



GEF-UNIDO NIGERIA IEE/RECP PROJECT

**RECP TECHNICAL TRAINING/CAPACITY BUILDING
WORKSHOP**

23rd JUNE, 2023

**Dolly Hills Hotel, 3 Dr Lady Ngozi Agbasimale Road,
Trans-Nkisi, Onitsha.**

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 Uyi Grand Hotel, 35 Aideyan Street, Off Ihama road, Benin city on the 20th of June 2023.

The purpose of the training was to create awareness of 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 workshop¹ 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.

¹ *Focusing on the RECP component*

- v. To provide guidance on the route to achieving certification to ISO 14001.

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	RECP methodology and ISO 14001 Environmental Management System	

	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	UNIDIO RECP methodology <ul style="list-style-type: none"> • Commitment, Environmental team, policy, objectives • Initial assessment <ul style="list-style-type: none"> ○ Identify non-productive output ○ Walkthrough ○ Emission map, flow chart ○ Action plan • examples 	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"> • emission mapping • Process flow chart • Non-productive outputs • Action planning 	45	20-27
10:30	Break			15 min.	28
10:45	UNIDIO RECP methodology - Initial assessment (session 2) <ul style="list-style-type: none"> • Input-/Output Analysis (MFCA) • Innovation and creativity • Monitoring & Controlling • examples 	Class exercise, participant questions	Understand <ul style="list-style-type: none"> • Input Output analysis MFCA • Root-cause analysis • To conduct brainstorming session • Environmental indicator • Monitoring & controlling 	90 min.	29-48
12:15	LUNCH			45 min.	49
13:00	Material management <ul style="list-style-type: none"> • Non productive material output • Material efficiency assessment (waste assessment) • Improvement options • examples 	Class exercise, participant questions Group work	Understand <ul style="list-style-type: none"> • Types of material (raw, auxiliary) • Why and where are materials used • Quantities and costs • Hazardous materials • Types of wastes and quantities 	45 min.	50-56
13:45	Chemical management	Class	Understand	30 min.	57-64

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

4. PARTICIPANTS' PROFILE

The training participant comprised of technical stakeholders (16% female and 82% male) from various industries in and around Anambra state and representative from the Federal Ministry of Environment. 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 (Governance, Environmental and Social) and the type of questions stakeholders typically ask with regards to this. To answer these questions he stated that ISO14001 is used. 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 consultant also spoke on RECP approach towards green industry production, circular economy principles and RECP benefits for companies with some UNIDO experience with regards to RECP and input/output analysis on company level. 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, exercises were carried 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 their activities irrespective of the company or industry. At the end, Mr Morgan (representative from FMEnv) gave a deeper explanation on what the RECP encompasses. Also, he stated that FMEnv has rolled out roadmap for circular economy. Finally the International 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. Part two of the workshop will take place in September, where companies will be assessed based on information they provide in the questionnaire.

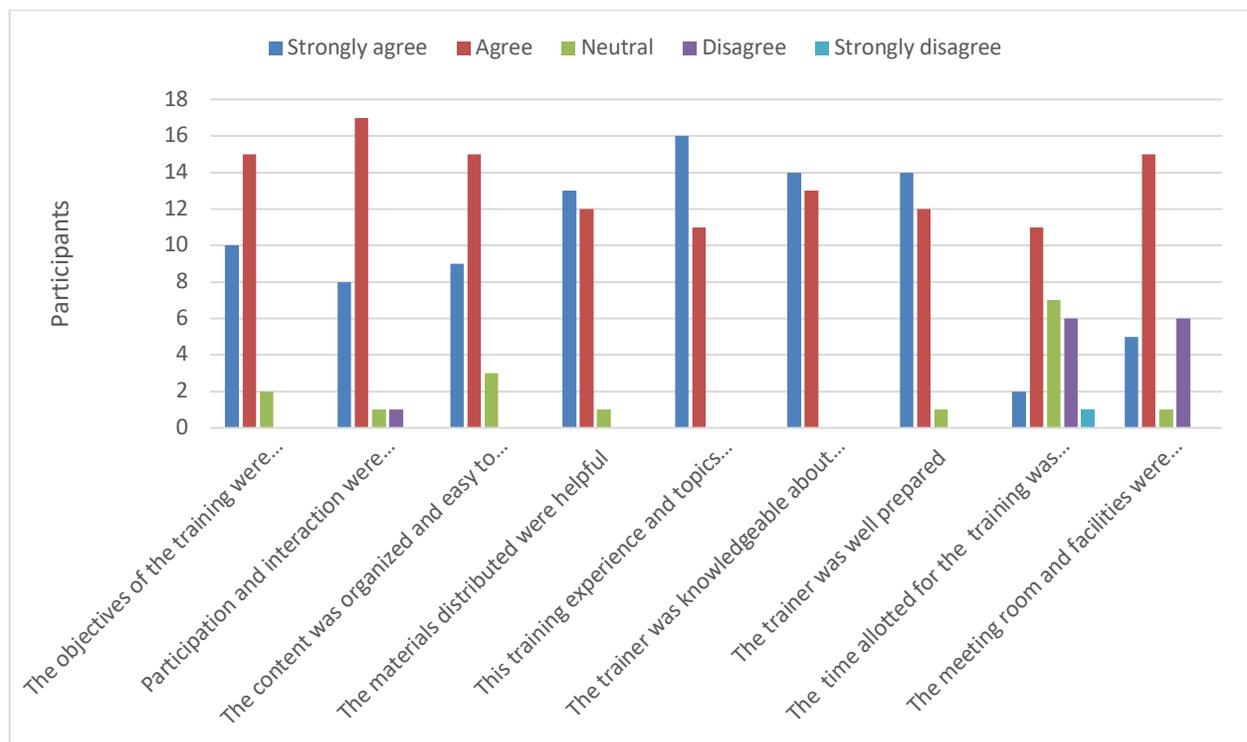
At the end of the session, the following questions were asked by participants.

- Why aren't there more facilitators?

Response: The two experts are part of a team of experts but the high cost of transport only enabled two members of the team to be present.

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 shows 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.

Suggestions

- The training should be expanded to give trainees adequate time to learn and assimilate the information adequately
- Training materials should be circulated at least a day or two before the training
- A more detailed oriented explanation on all presentations for adequate understanding (ECREEE).

7. LESSONS LEARNT, OBSERVATIONS AND RECOMMENDATIONS

7.1 Lessons learnt and Observations

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 lessons are noted:

- i. There is need for training materials to be shared beforehand to allow for post training reference.

7.2 Recommendation

Based on lessons learnt and observations made, the following are recommended.

- i. For technical sessions aimed at building capacity, an optimal duration should be considered for modules to ensure transfer of knowledge aimed for is achieved.

ANNEX 1: ATTENDANCE LISTS

DAY : 23rd June, 2023

S/N	NAME	GENDER	ORGANISATION	NUMBER
1.	Okafor kingsley	M	ZEC IND.CO.LTD	08038771542
2.	Daniel Agbodike	M	ZEC IND.CO.LTD	08062588908
3.	Obiora Ezebube	M	GEOELIS CABLES LTD	08037411466
4.	Ebiz Umigaji	M	EMOS BEST	07033962642
5.	Emejakpor Emmanuel	M	EMOS BEST	07032255082
6.	Emenike Amaobi	M	SEAHORSE LUBIND.LTD	08038682088
7.	Egbuna Fredrick	M	SEAHORSE LUBIND.LTD	07051
8.	Kingsley Ihekoromadu	M	SEAHORSE	07051825261
9.	Nnamdi Okereke	M	SEAHORSE	08035366231
10.	Dr Queendalene Ikebunura	F	DUMOFIELD FARMS LTD	08037841277
11.	Emmanuel Odoewu	M	GEOELIS CABLES LTD	08135868861
12.	Joseph Anene	M	GEOELIS CABLES LTD	08039532617
13.	Okoli Chinonso	M	CUTIX PLC	08066671822
14.	Aralu Onyekachukwu	M	CUTIX PLC	08134440519

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15.	Maryann Okoyefi	F	CUTIX PLC	07066011389
16.	Obieri Loveth	F	GEOELIS CABLES LTD	08100366141
17.	Edidiong O. Akpan	M	CUTRIX PLC	08166906675
18.	Erhi Thomas	M	RIMCO LTD	08072691555
19.	Onumara Bethel	M	RIMCO LTD	08035055813
20.	Chiamalu Ikoro	M	RIMCO LTD	08130936407
21.	Ezekiel Woni	M	RIMCO LTD	08034417702
22.	Okorie Obinna	M	TRANSTELL VENTURES	07037465785
23.	Obua Joseph Welekwe	M	TRANSTELL VENTURES	08033523675
24.	James Ehiogu	M	TRANSTELL VENTURES	08035770945
25.	Ejike Odinaka	M	KAJES COMPANY	07033630902
26.	Ekawu Onyekuhi	M	DOZZY GROUP	08068572378
27.	Egbule Emeka	M	DOZZY GROUP	08034415069
28.	Ngoka tochukwu	M	DOZZY GROUP	08057572187
29.	Ukaigwe Emeka	M	NGBOROS &CO.NIG LTD	07063997387
30.	Okoro Reginald	M	NGBOROS &CO.NIG LTD	0703838086
31.	Nwanbu innocent	M	NGBOROS &CO.NIG LTD	07032403693
32.	Ugorji Michael	M	ZEC IND LTD	08036676941
33.	Umeaduma Tochukwu V	M	TUMMY TUMMY FOOD IND	08067705366

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34.	Olisaemeka Augustine	M	TUMMY TUMMY FOOD IND	08039512344
35.	Humphrey Onyeansi	M	ENVOY OIL IND .LTD	08033807729
36.	Onwuka Obinna	M	A-Z PETROLEUM LTD	08037718295
37.	Akout	M	A-Z PETROLEUM LTD	07056861832
38.	Azubuike Okechukwu	M	A-Z PETROLEUM LTD	08061508915
39.	Oruche Joseph O	M	A-Z PETROLEUM LTD	07032413999
40.	Chris Ukachukwu	M	REXTON IND .LTD	08033166272
41.	Ogbu Ijeoma	F	SUNNY PEACE INDUSTRIES	07035514675
42.	Diokpo Chidinma N	F	KATES ASS.IND LTD	08136118267
43.	Aduwa Mercy	F	ENVOY OIL IND LTD	08059041141
44.	Emma Oai	M	ENVOY OIL IND.LTD	08063675267
45.	Chigbo Morgan	M	FMENU(RECP WG)	08068013880
46.	Chukwudubem Anyadiegwu	M	HOSPITALIA	08058939646
47.	Obafemi Adejumo	M	ECOWATT NIGERIA LTD	07031038658
48.	Omojolabi olayinka	F	MAN	08037181922
49.	Solomi S.O	M	MAN/PMU	08064541820
50.	Clara Nwamaraihe	F	MAN/PMU	

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

BENIN-CITY, NIGERIA: JUNE 20, 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.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
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.



Plate2: Stakeholders during the session.

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Plate3: Representative of FMEnv explaining the RECP project.



5-Day Capacity Building Workshop on Improving Nigeria's Industrial Energy Performance and Resource Efficient Cleaner Production through Programmatic Approaches and the Promotion of Innovation in Clean Technology Solutions



Plate 4: Stakeholders at the end of the day's session.