TEST Overview

An integrated Approach for Sustainable Production in the Manufacturing Sector

UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION

switchmed

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THE CONTEXT

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UNIDO
Inclusive and Sustainable Industrial Development (ISID)

ISID
INCLUSIVE AND SUSTAINABLE INDUSTRIAL DEVELOPMENT

UNIDO is the specialized agency of the United Nations that promotes industrial development for poverty reduction, inclusive globalization and environmental sustainability.

50 years for resource efficiency
Building blocks of a circular economy

UNIDO switchmed

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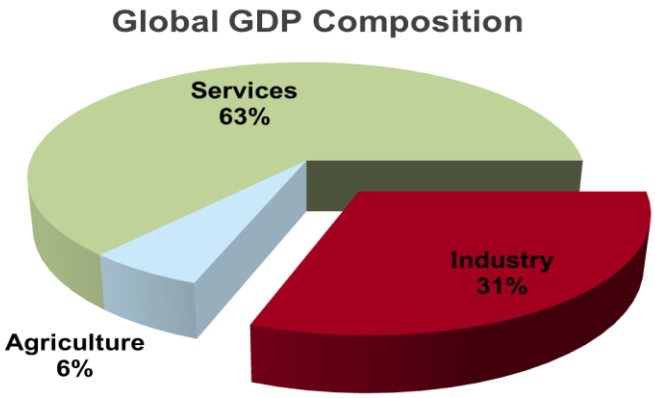
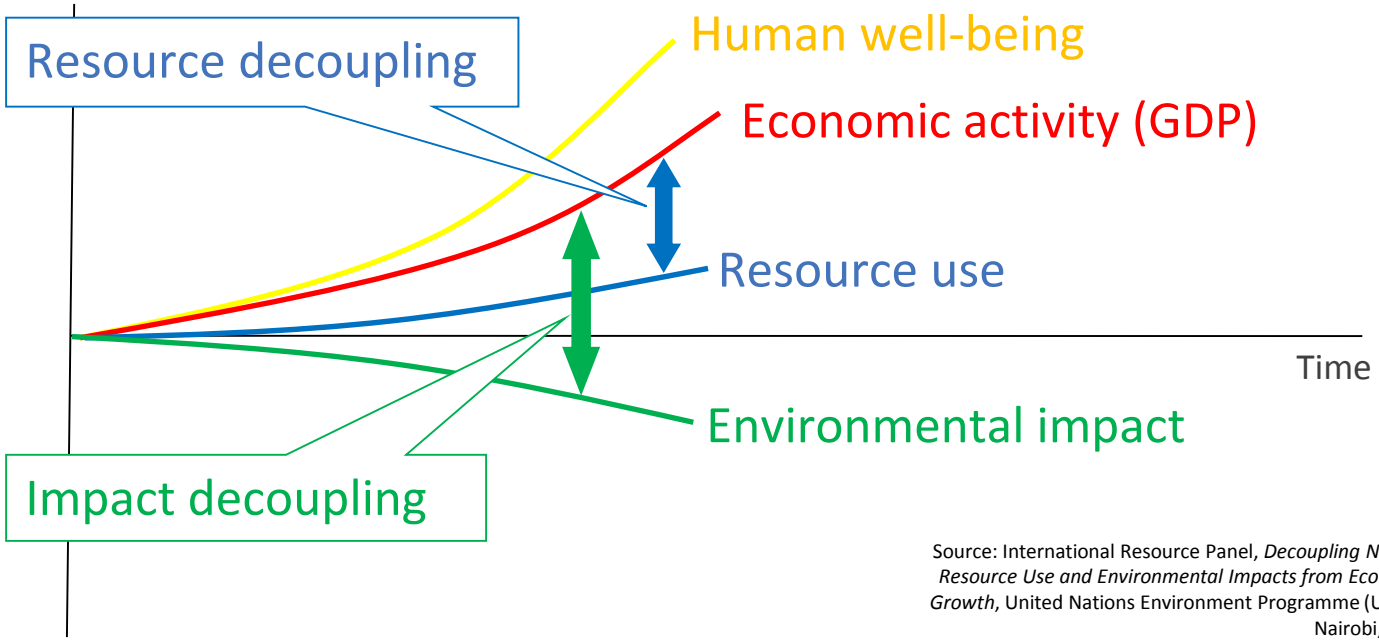
Industry contribution to ISID

- Manufacturing is the engine of the global economy and play a key role in poverty eradication
- Industrial sector uses more materials and energy than they would require due to obsolete technology and practices
- Industry is responsible for nearly a third of all CO2 emissions, 20% global water use, as well as significant pollution generation



THE CHALLENGE

Decoupling of Growth from Natural Resource Consumption and Negative Environmental Impacts



Source: International Resource Panel, *Decoupling Natural Resource Use and Environmental Impacts from Economic Growth*, United Nations Environment Programme (UNEP), Nairobi, 2011

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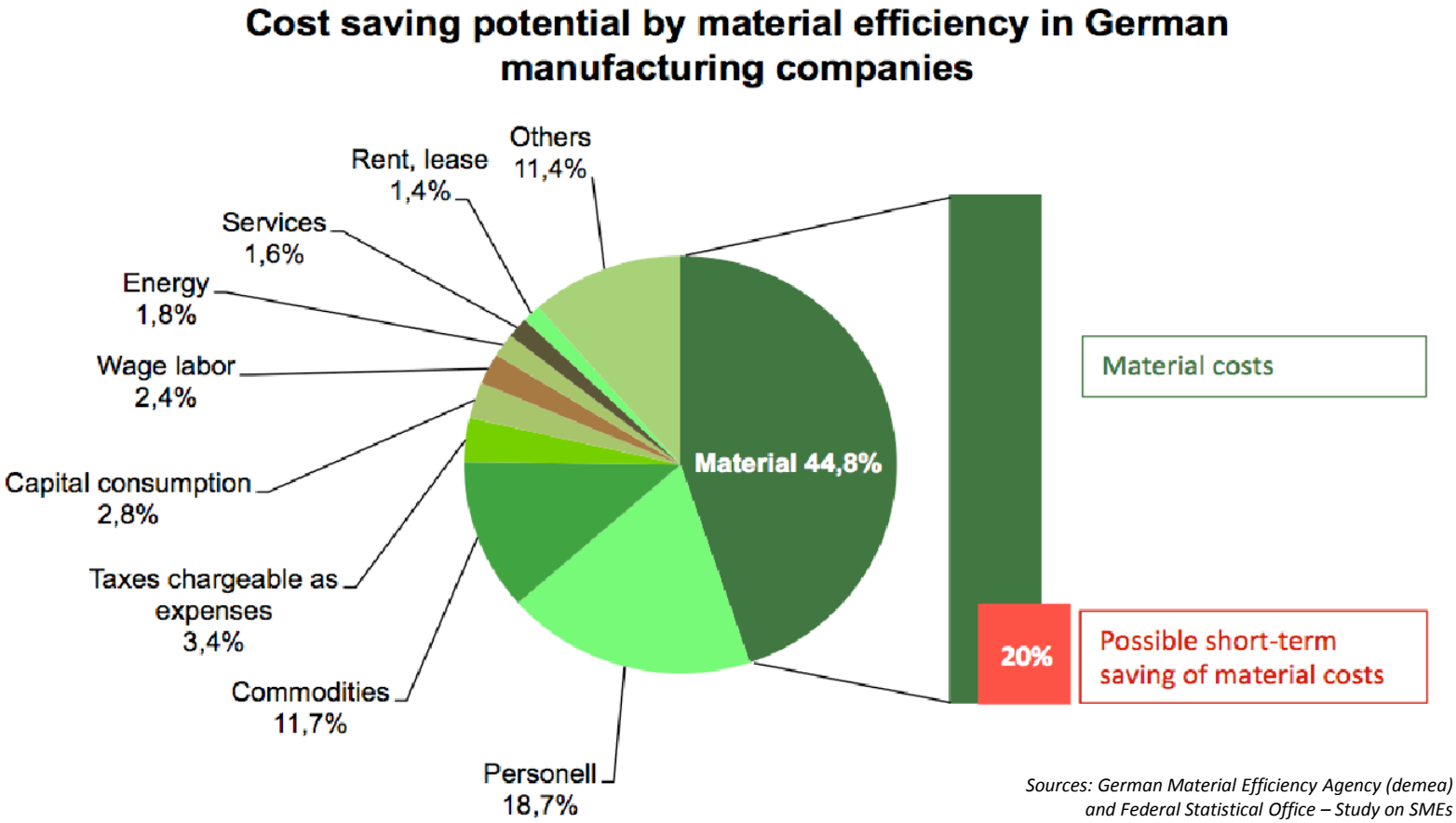
POTENTIAL for RECP IN DEVELOPED ECONOMIES



Sources: German Material Efficiency Agency (demea) and Federal Statistical Office – Study on SMEs

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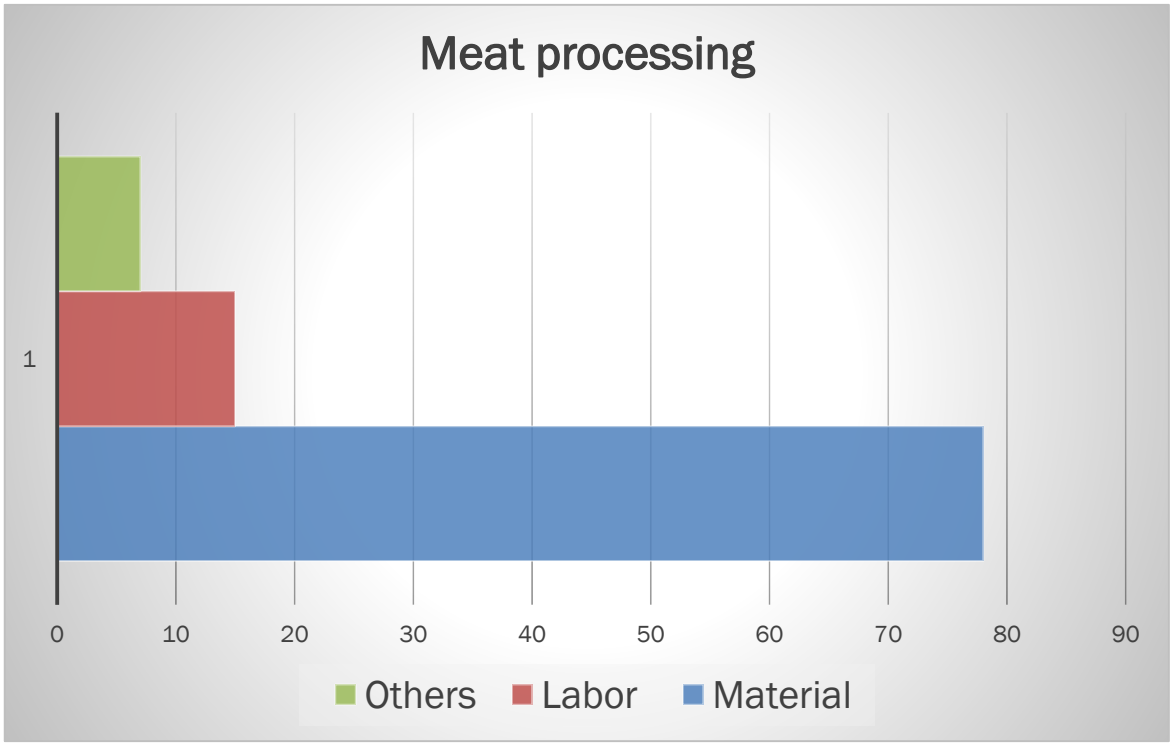
Material costs in production

Materials are often the largest share of all production expenses, using less materials can lead to significant savings!



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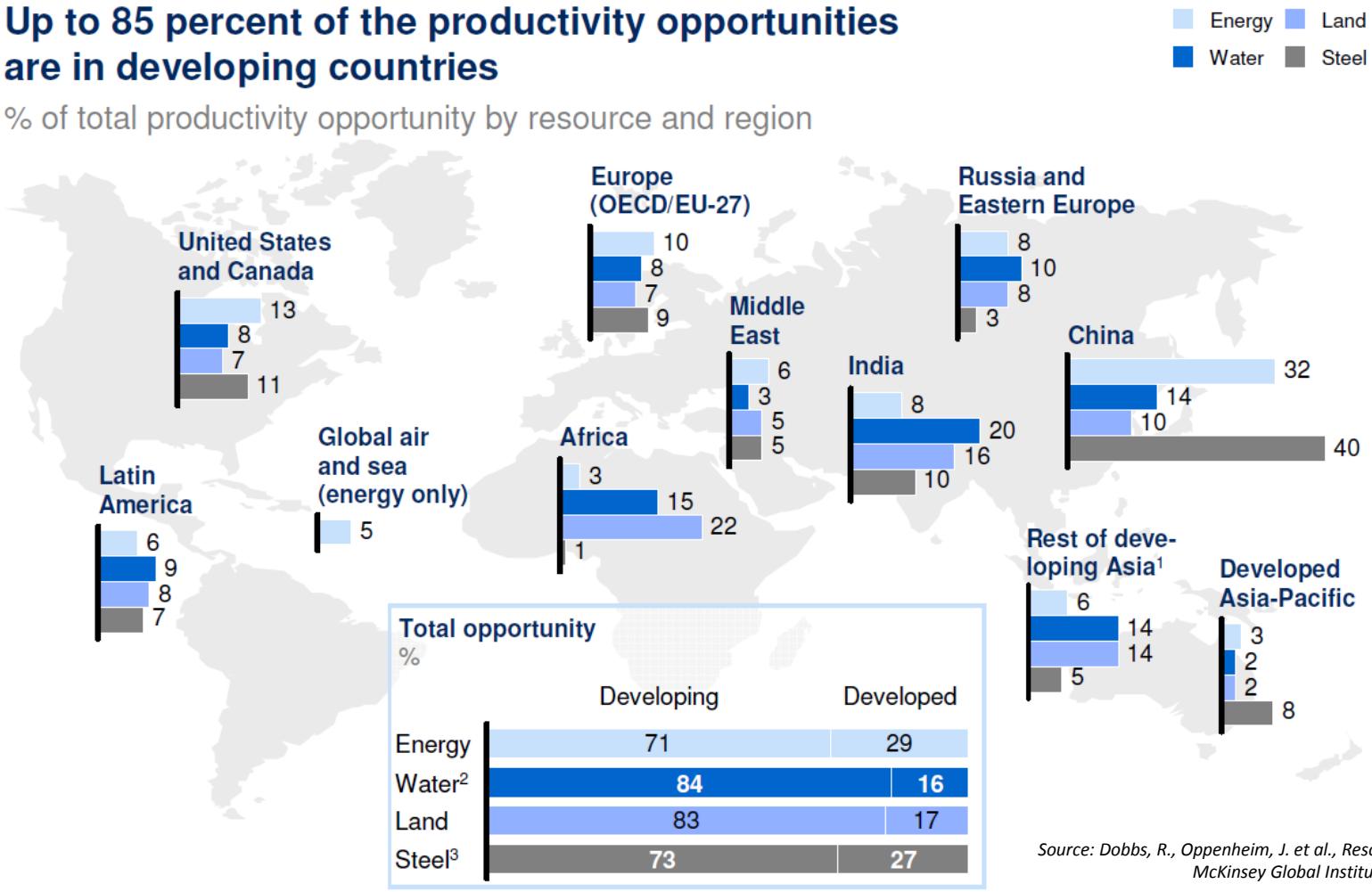
POTENTIAL IN DEVELOPING ECONOMIES

Up to 85 percent of the productivity opportunities are in developing countries

% of total productivity opportunity by resource and region



Source: Dobbs, R., Oppenheim, J. et al., Resource Revolution, McKinsey Global Institute, London, 2011

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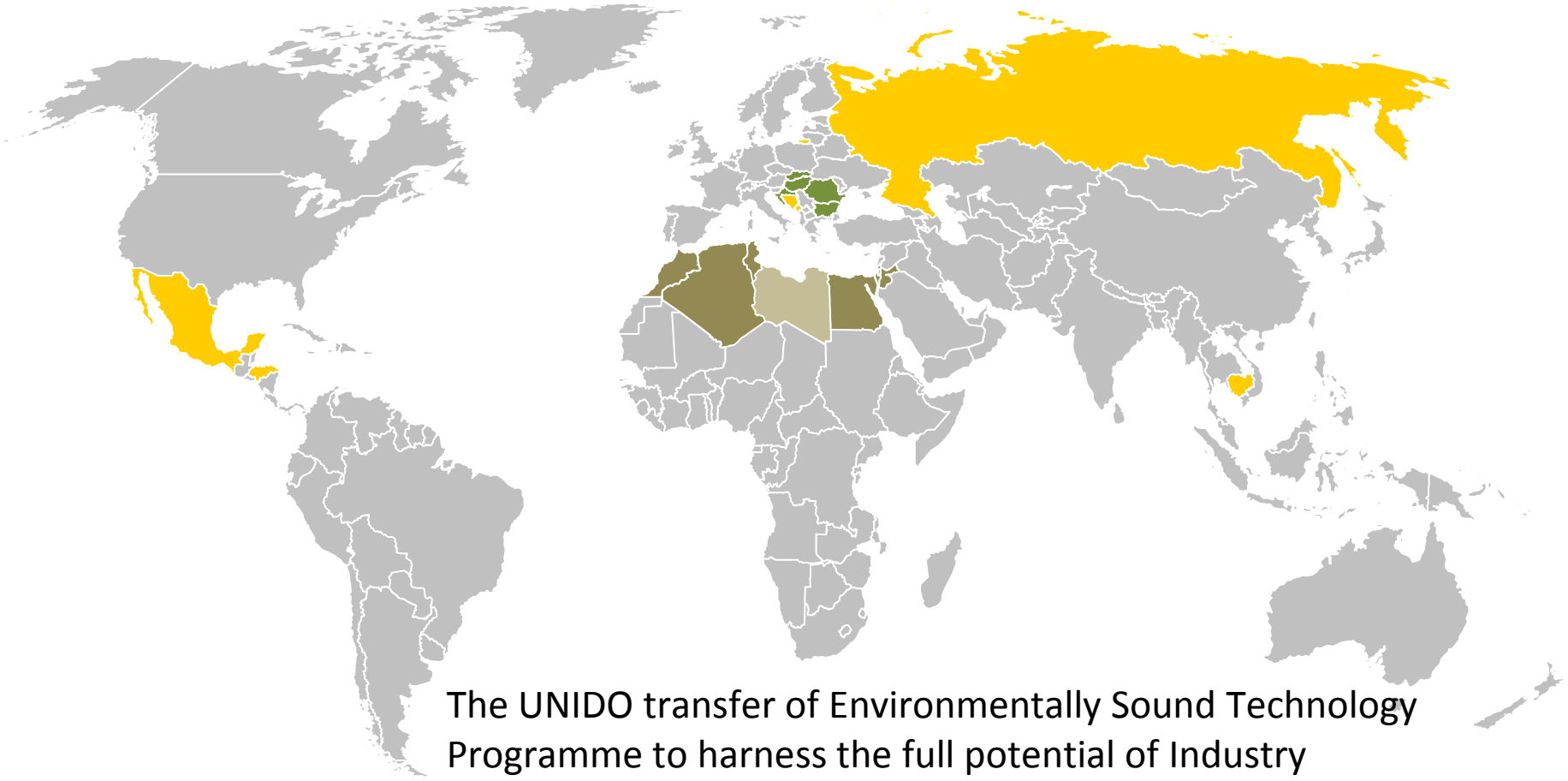
TEST Programme



The UNIDO transfer of Environmentally Sound Technology Programme to harness the full potential of Industry contribution to Inclusive and Sustainable Development (ISID)

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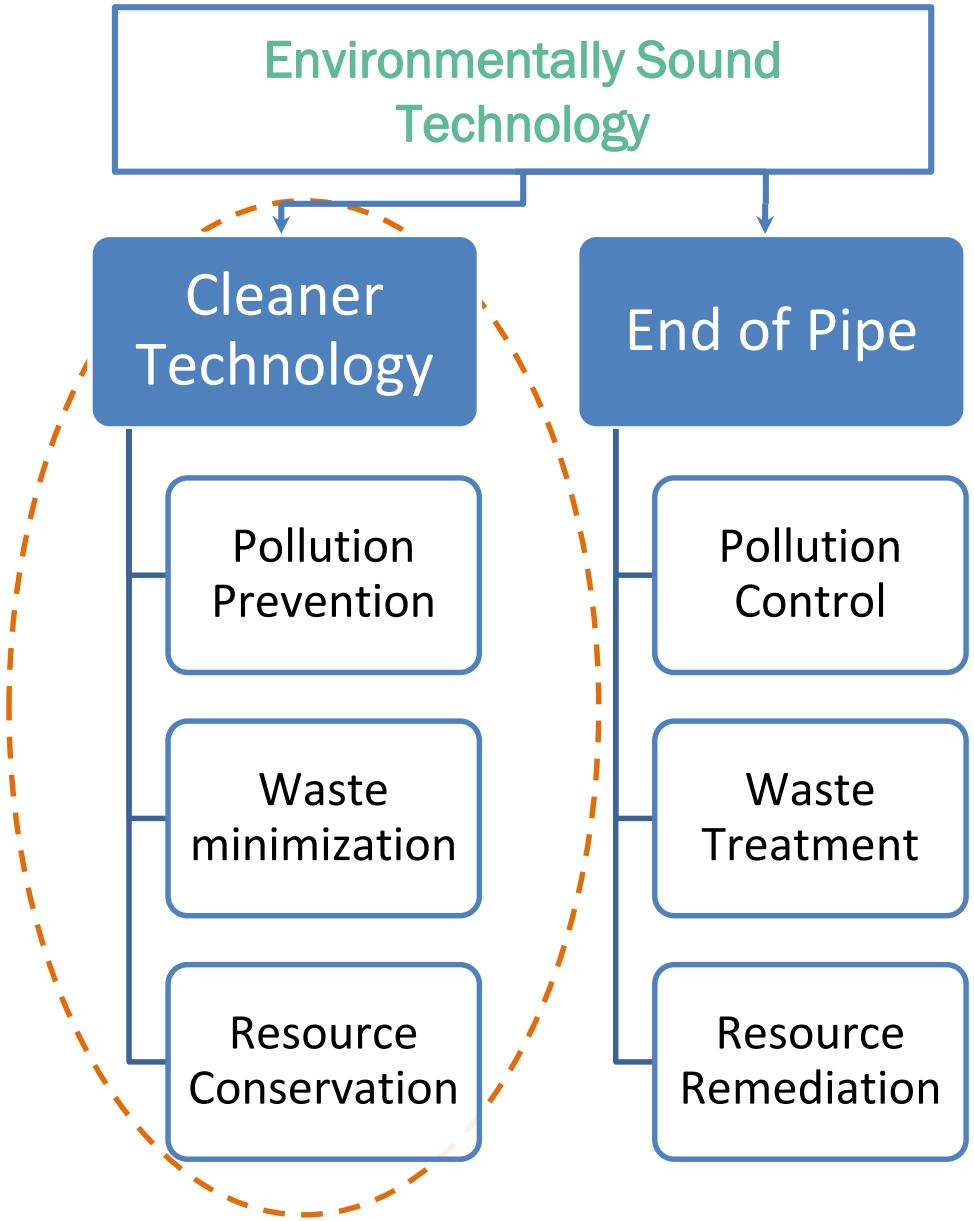

- ✓ Include both soft techniques (e.g. organizational measures) and Technologies
- ✓ Protect the environment
- ✓ Less polluting
- ✓ Use less resources per unit of product/service
- ✓ Recycle and handle residues in a more sustainable way
- ✓ Are safe with respect to the use of hazardous substances for humans and the environment

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THE BUSINESS CASE: EXPERIENCE FROM MED TEST PROGRAMME

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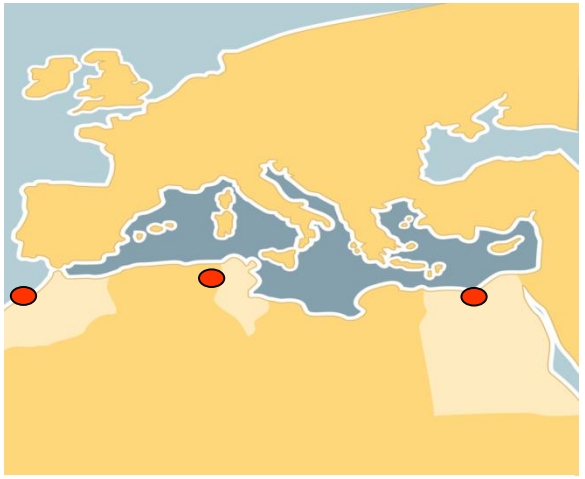
MED TEST Programme

- **MED TEST I (2009-2012)**
  MedPartnership

  3 countries, 43 companies



- **MED TEST II (2014-2018)**
  SwitchMed

  8 countries, 125 companies

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Scaling up: from MED TEST I to MED TEST II

www.switchmed.eu

To stimulate the demand and supply of sustainable production services

Develop national capacities & the local market of sustainable production service providers

Service Providers

Scale-up adoption of best practices through industry demonstrations:

-Eco-innovative technology/Eco-Design products/packaging

-Production efficiency (modification, process control, GHK, etc.)

Industry

Engage key stakeholders (policy makers, industrial association, financial institutions) – enabling business environment

Institutional Stakeholders

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Benefits for Service Providers

- ✓ How to conduct integrated resource and energy efficiency audits with focus on process optimization;
- ✓ Benchmarking techniques for environmental performance of industries;
- ✓ How to integrate resource efficiency into environmental management systems for continuous improvement;
- ✓ Material flow cost accounting techniques to reveal the actual economic losses due to inefficient use of resources
- ✓ Best practices and eco-innovative technology for specific industrial sectors;
- ✓ How to market sustainable production services to industry

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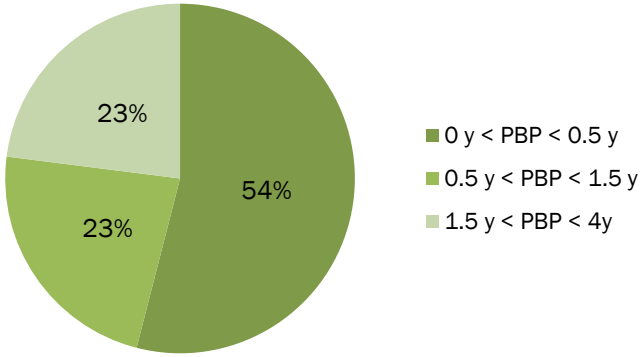
Added value for Industry

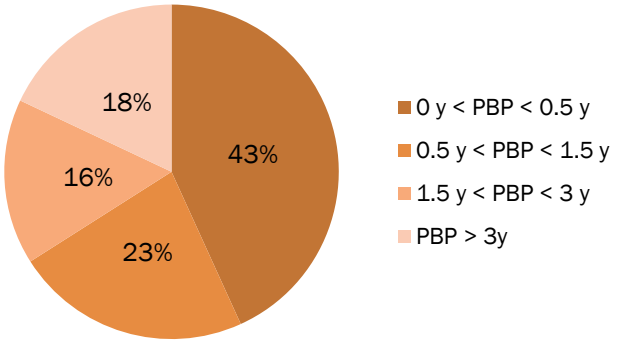
- ✓ Increased productivity, reduced operational costs, optimized investments;
- ✓ Minimized environmental compliance costs, reduced business risks and smaller environmental/carbon footprint;
- ✓ Compliance with international environmental standards for accessing new markets (global supply chains and export markets, new green markets, public procurement, etc.);
- ✓ Secured long-term supply of production inputs: the adoption of a resource-efficiency strategy can mitigate the effects of disruptions and price volatility in the raw materials supply chain;
- ✓ Improved relationship with stakeholders (investors, banks, regulatory bodies, local communities, consumer associations, etc.).

Business case

MED TEST I	MED TEST II

Return on investment of accepted measures / implementation rate > 76%





Private sector financial leverage

17 M euro	86 M euro (+75% per company)

Average Resource Savings

Energy 18%, Water 27%	Energy 28%, Water 20%, Materials 5%

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RECP sound business strategy

Minimized environmental compliance costs, optimized investment

Best practice ISRAEL

*"One Israeli SME adopted measures that will reduce its **energy costs by 13%.** As an added benefit, the TEST methodology has enabled company to identify many VOC emission reduction possibilities that cumulatively result in environmental compliance **without the investing 4 M** euros in Regenerative Thermal Oxidizer (RTO) that operates at a **cost of 1 million Euros** per year."*

Israeli ministries of Economy, Environment and Finance to jointly commit 20 million EUR to upscale resource efficiency among Israel's industry.

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RECP sound business strategy

Manage business risks (water shortage), stakeholder's relationship

Best practice Jordan

"A beverage company identified and integrated more than 30 RECP measures into existing ISO14001 system, cutting ***water use by 22%, energy by 44% and raw materials by 3%*** *with total annual savings of 570k euro and a PBP of less than half a year. Approximately 40,000 m^3 of water have been saved annually by upgrading CIP & internal reuse. Thanks to the reduction in product losses to drain and improved control of the WWTP, the company plans reusing wastewater for agricultural purposes, as a socially responsible action in a water scarce country like Jordan."*

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RECP sound business strategy

Innovation, new business and green market opportunities

Best practice Tunisia

"A jean washing company realized 360k euro savings with a PBP of 1 yr. ***Water savings reached 46%, savings in energy 26% and 1% in chemicals.*** *Some of the most important projects include acquisition of Eco-Innovative E-Flows machines for textile finishing (micro-nano-bubbles technology) and recycling 40% of wastewater within process. The company main motivation was to improve branding and respond to the increasing European market demand for green products."*

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RECP sound business strategy

Improved product quality, productivity and reduced operational costs

Best Practice Palestine

"In a food company, the wafer production line revealed to be the major source of material and product losses with a reject of 15% compared to 1% of best practice. Through a modification of the product formulation, improved operational control and the installation of a new creamer section, the company not only achieved a better quality of their wafers, but also an increase in the productivity, while reducing rejects by 10% at packaging stage. Several energy efficiency measures led to a reduction by ***60% of the total gas consumption at boilers and oven****"*

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TOOLS FOR SUSTAINABLE PRODUCTION

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Discussion

- What is your experience working with different SP tools in order to improve RE performance of a company?
  - EMS, EnMS
  - CPA
  - LCA
  - Eco-design, eco innovation
  - CSR
  - Others….

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SP tools & the Management Pyramid

Stand-alone implementation of any of the above-mentioned tools
(although effective in identifying particular improvements)
can easily lead to sub-optimization of solutions

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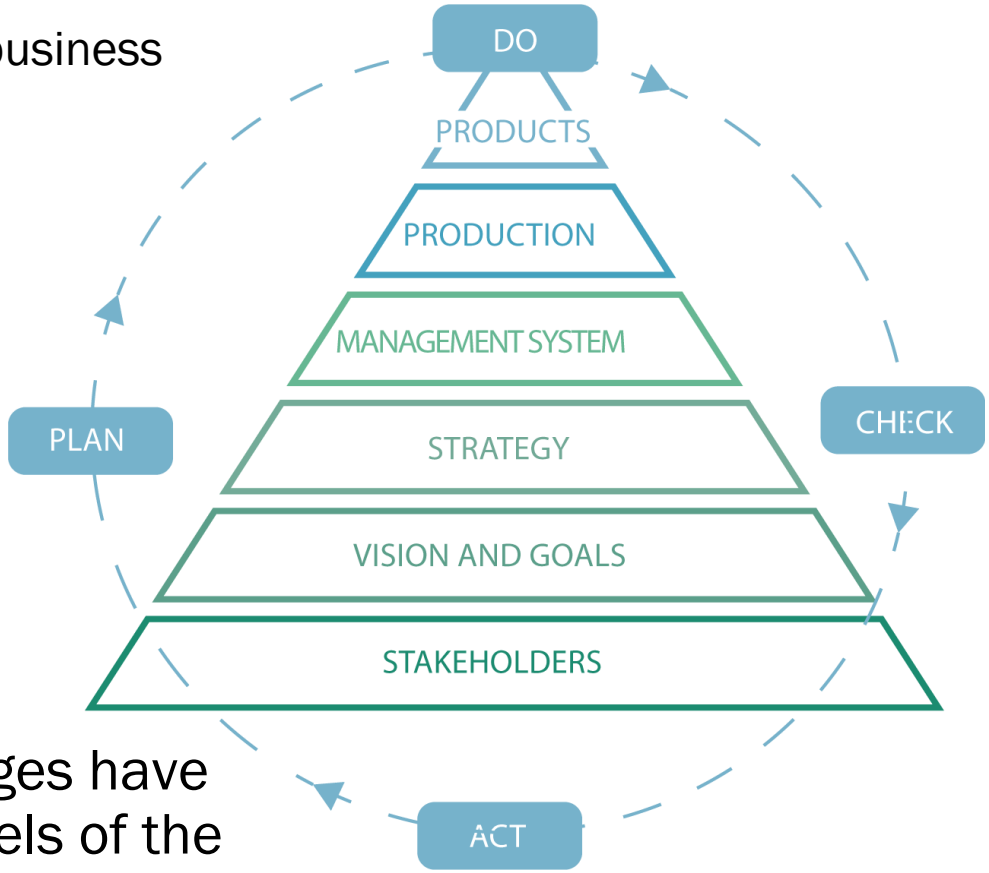
The Management Pyramid

Change at particular levels of a business **is the result of learning**

Following the learning cycle

P – D – C – A



In order to be effective, changes have to be consistent within all levels of the management pyramid

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Resource Efficiency & Cleaner Production Assessment (RE CPA)

Objective	Focus	Limitations
To improve resource productivity and environmental performance by feasible measures that also bring economic benefits to a company	Analysis of the root causes of important losses and use of different preventive techniques for generating solutions.	Lacks the information and management system for monitoring the efficiency of material/energy flows and for continuous improvement.

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Material Flow Cost Accounting (MFCA)

Objective	Focus	Limitation
To monitor material and energy flows and their related costs through setting up of an appropriate information system.	Tracking and monitoring the non-product outputs in both physical and monetary units (e.g. volume and money) by linking accounting and production data. Reveals the actual costs of production inefficiencies and losses, including hidden environmental costs.	Focuses on annual or process-specific cost indicators and does not consider the dynamic baseline of industrial processes. Does not address measures to improve physical performance and cannot bring the desired organizational learning on its own.

Monitoring and Targeting (M&T)

Objective	Focus	Limitation
To control actual resource efficiency performance by setting up an information system correlating energy, water or material consumption data to relevant driving factors	Monitoring resource efficiency at the level of the whole company, specific cost centres or sources of losses. It enables accountability for resource efficiency.	Difficult to implement in situations where driving factors cannot be easily defined. Requires tools for identification of measures like RECPA.

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EMS and EnMS

Objective	Focus	Limitation
To implement a company's environmental and/or energy policy in line with international standards based on a systems approach	Provides the backbone for linking all levels of a business and for managing its environmental/energy aspects for continuous improvement.	Does not provide a practical tool to identify measures to improve environmental performance.

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Corporate Social Responsibility (CSR)

Objective	Focus	Limitation
To integrate all sustainability aspects related to social, environmental, and economic dimensions into business strategy and operations.	Overall umbrella and approach for sustainable production tools, to manage business risks and opportunities, including the values of stakeholders.	Risk of it being only formally implemented as it requires changes on the most "difficult" level of the management pyramid that deals with enterprise values and strategies.

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Life Cycle Assessment and Eco-Design

Objective	Focus	Limitation
To analyse (LCA) and reduce (Ecodesign) environmental footprint of products and services along their life cycles, both upstream and downstream.	Addresses key environmental impacts of a product or service beyond manufacturing and stimulates the design of sustainable goods and services for a circular economy.	Requires additional tools to incorporate social and financial aspects. Complexity and cost can be high, depending on the scope and type of product/service.

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Eco-Innovation

Objective	Focus	Limitation
To stimulate incremental or radical changes in how products and services are delivered to minimize resource use and environmental impacts.	Targets products, processes, marketing methods, organizations and institutions to create new business models based on stakeholder's expectations in the area of sustainability.	A complex process requiring significant organizational resources, proper policy incentives, and an enabling business environment.

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RATIONALE FOR AN INTEGRATED APPROACH TO SUSTAINABLE PRODUCTION - THE TEST APPROACH

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Why TEST Programme was developed

- Companies do not continue with RECP on their own:
  - Lack of information and management systems supporting RECP
  - Traditional audit like approach: limited training and engagement of different company staff level

- Limited data to document the business case of RECP for evaluation and reporting to stakeholders (TEST has longer project's cycle compared to traditional CPA projects)

- Shift from traditional focus on low hanging fruits to manufacturing process needs, Eco-innovation, sector expertise accelerate company uptake of RECP

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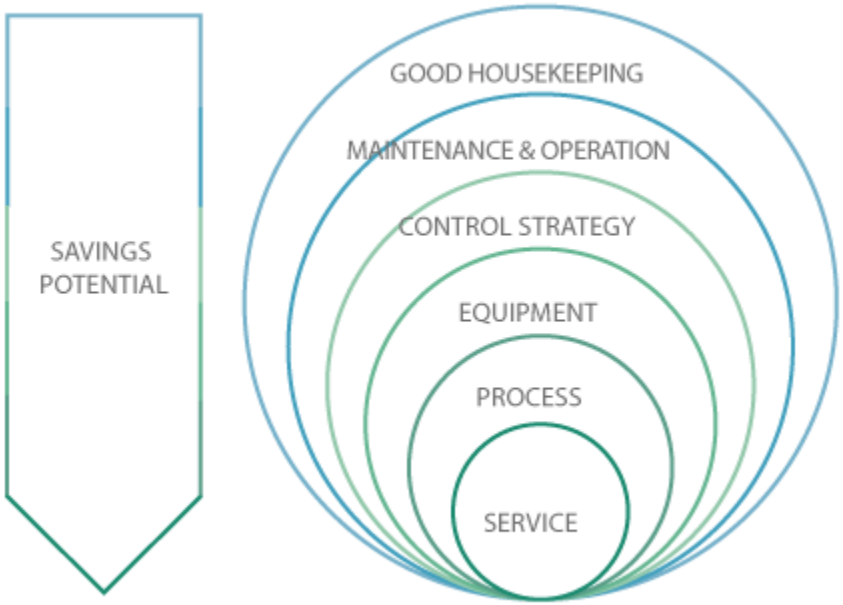
Identification of the full potential for financial and environmental benefits



- Leak inspection programmes
- Performance monitoring (OPIs, pressure losses, energy use, etc.)
- PLC for carbonation process
- Install CO2 recovery plant to recycle CO2 from bottle drying operations
- Replace liquid CO2 purchased with on-site CO2 production (extraction from boiler flue gas)
- Substitute CO2 with filtered compressed air for drying bottles

Addressing the core process needs first when generating options for improvement measures before looking at changing technology/equipment performance, control strategy, good housekeeping or efficiency of utility systems.

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Key success factors working with industry on sustainable production

- ✓ Identification of the full potential for financial and environmental benefits

- ✓ People who influence resource efficiency at all business levels (operational, managerial, strategic), are committed, skilled and empowered

- ✓ SP tools are customized in a way that matches the needs of an enterprise within its operating framework conditions and enhances organizational learning.

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TEST architecture

Integrate RECP into existing management system and core business values for continuous improvement

Assessing actual performance

- Material/energy use vs. International sector Benchmarks and BAT standards
- Setting up Baseline using **MFCA** data
- Quantification of non-product output costs (NPO costs) – "reveal REAL cost of inefficiency/pollution"

Identify and focus on Leverage Points

- priority flows
- priority areas
- core process needs (significant sources of losses)
- sources and causes of losses and pollution

Information and Management System for RECP

- **Utilising MFCA for** Establish information system for RECP performance
- Make accountable people who influence RECP
- Establish core elements of EMS/EnMS and linkages with RECP

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TEST approach

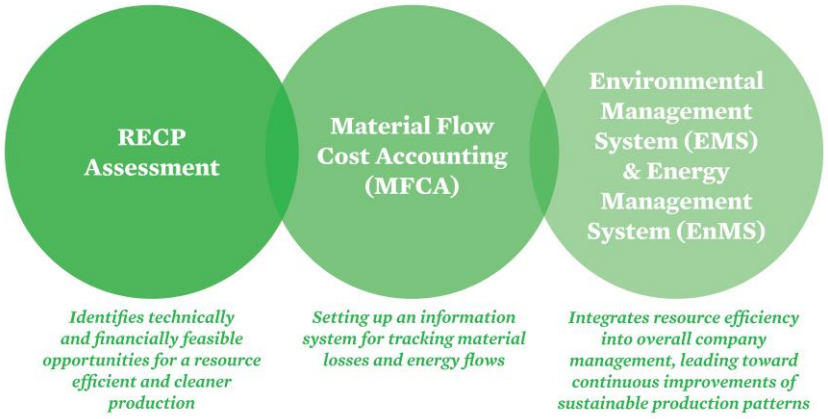
TEST approach embeds traditional "one-stop improvement" or "audit-like" approaches to resource efficiency in the system approach, driving continuous learning and improvement. The particular TEST steps follow the learning cycle, also known as a Deming scheme in line with ISO standards **(Plan, Do, Check, Act), using the following tools:**

i) the **RECPA** methodology, which includes exploring new eco-efficient technologies,

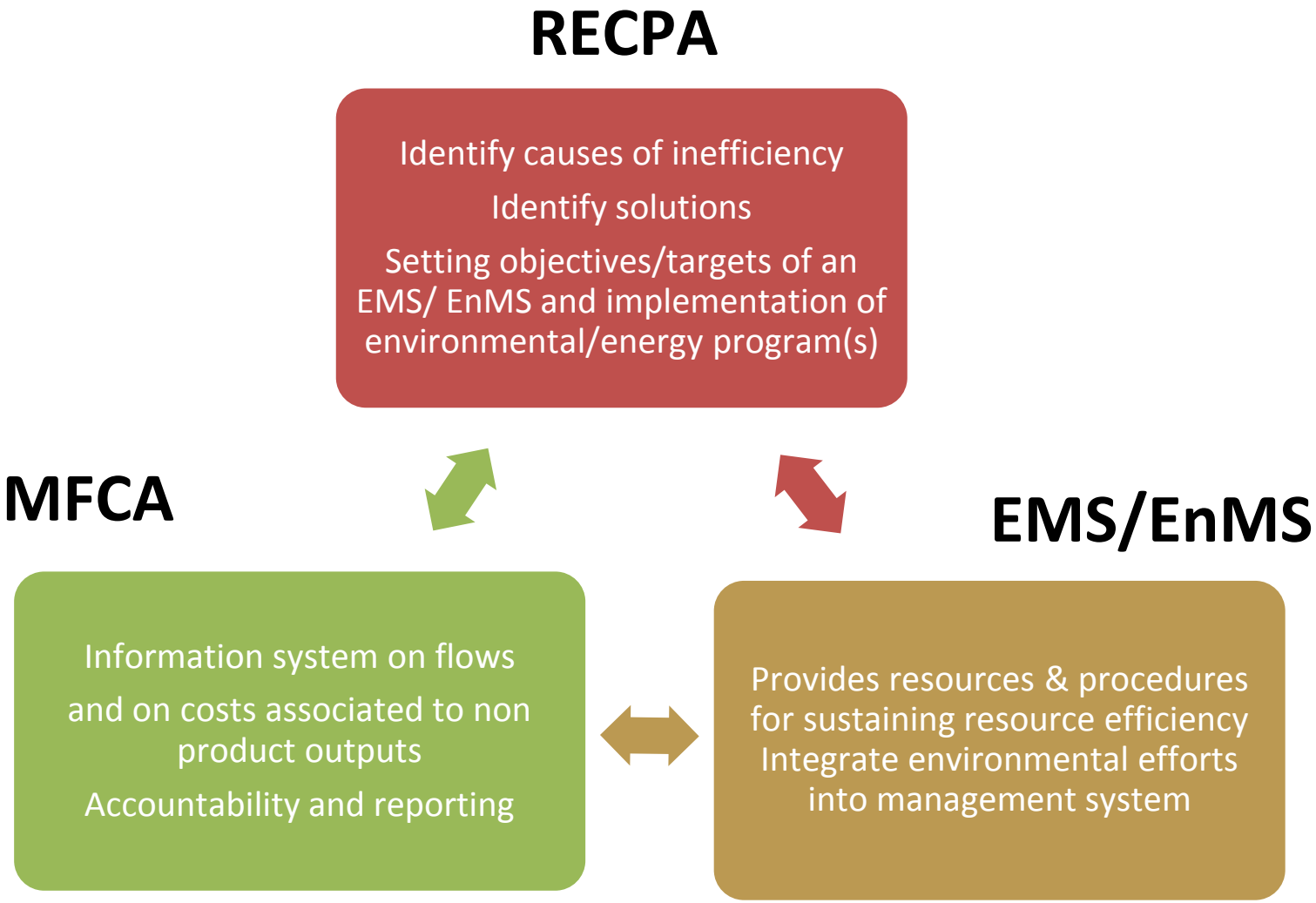
ii) an effective and supportive information system for material and energy flows based on **Material Flow Cost Accounting (MFCA)** principles;

iii) the core elements of **an Environmental Management System (EMS) and an Energy Management System (EnMS)** to sustain performance.

The TEST methodology builds on the following tools:



Tools Synergies within TEST



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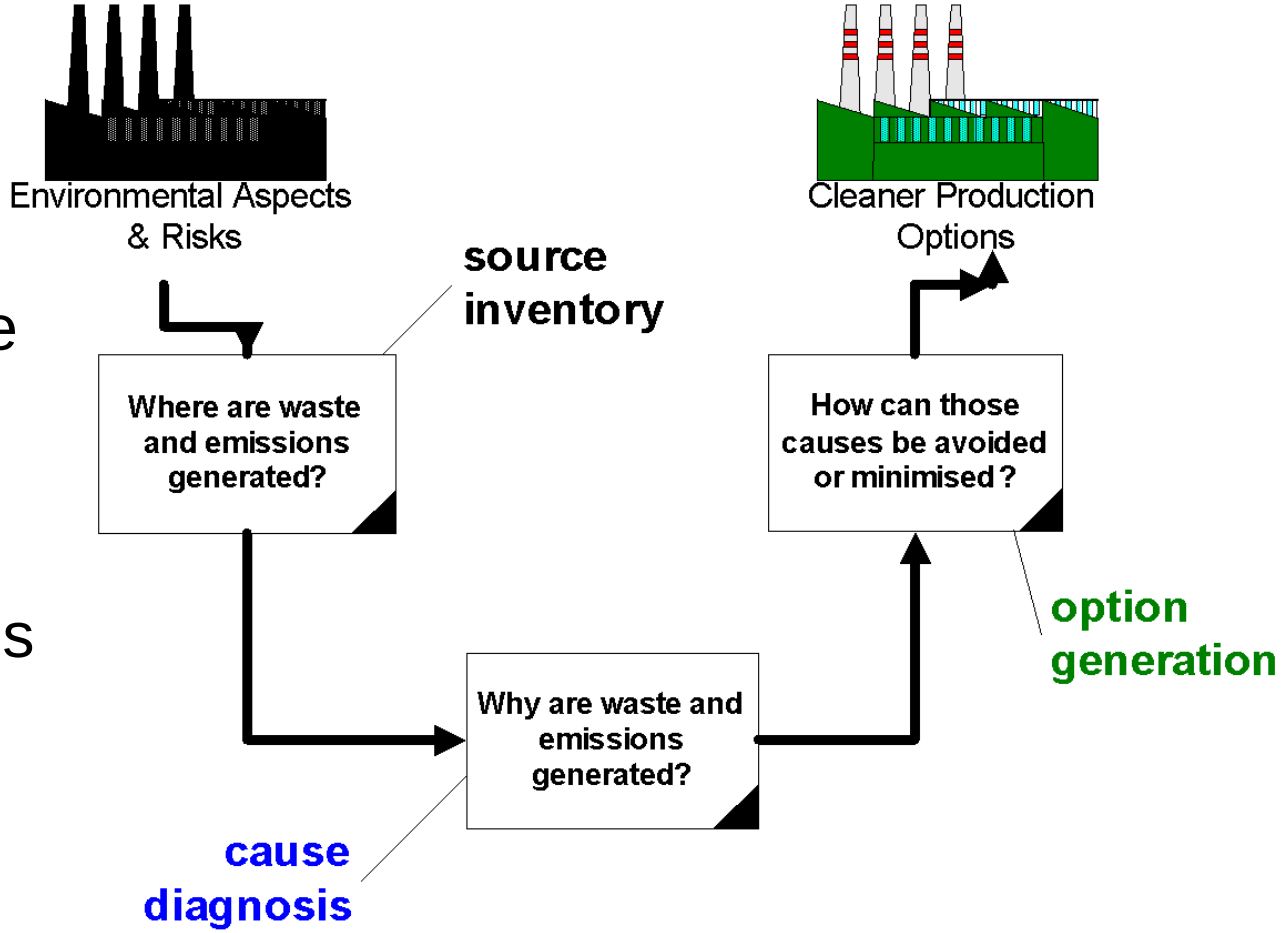
Cleaner Production Approach

Systematic root source and cause analysis guides the identification, evaluation and implementation of RECP opportunities



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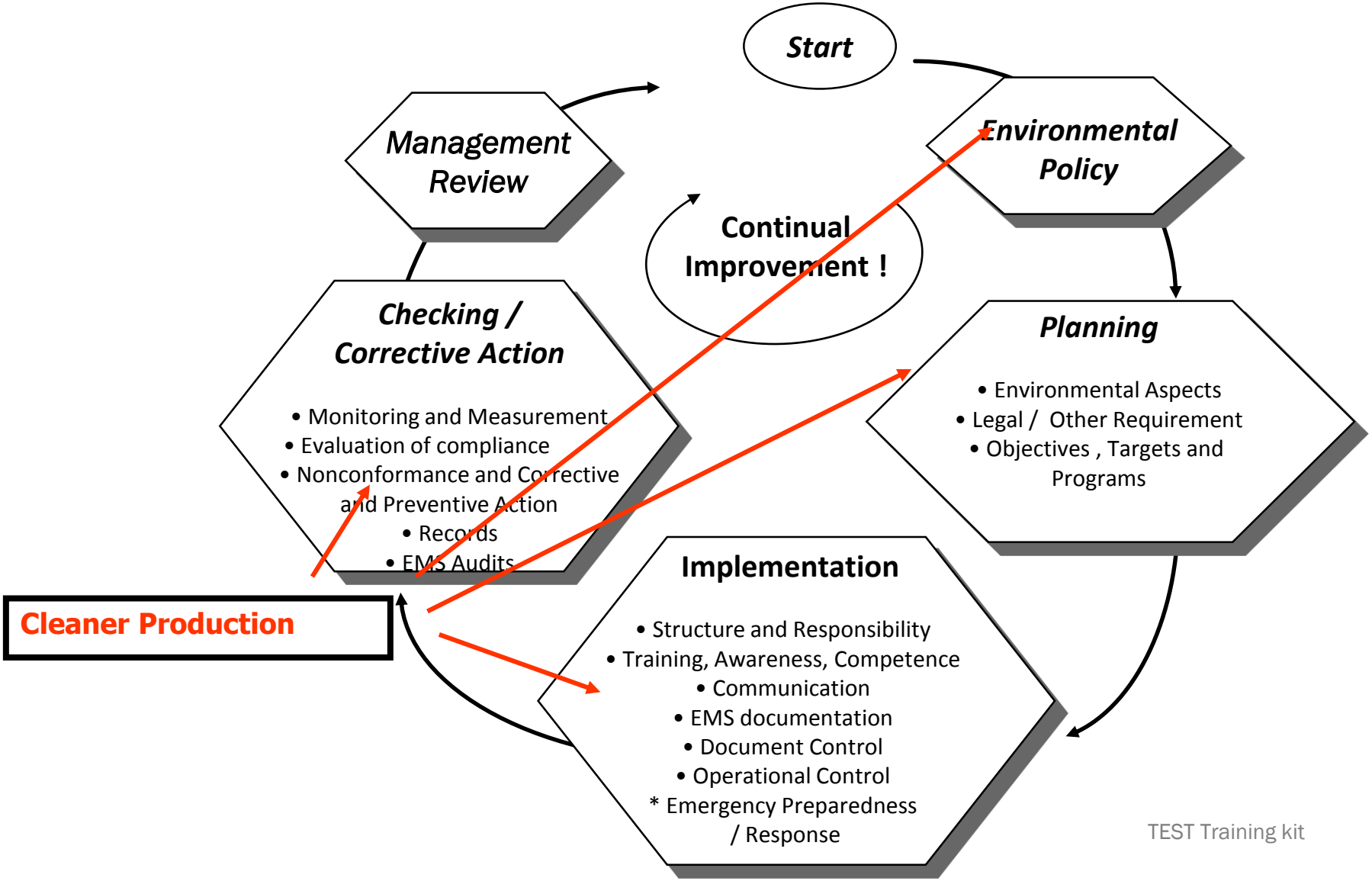
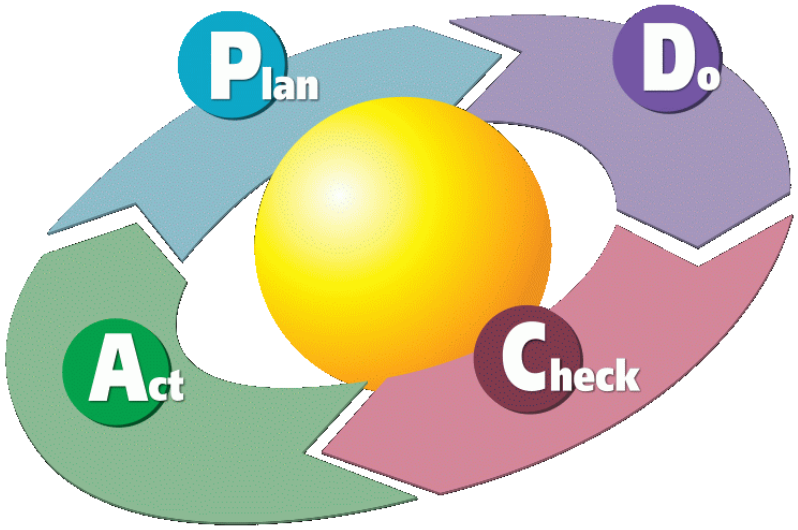
Integration of RECP into EMS



The Plan-Do-Check-Act model of the Learning cycle



PLAN
Establish the objectives and processes necessary to deliver results in accordance with the targets.

DO
Implement the plan, execute the process, make the product. Collect data for charting and analysis in the following "CHECK" and "ACT" steps.

CHECK
Study the actual measured and collected results and compare against the objectives. Look for deviation and appropriateness of the plan to enable the execution.

ACT
Request corrective actions on significant differences between actual and planned results. Analyze the differences to determine their root causes and respond.

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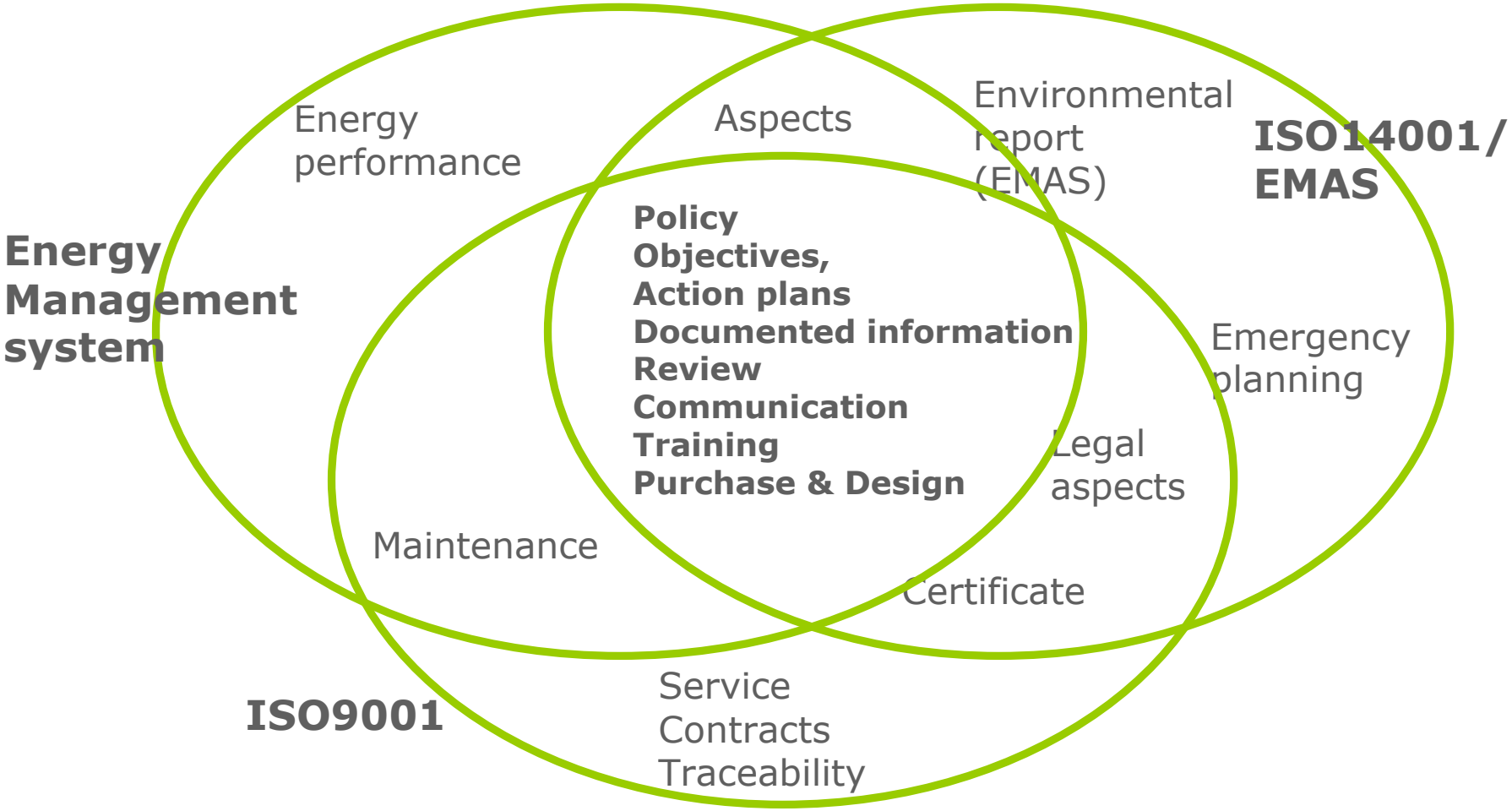
Integrated systems



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Integration RECP into EMS

EXAMPLES:

Documented information: procedure for prioritizing EA incl. costs of NPOs, RE consumptions beyond benchmarks/BAT standards

Operational control: procedure to segregate damaged products from warehouse

Monitoring: working instruction to control parameters of last CIP cycle (rinse) water for secondary applications

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Common elements

- Understanding the needs and expectations of stakeholders
- policy
- Defined organization and responsibilities
- Control of critical operations
- Management review for continual improvement
- Audits (internal and/or external)
- Training
- Corrective action system
- Contractors & visitors
- Informed documentation
- Communication

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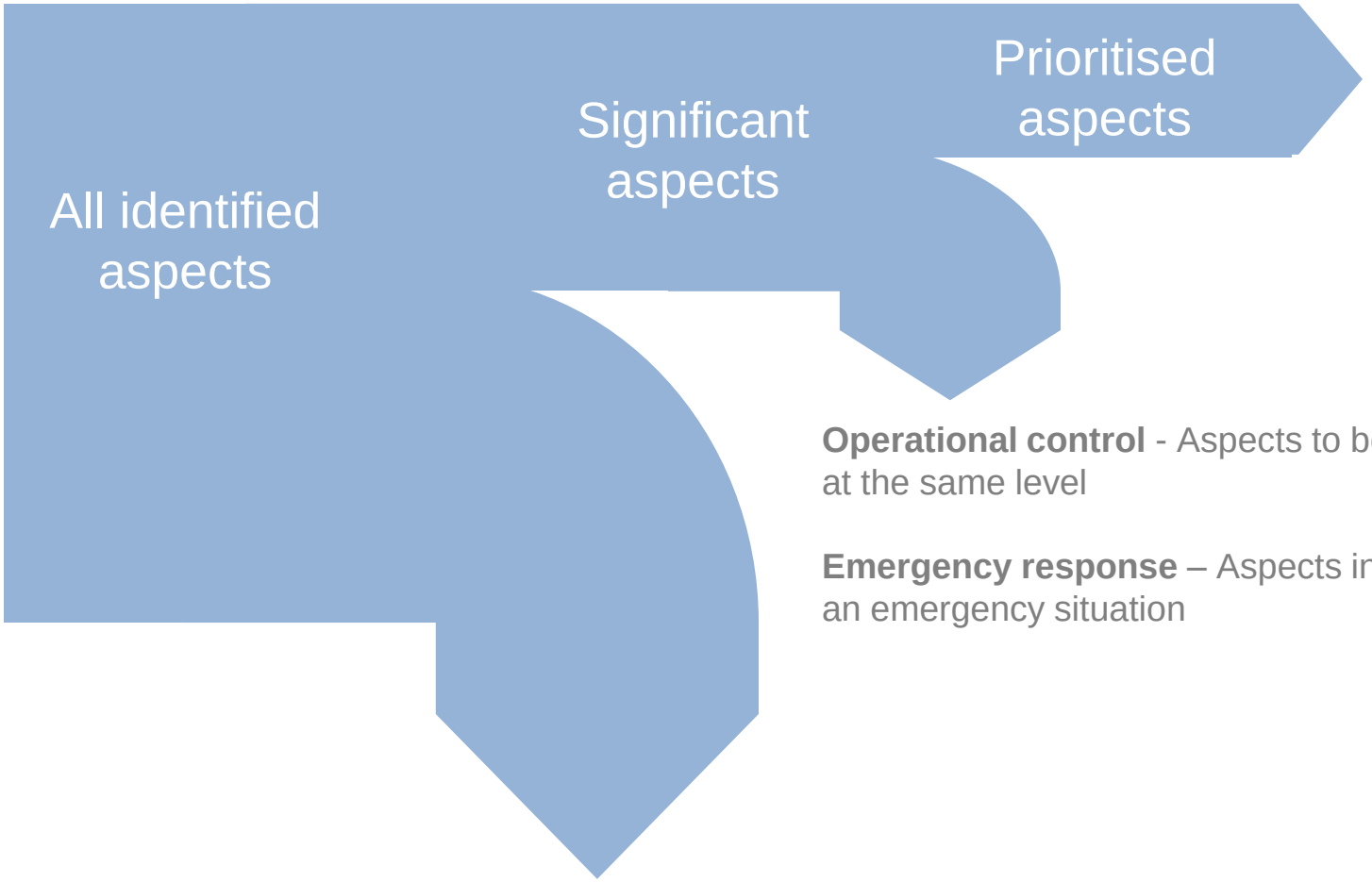
Managing environmental aspects



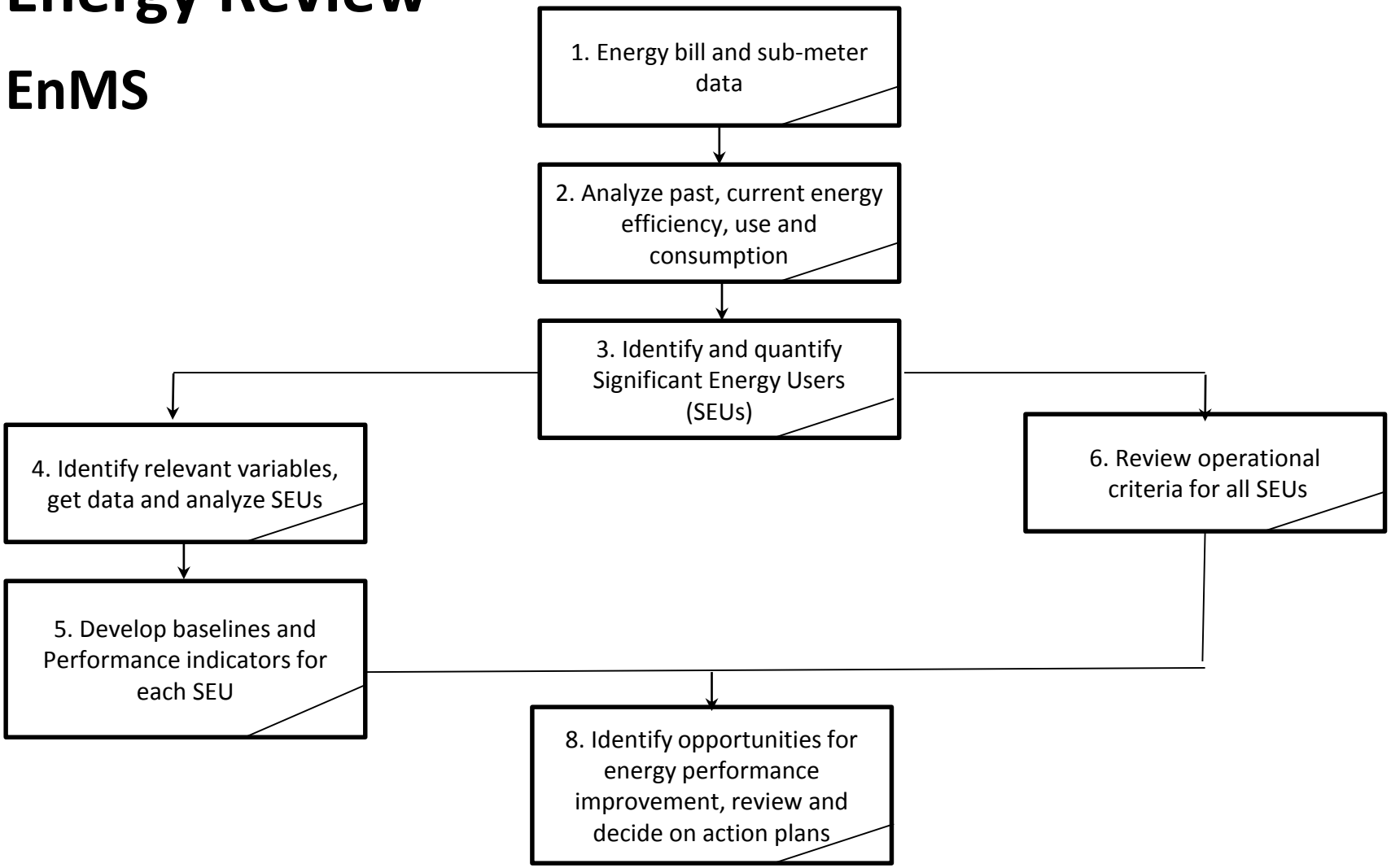
Objectives and targets
Aspects selected for continuous improvement

Operational control - Aspects to be maintained at the same level

Emergency response – Aspects in the event of an emergency situation

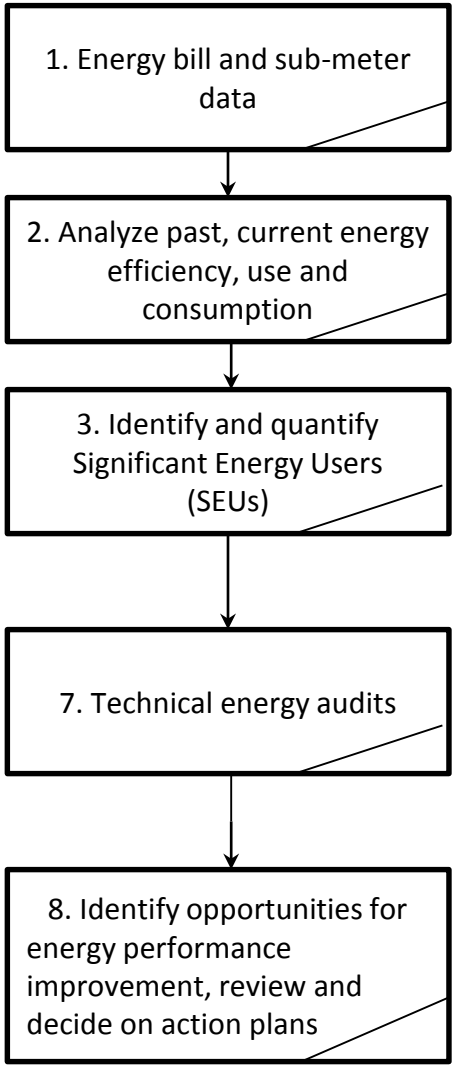
Energy Review

EnMS



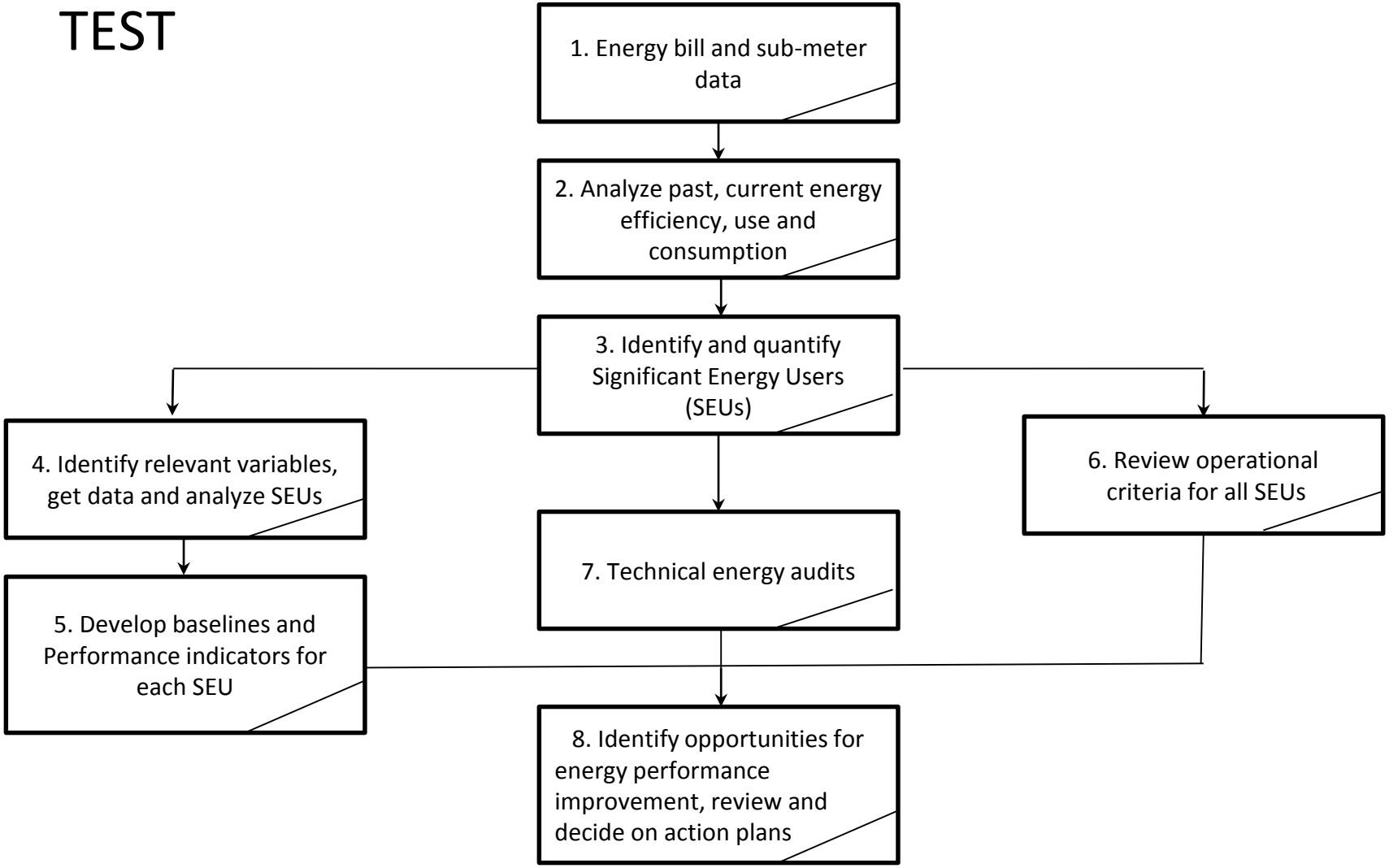
Energy Review

Energy Audits



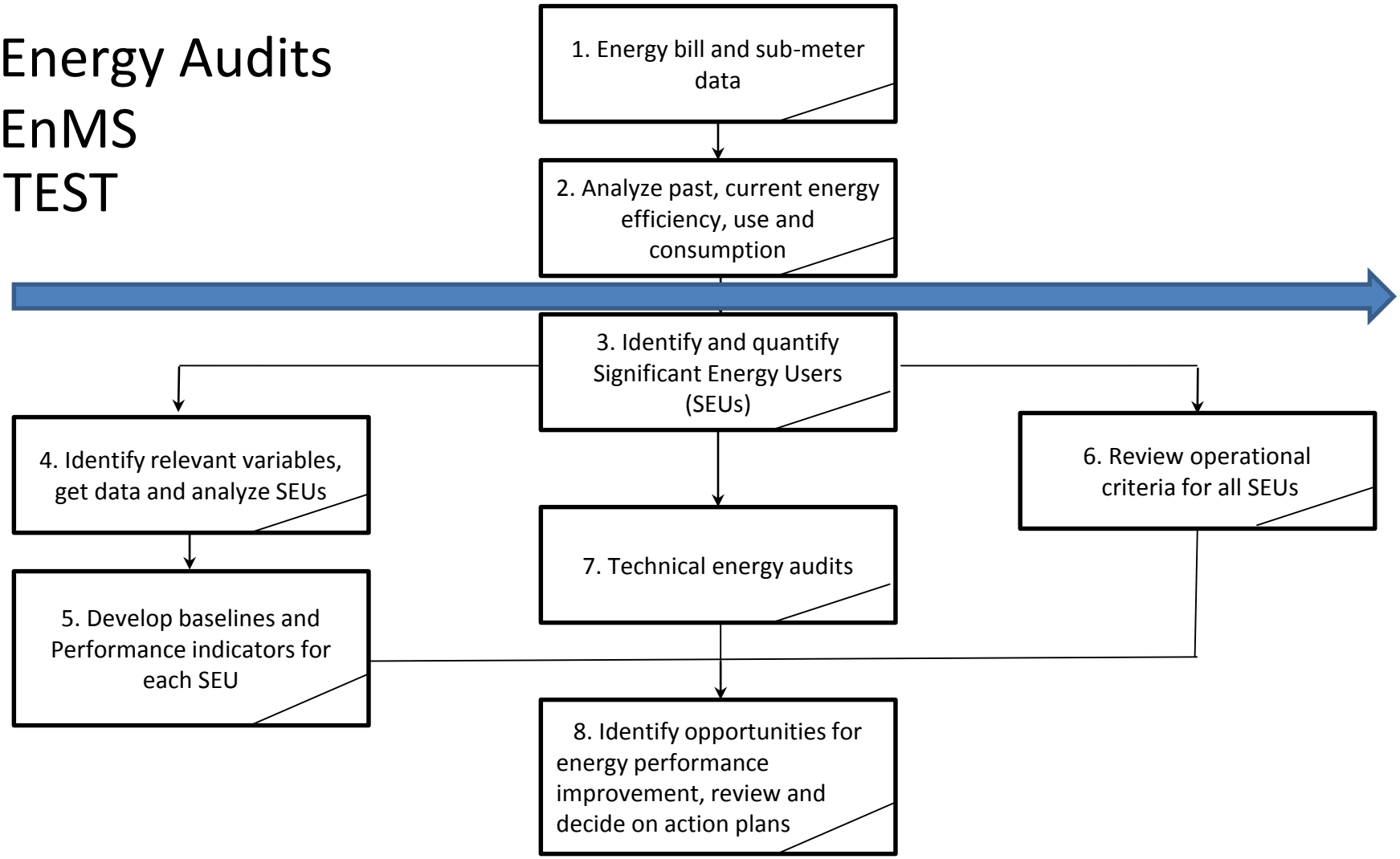
Energy Review

TEST

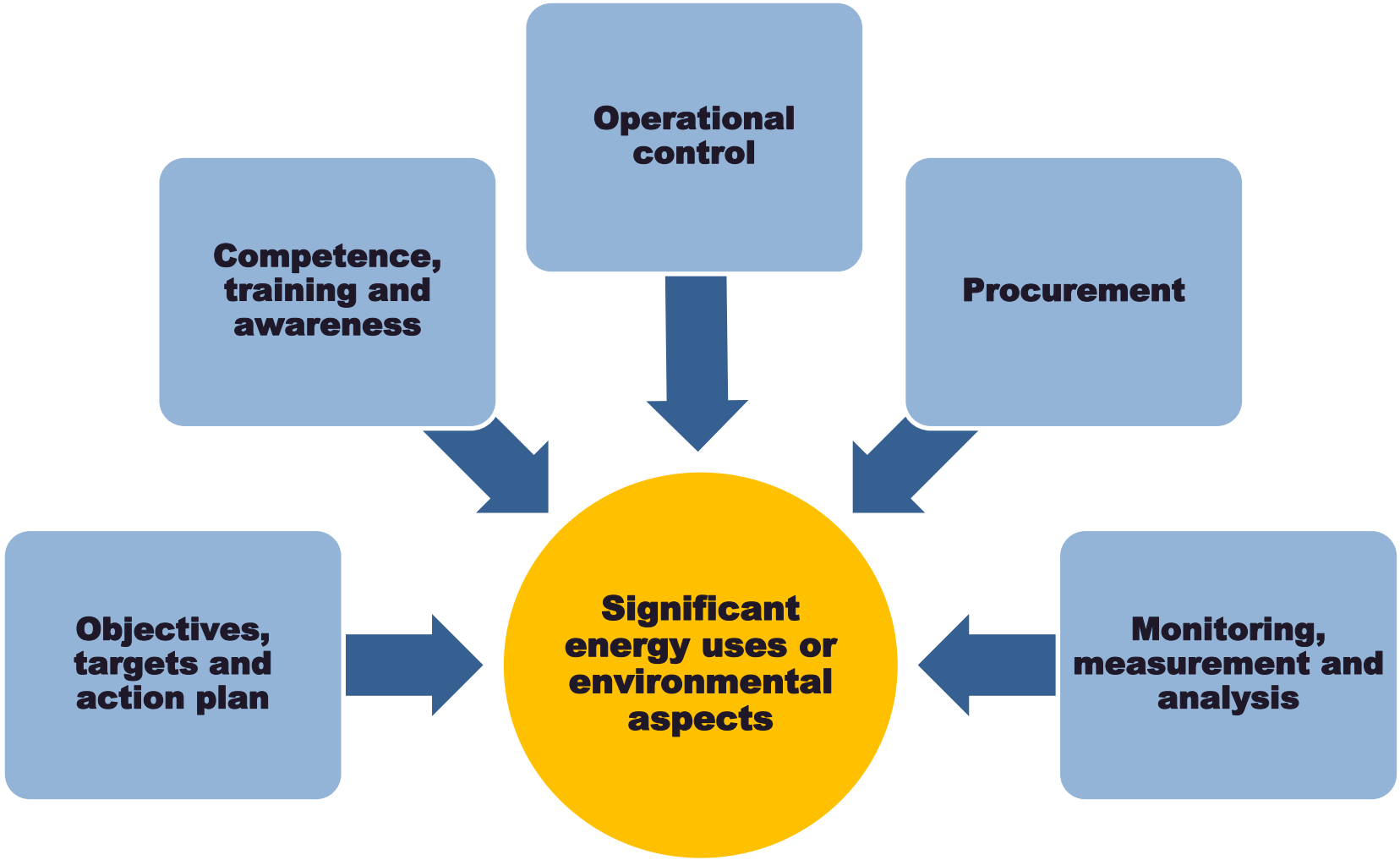


Energy Review

Energy Audits
EnMS
TEST



SYSTEM CONNECTION



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KPIs/OPIs in the toolbox

Information from KPIs/OPIs can assist the management to:

- Determine any necessary actions to achieve objectives and targets
- Measure impact of significant environmental or energy aspects
- Benchmark with international standards and with opportunities for better management of the aspects and trends in performance
- External communication of performance

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What is MFCA ?

According to **ISO 14051** Material Flow Cost Accounting, **MFCA** is "a system for measuring the flow and stock of materials in processes or production lines in both physical and monetary units".

MFCA		Conventional Accounting	
Sales	10,000	Sales	10,000
Product Cost	**2,000**	**Cost of Sales**	**3,500**
Material loss cost (NPO)	**1,500**	-	
Gross Profit	6,500	**Gross Profit**	6,500
Selling, general and admin. Expenses	3,000	Selling, general and admin. Expenses	3,000
Operating Profit	2,500	Operating Profit	2,500

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Terminology FA and MA

Financial Accounting

•Reports to those outside the organization:
Shareholders
Lenders
Suppliers
Tax authority

•Emphasizes financial consequences of past activities

•Emphasizes objectivity and verifiability

•Emphasizes precision

•Emphasizes summary data concerning the entire organization

•Must follow GAAP

•Mandatory for external reports

Managerial Accounting

•Reports to those inside the organization:
Planning
Directing and motivating
Controlling
Performance evaluation

•Emphasizes decisions affecting the future

•Emphasizes relevance

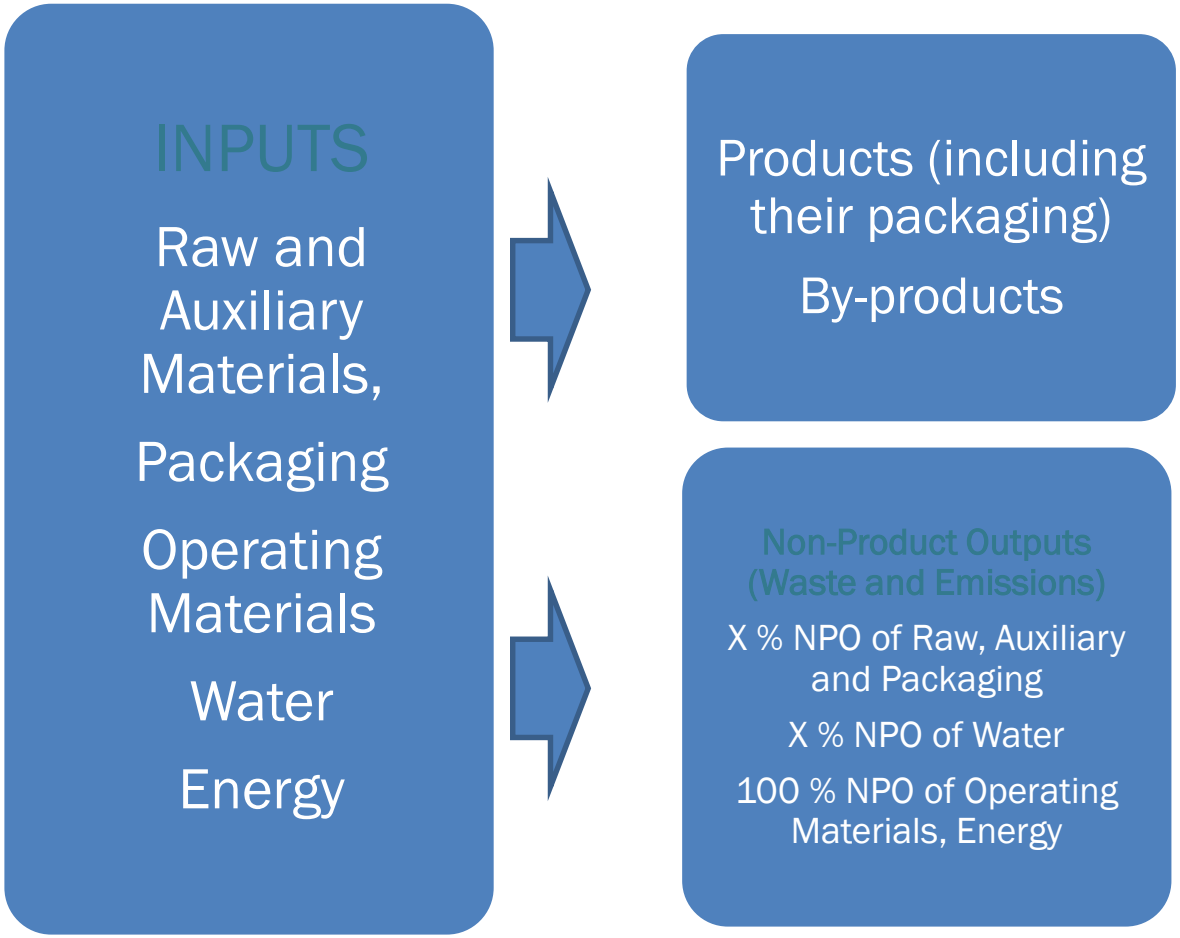
•Emphasizes timeliness

•Emphasizes detailed segment reports about departments, products, customers, and employees

•Need not follow GAAP

•Not mandatory

Terminology - Non Product Outputs



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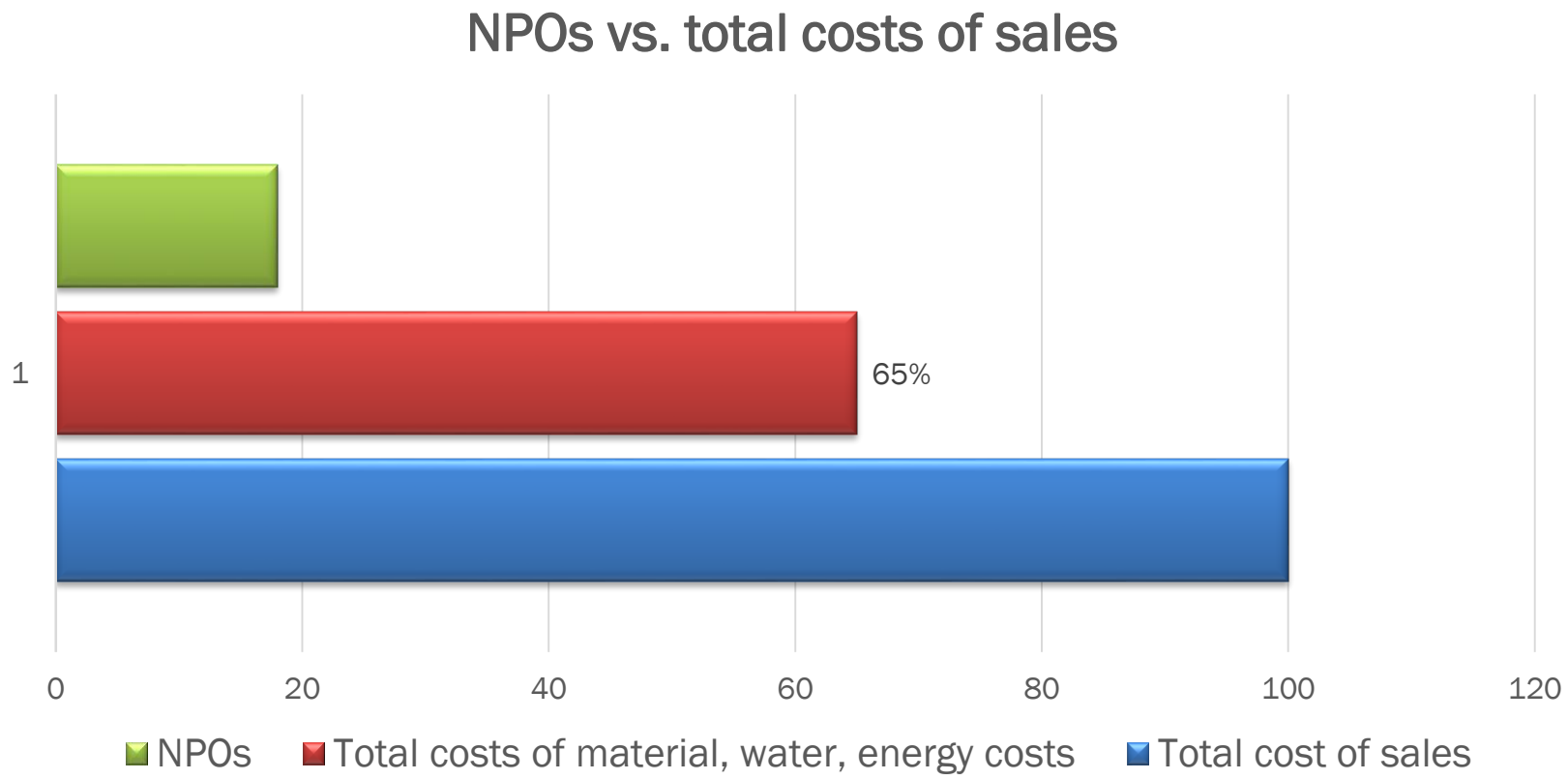
A beverage company from the MED Region (2015)



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Results of MFCA in 50 companies

	Lowest data	Average data	Highest data
Costs of Material and Energy Input as % of total Expenditures (Profit & LossAccounts)	37%	60-70%	79%
Total Raw Material in the Product in % of Total Raw Materials Input	40%	65-75%	94%
Total NPO Costs in % of Total Expenditures	3%	8-16%	21%
Total NPO Costs (in EUR)	160,000	1-2 M	16 M

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Implementation Challenges

Issues that triggered interest in MFCA and pose challenges to its implementation are current accounting practices:

- **inadequate links** between accounting and other departments;
- unintentional **hiding** of environment-related cost information in overhead accounts;
- inadequate tracking of information on **materials use, flows,** and costs;
- **lack of some environment-related information** in the accounting records; and
- **investment decisions** made on the basis of incomplete environment-related information.

Environmental Costs hidden in Overhead Accounts

	Product A	Product B	Example		
			Overhead	Product A	Product B
Materials by recipe/formula and stock issuing	Direct costs	Direct costs		70	70
Working hours by time records	Direct costs	Direct costs		30	30
Overhead	**distribution by % product turnover**				
Depreciation			50		
Rent			10		
Energy			5		
Communication			10		
Administration			25		
Top management's salary			10		
Waste & Emission Treatment			10		
Total Overhead			**120**	**60**	**60**
Total Product Costs				**160**	**160**

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Environmental Costs attributed to Cost Centers & Products

	Product A	Product B	Example		
			Overhead	Product A	Product B
Materials by recipe/formula and stock issuing	Direct costs	Direct costs		70	70
Working hours by time records	Direct costs	Direct costs		30	30
Energy	**Attribution to cost centers and products by actual process flows**		1	1	3
Waste and Emission treatment			1	3	6
Depreciation			7	13	30
Overhead	**distribution by % product turnover**				
Rent			10		
Communication			10		
Administration			25		
Top management's salary			10		
Total Overhead			**64**	**32**	**32**
Total Product Costs				**149**	**171**

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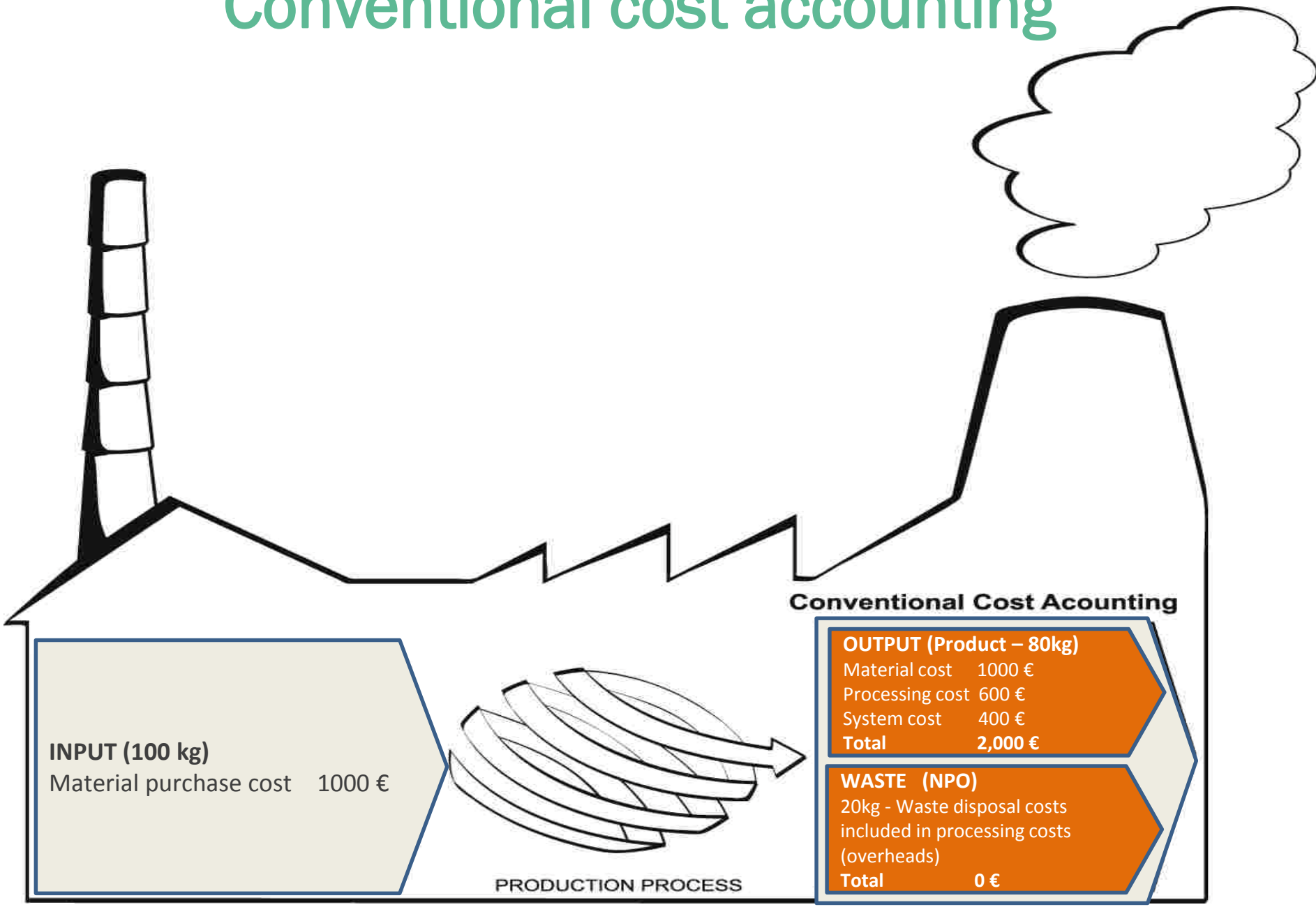
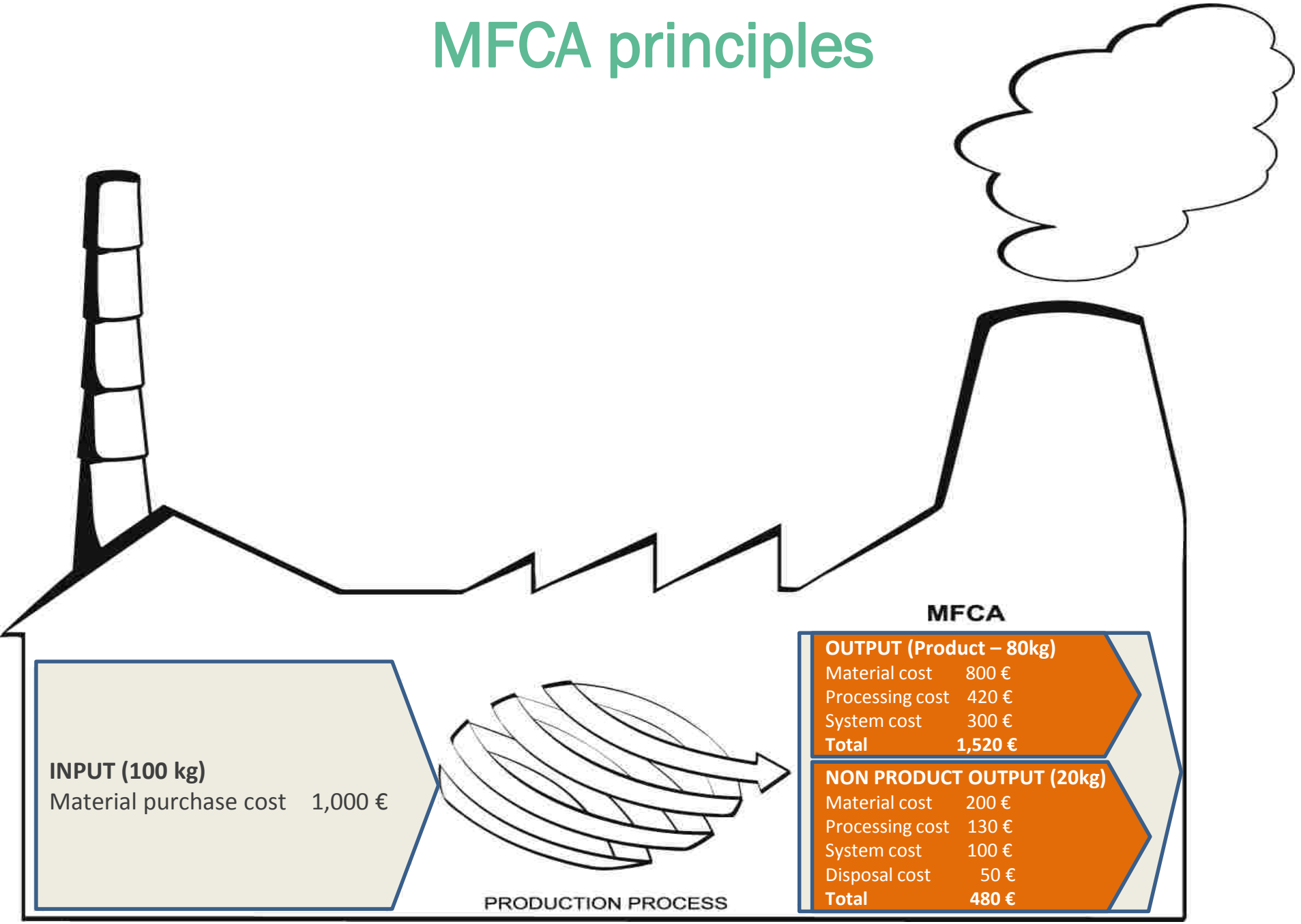
Conventional cost accounting



MFCA principles



TOTAL COST of POLLUTION

Environmental protection expenditure (waste management, external prevention services, fines)

\+ **Material and Energy costs of Non Product Output** (Costs of unproductive use of materials at purchase)

\+ **MFCA System costs** (cost for handling NPO, e.g. cost of labour; cost of depreciation and maintenance of cost centers generating NPO; cost of transport)

= **Total costs of NPOs**

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MFCA - Improving information systems

Typical recommendations:

- Data recording of material purchases in financial accounting by material groups
- Separate accounts for different material groups
- Separate posting of materials and services (e.g., the account for maintenance often includes both)
- Posting of inventory losses by different materials, not just in one line
- Recording of material numbers in production planning systems and stock management
- Estimation and recalculation of scrap percentages
- New accounts for better data monitoring, e.g. for energy consumption
- Establishing balances for energy, water and mass flow in order to verify the distribution to production steps
- Reworking the structure of cost centres and making them consistent with technical data monitoring interfaces, so that regular performance measurement is possible

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Highlights for MFCA integration

MFCA is used in TEST to fill in data collected in RECP audits into an excel calculator (MFCA tool) - **BUT in a structure of company accounts.**

This enables the creation of an information system on flows and related costs to sustain RECP in an organic and natural way utilising **language of financial managers and accountants**

NO full scale MFCA implementation is pursued (a full scale implementation of ISO 14051 on MFCA usually discourage companies)

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TEST approach

- No full scale implementation of EMS, EnMS and MFCA tools, unless an organization has the resources, the immediate need and the commitment for pursuing ISO certification. **Experience shows that successful implementation of TEST leads to follow up company engagement to full scale EMS, EnMS, MFCA or other tools.**

- The completion of the TEST cycle lays the foundation for implementing CSR tools as it provides the basis for the environmental and economic dimensions of CSR and initiate reflection on stakeholders expectations and values.

- It promotes multi-disciplinary teamwork within companies, as well as partnerships between service providers and experts in areas of sustainable production.

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OPPORTUNITIES

High potential, proof business case due to raising production costs, resource scarcity (e.g. water) and to limited extend to enforcement of environmental legislation

RECP is a sound core business strategy: Localizing resilient industry, job creation and stability, Industrial modernization/upgrade & sustainable design best opportunity for higher benefits vs. RE investments, Greening supply chain, global manufacturers

CHALLENGES

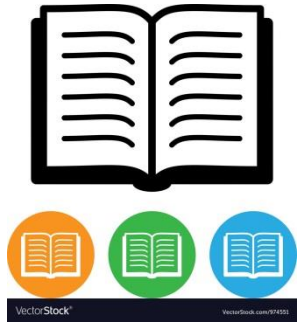
Not yet self sustaining: competing with capacity increase, RECP investments need stable business environment and financial incentives (transition strategy, policy instruments and partnerships)

RECP is Know-how intensive: sector competence, information management

Challenge for RECP service providers to open market: pricing and selling a service with high uncertainty on magnitude of savings/level of efforts, market distortions (subsidized technical assistance)

TEST tool kit

- **Target intended users:** mainly SPs, and also company staff



- **It consists of:**
  - A guideline document
  - A set of tools (MFCA excel file and manual, Energy mapping tool, checklists, etc..)
  - A set of training material (ppt, exercises, case studies)
  - Best practice saving catalogues: more than 250 BP from the MED region, 5 sectors

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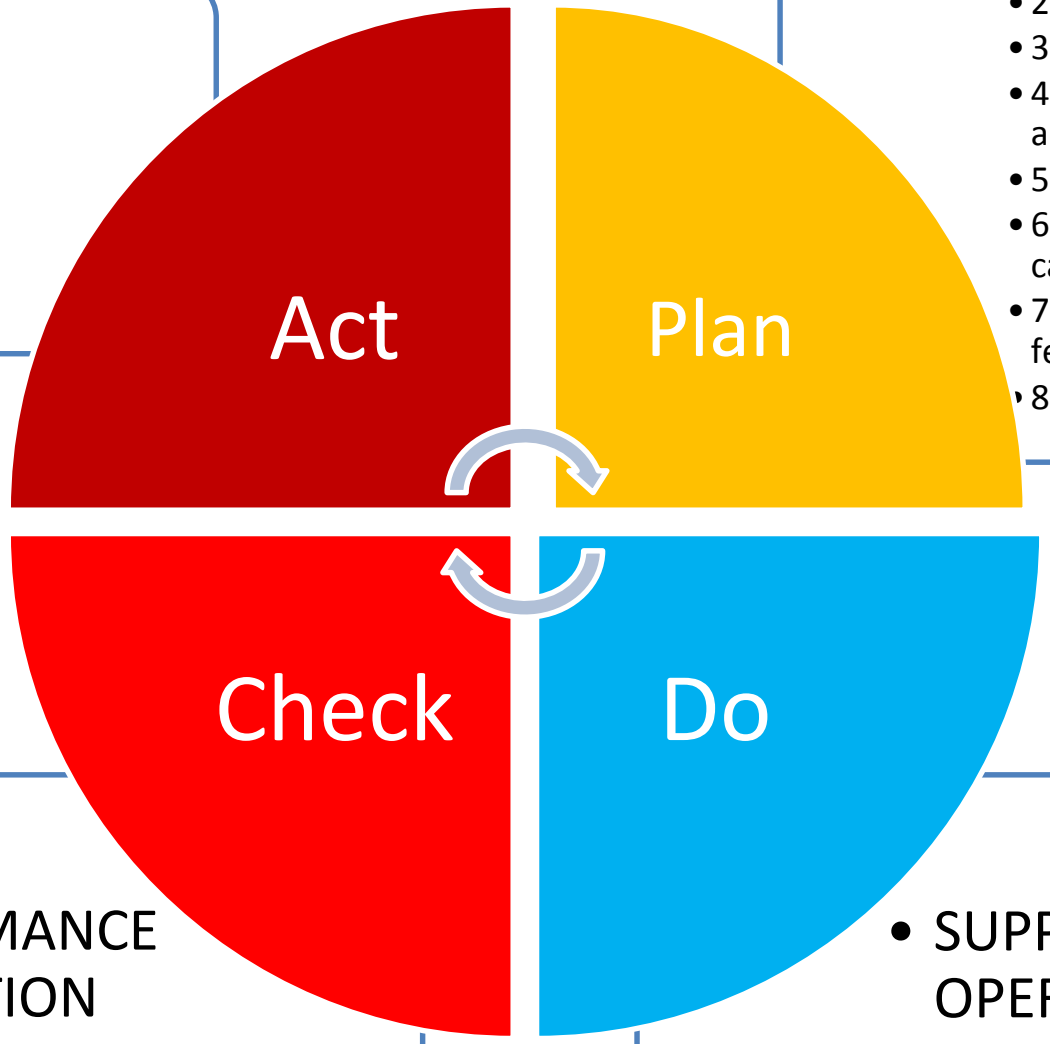

- IMPROVEMENT

- 1 Initial Screening
- 2. Scoping & Policy
- 3. TEST Team
- 4. Identifying total NPO and priority flows
- 5. Setting up focus areas
- 6. Revealing sources and causes of ineffeciency
- 7. Option generation and feaisbility analysis
- 8. Action Plan

- PERFORMANCE EVALUATION

- SUPPORT and OPERATION

	Step	Purpose
PLAN	**1.1 Initial screening**	Initial review of company, go/no-go decision to start TEST.
	1.2 Scoping and policy	Formalize top management commitment to RECP and scope of the work
	1.3 TEST team	Plan, organize and train internal company team (as well as external team, if created).
	1.4 Identifying total cost of NPO and priority flows	Starting the diagnosis: Identify the non-product output (NPO) costs and volumes and the priority flows at company system boundary.
	1.5 Setting up focus areas	Continuing the diagnosis: identify focus areas at the level of production steps (e.g. cost centres) with the highest potential for improvement.
	1.6 Revealing sources and causes of inefficiency	Concluding the diagnosis: identify sources and reveal root causes of inefficiency and pollution within focus areas.
	1.7 Option generation and feasibility analysis	Broadening the scope of possible improvement solutions and techno-economic analysis of a set of optimized feasible measures
	1.8 Action plan	Plan of actions for implementing and monitoring validated measures.

	Step	Purpose
DO	**2. SUPPORT AND OPERATION**	Implementation of the **TEST action plan** including improvement measures and monitoring to increase performance in resource use.
CHECK	**3. PERFORMANCE EVALUATION**	Measuring and evaluating performance of important material and energy flows.
ACT	**4. IMPROVEMENT**	Reflection on experience gained and integration of TEST into business strategies and operations.
FOLLOW-UP AND CONTINUOUS IMPROVEMENT		

TEST approach – TEST Programme

- **Comprehensive Assessment (TEST methodology):**
  - Multidisciplinary external team: CP, EE, EMS/EnMS, MFCA, Sector
  - Involving production, management and accounting departments
  - Information System on Resource Efficiency
  - Labor intensive/high impact
  - BUT, it can be customized to company's needs

- **Coaching and company engagement:**
  - Training and active involvement of company staff/top management
  - Assistance during implementation of TEST action plan, including internal management and information system procedures
  - Matchmaking access to financing instruments
  - Evaluation of results/savings

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When to use TEST vs. other RECP tools

- Company size: best for companies above 50 employees and/or significant material/energy flows

- Company motion and baseline:
  - Single tool vs. integrated approach
  - Level of information system in place for material and energy

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Step	TEST methodology features
1.1	1) Pitching the business case matching company concerns
1.2	2) Formalize top management commitment to RECP, including Stakeholders and Life cycle perspective
1.3	3) Bringing in the team the accountant's perspective – getting closer to the decision making of company
1.4	4) Need driven priority setting (using MFCA principles and consistent use of NPOs definition and benchmarking)
1.5	
1.6	5) Step by Step establishment of a need driven information system on RE and based on priority setting consisting of elements of accounting and physical monitoring of consumption and driving factors
1.7	6) Bringing in sector specific expertise for process optimization and ecotechnology 7) Focus on reducing demand of material and energy at end users (core process needs) 8) Sustainable design and LCCA
1.8	9) Setting up monitoring plan (formalizing the information system on RE, baselines before implementation of measures)
2	10) Follow up and coaching during implementation of TEST action plans and establishing linkages with formalized EMS and EnMS.
3	11) Measuring and verification of resource use performance, after implementation of RECP
4	12) Continuous improvement, linking to core business strategy

TEST Programme features

- Multidisciplinary external team: CP, EE, EMS/EnMS, MFCA, Sector
- Matchmaking access to financing instruments
- Training and active involvement of company staff/top management
- TEST Project's cycle enabling documentation and reporting of the business case to stakeholders
- TEST Project's cycle follows the PDCA, to allign to business culture, continuous improvement and facilitate integration with other ISO standards
- Labor intensive/high impact, BUT, it can be customized to company's needs

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Thank YOU for your Attention

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