



# **GEF-UNIDO NIGERIA IEE/RECP PROJECT**

## **TECHNICAL TRAINING / CAPACITY BUILDING WORKSHOP ON RECP METHODOLOGY AND ISO 14001 ENVIRONMENTAL MANAGEMENT SYSTEM**

**17<sup>th</sup> JUNE, 2023**

**Hotel Ibis, Ikeja, Lagos.**

# **TRAINING REPORT**

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**Prepared by**



**Hospitalia Consultaire Ltd  
RECP National Expert**

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## **ACRONYMS**

ECREEE	ECOWAS Centre for Renewable Energy and Energy Efficiency
EE	Energy Efficiency
EMS	Environmental Management System
EnMS	Environmental Management System
GEF	Global Environmental Facility
IEE	Industrial Energy Efficiency
ISO	International Standard Organization
MAN	Manufacturers Association of Nigeria
RECP	Resource Efficiency and Cleaner Production
UNIDO	United Nations Industrial Development Organizations

## 1. BACKGROUND

The training titled “Capacity Building Workshops for Stakeholders on RECP methodology and ISO 14001 Environmental Management System” with the objective of improving Nigeria’s resource efficient cleaner production through programmatic approach and the promotion of innovation in cleaner technology solution is an activity of the GEF-UNIDO IEE & RECP Project. The training was held at Hotel Ibis, 23 Toyin Street, Ikeja, Lagos on the 17th of June 2023.

The purpose of the training was to educate various key stakeholders on the concept of *Industrial Energy Efficiency* and *Resource Efficient Cleaner Production* to strengthen the capacity of Nigerian industrial sector and the industrial consulting base regarding the EnMS/ESO and RECP methodologies.

The training included various components for technical stakeholders on Resource Efficient Cleaner Production (RECP).

The methodology adopted for the training was interactive and participatory as facilitators were open to feedbacks, suggestions and questions during presentations. The sessions were executed through power point presentations. Surveys were also deployed at the end of each training session to collect feedbacks from participants.

## 2. OBJECTIVES OF THE WORKSHOP

The objectives of the workshop<sup>1</sup> were as follows:

- i. To enlighten the stakeholders of the impacts of industrial activities on the environment.
- ii. To create awareness on the need to minimize these impacts on the environment.
- iii. To introduce the concept of RECP and environmental management system to enterprises.
- iv. To sensitize and encourage organizations to adopt and implement ISO 14001 as a tool to effectively manage their environment.
- v. To provide guidance on the route to achieving certification to ISO 14001.

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<sup>1</sup> Focusing on the RECP component

### 3. TRAINING AGENDA AND RESOURCE PERSONS

The agenda for the training day on RECP Methodology and ISO 14001 Environmental Management System is as follows.



Start time	8:30am		
Closing time:	16:00	<b>RECP methodology and ISO 14001 Environmental Management System</b>	

	content	Means of evaluation	Learning activities	Duration (minutes)	Slides
09:00	Introduction of SDG, ESG, RECP (environmental management ISO 14001)	Group discussions	Setting the scene	45 minutes	8-19
09:45	UNIDO RECP methodology <ul style="list-style-type: none"> <li>• Commitment, Environmental team, policy, objectives</li> <li>• Initial assessment               <ul style="list-style-type: none"> <li>○ Identify non-productive output</li> <li>○ Walkthrough</li> <li>○ Emission map, flow chart</li> <li>○ Action plan</li> </ul> </li> <li>• examples</li> </ul>	Class exercise, participant questions	Developing an environmental policy and objectives, Commit and establish an environmental team, plan initial assessment, Understand <ul style="list-style-type: none"> <li>• emission mapping</li> <li>• Process flow chart</li> <li>• Non-productive outputs</li> <li>• Action planning</li> </ul>	45	20-27
10:30	Break			15 min.	28
10:45	UNIDO RECP methodology - Initial assessment (session 2) <ul style="list-style-type: none"> <li>• Input-/Output Analysis (MFCA)</li> <li>• Innovation and creativity</li> <li>• Monitoring &amp; Controlling</li> <li>• examples</li> </ul>	Class exercise, participant questions	Understand <ul style="list-style-type: none"> <li>• Input Output analysis MFCA</li> <li>• Root-cause analysis</li> <li>• To conduct brainstorming session</li> <li>• Environmental indicator</li> <li>• Monitoring &amp; controlling</li> </ul>	90 min.	29-48
12:15	LUNCH			45 min.	49
13:00	Material management <ul style="list-style-type: none"> <li>• Non productive material output</li> <li>• Material efficiency assessment (waste assessment)</li> <li>• Improvement options</li> <li>• examples</li> </ul>	Class exercise, participant questions Group work	Understand <ul style="list-style-type: none"> <li>• Types of material (raw, auxiliary)</li> <li>• Why and where are materials used</li> <li>• Quantities and costs</li> <li>• Hazardous materials</li> <li>• Types of wastes and quantities</li> </ul>	45 min.	50-56
13:45	Chemical management	Class	Understand	30 min.	57-64

	content	Means of evaluation	Learning activities	Duration (minutes)	Slides
	<ul style="list-style-type: none"> <li>Chemicals assessment</li> <li>Risk assessment</li> <li>Material safety data</li> <li>Improvement options</li> <li>examples</li> </ul>	exercise, participant questions Group work	<ul style="list-style-type: none"> <li>Chemical risks</li> <li>Chemical risk assessment</li> <li>Quantities and costs</li> <li>Hazardous chemicals</li> <li>Replacement and reduction options</li> <li>Required Personal protective equipment</li> </ul>		
14:15	Break			15 min.	65
14:30	Water efficiency <ul style="list-style-type: none"> <li>Water assessment</li> <li>Data collection</li> <li>Basic measurements</li> <li>Improvement options</li> <li>examples</li> </ul>	Class exercise, participant questions Group work	Understand <ul style="list-style-type: none"> <li>Why is water used in the process</li> <li>How much water is used</li> <li>What are the costs for water usage</li> <li>What is the impact of wastewater discharge</li> </ul>	45 min.	66-70
15:15	Feasibility and environmental programme <ul style="list-style-type: none"> <li>Option typology</li> <li>Evaluation process - technical-economic-environmental</li> <li>Feasibility and profitability</li> <li>Action plan</li> <li>Continuous improvement</li> </ul>	Class exercise, participant questions	Understand <ul style="list-style-type: none"> <li>How to calculate and analyse feasibility of options</li> <li>How to establish acting plans</li> <li>Continuous improvement - monitor and control of improvement activities</li> </ul> For industries and technical consultants: Homework <ul style="list-style-type: none"> <li>introduction to report template</li> <li>Planning RECP assessments</li> </ul>	45 min.	71-81 82-85
16:00	Closing				

The team which delivered sessions during the training are as underlisted.

S/N	NAME	DESIGNATION
1.	Mr. Oladipo Jacob	Project Coordinator, PMU GEF-UNIDO IEE-RECP Project
2.	Mr. Michael Fegerl	RECP International Consultant
3.	Mr. Alf Hartzenburg	IEE International Consultant
4.	Mr. Chukwudubem Anyadiegwu	RECP National Consultant
5.	Mrs. Oluyinka Omojolaibi	Representing Technical Coordinator, PMU GEF-UNIDO IEE-RECP PROJECT
6.	Mrs. Clara Nwamaraihe	Program Administrative Assistant, PMU GEF-UNIDO IEE-RECP PROJECT

#### 4. PARTICIPANTS' PROFILE

The training participant comprised of stakeholders (20% female and 80% male) from food and beverage processing industry, production of paints and soap industry, metal works, representatives from the Federal Ministry of Environment and 9 from Lagos academia. List of attendants of the training is captured in Annex 1.

#### 5. WORKSHOP PROCEEDINGS

The day began with opening remarks and welcome address by the Project Coordinator, Mr. Oladipo Jacob. This was then followed by a semi-interactive session introducing the RECP International Consultant, Resource Efficient and Cleaner Production, their standards, case studies and an overview of industrial waste management. This gave the participants the necessary information about the project and the implementing partners with the view to have a clear understanding of the project concept.

##### **SESSION: TRAINING ON RECP METHODOLOGIES/ISO14000 SERIES**

The session began with the consultant giving the international project team and his experience of over 30 years in the RECP field. The RECP methodology and ISO 14001 - Environmental Management Systems (EMS) was introduced by the consultant, covering Sustainable Development Goals and emphasized the significance of SDG 9 and SDG 12 in the field of RECP, challenges to RECP and expectations from enhancing RECP and strengthening environmental regulatory frameworks in Nigeria.



The expert also iterated the focus of reporting ESG in 3 key areas (Environmental, Social and Governance) and the type of questions stakeholders typically ask with regards to this. He stated that ISO14001 answers questions raised by stakeholder with regards ESG. He also stated the UNIDO-RECP methodologies and the basics that can be used. These toolkits focus on analysis and assessment of companies to find out most efficient output.

The session also covered RECP approach towards green industry production, circular economy principles and RECP benefits for companies with case studies on RECP and input/output analysis. A fishbone diagram was used to identify/show root causes and options. In general, the aim is to move from a linear to circular economy, which involves turning wastes into resources, encouraging users and strong use of cooperation.

Also, the facilitator stated that an Environmental Programme can be created to show management of companies and how to follow RECP. And the evaluation process should be followed because it is important for financing and for feasibility of an investment project. An action plan is also required with identified improvement options.

Finally, there were exercises with participants grouped in order to measure their level of understanding as regards to the concept introduced in the sessions. The activity aimed to help the participants to differentiate between aspects (cause) and impacts (effect) of processes irrespective of the company or industry. At the end, the consultant proceeded to give a run-through with the RECP-tool, then a questionnaire that will be used to design RECP (self) assessment workplan was explained to the stakeholders and the completed forms were requested to be sent back to the PMU.

At the end of the session, the following questions were asked by participants.

- Is it only when trying to reduce resources wasted that you decide to use RECP assessment?

*Response: It is up to the individual, but it is for their benefit and also ensure to also do good house-keeping.*

- Does any firm use production flowchart in their organization?

*Response: A firm stated that they use the flowchart to track the production process and how the waste is handled in the effluent management system.*

- What is happening in terms of National Policy with regards to RECP and what is in place in regards to that and also is there a roadmap set in place?

*Response: As a pilot project, the project covers certain aspects under the four different executing agencies and other critical stakeholders including academia. There are also going to be RECP centers where everyone has a role to play. Therefore, the project cannot cancel any policies but will just enhance/improve in the already existing policies. Finally, the roadmap has been specified and the project is going according to the roadmap using experience from other countries.*

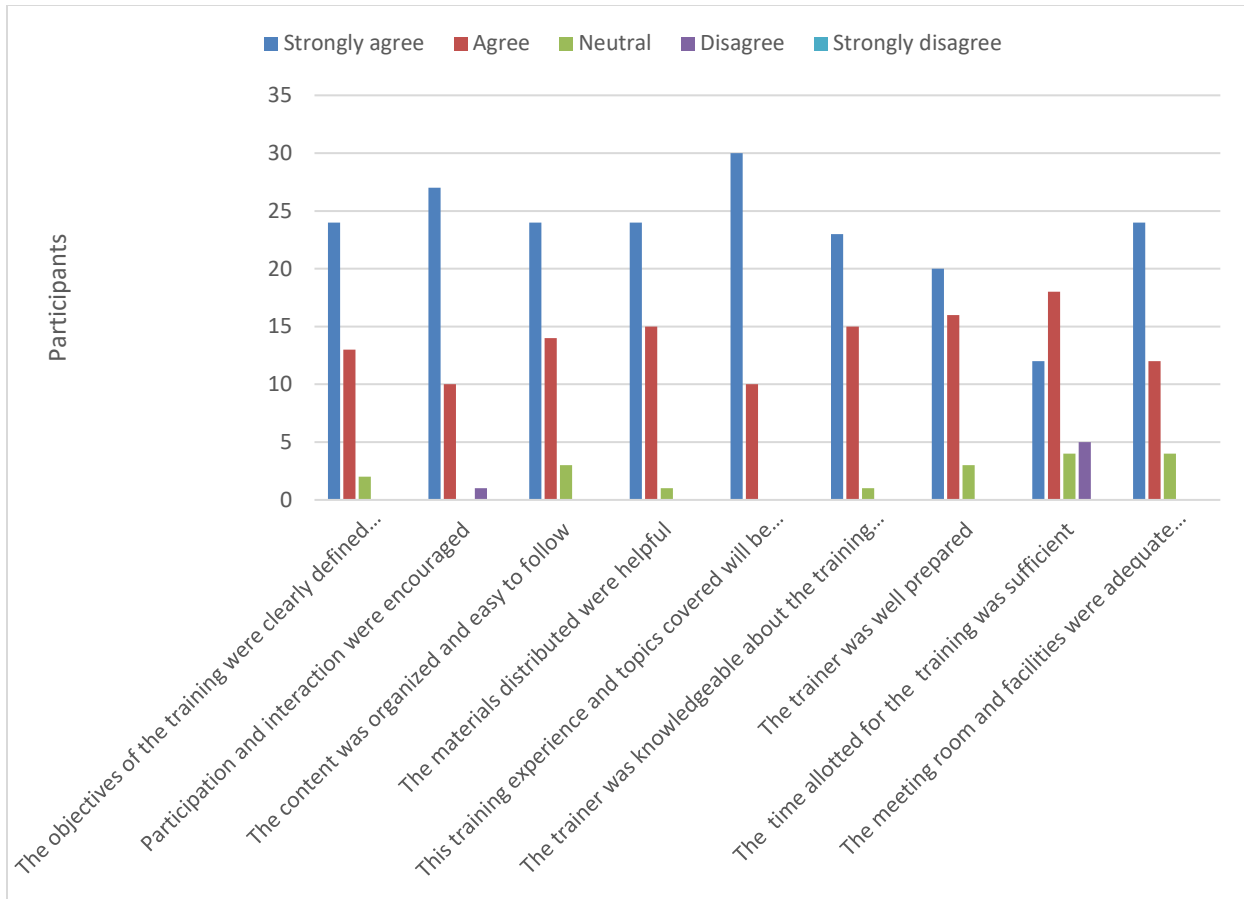
- Is there provision to handle biological waste like decaying products and are there trainings on this? Also, what is the legal requirement and can there be trainings on that?

*Response: Currently there is no specific manner of handling biological waste after segregation at point of waste production. Nigeria has very good laws and the team is working on understanding the laws and sustaining our processes on following the laws.*

*Participants were encouraged to visit the website of the Federal Ministry Environment for information on the laws.*

## 6. TRAINING EVALUATION

At the end of each training session, participants were interviewed in order to garner their views, suggestions and feedbacks. The chart below summarizes results of the responses from questionnaires administered.



The general feedback of the participants about the training was positive as the trainers were well prepared. The content was believed to be organized and the objectives of the training were well defined. While sharing their opinion, the participants agreed that participation and interaction were encouraged during the training and the materials distributed were also helpful coupled with the fact that the facilitators were knowledgeable about the topics. Majority of the participants believed that the training experience and topics covered will be useful in their daily operations.

## 7. LESSONS LEARNT AND RECOMMENDATIONS

Participants grasped the concepts and models - RECP, ISO 14001-EMS and IEE-ISO 50001 discussed at the workshop sessions. A key take-away for participants was that the project and consequently integration of RECP methodologies will result in industries optimizing production cost and profit.

Based on feedback from participants and observations made during the sessions, the following are recommended.

- i. There is need for training materials to be shared beforehand to allow for post training reference.
- ii. There is also a need for trainings on legal requirements with regards to the project to be included in future workshops.
- iii. Defined ways to recycle waste products should be included in the training.
- iv. The facilitator should be more engaging.
- v. Certification, Time Frame and Economic Evaluation should be improved.

**ANNEX 1: ATTENDANCE LIST**

S/N	NAME	GENDER	ORGANIZATION	PHONE NUMBER
1.	WILLEM INYA	M	NACCIMA	07060781798
2.	BARTH EGBU	M	EURO GLOBAL	07067975664
3.	FOLUSO AGUNBAIDE	M	UNIVERSITY OF LAGOS	08055136498
4.	PETER OLABISI OLUSEYI	M	UNILAG	08034106278
5.	OLUSOLA OYEBOLA	M	UNILAG	08094723005
6.	ABAYOMI AKEEMA	M	UNILAG	08052264460
7.	OTUECHERE ONYEGIDE	M	GUINNESS NIGERIA	07086459730
8.	OJILE ENEOJO NICO	M	TECHNO OIL LTD	08033476656
9.	AKINLADE ANJORIN	M	GUINNESS NIG PLC	
10.	AKEEM HARDIX OGUNTADE	M	SPACEWAY LTD	08055884461
11.	ENGR YUSUF MAJOLAGBE	M	NIGERIA INSTITUTION OF ENVIRONMENTAL ENGINEERS (LAGOS)	08121982048
12.	ENGR ODUKOYA SESAN	M	NIEEII	08033578492
13.	OGUNYEMI BUKOLA DAVIS	M	SPECTRA IND. LTD	08185680996
14.	OSASONA OLUWAKEMI	F	SPECTRA IND. LTD	08109250998
15.	BOLAJI OLAYINKA	F	SPECTRA IND. LTD	08036170628
16.	ADEBAYO TOPE	F	BERGER PAINTS NIG PLC	08162565710
17.	GODWORD OSEKUYE	M	BERGER PAINTS NIG PLC	07030464213
18.	ARUOTURE CELESTINE	M	BERGER PAINTS NIG PLC	08035427259
19.	PRYESH AGARWAL	M	DUFIL	08055096742
20.	CHARLES EKEKWE	M	DUFIL	08058695016
21.	BENITA ELEUDU	F	DUFIL	09062867668
22.	TALUW ADEKUNLE	F	BAMBI RESOURCE & INST.	08037221517
23.	EGBO CHINEME PRINCESS	F	LAGOS BUSINESS SCHOOL	08068057954
24.	AMOD KUMAR	M	DUFIL	09010978086
25.	THERESA AKPOUOSE	F	LAGOS BUSINESS SCHOOL	07032301013
26.	ADEKUROYE HENRY	M	TECHNO OIL LIMITED	08038427579
27.	ANSELIM OHEMINI	M	TECHNO OIL LIMITED	08069701643
28.	ADENIYI OLADIJO	M	TECHNO OIL LIMITED	08033551157
29.	OLANIYI ADEKUNLE	M	GUINNESS NIGERIA PLC	08033339883
30.	ENGR. OYEWILE A. ASHAOLU	M	EMERV, ABUJA	07067986555
31.	EDEH IKENNA FRANKLINN	M	NIGERIA FOUNDRIES LIMITED	08069034507

S/N	NAME	GENDER	ORGANIZATION	PHONE NUMBER
32.	AKINTOBI OLU-SAMUEL	M	RELIANCE CHEMICAL PRODUCT LTD	08064974896
33.	ADEKUNLE ADESINA JOSEPH	M	RELIANCE CHEMICAL PRODUCT LTD	08034422269
34.	ODETOLA SUNDAY	M	LAGOS BUSINESS SCHOOL	08067337446
35.	AISUAN INNOCELNT I.	M	LAGOS BUSINESS SCHOOL	08056641099
36.	ADEMOLA ORIMOLADE	M	LBS	08033476483
37.	KOMOLAFE OLUISOGO	M	EURO GLOBAL FOODS	08033818646
38.	NATHANIEL ADELEKE	M	NECA	08063551667
39.	ORERE GEORGE	M	ELECTRICAL R .C. P	09066765027
40.	MADICHE CHIKE	M	RELIANCE CHEMICALS	07062820956
41.	NNEKA OMOWUNMI SOLOLA	F	BERGER PAINTS NIG PLC	08055228358
42.	ADEREMI OLADAYO ADEGBOGE	M	NIGERIAN FOUNDARIES GROUP	08038536279
43.	OLAGUN GEORGE T.	M	SPECTRA	08035661821
44.	ADEBAJO GBENGA	M	HONEYWELL	08027978737
45.	SAMSON ADEMOSI	M	NASME	0803259376
46.	TRUST EMALESA	M	GUINNESS	08118819520
47.	OYETAYO ADEGBOYEGA	M	NIEEE LAGOS	
48.	AGHARESE ONCEGHESA	F	FBRA	
49.	CHRISTOPHER OSOGBA	M	WHITE CONSULT TECH. LTD	
50.	OGUNFOKJU TIMOTHY	M	WHITE CONSULT TECH. LTD	
51.	CHIKA ZACH	F	WHITE CONSULT TECH. LTD	08026545052
52.	AFINNI OLAYINKA	M	NASME HADDINIQUE NIG LTD)	08037912199
53.	DR. PERCY CHUKWUKA DAVID	M	NACCIMA	
54.	OGUNRANFO RASAQ	M	HONEYWELL	08147839693
55.	OWODEBI O.P	M	HNY FURNITURE LTD	08053615737
56.	ADEBOLA AKINWANDE	F	NECA	08100593200
57.	DAUDA SUNDAY W.	M	TECHNO OIL LIMITED	08187117485

## ANNEX 2: TEMPLATE OF TRAINING EVALUATION FORMS

### IMPROVING NIGERIA'S INDUSTRIAL ENERGY PERFORMANCE AND RESOURCE EFFICIENT CLEANER PRODUCTION THROUGH PROGRAMMATIC APPROACHES AND THE PROMOTION OF INNOVATION IN CLEAN TECHNOLOGY SOLUTIONS

**LAGOS, NIGERIA: JUNE 17, 2023**

#### TRAINING EVALUATION FORM – RECP methodologies

**DAY X:**

**TARGET PARTICIPANT:**

**SUBJECT MATTER:**

**This training evaluation is to provide us feedback to help us identify if the training achieved the intended outcomes.**

Please indicate your level of agreement with the statements listed below in #1-9.

	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
1. The objectives of the training were clearly defined and met					
2. Participation and interaction were encouraged					
3. The content was organized and easy to follow					
4. The materials distributed were helpful					
5. This training experience and topics covered will be useful in my practice					
6. The trainer was knowledgeable about the training topics					
7. The trainer was well prepared					
8. The time allotted for the training was sufficient					
9. The meeting room and facilities were adequate and comfortable					

10. How do you envisage to apply the lessons from this training in your practice?

11. What did you like most about the training?
12. What aspects of the training could be improved?
13. Please share other comments or expand on previous responses here

Thank you for your feedback!



### ANNEX 3: PICTURES



*Plate 1: Stakeholders during the session.*



*Plate 2: RECP International Consultant Representative during his session on RECP methodologies and EnMS.*





*Plate 3: International Consultants answering a question from a participant during an exercise.*



*Plate 4: Stakeholders during the session with RECP International Consultant.*