



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION



SUSTAINABLE DEVELOPMENT GOAL 9
INDUSTRY, INNOVATION AND INFRASTRUCTURE

Project: “Low-Carbon Development for Productivity and Climate Change Mitigation through the Transfer of Environmentally Sound Technology (TEST) Methodology”



Programme for Country
Partnership **Cambodia**

“Compilation of TEST from Beginning to End”

Dr. Sopheak REY, National Project Coordinator

22th, December 2023
Phnom Penh, Cambodia





UNIDO in brief



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

The mandate of UNIDO is an essential component of Sustainable Development **Goal 9**, and is instrumental to the achievement of all other goals





The TEST Project:
“Low-carbon development for productivity and climate change mitigation through the Transfer of Environmentally Sound Technology (TEST) methodology”



Objective: To reduce the long-term risks of climate change through the transfer of environmentally sound technology in Cambodian Industries.



Component 1
Policy framework strengthening and capacity building focused on resource efficiency



Component 2:
Promotion of incentive mechanism: The Green Industry Award



Component 3:
Training and technical assistance to scale up TEST methodology through demonstration projects in industry.



Component 4:
Awareness raising on and dissemination





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TEST Project from Beginning (2018)





Project Launch in 2018





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ToT on RECP and TEST in 2018



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First PSC Members Meeting



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Training of Trainer (ToT) and Demonstrated Energy Audit (2019)



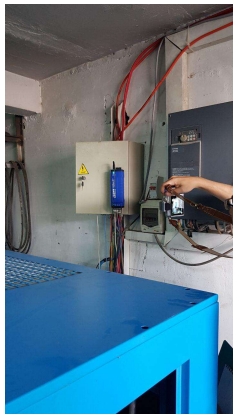


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Training of Trainer (ToT) and Demonstrated Energy Audit (2019)





Training of Trainer (ToT) and RECP (2019)





Factories and SMEs Recruitment for First Batch





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TEST Project Implementation and Progress





TEST (RECP + EMS and EMA)

Capacity Building

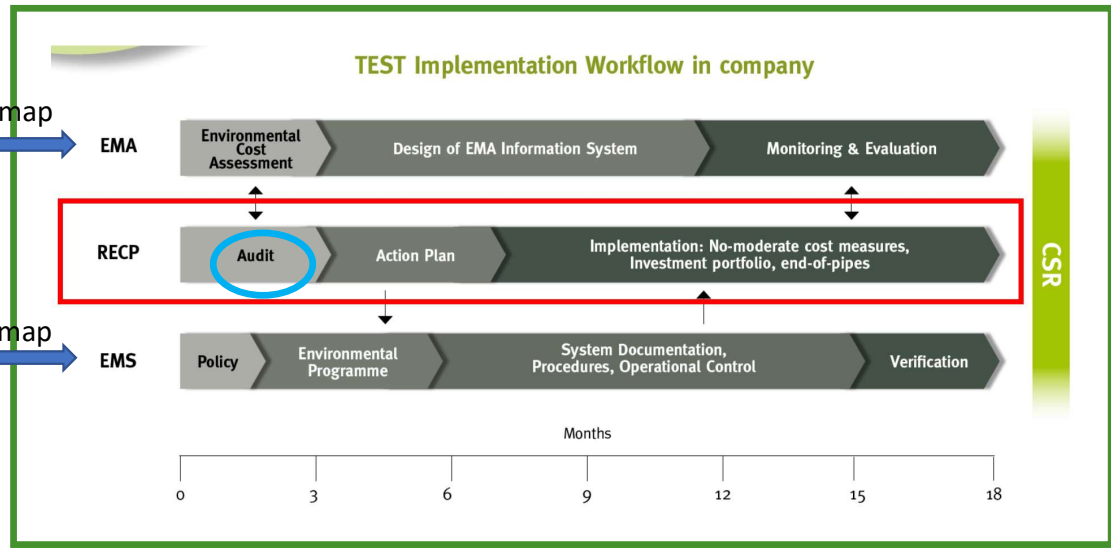
TEST, EMS and EMA Trainings, [Test toolkit | Unido \(test-toolkit.eu\)](https://test-toolkit.eu)

Company Works

- ❖ Market Requirements
- ❖ Compliances (HIGG Score,...)
- ❖ Compliances by Laws and Regulations,....

EMA Roadmap

EMS Roadmap



Chemical Management, Safe and Efficient Boiler Operation Trainings

RECP SAP 2021-2030

GIA Guideline

Annual GIA 21, 22, 23,..

Other Guidelines

Awareness Raisings

Supports & Monitoring

Public Informed

Key Achievements from TEST Project

Sustainability Contribution

- Economic Dimension:
 - Saving of Resources (Raw Materials, Operating Material, Water, Electricity, Diesel, Fire-Wood, Chemicals) and Increase Productivity by 10-20%;
 - Annual Saving of 3.6 Million USD/Batch or around 10 million USD/year for 55 factories and SMEs;
- Social Dimension:
 - Benefit to 130 000 workers of 55 factories and SMEs as helping factories to meet the Sustainability and Compliances;
 - Capacity Building of Factory Key Staffs on TEST, EMS, EMA, Chemical management, and Safe and Efficient Boiler Operation;
 - Health of Workers and Safety at Workplace Improved;
 - Reduction of Negative Impact to the Surrounding community;
 - Change of mindset toward green activities/practices;
 - Understanding Benefits of Healthy Workforces;
 - Change of Mindset toward Green Activities/Practices;
 - Understanding Benefits of Healthy Workforces;
- Environmental Dimension:
 - Avoiding 50 000 tons, 85 000 tons, 100 000 tons of CO₂ (Directly and Indirectly) in 2021, 2022 and 2023 respectively;
 - Substantial Annual Reduction in Discharge of Wastewater and Solid Wastes discharged, and GHG emissions;
 - RECP Assessments and Implementations, EMS and EMA Roadmaps for 55 factories and SMEs;

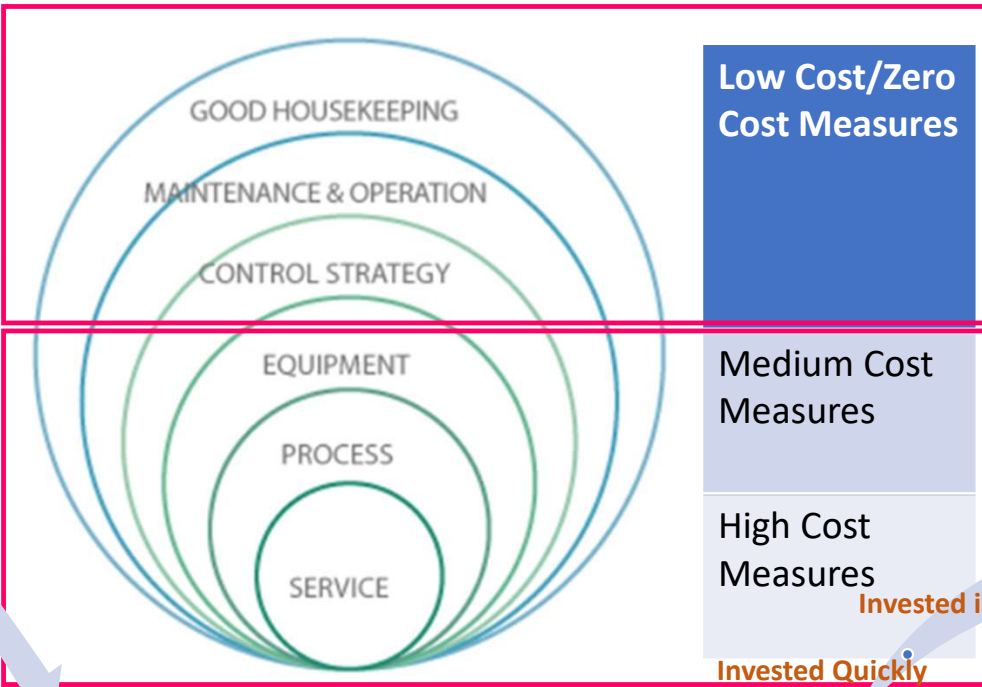
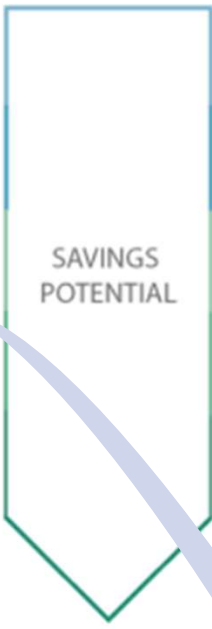
How the integrated tools can help the savings of material, energy and water

Assessment

Implement/Setup

Policy/Systems

RECP Assessment
(PDCA)
KPIs, OPIs



Low Cost/Zero Cost Measures

Medium Cost Measures

High Cost Measures

Invested Quickly



Environmental Management System (EMS) Training and Roadmap
(Up to 20% Saving)

Environmental Management Accounting (EMA) Training and Roadmap
(Up to 40% Saving)

Environmental Policy
Invested in long-term
(Improved System)

Improved Process

Corporate Social Responsibility (CSR)/ISO 26000



Activities of Output 1- Development and Adoption of RECP SAP 2021-2030



Component 1
Policy framework strengthening and capacity building focused on resource efficiency

Meeting/Sharing

Sharing of RECP Documents with a number of stakeholders including EU, GIZ, WB, MEF, ILO and others

Field Reflection

Field visit to reflect on the concept of EIP (Sihanouk SEZ and City)

: to promote Cambodia's industrial development towards a green, climate-inhabitable, and knowledge-based ecosystem; various stakeholders including financial institutions, educational institutions, non-governmental unities, and all stakeholders must continue to work closely together to RECPSAP. *Lm*



Phnom Penh, *27* September 2021

Senior Minister

Minister of Industry, Science, Technology & Innovation



Kitti Settha Pandita CHAM Prasidh

<https://drive.google.com/file/d/1CxoKfT8XYnjJJ0I7paPrkQceJiqWmstj/view?usp=sharing>



Activities of Output 2- Development and Adoption of Green Industrial Award Guideline

Activities

Adopted GIA Guideline, Creating Offices and TWG, Jury, Committee, Inter-Ministerial Meetings, and Participations of Private Sectors (Factories and SMEs for the event)

I urge all relevant parties to work together to successful implement this Green Industry Award as well as to the manufacturing company to apply and compete for the award. ↙

Phnom Penh, 27 July 2021

Senior Minister
Minister of Industry, Science, Technology
& Innovation



Kitti Settha Pandita CHAM Prasidh

Events

GIA-2021 (Completed)
GIA-2022 (Completed)
GIA-2023 (Completed)



<https://web.facebook.com/Cambodian-Green-Industry-Award-110629424503791/>





Contribution of GIA to Due Diligence

Other Consideration

Cambodian GIA Aspects	Criteria (15 Indicators)	Compliances	
Focus on Factory/SME Level; Park/SEZ or SME Cluster Level; and Logistics Complex Level (for Supporting Industry)		<ul style="list-style-type: none"> GIA 2021, 2022 and 2023 9 (2022), 7 (2021) factories and SMEs of TEST won GIAs 	Green Commitment
A1. Environmental aspect	C1. Material Efficiency, C2. Waste Management and Recycling, C3. Energy Efficiency and Renewable Energy, C4. Water Efficiency, C5. Waste Water Treatment, C6. Emission to Air;	HIGG Score and National Compliances	Green Activity
A2. Innovation and sustainability aspect	C7. Environmental Management Program, C8. Innovation;		Green System
A3. Economic Aspect	C9. Investment Versus Saving, C10. Relative Investment, C11. Job Creation;		Green Culture
A4. Social and Gender Aspect	C12. Personnel, C13. Working Place and Industrial Safety, C14. Gender, C15. Community.	OHS (National and International Compliances)	Green Network



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GIA 2021-2023



GIA 2023



GIA 2022



GIA 2021

2
0
2
4

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RECP Assessments (MISTI and Consultant)

- TEST Training before RECP Assessments, RECP Assessment
- Implementation Plan



EMS and EMA Roadmaps (MISTI and Consultant)

- Support to build EMS Roadmap after EMS training
- Support to build EMA Roadmap after EMA training



Awareness Raisings (MoE-DoCC)

- Policies, Regulations, R&D, Knowledge Transfer
- Best Practices, Case Studies, Feedbacks, Communications



Supports and Monitoring (MISTI, UNIDO PMU)

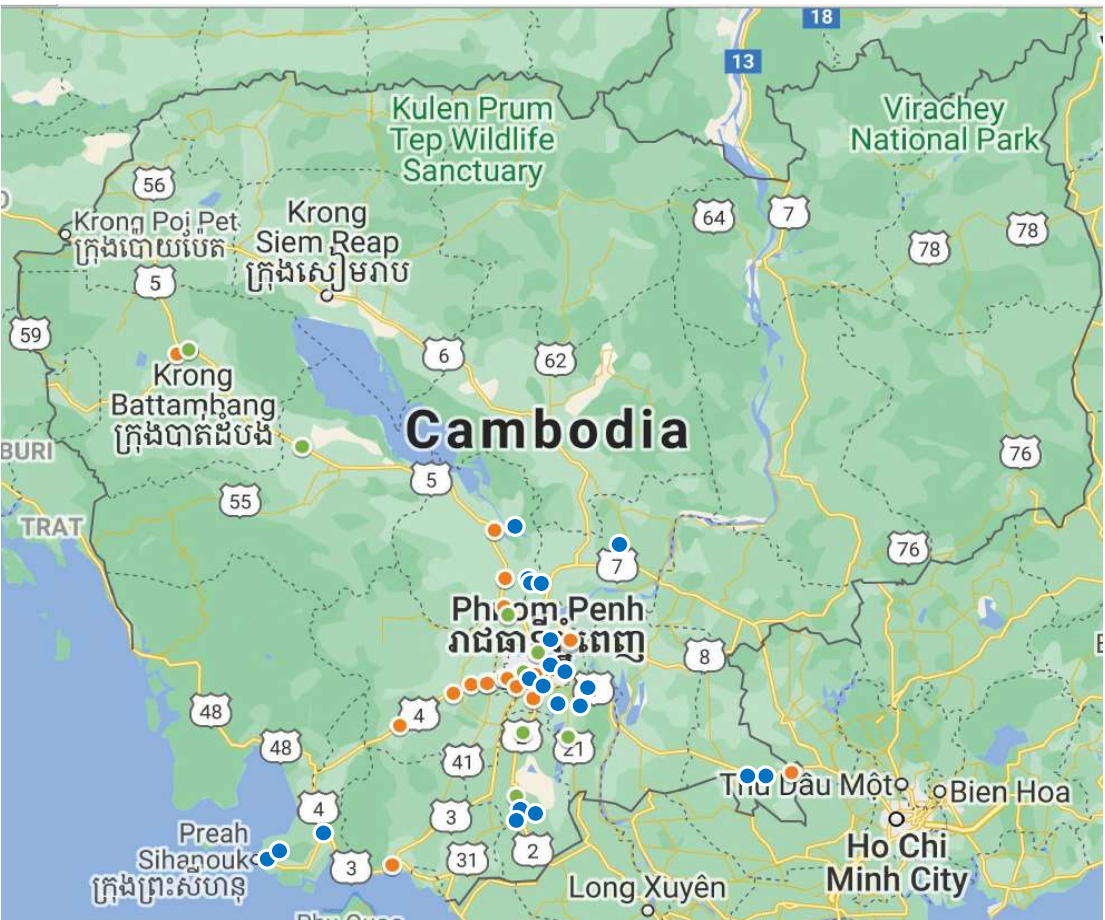
- Trainings on TEST, EMS, EMA, Chemical Management, Wastewater Monitoring, Bankable document, Implementation progress,...



Key engagements from Project to
Factories/SMEs



Project: “Low-carbon development for productivity and climate change mitigation through the Transfer of Environmentally Sound Technology (TEST) methodology”



● First Batch ● Second Batch ● Third Batch
Distribution of 55 factories/SMEs (All Batches)

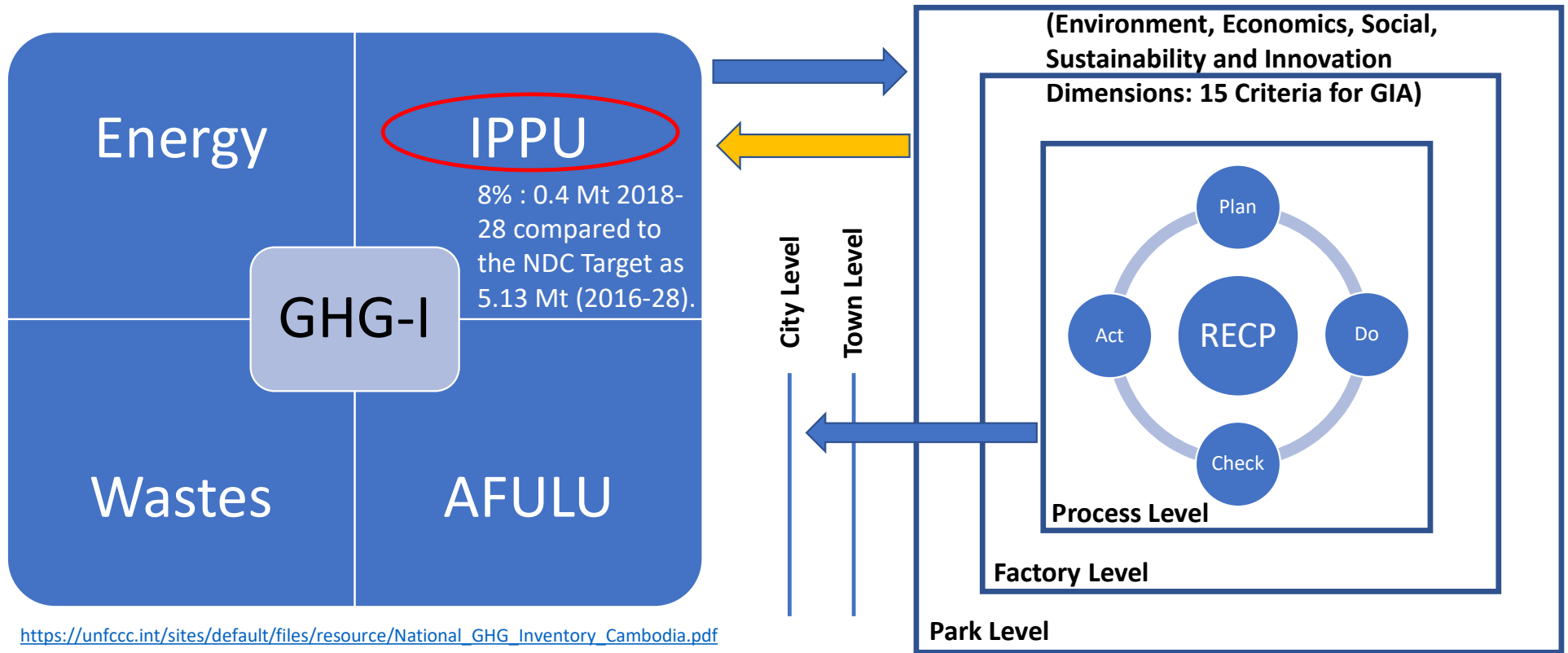
Number of Factories/SMEs	55
Employee of Participated Factories	130 000
Women in Industries	More than 80%

	Identified	Implement
Economic (Saving USD)	17 282 237 (PBP: 4.04)	7 629 038 (PBP: 1.07)
Energy (Saving kWh/y)	52 538 084 (410 measures)	15 819 900 (81 measures)
Water (Saving m3/y)	636 929 (164 measures)	64 324 (34 measures)
Material (Saving tons/y)	4 131 117 (41 measures)	38 943 (7 measures)

The confirmed investment from factories and SMEs is 9 122 782 USD (Up to December 2023)
 CO2 Reductions (Direct and Indirect) for 2019, 2020, 2021, 2022 and 2023 are: 19 000, 33 000, 50 000, 85 000, 100 000 tons/year respectively.



TEST Contribution to National Determined Contribution (NDC)



https://unfccc.int/sites/default/files/resource/National_GHG_Inventory_Cambodia.pdf





Other Project's components

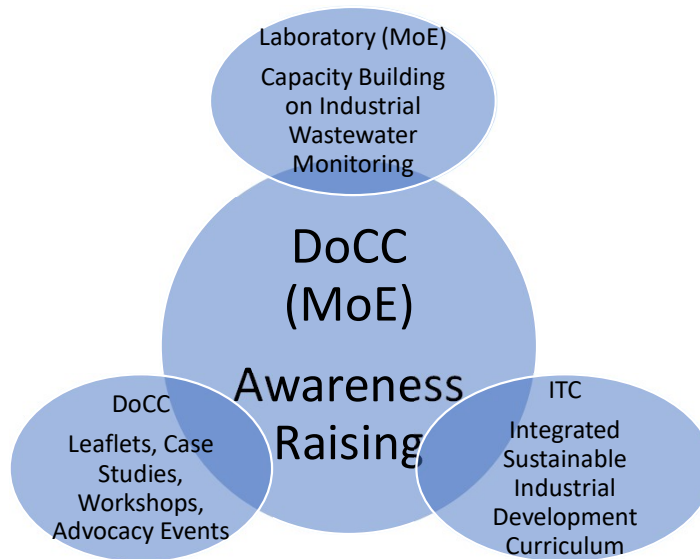
Lead partner



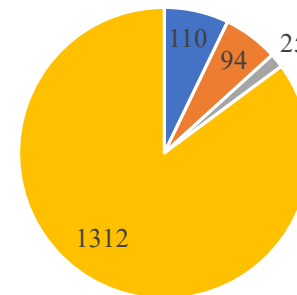
Output 1.1.4 aims to promote Awareness Raising and Dissemination



Component 4:
Awareness raising on
and dissemination

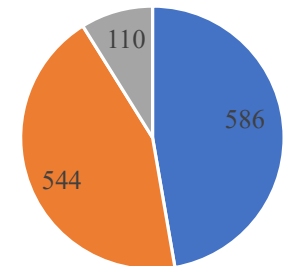


Capacity Building: 1,541 Staff/Officials Were Trained



- Companies
- Government agencies
- National experts
- Others

Awareness Raising Events: 1,240 People Were Reached out



- Green Industry Award sessions
- Overall awareness raising sessions
- TEST Application teams at Companies

2,781 People participate and benefit from Awareness Raising and Capacity Building





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Monitoring, Improvements and Working Cultures





From RECP
To TEST

Supports on System Developments (EMS and EMA Trainings and Roadmaps)

“Green Commitment,
Green Activity,
Green System,
Green Culture,
Green Network”

ISID

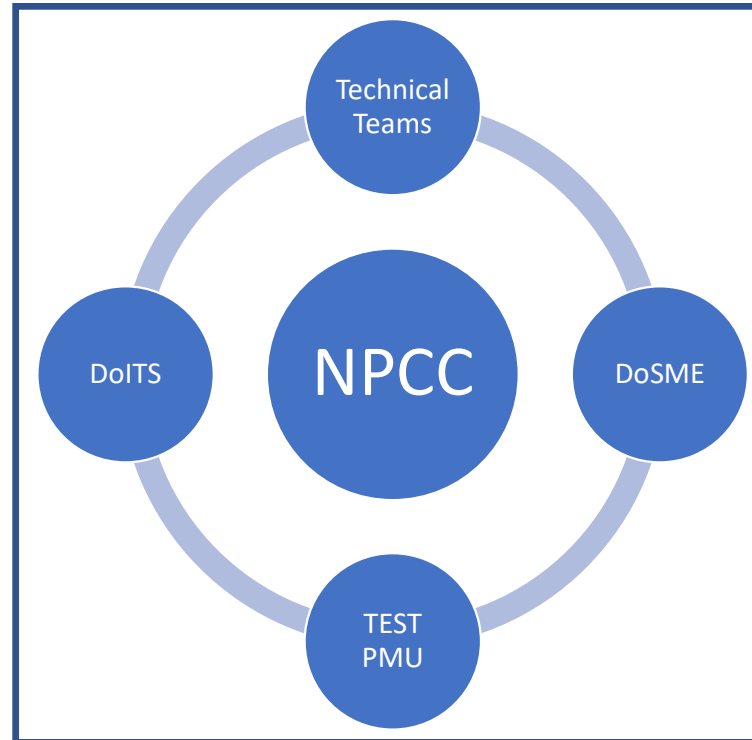
4Es
(Envision, Enable,
Empower and
Energize)

Result Based
Management (RBM)/
“Performance Based
Budget”

M&E Frameworks and
System

Monitoring and Progress of
Factories on RECP and TEST

(Teams)



Monitoring and Progress
of SME on RECP and TEST

(Teams)

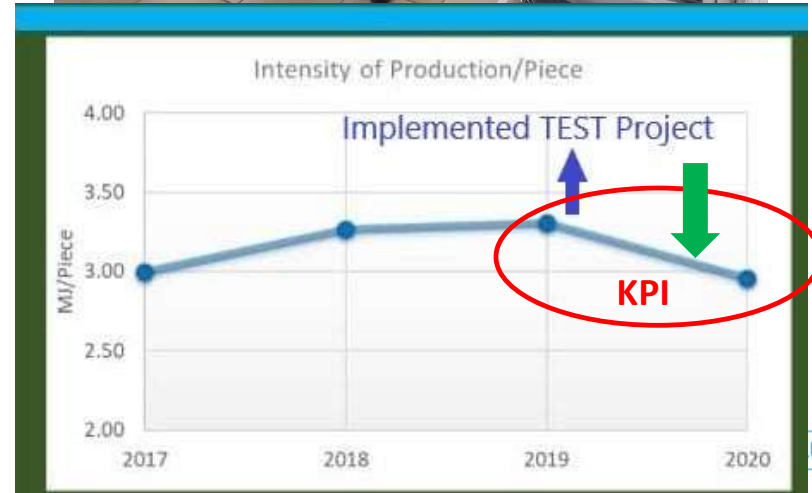
Technical Advisory on RECP and TEST Monitoring and Enabling (TEST PMU)



Monitoring



Component 3:
Training and technical assistance to scale up TEST methodology through demonstration projects in industry.



Case of Women on Promoting Green Manufacturing



Caption: Ms. Panharith Hang presented the progress update of recommended measure to UNIDO delegates

Photo: ©UNIDO-TEST Project/2022

Before joining the TEST Project, she observed that the factory she is working for had faced several issues such as high energy and water consumption and a medium level of efficiency in terms of material and waste management. As a result, the factory had had a high cost in the production line and more or less affected the environment.

Challenges in implementing TEST and Brand Supports

Requirements

Most factories join the TEST Project under the requirement of the brands

Factories have policy, but not yet concrete action plans, KPIs and OPIs, Systematic Works and Setups

(Report Systems)

Commitments

Capacity including the integration of Middle Skill Person and Technical Persons

(Energy Manager, Compliance Officers,...)

Investment and Long Term Planning including the Integration from Local Findings and Interventions

Responsibility

Expansion to Community, Culture and Network Levels

Further Interventions and Integrated Supports for Responsible Business and for Inclusive and Sustainable Industrial Development (ISID) or SDGs



Skills and Energy Management System (EnMS)

- Energy Management System (EnMS)
- Energy Manager
- Energy Auditor
- Compliance Officers
- Investments
- ESCOs
- Technology Transfers





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Green Manufacturing Framework Exchange wit Neighboring Country- “Thailand”



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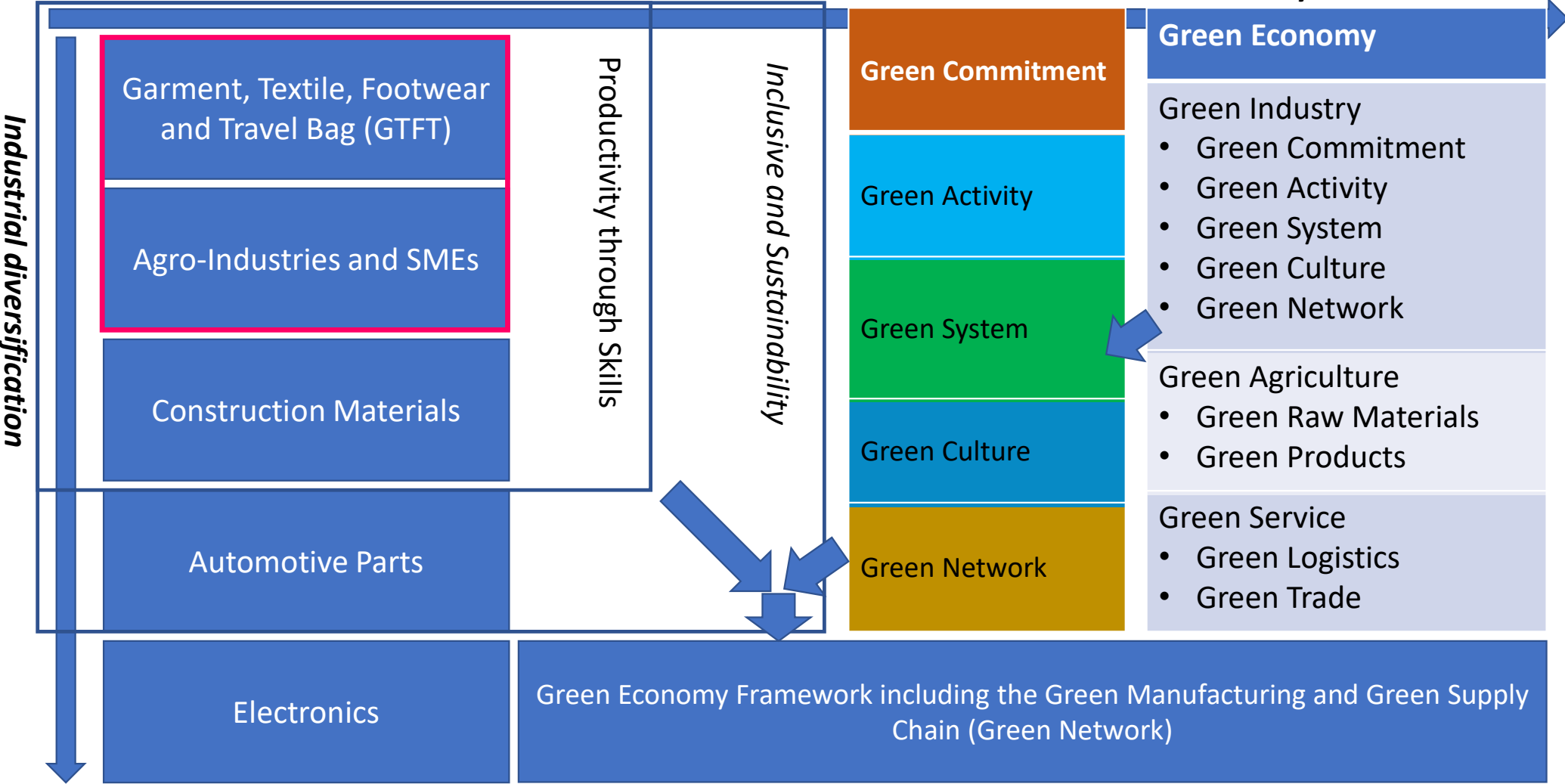


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Industrial Diversification with the Graduation on LDC

Low Carbon Transition towards Inclusive and Sustainability





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TEST Project Completion and Closing





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Project Closing on December 19, 2023



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Press Release from TEST Project Closing

- **MISTI Website**

<https://www.misti.gov.kh/page/index?article=success-of-test-project-paves-way-for-green-manufacturing-in-cambodia.html>

- **UN Cambodia Website**

[TEST PROJECT: A MILESTONE IN SUSTAINABLE INDUSTRY AND CLIMATE CHANGE MITIGATION IN CAMBODIA | United Nations in Cambodia](#)

- **By local media**

<https://m.freshnewsasia.com/index.php/en/localnews/321955-2023-12-19-11-38-13.html>





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Thank you

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