receptors; use of non-renewable resources; indirect impact on air quality and loss of biodiversity
Maintenance	Effluent, energy use and emissions, material use			✓	✓	✓		✓	Use of renewable and non-renewable resources; indirect impact on air quality and loss of biodiversity
Storage	Energy use and emissions				✓			✓	Use of non-renewable resources; indirect impact on air quality and loss of biodiversity
Transport	Noise, fuel use and emissions	✓			✓			✓	Nuisance upon human / fauna receptors; use of non-renewable resources; indirect impact on air quality and loss of biodiversity
Administrative	Material use, energy use and emissions		✓		✓	✓		✓	Use of renewable and non-renewable resources; indirect impact on air quality and loss of biodiversity

Consider Impact In Use



Manufacture

Use - Normal conditions

- Abnormal conditions
- Emergency conditions

Maintenance and Up-grade

Disposal

Environmental assessment is an iterative process within the overall development of the system

Environmental assessment draws on a range of available techniques to identify and understand possible environmental risks

Possible environmental risks must be identified and understood so that they can be eliminated or controlled

Environmental risk identification is most effective when done systematically by a team of people with knowledge about the system, its design, usage and environment

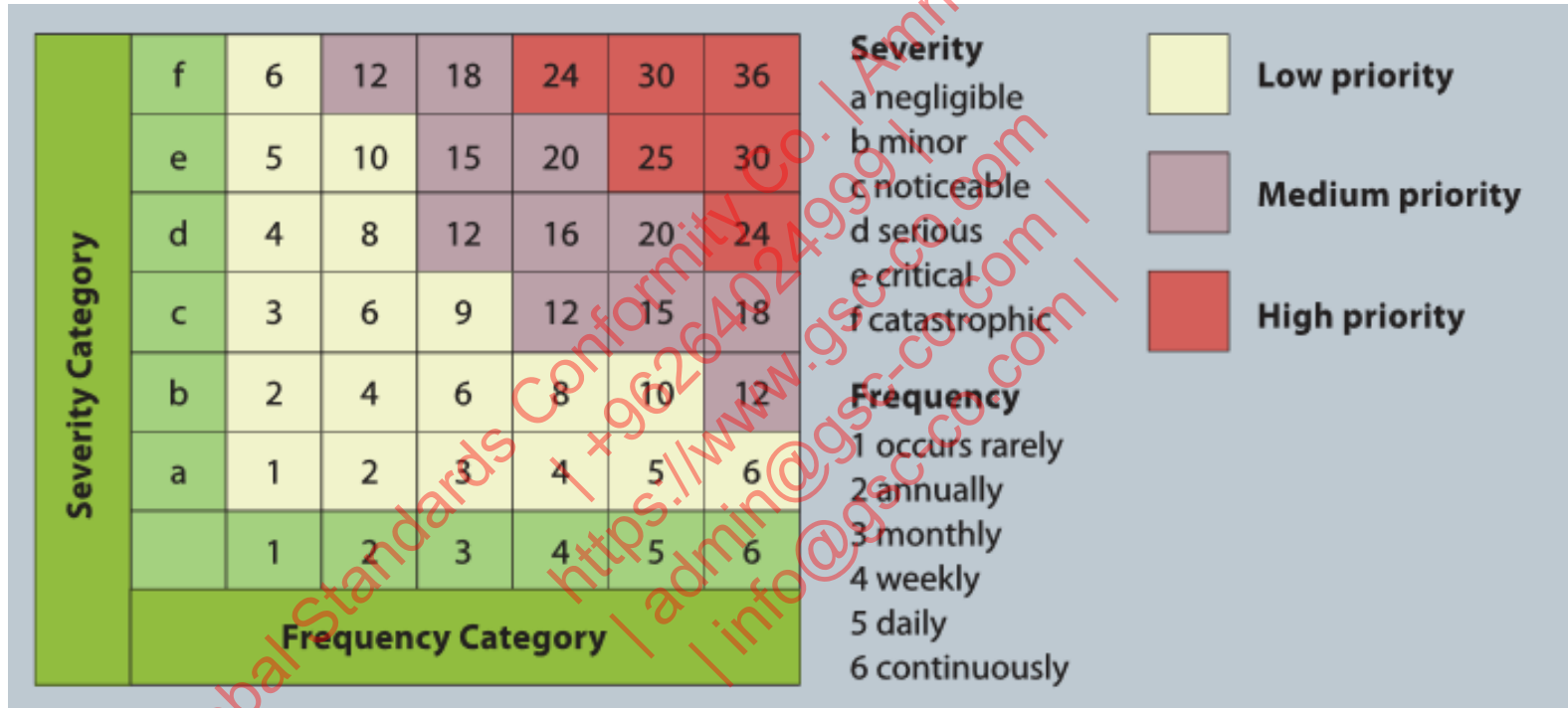
Compliance with POEMS will ensure that any project's EMS is robust and proportionate to the project's levels of risk

Recent experience of the MOD acquisition community in implementing POEMS highlights that the majority of applications lie within the In-Service and Disposal stages

Before a project comes into service, the emphasis of environmental management is on influencing the development of the project to eliminate environmental risk and enhance environmental benefits

When a project is In-Service, the environmental management is principally concerned with controlling residual or remaining environmental risks

Risk Matrix



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Discussion

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Legal Requirements

- Identify environmental legal requirements applicable to the operations of the organisation
- Show how legal requirements apply to environmental aspects
- Keep these up-to-date & incorporate them into other elements of the EMS



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Legal Requirements



- Identify other environmental requirements to which the agency subscribes
 - MOD requirements
 - Government direction
 - Commercial client requirements
 - Etc
- Show how other requirements apply to environmental aspects
- Keep these up-to-date & incorporate them into other elements of the EMS



Legal and other requirements discussion

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- ✔ Environmental program/action plan:
 - to achieve objectives & targets
 - Includes responsibility, means & timeframe



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- Management provides appropriate resources
- Document roles, responsibilities & authorities
- Management delegate some responsibilities to a management representative or ensure management take responsibility to:
 - Co-ordinate establishment, implementation & maintenance of EMS
 - Report to top management on performance of EMS & recommend improvements
 - Drive continual improvement through lessons learned and PDCA



- Does the company have a Competence Management System?
- Identify positions & roles associated with significant environmental aspects
- Including senior management roles
- Assess competence to meet requirements
- Identify training needs (Training Needs Analysis)
- Fulfil training needs
- Assess if training needs meet requirements
- Assess if coaching / mentoring is needed to meet competence needs
- Is there the desire to meet the competence needs
- Continual assessment of competence



- Ensure all appropriate members of staff and contractors are aware of EMS requirements and the system
- Propagate awareness of the EMS
- Engagement



**Road To
Awareness**

- Ensure that communication from external parties is appropriately managed
- Decide how to proactively communicate externally about significant environmental aspects



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- ✔ As the system starts to get implemented, this can often be a time when barriers appear. Ensuring that the engagement process remains in place and is positive, will allow these barriers to be reduced
- ✔ Ensure that engagement with external parties is appropriately managed and undertaken
- ✔ Decide how to keep the engagement process open and positive, thus ensuring that you learn from your workforce and external parties you interact with



- Environmental statement of intent (May be driven by a group or government body – MOD)
- Environmental policy
- Environmental Strategy
- Environmental Plan
- Environmental objectives and targets
- Description of the scope of the environmental management system
- Description of the main elements of the environmental management system and their interaction, and reference to related documents (Including how they interact with Quality, Health and Safety)
- Documents and records required by the standard
- Documents and records determined by the organisation to be necessary to ensure the effective planning, operation and control of processes that relate to its significant environmental aspects.



- Document Template (Numbering convention)
- Document approval
- Document review, update and re-approval
- Identification of changes and current revision status
- Management of change
- Roles and responsibilities
- Availability at points of use
- Legibility and identification
- Identification and distribution of external documents
- Management of obsolete documents.



- Physically control all activities, functions, products and processes associated with significant environmental impacts
- Operational control must include documented processes, work instructions and operating procedures defining the manner in which control will be maintained, on a risk management basis
- Control of work practices may form the basis of how these risks are managed (Which will include E risks)
- Operational control extends to significant environmental aspects of goods & services used by the agency, for communication to suppliers & contractors.

Operations In-Service

In-Service/ Operation/ Normal	Transport of personnel and equipment, refuelling	Energy use, air/carbon emissions, possible spillages of oil/fuel when refuelling, noise, odour, dust and vibration
In-Service/ Operation/ Abnormal	Temporary deployment for civilian duties	Energy use, air/carbon emissions, possible spillages of oil/fuel when refuelling, noise, odour, dust and vibration
In-Service/ Operation/ Emergency	Road traffic accident, fire or explosion	Land or water contamination through spillages of oil/fuel, air/carbon emissions from fire/explosion
In-Service/ Maintenance/ Routine	Routine servicing	Energy use, fossil fuel consumption, carbon emissions, waste disposal
In-Service/ Maintenance/ Deep repair/upgrade	Replacement of worn or obsolete parts	Energy use, waste disposal, fossil fuel consumption, carbon emissions, special waste disposal
In-Service/ Maintenance/ Rebuild	Fitting of larger engine	Energy use, waste disposal, fossil fuel consumption, carbon emissions special waste disposal

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ACQUISITION LIFE CYCLE MODEL

	Concept	Assessment	Demonstration	Manufacture	In-Service	Disposal
Environmental Activities	Agree environmental requirements for the User Requirement Document Identification of stakeholders and standards Identification of likely environmental aspects and impacts	Environmental Impact Assessment to compare design and procurement options	Input to the design process to influence environmental impact Finalise design issues and agree final design option Agree monitoring and measurement programme	Monitor manufacture to ensure compliance with any identified objectives and targets Further evidence that the environmental objectives and targets are being met Verification of user and maintainer environmental documentation and training	Continuous environmental improvement through incident investigation and environmental audits Identify preventative action Influence the design process for improved environmental performance if there are modifications or upgrades	Dispose of equipment in accordance with Disposal Plan
Environmental Outputs	Environmental Case Report Environmental Management Plan Environmental Committee established	Environmental Case Report for each design / procurement option Environmental objectives and targets Environmental Management Plan	Evidence that the environmental targets are being / will be met Demonstration Stage Environmental Case Report Through-life Environmental Management Plan Draft Operational Control Procedures	Results of verification tests. A full system / manufacture stage Environmental Case Report Through-life Environmental Management Plan Operational Control Procedures	In-Service Environmental Case Report Updated Operational Control Procedures Environmental Management Plan for changes and system disposal	Environmental Case Report for the disposal programme Final Disposal Plan

Initial Gate

Main Gate

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The Acquisition EMS is consistent with ISO 14001, and is based on the following stages: Collect evidence; Analyse/evaluate evidence; Set priorities; Determine actions; Audit performance

POEMS procedures have been designed to manage environmental performance and environmental liabilities of equipment and services throughout the acquisition process

Measures of environmental risk should be treated as forecasts with a degree of uncertainty. Using input from people who know the system and its operation will give improved forecasts of risk

Risk forecasts should be used to focus effort and resources on the most significant environmental risks, to have the greatest influence on environmental performance

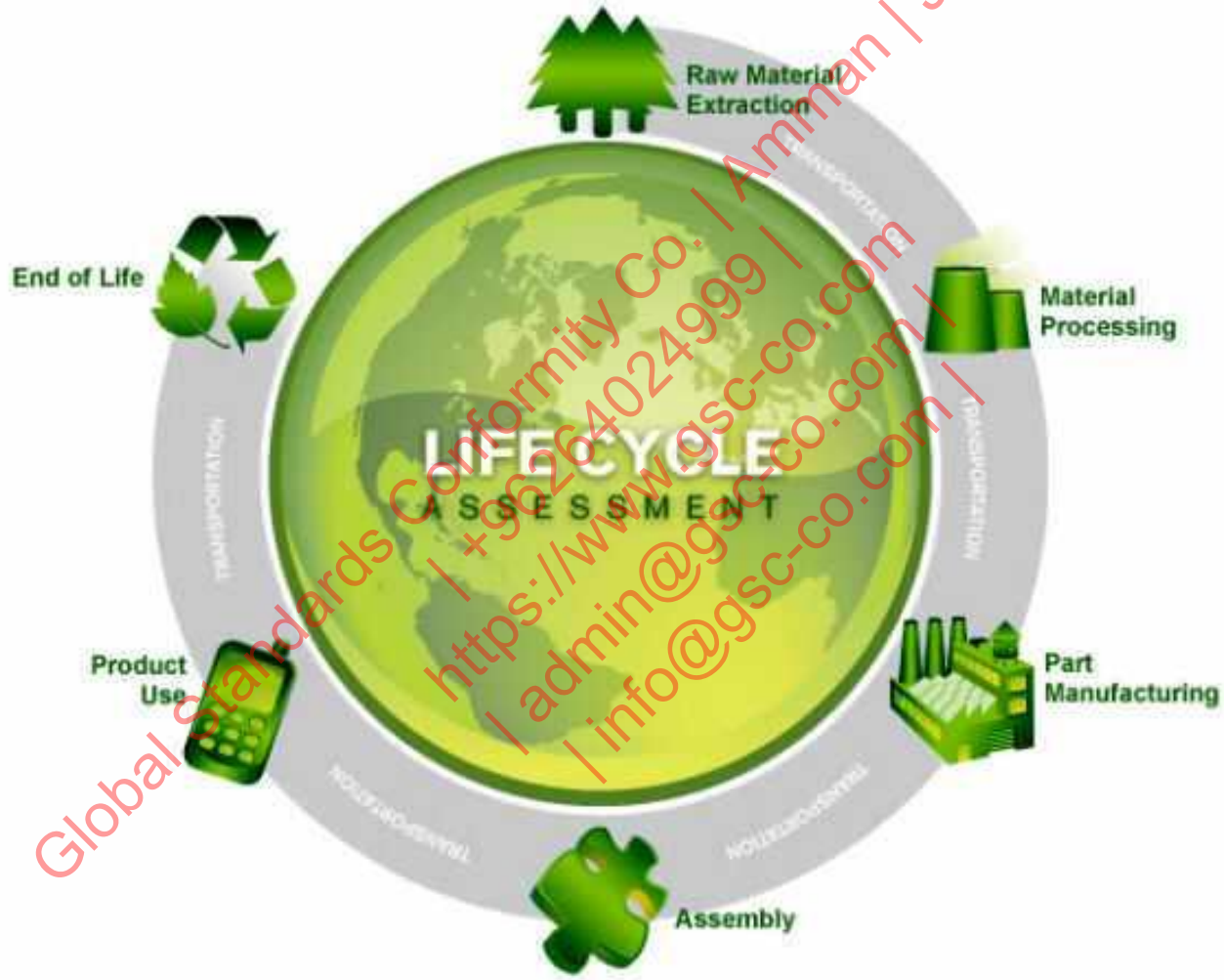
A context diagram is a visual tool to help identify POEMS boundaries in order to determine what activities are in or out of scope of the project's EMS as well as identifying responsibilities

Project Teams should have access to environmental expertise in the form of Environmental Committees in close liaison with the Safety Committee in order to manage environmental impacts effectively and with confidence

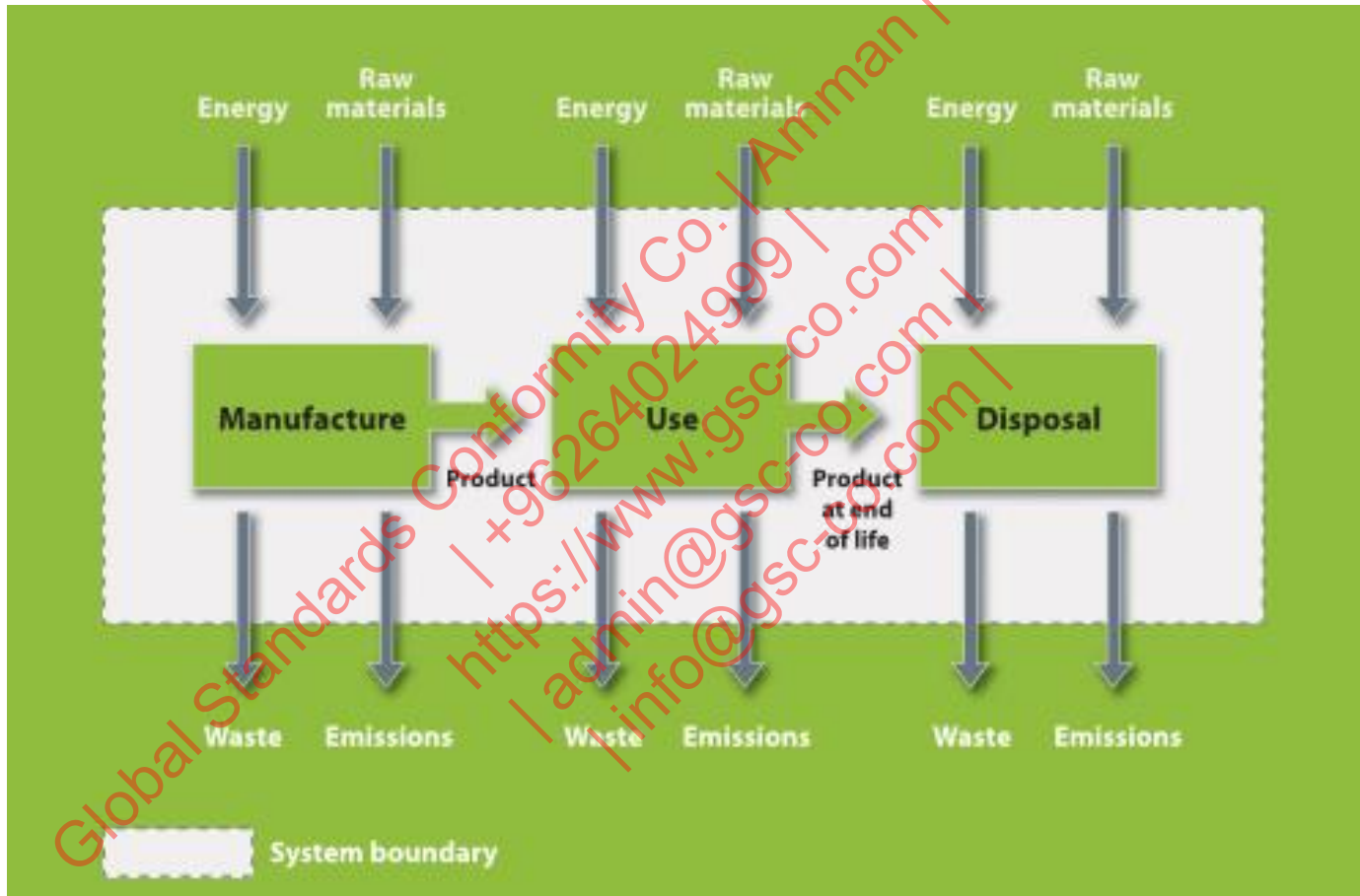
As a part of POEMS, regular audits of the procedures and their implementation are required

Audits ensure that an EMS is being applied properly e.g. through operational controls, appropriate training of staff and incident reporting

Life Cycle Assessment



Life Cycle Assessment



Life Cycle Assessment

- Life cycle assessment (LCA) is a formal process as part of your EMS to assess the Environmental aspects and impacts throughout the lifecycle of a product or service
- It is used in particular related to purchasing of products or services that will be embedded as part of a operational control or life of a facility
- For example pollution arising from a production process may be reduced by changes to raw materials or equipment used in the process, but the lifecycle impact must be looked at, from grade to grave.
- Importantly this includes the disposal or decommissioning
- Even during the earliest stages of a lifecycle or planning, the assessment of impact at later stages should be considered.

Contract Management

- A significant risk to any large organisation or agency is the utilisation of contractors
- Development of a Contract Management Process and supporting processes, procedures and supporting documents is of utmost importance if significant Environmental Risks could come from or be managed by contractors
- Assessment of the supply chain, to identify that they meet a minimum set criteria
- Working closely to ensure they understand the agencies EMS requirements. This may require interface documents to understand who manages what and in particular during emergency situations
- Continual management and improvement of the supply chain through performance assurance and improvement programmes

The Acquisition Cycle



Demonstrate Contract Management Process

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- Preparedness is the processes and procedures in place to ensure the organisation is prepared for any form of natural or manmade disasters.
- In the next slide we talk of response and management of an incident or disaster, but the preparedness is in relation to;
 - Communication (to all)
 - Everyone must know what to do in such a situation
 - The protocols are in place and have been tested regularly
 - The equipment used and services relied on in a disaster situation are fully compliant with their requirements
 - All possible scenarios are considered
- Management is fully engaged

- Processes / Procedures to identify potential for accidents and emergency situations, appropriately respond to, and minimise the environmental impact of, accident and emergency situations
- Ensure the appropriate training is provided to the assigned persons
 - Dependent on level within the company this can be anything from awareness, ER coordinator, through to ER manager – often many people share these roles.
- Test emergency response
- Review emergency preparedness & response procedures, especially after incidents

- Processes / Procedures to identify the method of how the agency will manage the crisis, including the communication internally and externally
- Ensure the appropriate training is provided to the assigned persons
 - Dependent on level within the company this can be anything from awareness to command center manager
- Test crisis management programme
- Review crisis management processes / procedures, especially after incidents and tests.

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- ***Internal audit of 'implemented' system (Phase 3)***
- ***Management Review of 'implemented' system (Phase 3)***
- Certification management (Phase 4)

- Complete EMS should be reviewed by top management on a regular basis.
- Management decide the 'frequency of review (usually anything from quarterly to once a year to review all system)
- Management reviews are not implementation status meetings ... they are system effectiveness review sessions
- Review looks at data over time to see if the desired results (objectives and plans) are being achieved ... and taking action if/when needed (this must be factual data)
- Management reviews make management systems dynamic!!! If they did not take place then the systems become static and ineffective

- To be effective, management reviews should be well prepared i.e. agenda, data/trends etc
- Allows top management to assess the effectiveness of the Management System based on the policy, objectives and to define the opportunities for improvement and the need for changes
- Attendees must come with data/trends ... know what it means ... and be prepared to offer related recommendations
- The results of management reviews should be in the form of specific actions, ensuring that improvements are made in products/services and processes/systems, and that resource needs are identified

- Management review outputs can also set the direction for the future;
 - new/revised policy can be considered
 - improvement objectives can be established
 - specific improvement initiatives can be agreed
- Depends on how the company operates the process
- Many companies split their meeting to 4 quarterly meetings each one covering a certain part of the Management System
 - The meeting is often best being part of other business / operational / management systems meetings (HS / Q)
- The output of the review meeting is in the form of a Management Review Report.
- The report should be used to drive changes in the system for continual improvement and should be shared with other sites and interested parties

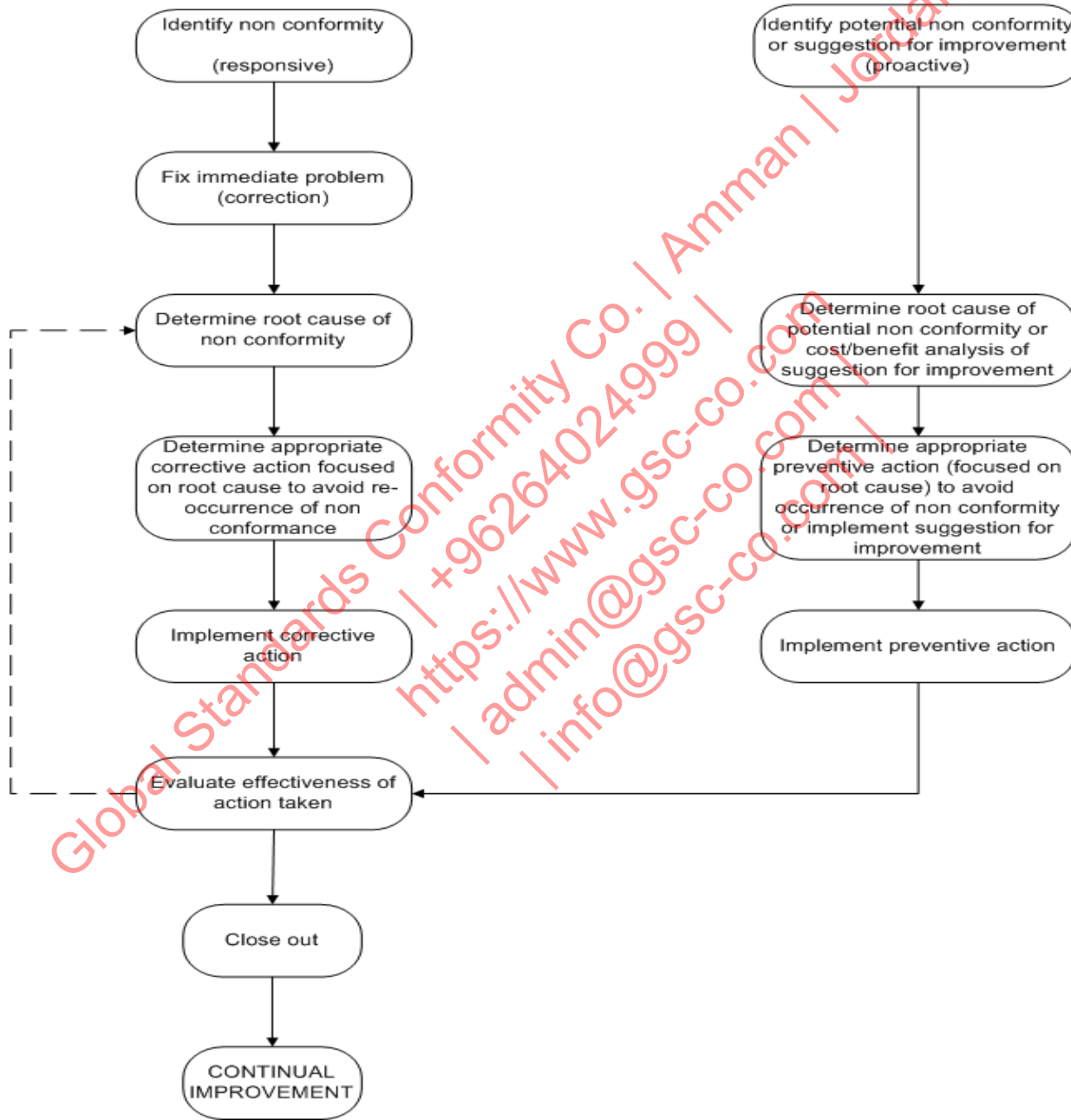
- Monitor the activities, functions and processes that are associated with a significant environmental impact
- Monitor performance, operational controls, & conformity with environmental objectives & targets
- Calibrate or verify any monitoring & measurement equipment

- Periodically evaluate compliance with legal & other requirements
 - Can form part of internal audit programme
 - Driven by changes in international standard
 - Driven by changes to the legal obligations
 - Driven by changes imposed and agreed by clients
- Record the evaluations

- Identify actual & potential nonconformities
 - From employee engagement
 - Incident or accident
 - Internal Audit
 - External Audit
- Take action to stop / correct nonconformities and mitigate environmental impact – immediately if impact is significant
- Short term actions should be following emergency / incident response processes and procedures

- Identify actual & potential nonconformities
- Investigate nonconformities & determine root cause
 - Ensure person or team have the necessary RCCA training
- Take corrective action to avoid recurrence (consider does action prevent occurrence in the future)
- Review effectiveness of action taken, if not long term effective then take appropriate measures
- Consider sharing with other sites or peers

Corrective Action



- Retain all environmental records required for the successful development, implementation and maintenance of the EMS, including any legal or environmental agency obligations

- Establish & implement internal audit program to:
 - evaluate conformity with requirements of EMS & international standard
 - evaluate effectiveness of EMS
 - opportunity for improvement
 - provide information to top management

- More during Auditor Training

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Global
Standards™

Reducing risk ✓ people
integrity
processes

Environmental Management System (EMS)

Implementation Training

Aligned to ISO 14001:2015

Delivered by: Karam Malkawi

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Steps to Establish an EMS

1. Obtain commitment from top management.
2. Define responsibilities, appoint management team or delegate to a representative(s), establish EMS steering committee, develop implementation plan, initial training on EMS.
3. Planning—identify environmental aspects, legal & other requirements; formulate environmental policy; establish environmental objectives & targets & programs.
4. Implementation & operation—develop documentation & processes
5. Checking—develop processes for monitoring & measurement & corrective & preventive action
6. Develop and deliver presentation on awareness of the EMS in the agency.

Steps to Establish an EMS

7. Establish internal audit program, including training; conduct initial internal audit to evaluate conformity to requirements of ISO 14001, including evaluation of compliance
8. Follow up internal audit with improvements to system
9. Conduct initial management review of EMS
10. Implement improvements from management review
11. Continuous communication and employee engagement to ensure effective implementation of the system
12. Ongoing analysis, engagement and improvement

In some organisations it will be beneficial both administratively and for the purpose of expanding knowledge to combine both the environmental and safety case in order to produce a single set of information.

The advantages of combining the two may be outweighed by the disadvantages, which may result in overly complex documentation, management resource and increased administrative burdens.

It may be an area to consider however.

Assurance and Audit Procedures

- System Audit
- Management Review
- Non-conformance and Corrective Action
- Monitoring and Measurement

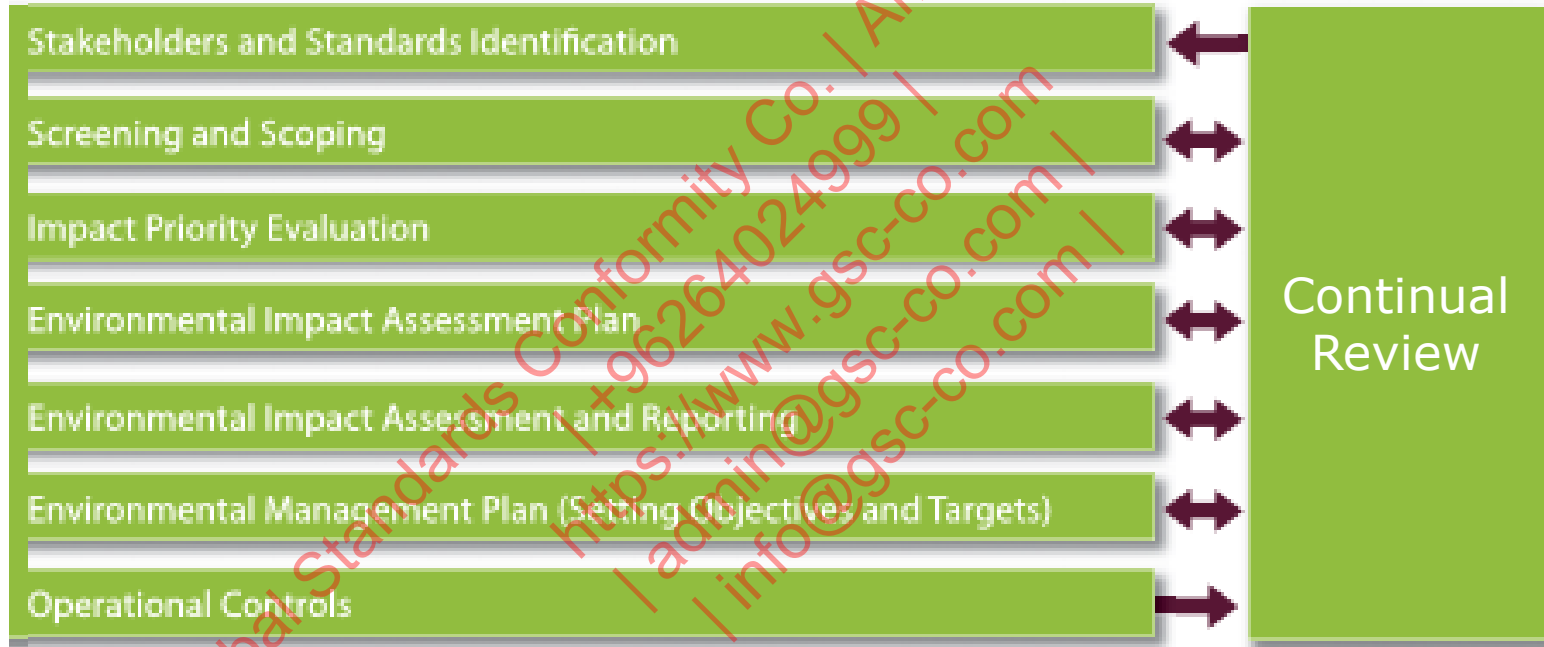
Core Procedures

- Stakeholders and Standards Identification
- Screening and Scoping
- Impact Priority Evaluation
- Environmental Impact Assessment Plan
- Environmental Impact Assessment and Reporting
- Environmental Management Plan (Setting Objectives and Targets)
- Operational Controls
- Continuous Review

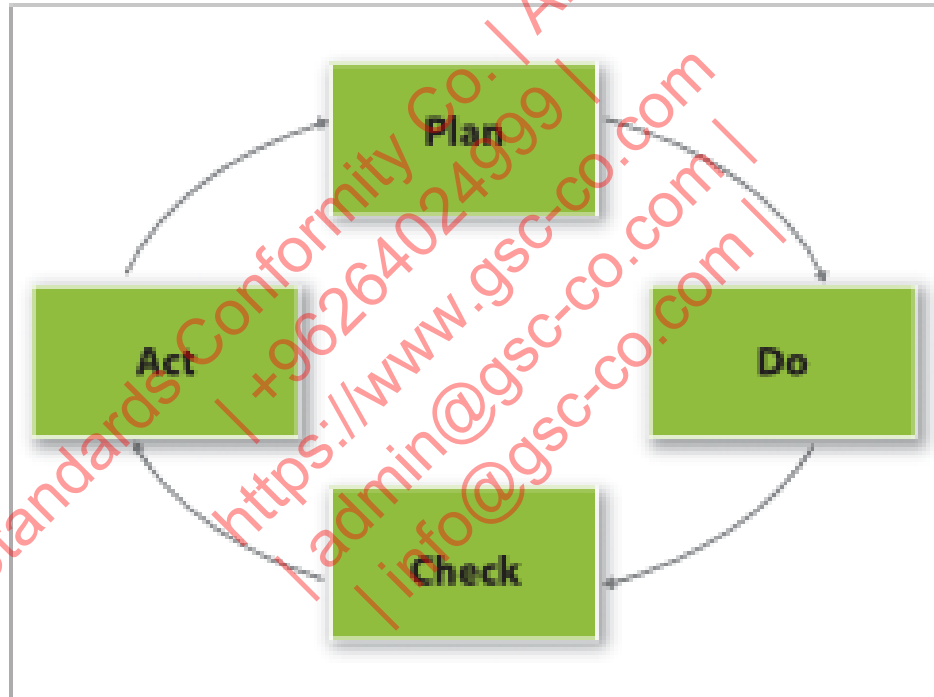
Assurance and Audit Procedures

- Communication Training and Awareness
- Document and Record Control

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- Plan
 - To determine scope of the system during the initial phase, which will continually develop throughout the lifecycle
- Do
 - To develop appropriate documentation and assign responsibilities in order to ensure that relevant issues are managed effectively
- Check
 - Period monitoring and checking to ensure the system is working efficiently and effectively to meet the requirements
- Act
 - Appropriate measures to rectify any shortfalls and updating where the circumstances change or incidents / findings need actions taken

- On-site gap analysis (Phase 1)
- Implementation Action Plan identifying responsibilities (Phase 1)
- Document EMS Policy, Aspects & Impacts and Objectives (Phase 2)
- Document EMS processes and procedure (Phase 2)
- Create supporting documents, templates, guidance and records (Phase 2)
- 'Health Check' utilising Implementation Action Plan for 'progression' (all phases – see Phase 1 for explanation)
- Internal audit of 'implemented' system (Phase 3)
- Management Review of 'implemented' system (Phase 3)
- **Certification management (Phase 4)**

Steps to Gaining Certification

1. Apply to IAF Member accredited certification body for ISO 14001 certification
2. External comprehensive documentation review & preliminary audit to evaluate readiness for certification (Stage 1)
3. Implement improvements from documentation review & preliminary audit
4. Certification audit (Stage 2)



ISO 14001
Certified

5. Management review, & implementation of further improvements
6. Plan corrective action in response to any nonconformities raised
7. Certification granted for 3 years
8. Surveillance audits initially 6-monthly then annually
9. Regular management reviews
10. Triennial recertification audits.



ISO 14001
Certified

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- ✔ Model environmental management system for government agencies.
- ✔ International standards ISO 14001:2015, ISO 14004:2004, ISO 19011:2003
- ✔ Training on environmental management systems and auditing
- ✔ Consultancy to *assist* with development of the EMS
- ✔ Software to simplify the whole process
- ✔ Conformity assessment bodies to certify the EMS to the requirements of ISO 14001:2015.

Standards and MOD Publications	
ISO 14001:2004	Environmental Management Systems - Specification with guidance for use.
ISO 14004:2004	Environmental Management Systems - General guidelines on principles, systems and supporting techniques.
ISO/TR 14062:2002	Environmental management - Integrating environmental aspects into product design and development.
ISO 19011:2002	Guidelines for quality and/or environmental management systems auditing.
ISO Guide 64:2008	Guide for the inclusion of environmental aspects in product standards
ISO 14064-1:2006	Greenhouse gases -- Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals.
ISO 14064-2:2006	Greenhouse gases -- Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements.
ISO 14040:2006	Environmental management - Life cycle assessment: Principles and framework
ISO 14044:2006	Environmental management - Life cycle assessment: Requirements and guidelines
BS 8555:2003	Environmental Management Systems - Guide to the phased implementation of an environmental management system including the use of environmental performance evaluation.
BS 8900: 2006	Guidance for managing sustainable development
BS EN 16001: 2009	Energy Management System
BS EN 1050	Safety of Machinery – Principles for Risk Assessment

Other Useful Websites

- www.netregs.gov.uk This aims to make environmental legislation clearer and provides generic environmental management and sector-specific guidance
- www.legislation.gov.uk Another website from which UK Acts of Parliament, Statutory Instruments and Explanatory Notes can be downloaded. Also includes new and draft legislation
- www.iema.net Institute of Environmental Management and Assessment
- http://ec.europa.eu/environment/gpp/index_en.htm European Commission Green Public Procurement webpages
- www.aof.mod.uk Acquisition Operating Framework webpages, which provides information on policy and good practice for the MOD and industry partners concerned with acquisition
- <http://wwf.panda.org/> World Wide Fund for Nature

- Management team (Steering committee) or delegated representative to co-ordinate establishment, implementation & maintenance of EMS & report to top management.
- Steering committee to establish the EMS, and possibly continue to maintain the EMS.
- Training of management representative & steering committee members on environmental management systems & ISO 14001.
- Training of management representative & internal auditors on internal auditing.
- Delivery of awareness training on environmental management system to all staff.
- Possible resources for waste segregation, energy & water efficiency measures, and other environmental action plans.

- Lack of management support and commitment
- Lack of support from staff
- Inadequate resources
- Inadequate awareness and culture within the organisation
- Lack of clear responsibilities and authorities
- EMS too complex for the organisation
- Organisational politics & culture within functional areas

Best Available Techniques (BAT)

Bat is a concept applied by regulations to limit the pollutant discharges from industrial processes, with particular regard to the preferred abatement strategy

The best technically feasible option under the circumstances, to reduce the environmental impacts arising from a process or an organisations activities.

Best Practicable Means (BPM)

Refers to options that are financially and technologically feasible. It can include such factors as the design installations, maintenance and manner or period of operation for plant and machinery, construction and maintenance of including buildings.

It looks at areas where money, time or trouble are disproportionate to the benefits likely to be achieved. Lack of finance is not a reasonable defence.

An environmental management system takes time and commitment from the entire organisation.

Effective running of an EMS will provide ongoing environmental benefits, cost savings and contribute to building an attractive work place culture.

The process approach to management systems allows for easier adoption, simpler understanding and importantly identification of roles and responsibilities against tasks associated with the requirements of the EMS. The use of electronic tools to simplify these steps, make for a more efficient and well controlled system.

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