

IAMC Toolkit

Innovative approaches for the Sound Management of Chemicals and
Chemical Waste

PHASE V **IMPLEMENT & MONITOR**

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Company guide

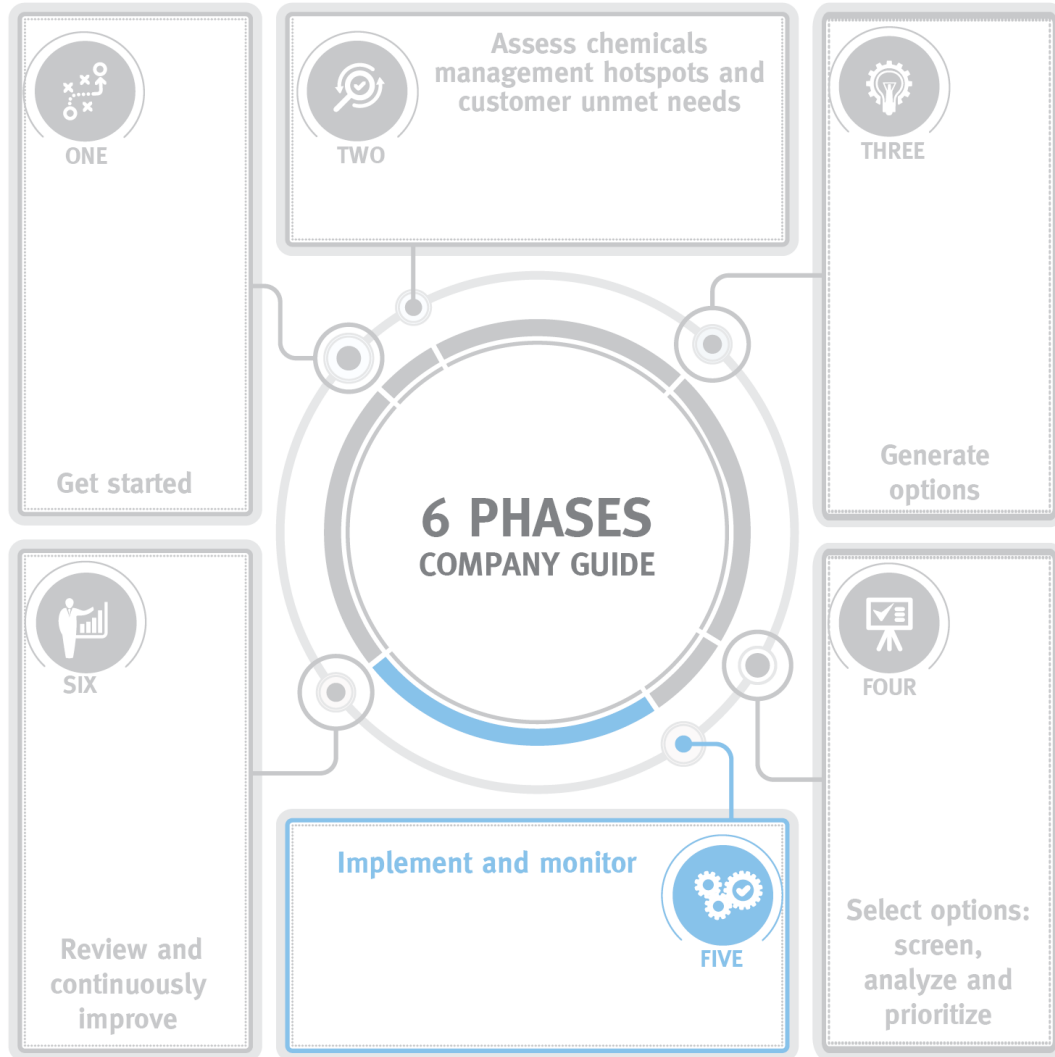
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Content

1. Define expected benefits upon successful implementation
2. Implement the selected innovative options
3. Monitor the implementation process at the company

Phase 5: Implement and Monitor



Source: ISSPPRO

Introduction: Implement & Monitor

The aim of this step is to support the company in implementing the selected innovations and ensuring the objectives are realized in an efficient and cost-effective way.

The Toolkit user will learn how to:

- Define expected benefits upon successful implementation
- Develop a plan for implementing selected innovations
- Develop a monitoring plan to ensure implementation progress is measurable, transparent and easy to communicate

Phase 5: Implement & Monitor

Key Tasks

- Define expected benefits upon successful implementation
- Implement the selected innovative options
- Monitor the implementation process at the company



Deliverables

- **Implementation plan:** summary of implementation timeframe and expected benefits
- **Monitoring results:** summary of benefits achieved and obstacles overcome upon completed implementation of innovations

Define expected benefits upon
successful implementation

Define benefits

It is important that the company and project team know the benefits expected to result from implementation and aim to achieve them.

Clearly define the expected outcome (targets) of the implemented options according to sustainability impacts:

- **Economic benefits and costs**, for example:
 - Capital investment costs = \$25,000, training costs = \$1,000
 - Material savings = \$15,000 p.a., operational savings = \$2,000 p.a.
- **Environmental benefits**, for example:
 - Reduction of used-solvent waste from 150 kg per tonne of product to 25 kg per tonne of product.
 - Note: the “Enterprise-Level Indicators for Resource Productivity and Pollution Intensity” (UNIDO-UNEP) can be used to measure environmental performance.
- **Social benefits**, for example:
 - Substitution of heavy metals in anti-corrosive paint formulation with safer and more effective alternatives
 - Decrease the chance of severe accidents by a factor of 10

Setting Targets for Option Implementation

Use the following example template for setting targets against which to measure successful implementation.

Name of option	Category	Cost for implementation	Expected economic benefits	Expected environmental benefits	Expected social benefits
Option 1	Good housekeeping	\$XX per year	\$XX per year	XX kg of fuel oil per day = XX kg of CO ₂ avoided per day	Proper insulation of condensate return piping protects personnel against burns
Option 2	Equipment modification	\$XX per year	\$XX per year		
...					

Implement the selected innovative options

Implementation Action Plan

An **implementation plan** lays the foundation for a successful, efficient and cost-effective implementation. A good implementation plan answers the following questions:



Implementation Plan Checklist

Keep the following factors in mind when preparing the implementation plan:



- What is to be implemented?
- How does it contribute to the company strategy & goals?
- Who is responsible for the implementation of each option?
- When should each option be implemented (deadline)?
- How is it to be implemented?
 - What resources (technical, financial, manpower) are required?

The **innovation team is responsible for:**

- Presenting the action plan to the management and gaining approval
- Driving implementation and maintaining the action plan as a live document

Example Template: Action Plan

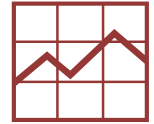
The following example template can be used to develop an implementation plan together with the company.

Innovative option	No. XX: Short description of option			
Main responsible	Ms/Mr.	Implementation period	XXX to XXX	
Main resources	Labour: XY working hours Total investment: \$XY	Training requirements	For employees on how to safely and efficiently manufacture the new lead-free paint	
Team members and roles	Ms./Mr. – R&D for lead-free paint development			
	...			
Specific action	Responsible	Resources	Deadline	Comments

Monitor the implementation process at the company

Monitoring Plan

Develop a monitoring plan for selected innovative options so that you can measure the performance of implemented options and compare it with the status before their implementation.



A monitoring plan should provide answers to the following questions:

- **What to monitor** (generation of hazardous waste, solvent consumption, VOC emissions, etc.)
- **When to monitor** (weekly, after each shift, etc.)
- **Who is responsible** for monitoring (shift supervisor, QC representative, etc.)
- **How to present results:** absolute values (e.g. kilograms of waste solvent per tonne of product, kilowatt hour of heat per tonne of product, etc.) and percentage (X% of total heat, etc.)
- **Who needs the information** (management, workers, customers, suppliers, other relevant stakeholders, etc.)

Example Template: Monitoring Plan

The following example template can be used to develop a monitoring plan together with the company.

What to monitor?	Who is responsible for monitoring?	When to monitor?	How to monitor?	Reporting to employees	Reporting to management
Product (or product group) 1	Name	After each shift (daily)	Supervisor keeps track of the production	Represented by a curve for the whole year	Figures and graphs for daily and weekly production
Electricity	Name	Weekly	Reading of main meter	As above + compared with production	Weekly curve compared with weekly production
Water	Name	Weekly	Reading of main meter	As above	As above
Material 1	Name	Daily	Workers register number of boxes used	Monthly curve compared with production	As above
Material 2	Name	Weekly	Storage department keeps track of the supply to the production	As above	As above
Accidents	Name	Daily	Supervisor keeps track of accidents	Monthly curve and safety instructions	Weekly figures

Sources

Sources

- CSD Engineers, Switzerland / ISSPPRO, Germany, 2015
- UNIDO-UNEP: Enterprise-Level Indicators for Resource Productivity and Pollution Intensity, 2010
- UNIDO: Cleaner Production Toolkit, 2010

Disclaimer

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