METABUILD

Resource-Efficient Supply Chain for Metal Products in Buildings Sector in South Asia

METABUILD status update

February 2019

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Background

- **Resource Efficient Cleaner Production (RECP)** targets efficient use of resources (energy, water, materials) while reducing waste
- RECP can **enhance business profitability** while saving the environment
- No/low cost measures (“low hanging fruit”) can lead to substantial savings
- Applicable across **different sectors**
- RECP aligns with focus of various South Asian countries on enhancing industrial energy efficiency

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Objective and target

Main objective:

Reducing waste emissions and increasing resource efficiency in **400** metal component SMEs from the building and construction sector

Target sectors:

Rolling mills, sheet metal, metal pipes and cables, non-ferrous products (taps, valves etc.), fabrication (frames, grills), aluminium extrusion, metal finishing

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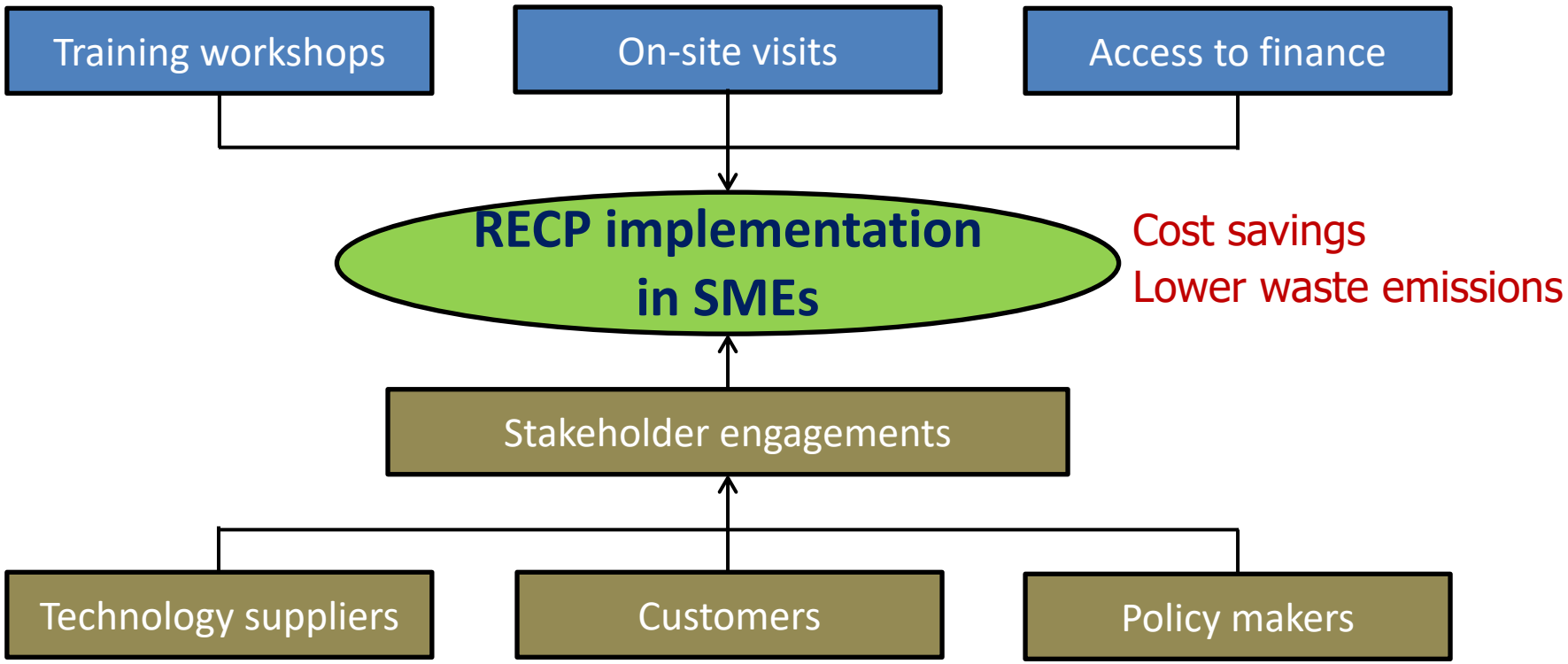
Project structure



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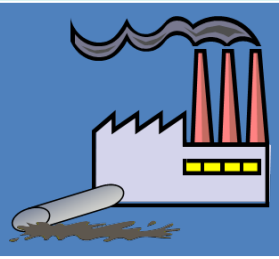
Summary of progress

- **402 companies** participating in the project
- Over **1800 RECP measures** implemented to-date
- Companies benefitting through resource and cost savings
- Stakeholders engagement on-going

Status of resource reduction

	 Bangladesh	 Nepal	 Sri Lanka
	240	82	80
Reduction per kg product in consumption/generation of			
Material, water		2-25%	2-67%	2-50%
Energy		11-74%	2-14%	8-60%
Hazardous waste		3-5%	7-50%	2-90%

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Annualized savings overall

Energy

Electricity	1,056,533	kWh
Furnace oil	174,881	l
Coal	355,475	kg
Natural gas	146,803	m^3
Rice husk	27,073	kg
Liquefied petroleum gas (LPG)	3	t
Diesel	2,717	l

Material

Raw material*	487,259	kg
Welding flux	30,000	kg
Acid	424,770	l
Welding electrode	6,572	kg
Water	9,224,000	l
Paint	86	l

**steel/brass/bakelite etc*

Other benefits

Power demand reduction
Solar power generation
Improved tariff scheme
Improved working conditions

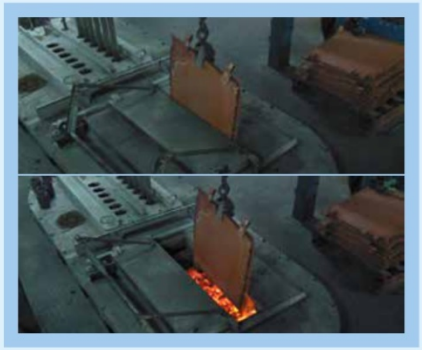
Examples of implementation

RESOURCE OPTIMIZATION

Aluminium extruded products, Sri Lanka	Fabrication unit, Nepal	Steel industry, Bangladesh
		
• Powder coating transfer efficiency improved by optimising charging voltage, gun speed, gun-part distance • Annual savings: 1,490 kg powder • Payback: Immediate	• Semi-finished products and cut pieces properly stored • Safe and clean working environment • Increased reuse of cut pieces • Annual savings: 2.4 t steel, 0.4 t Aluminium • Payback: 2 months	• Collecting trays placed below colour coating machines for catching spilled paint • Cleaner floors • Annual savings: 4,600 L of paint • Payback: Immediate

Examples of implementation

IMPROVING HEATING EFFICIENCY

Wire drawing unit, Sri Lanka	Steel industry, Nepal	Electrical switchgear industry, Bangladesh
		
• Heat loss from oversized door opening minimized by having multiple positions for door opening • More comfortable working environment • Annual savings: 15,467 kWh • Payback: Immediate	• Recuperator installed to recover flue gas waste heat • Used to preheat air entering furnace • Annual Savings: 227.6 t of coal • Payback: 5 months	• Temperature of bakelite moulding machine heaters regulated by auto cut-off • Product quality improved • Annual savings: 2,970 kWh • Payback: <2 months

Examples of implementation

WATER OPTIMIZATION

Steel industry, Sri Lanka	Fabrication industry, Nepal	Power engineering industry, Bangladesh
		
• Rainwater from terrace collected in an existing unutilized tank • Used for rinsing baths in production • Annual savings: 375,000 litres • Payback: 3 months	• Water cascading used for rinsing parts after pickling • Existing rinse pits were resin coated and used with water cascading • Annual savings: 576,000 litres • Payback: 26 months	• Workers were trained to allow adequate time for drain out while removing parts from acid treatment tanks • A buzzer with stop watch was installed to provide reminder • Annual savings: 137 L acid and 10,800 L water • Payback: < 1 month

Company trainings

- In-house and off-site company trainings on-going
- Specific topics on energy, water, materials and EHS (environment health and safety) covered to-date

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Customer roundtables

- Focused on greening the supply chain
- Participants learned about supply chain tool and its application
- Created awareness and interest among participants on this topic

Technology fairs

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- Companies learnt about RECP products
- Actions towards new purchases on-going

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adelphi
AUSTRIA RECYCLING
DCCI
Nepal Society for Environmental & Economic Development
STENUM Asia
teri

Financing support

- Workshops held for financial institutions on financial products prototyping
- Follow-up on-going with interested companies and banks for RECP finance access

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Next steps

- Continue to support companies in RECP implementation
- Measure savings and impact
- Dissemination of outcome and learnings
- Create structures for post-project sustainability of the action

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