



RECP Training






1. RECP Concept & Practice
2. RECP Assessment
3. Motivation, Commitment & Team
4. RECP Indicators
5. Initial Assessment
6. Detailed Assessment


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Module 5 Initial Assessment




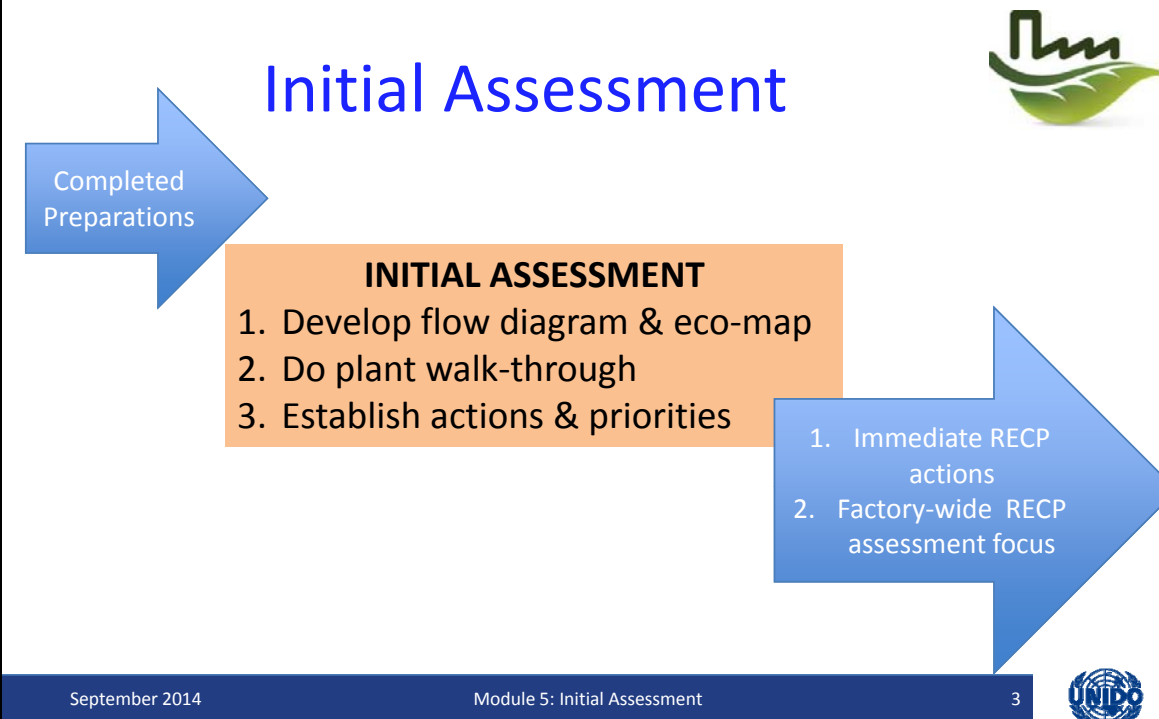
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Initial Assessment



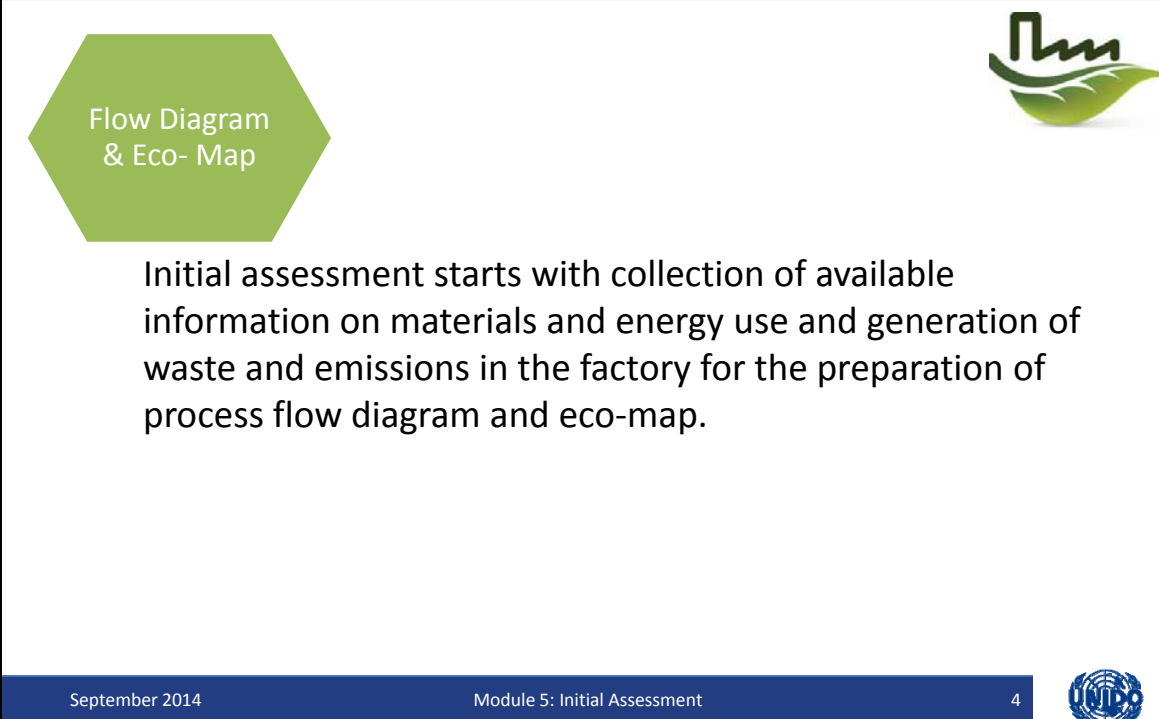
Completed Preparations

INITIAL ASSESSMENT

1. Develop flow diagram & eco-map
2. Do plant walk-through
3. Establish actions & priorities

1. Immediate RECP actions
2. Factory-wide RECP assessment focus



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Flow Diagram & Eco- Map

Initial assessment starts with collection of available information on materials and energy use and generation of waste and emissions in the factory for the preparation of process flow diagram and eco-map.

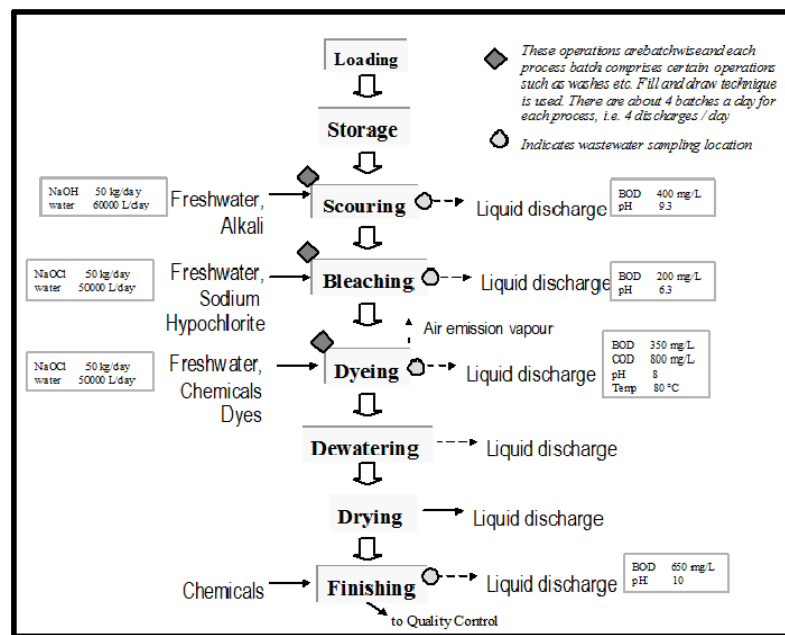
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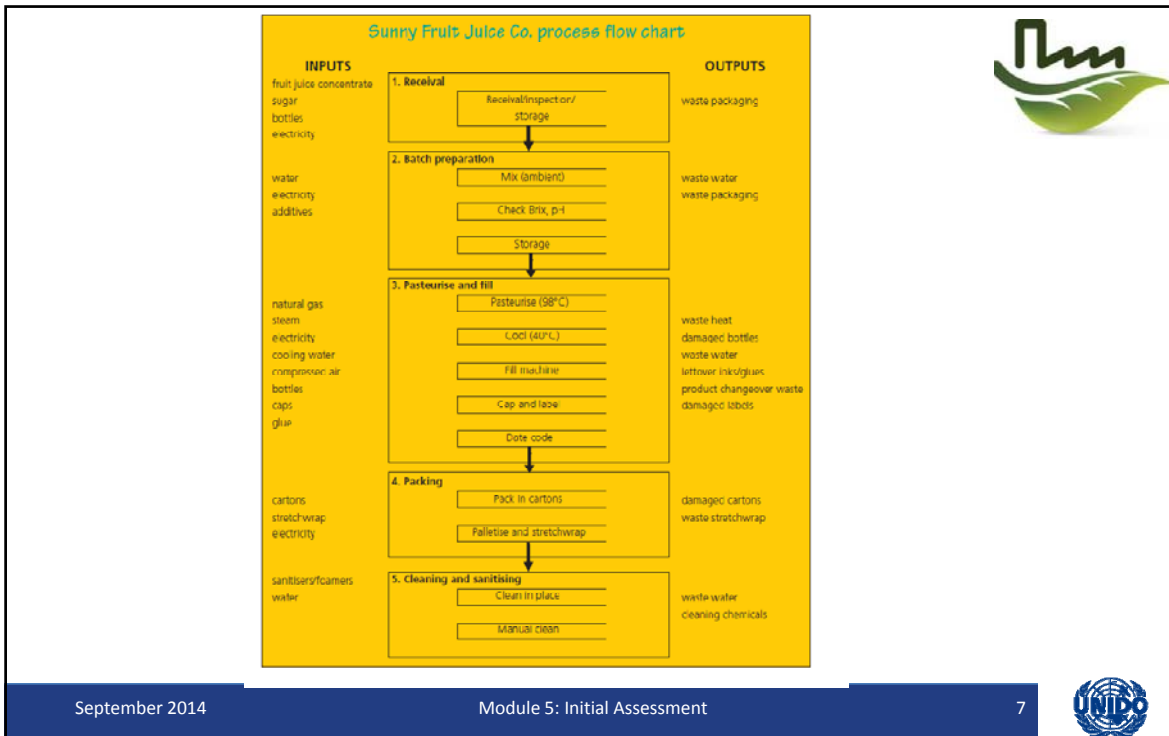



3.1 Process Flow Diagram



- Use block representation to denote operations
- Write the name of the operation, special operating conditions, show points of inspection or quality control, quantities (if available) and use symbols
- Indicate batch or continuous operations
- Use colour codes to indicate different piping or material flow patterns
- Capture start up, shut down and maintenance related activities, seasonal variations in production, etc. Best done by preparing a flowchart which indicates how a process or unit operation is operated for a special situation





2.1 Eco-Map

- Eco-mapping is a very useful application for a RECP team to use
- Eco-mapping can easily capture observations made during the walkthrough
- Eco-maps **visually** present issues of concern, and can also note good practices
- Eco-maps are often the direct indicators of the **housekeeping** status of the enterprise
- Colour coding and symbols may be used to show areas that have been monitored or areas where problems will have to be dealt with on a priority basis
- Eco-maps can be made easily by using the **layout maps of the site / unit**

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2.2 Eco-Map



- Eco-mapping may be used for specific themes, such as:
 - Water consumption
 - Wastewater discharge
 - Solid waste generation
 - Fugitive emissions and odours
 - Noise
 - Dust
 - Environment and safety risks

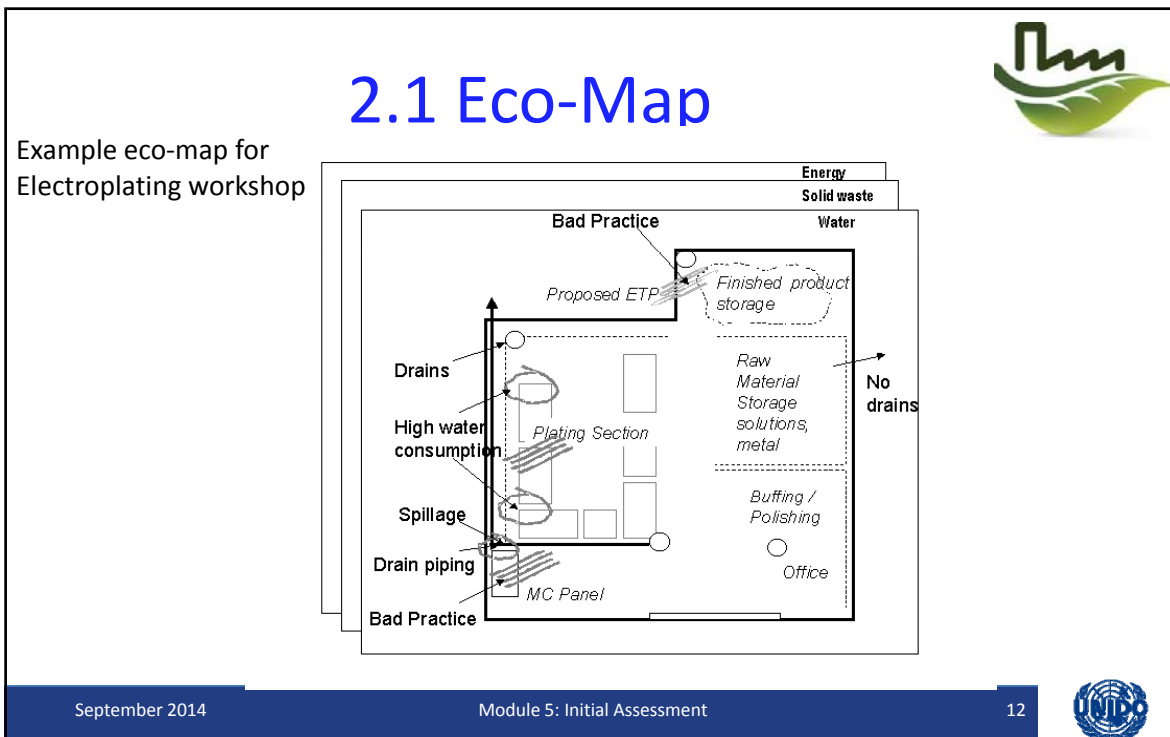
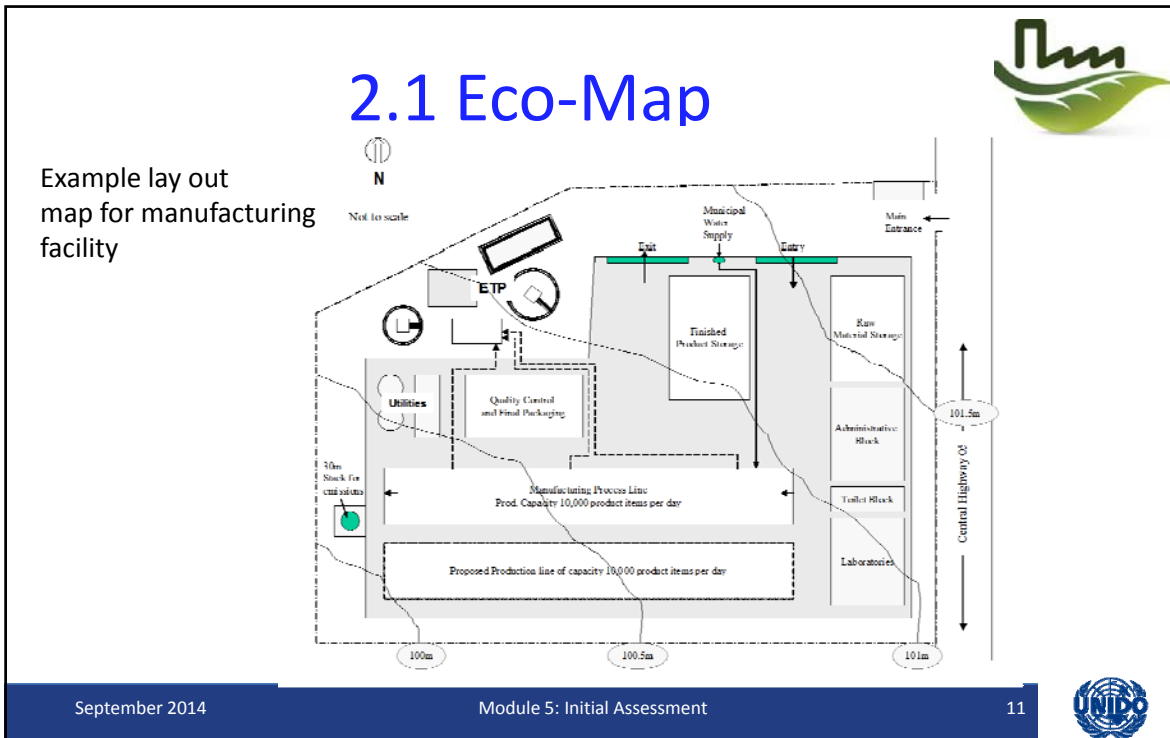


2.1 Eco-Map



- Preparation of layout maps
 - *Key map*: Show the location of the enterprise, access roads, neighbourhood characteristics, and especially sensitive receptors
 - *Layout map of the entire operations in the organization*: Show the internal roads, entry and exits, waste storage, processing, disposal facilities, utilities, wastewater outlets
 - *Layout map of key departments*: Layout maps may be drawn for departments of concern indicating the positions of the major equipment, water piping, steam lines, drains and vents / stacks. Separate layout maps are required for each floor







Plant walk through is undertaken to complement and review flow diagram and eco-map, assess operations and identify status of housekeeping and overall productivity.



2.2 Plant Walk Through



- Inspection of the plant's operations by the team:
 - Observe location and scale of waste/pollution sources
 - Observe usage of energy, materials and water
 - Appraise status of equipment and operations
 - Note general factory appearance and staff and management attitudes
 - Identify quick fixes, through e.g. improved housekeeping



2.2 Plant Walk Through



- Follow the PFD
 - Start at the raw materials receiving area and end at the department of finished products
- Cover all the support utilities
 - Boilers, power generators, fuel storage tanks, pump-house, refrigeration plant, raw water treatment plant, wastewater treatment facility, etc.
- During operations and while idle for specific tasks
 - Identification of leaks, steam, compressed air, water etc.
- Consider contingencies
 - What if?? Supply interruptions, maintenance, external emergencies
- Involve staff and collect their comments and ideas

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2.2 Plant Walk Through



- What to take for a walk through
 - A camera to take photographs
 - A notepad to make quick sketches, including lay-out, eco-map, etc.
 - Color pens or highlighter to mark important points
 - A voice recorder to record observations
 - Appropriate closing and Personal Protective Equipment
 - Flashlight to look into dark places
- Checklists
 - Materials, energy, water, waste, effluents, etc.

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2.2 Plant Walk Through



Ask questions related to operating practices, housekeeping, equipment maintenance and control, safety and health, waste generation, handling etc.

Walkthrough areas...

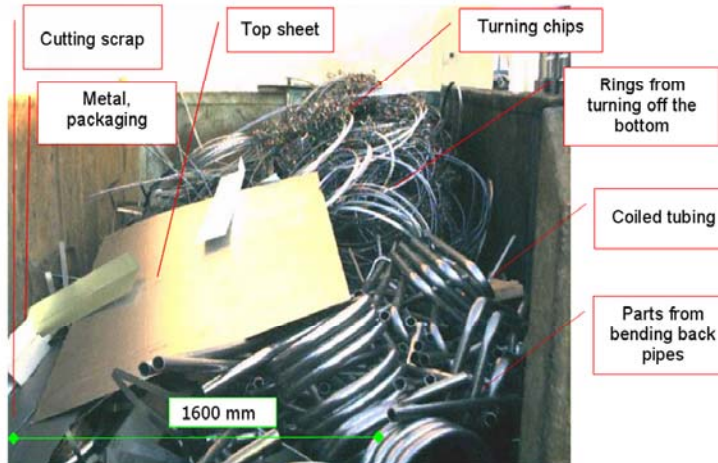
- Work floor or shop floor
- Machines and Operations
- Waste and Emissions
- Labor
- Storage areas
- Utilities



2.2 Plant Walk Through



2.2 Plant Walk Through



2.2 Plant Walk Through



Eco-Efficiency Toolkit for Queensland Food Processing Industry, Gov of Queensland, Brisbane, 2004



Actions & Priorities



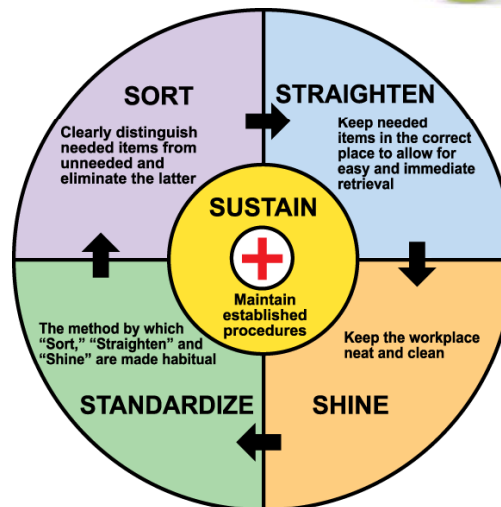
Information collected is being analyzed to identify immediate RECP options for implementation and thereby provide momentum for the RECP effort in the company, including for detailed assessment of plant level priority areas.



3.3 Actions and Priorities



- **5S**
 - Japanese system for better workplace management
 - *Finding a place for everything and putting everything in its place.*
- It's the elimination of waste everywhere – while adding customer value...



<http://www.abbeymoulding.com>



3.3 Actions and Priorities



- **Good Housekeeping**
 - Refers to a number of practical measures based on common sense that enterprises can undertake to improve their productivity, obtain cost savings, and reduce the environmental impact and resource use of their operations
 - **Typical housekeeping deficiencies**
 - Air and water leaks
 - Spills and wasted materials
 - Unnecessary running – taps, equipment, lighting, heating, cooling
 - Unnecessary rework
 - Blocked drains
 - Unmotivated staff
 - **Avoidable costs and environmental burden**
 - **Often a workplace hazard**



Overflowing bins containing recyclables and recycled bin empty

- lack of easily accessible bins
- lack of staff training and monitoring



Half full bin ready for collection

- paying for collection of air



Spills and product on floor and equipment

- poor equipment design
- poor staff practices
- poor plant layout



3.3 Actions and Priorities



Good Housekeeping

- **Water use and effluents**
 - Avoid over-flows
 - Use efficient nozzles
 - Dry-clean before hosing
 - Fix leaking taps and pipes
 - Replace hoses by fixed pipes
 - Automatic/timed shut off valves
 - High pressure low flow cleaning
- **Energy**
 - Eliminate avoidable use of equipment, lighting, heating, and cooling
 - Operate and maintain at defined set points (temperature, pressure etc.)
 - Fix leaks of steam, condensate and compressed air
 - Maintain insulation



3.3 Actions and Priorities



Good Housekeeping

- **Warehouse/inventory**
 - Proper acceptance protocols
 - Proper labelling and identification
 - Quarantine areas established
 - Appropriate bunds and proper storage and racking
 - First In First Out operation
 - Computerized inventory control
- **Process floor**
 - Ensure safe operating area (hoses, cables, puddles, etc.)
 - Storage of equipment and tools
 - Color coding to identify and facilitate the use of right equipment
 - Light colored walls and floors
 - Mop up spills and leaks
 - Remove waste



2.3 Actions and Priorities



Use a traffic light system to sum up the collective findings of the RECP team

Process Area	Resource Use	Environmental Burden	Costs	Others	Evaluation
• Goods Receiving	Green	Yellow	Green	Green	Low priority
• Process 1	Red	Yellow	Red	Green	High priority
• Process 2	Yellow	Red	Green	Red	High priority
•					
• Process n					
• Dispatch Area	Green	Yellow	Yellow	Yellow	Low priority
• Utilities	Red	Yellow	Yellow	Green	Medium priority



2.3 Actions and Priorities



- Immediate actions:
 - Low/no cost RECP options:
 - Fix leaks and spills
 - Improve switch on/off procedures
 - Improve inventory controls
 - Standardization of procedures
 - →Ensure immediate implementation and record benefits achieved
- Factory-wide assessment focus
 - Most significant environmental and resource issues
 - Quantity, volume and hazard
 - Associated costs
 - Risks to employees, consumers, community, etc.
 - Marked in process flow chart and factory map
 - →Recommend for detailed assessment

Take stock of achievements, lessons learned and next steps, and inform management and staff



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Initial Assessment

Flow diagram and eco-map

Walk through

Actions and priorities

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www.recpnet.org

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Swiss State Secretariat for Economic Affairs (SECO)

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