GEF–UNIDO IEE & RECP PROJECT NIGERIA

NEWSLETTER

IEE & RECP NIGERIA
SUSTAINABILITY & RESOURCE EFFICIENCY

October 2026



A Group Photo from the Training Workshop Held in Kano

GEF-UNIDO IEE & RECP PROJECT NIGERIA Advancing Industrial Energy and Resource Efficiency for Manufacturing Sustainability and Competitiveness

In 2021, the 5-year GEF-UNIDO Industrial Energy Efficiency and Resource Efficient Cleaner Production (IEE & RECP) Project has driven measurable transformation across Nigeria's industrial landscape. By embedding energy and resource efficiency into manufacturing operations, the project has successfully lowered production costs, minimised environmental footprints, and strengthened market competitiveness.

Pilot Scope and Strategic Framework

To demonstrate how IEE and RECP methodologies integrate into daily factory operations, the pilot deployed six strategic components targeting key manufacturing hubs: **Lagos, Ogun, Oyo, Warri, Benin, Port Harcourt, Abuja, Kaduna, Kano, Onitsha, and Enugu.** The intervention prioritised five high-impact industrial sectors:

- Food and beverages
- Wood and furniture
- Textiles
- Basic metals, iron and steel
- Petrochemicals

INSTITUTIONAL LEADERSHIP AND MULTI-STAKEHOLDER COLLABORATION

The Manufacturers Association of Nigeria (MAN) executed the project, serving as the secretariat and superintending the operations of the Project Management Unit (PMU).

The initiative operated through an extensive multi-stakeholder network:

International & National Partners:
Global Environment Facility (GEF), United Nations Industrial Development Organisation (UNIDO), ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREE), Federal Ministry of Environment, Energy Commission of Nigeria, Bank of Industry (BOI), Standards Organisation of Nigeria (SON), FCSS, Hospitalia Consultaire and Ecowatt Ltd.

SUPPORTING INSTITUTIONS:

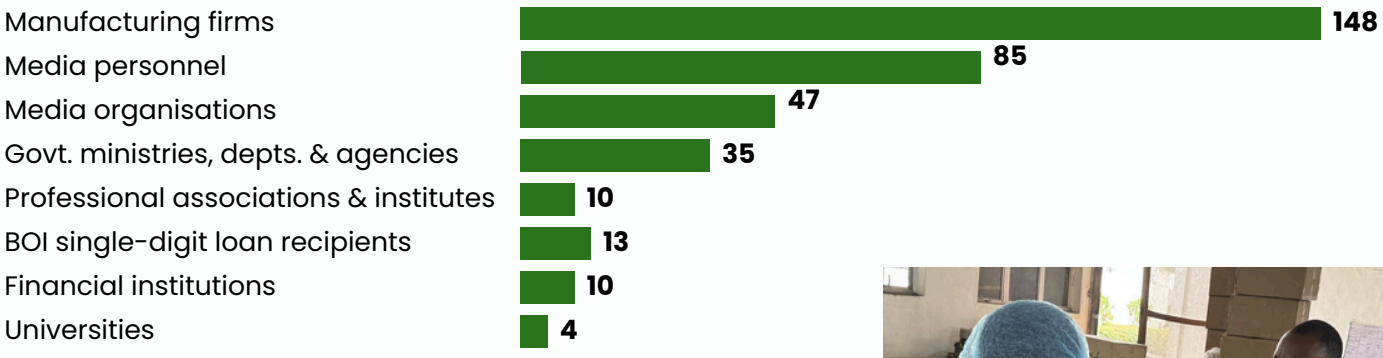
Federal Ministry of Industry, Trade and Investment; Federal Ministry of Power; Federal Ministry of Science and Technology; National Universities Commission (NUC); Nigeria Investment Promotion Commission (NIPC); Nigerian Environmental Society (NES); and financial institutions.

CAPACITY BUILDING AND ACADEMIC INTEGRATION

To establish institutionalised, long-term technical expertise, the project developed an advanced curriculum covering **Energy Management Systems** (EnMS), **Energy Systems Optimisation** (ESO), and **RECP methodologies**. The NUC approved the curriculum, and the project is piloting it at the **University of Abuja, Federal University of Petroleum Resources, Effurun, University of Lagos, and Bayero University, Kano**. In addition, the project trained and certified 68 industrial employees as Lead Auditors for ISO 50001 (**Energy Management System**) and ISO 14001 (Environmental Management System).

QUANTITATIVE IMPACT AND REACH

Over 1,500 manufacturing employees received basic, intermediate, and advanced technical training. Broader project engagement across the ecosystem included:



FACTORY-FLOOR INTERVENTIONS AND EQUIPMENT DEPLOYMENT

At the operational level, International and National Experts conducted Cleaner Production Assessments across 42 selected companies. Reports translated findings into actionable business plans and targeted interventions, focusing on boiler optimisation and condensate recovery, fuel optimisation and efficient motor systems, predictive maintenance, energy monitoring, waste management, and water recycling. To complement these assessments, the project procured specialised technical equipment to deliver hands-on diagnostic measurements and practical training demonstrations in factories.





SCALING UP: THE MAN GEF-UNIDO IEE & RECP TRAINING CENTRE AND FUTURE OUTLOOK

While the initial pilot focused on specific industrial zones and left five manufacturing sectoral groups unaddressed, the project systematically captured its lessons in a comprehensive reference compendium to guide future replication.



GEF–UNIDO IEE & RECP Training Centre located at MAN House, Ikeja, Lagos, Nigeria

To bridge remaining sectoral gaps and sustain momentum, a dedicated Training Centre has been established within MAN and equipped with specialised measurement tools and technical resources. The Centre serves as a permanent platform for knowledge sharing and technical support, enabling industry-wide replication of IEE & RECP methodologies, continuous stakeholder engagement, and capacity development. It provides a scalable foundation for Nigerian manufacturers to reduce operational overhead, meet environmental standards, and remain globally competitive.

Undoubtedly, the GEF-UNIDO IEE & RECP Project has shown a strong nexus between industrial growth and environmental sustainability. The project successfully demonstrated short-term energy and cost savings, provided a self-sustaining framework, developed a robust curriculum for IEE & RECP Methodologies and established a well-equipped GEF-UNIDO IEE & RECP Training Centre in MAN, laying the groundwork for a cleaner, cost-effective, and globally competitive manufacturing sector.

As Nigeria expands this model to the remaining 5 sectors, the project's foundation will continue to equip local manufacturers with the tools, talent, and technology needed to lower operating costs, meet global efficiency standards, and drive green industrial growth for decades to come.

8 Questions Every Manufacturer Should Ask About Resource Efficiency



Resource efficiency begins with asking the right questions.

Manufacturers seeking to reduce waste, control costs and improve productivity should regularly examine how energy, water, materials and other production resources are being used across their operations.

Where is most of our energy being consumed?

Identify the equipment, processes and production periods responsible for the highest energy use.

Where are we losing raw materials?

Look beyond visible waste. Consider rejects, rework, spills, damaged materials, poor storage, overuse and materials that could be recovered or reused.

Are we using more water than necessary?

Monitor water use across production, cleaning and utility systems. Leaks, excessive washing, inefficient processes and lack of recovery can increase operating costs.

Are our machines operating efficiently?

Equipment that is poorly maintained, incorrectly set or left running when not required can consume energy and resources without creating value.

What is causing our downtime?

Frequent breakdowns, poor maintenance and process interruptions reduce productivity while increasing energy, labour and operational costs.

How much of our waste could be prevented at source?

Before focusing on disposal, examine why waste is being generated. Better process control, handling, maintenance and production planning can often prevent losses before they occur.

Do we know the financial cost of our resource losses?

Waste is not only the material that is discarded. It also includes the energy, water, labour, machine time and other resources already invested in producing it.

Are we measuring improvement?

Resource efficiency should be monitored over time. Track relevant indicators and compare performance to determine whether interventions are actually reducing costs and improving productivity.

The most important question is often the simplest:

Are we getting the maximum possible value from the resources we already use?

Small improvements, consistently applied, can translate into significant savings and stronger production performance.

Study Tour to Austria Strengthens Industrial Efficiency Insights



As part of the GEF–UNIDO IEE & RECP Project, 16 Nigerian delegates participated in a study tour to Austria from April 6–16, 2026.

The visit coincided with the UNIDO Clean Hydrogen Conference, IVECF and ISEC 2026, giving participants first-hand exposure to advanced industrial decarbonisation practices, including waste heat recovery, green hydrogen, solar thermal systems and energy-efficient manufacturing.

At the ISEC Conference in Graz, the President of the Manufacturers Association of Nigeria (MAN), Otunba Francis Meshioye, OFR, highlighted the importance of blended finance, industrial innovation and supportive policy reforms in advancing green industrial transformation. He noted that combining public and private sector funding can reduce risk, attract investment and accelerate sustainable industrial projects, while countries like Nigeria must continue to strengthen renewable energy adoption and energy-efficient production systems.





The delegation also engaged in site visits and strategic discussions with UNIDO, Austrian institutions and industry leaders, exploring policies, financing models and clean technologies that support sustainable industrialisation.

Overall, the tour deepened technical insight, strengthened partnerships and provided practical lessons to support the wider adoption of Industrial Energy Efficiency (IEE) and Resource Efficient and Cleaner Production (RECP) practices in Nigeria.

KNOWLEDGE FEATURE

What is Resource Efficient and Cleaner Production (RECP) and *Why Does It Matter to Nigerian Manufacturers?*

Every manufacturing process starts with resources. Raw materials enter the factory. Energy powers equipment. Water supports production, cooling and cleaning.

Chemicals may be used in processing, treatment or finishing. Labour, machinery and time bring these inputs together to produce goods.

But not everything that goes in becomes useful output. Some energy is lost through inefficient equipment, water is wasted through leaks or excessive use, materials become rejects or off-cuts, chemicals may be overused, and production activities can generate avoidable emissions. This is where Resource Efficient and Cleaner Production (RECP) becomes important.

RECP in Simple Terms

RECP is a practical approach to helping industries use resources more efficiently while reducing waste, emissions and environmental impact. Rather than waiting until waste or pollution has been created, it encourages manufacturers to examine the production process and prevent unnecessary losses at source. The objective is not to produce less, but to produce better, with greater value from the resources already available.

Understanding the Production Chain

A simple manufacturing process can be viewed as:

INPUTS (Resources) » PRODUCTION Process » OUTPUT Products and other outputs

Inputs include energy, water, raw materials, chemicals, packaging, labour and production time. The desired output is the finished product.

However, production can also generate unintended outputs such as material waste, rejects, waste water, excessive heat, emissions and rework. RECP focuses on what happens between input and final product to minimise these losses.

Waste Is Lost Value

Waste goes beyond discarded material. When a product is rejected, the business loses includes not only the raw material, but also the energy, water, chemicals, labour and machine time invested in it. A leaking water pipe or an inefficient motor may seem minor, but both increase operating costs without adding value. RECP helps manufacturers recognize and eliminate such losses.

What Does RECP Examine?

RECP encourages a systematic look at key areas of production:

- Are machines, boilers and other systems consuming more energy than necessary?
- Can leaks be prevented?
- Can consumption be reduced or water recovered and reused?
- Can rejects, spills, damage and overuse be reduced?
- Are chemicals being stored, handled and applied efficiently and safely?
- Can waste be prevented at source?
- Can materials be recovered, reused or recycled?
- Can better combustion, cleaner fuels or improved process control reduce emissions?

Prevention Before Treatment

Unlike traditional approaches that focus on treating waste after it is generated, RECP prevents losses at source, through better handling, process settings, maintenance, improved combustion and water recovery.

Why RECP Matters to Nigerian Manufacturers

In a high-cost operating environment, efficient use of resources directly affects profitability and competitiveness.

RECP Is Continuous Improvement

RECP is not a one-off exercise. As production conditions change, manufacturers should continually measure performance, identify losses, implement improvements and monitor results.



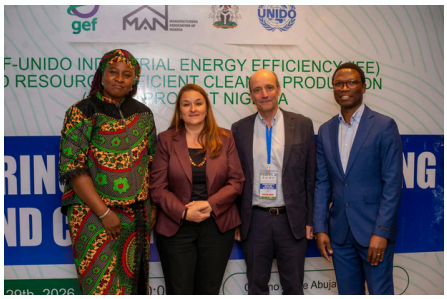
The key question is simple: Are we getting the maximum possible value from every unit of energy, water and material going into production?

Project Milestone: Steering Committee Meeting & Closing Ceremony

Highlights from the GEF–UNIDO Industrial Energy Efficiency (IEE) and Resource Efficient and Cleaner Production (RECP) Project Nigeria Steering Committee Meeting and Closing Ceremony, held in Abuja on 29 April 2026.

The event brought together project partners and key stakeholders to reflect on implementation milestones, review project outcomes and mark the conclusion of the formal implementation phase of the five-year intervention.

The occasion also provided an opportunity to recognise the partnerships, knowledge and institutional capacity developed through the project, while reinforcing the importance of sustaining IEE and RECP practices across Nigerian industry.








TECHNICAL FEATURE

Cleaner Production and Air Quality: Why Better Production Practices Matter

Industrial production supports jobs, economic growth and the supply of essential goods. But the way production is managed also influences the quality of the air within factories and surrounding communities.

Cleaner production provides manufacturers with a practical way to reduce these impacts by focusing on one important principle: prevent pollution and resource losses at source, rather than dealing with them only after they have been created.



The Link Between Efficiency and Air Quality

Poor air quality is often a sign that resources are not being used efficiently. Inefficient equipment, high fuel use and poor process control can increase emissions while also raising operating costs.





Energy Efficiency Also Matters

Using energy more efficiently means less fuel is burned, which can reduce process, Efficient motors, optimised boilers, heat recovery and improved production scheduling can lower energy demand and support cleaner air.



Practical Actions for Manufacturers

- Improve combustion efficiency.
- Maintain boilers, furnaces and generators regularly.
- Use cleaner fuels where feasible.
- Optimize production temperatures and process controls.
- Control dust during material handling.
- Improve ventilation and extraction systems.
- Recover waste heat for productive use.

Better Maintenance, Better Air

Regular inspection and preventive maintenance help equipment run efficiently, reduce fuel use and minimise emissions. Simple actions, such as checking burners, repairing leaks and cleaning filters, can make a big difference.

Protecting Workers and Communities

Improved production practices can reduce dust, fumes and chemical vapours, creating safer and healthier workplaces while minimising the impact on surrounding communities.

From Compliance to Continuous Improvement

Meeting environmental requirements is important, but cleaner production encourages manufacturers to go further by improving processes, reducing waste and preventing emissions at source. This turns environmental management into an opportunity for continuous improvement, lower costs and stronger competitiveness.

Cleaner Production Is Better Production

For Nigerian manufacturers, improving air quality can go hand in hand with better fuel use, stronger maintenance, efficient equipment and improved process control, delivering lower costs, reduced emissions and more competitive operations.

Voices from the Project

Hear directly from those who were part of the GEF-UNIDO IEE & RECP Project Nigeria on the impact, results and what it means for the future of sustainable manufacturing.



"This program has been awesome. I'll say that when we started, it was a bit tough. You know, we weren't sure how we were going to do it. But I'm so happy today that the 600 million USD from UNIDO. Actually, it catalyzed into 13 projects, 13 very big projects. About 10 of those projects were to large enterprises, so when we say large enterprises, that's companies that we gave over 2 billion, and the smaller ones that got less than 2 billion.

But I'm happy today we listened to the testimonials, and they were actually heartwarming, from the environmental issues to cost savings from energy, and to job creation. I think that that was very good. But I mean, this just tells us that the program was actually very impactful. And I want to say thank you to UNIDO, to MAN, to GEF, to all the people who were part of this program. It wasn't easy, I'm very glad that the objectives of the project have been achieved."

Mrs. Ifeoma Uz'okpala

Executive Director, Risk Management & Technology, Bank of Industry

Financial Partner

Watch Video



"We thank GEF for providing the $550,000 credit guarantee line. We are happy that the line has been fully utilized. A total of 13 customers benefited from the fund and they are all doing well. We are also happy about the awareness that it has created."

Mr. Taiwo Oyenola

Chief Risk Officer / Executive Director, Risk Management & Technology, Bank of Industry

Financial Partner

Watch Video

Voices from the Project

Hear directly from those who were part of the GEF-UNIDO IEE & RECP Project Nigeria on the impact, results and what it means for the future of sustainable manufacturing.

"I'm actually representing the Nigeria Environmental Society here, which is like a partner to the industrial and all other sectors in environmental management and sustainability.

I actually thought I knew so much about environmental sustainability and all that, and we've been talking about climate change. But when I got here and I started hearing about resource efficiency and cleaner production, energy efficiency... I know that. So, I can not only apply this now to my work, I can also apply it to my home. Because I actually got home and tried reducing my fan, because everything has to be on the maximum speed. My fans are on five, my AC, everything including my freezer.

And I tried it out. I reduced my freezer from the maximum and brought it down. It did not remove the frozen things. Everything was still intact. The same thing with the fan, and I can see that even right in my house I was, you know, doing energy efficiency. And it has affected everything.

And I can say that even what we do in my profession, as you know, risk identification, mitigation and all that, everything is still included in business planning. I have come now and I've learned more than I knew before. And if I now have to develop a business plan, I can almost do it like a professional.



Mrs. Theresa Ajiboye

Participant / Representative of Nigeria Environmental Society

Capacity Building Participant

Watch Video

FROM ASSESSMENT TO ACTION

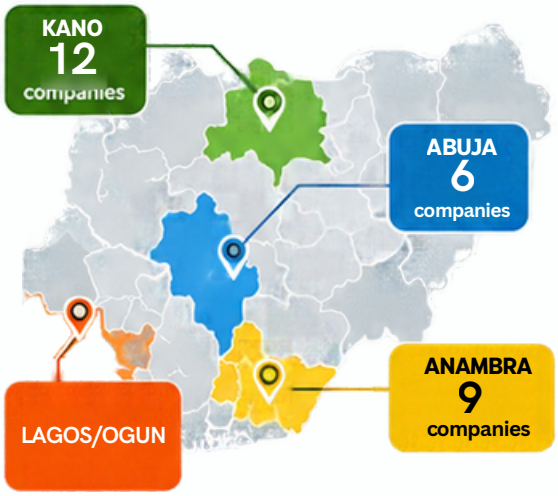
What Production Assessments Taught Us

Cleaner Production Assessments (CPAs) were one of the most practical components of the GEF–UNIDO IEE & RECP Project, taking the principles of energy and resource efficiency directly into factory operations.

The assessments helped participating manufacturers examine how energy, water, materials and other production resources were being used, identify where losses were occurring, and translate those findings into practical improvement opportunities.

42-COMPANY FOOTPRINT

A total of 42 manufacturing companies received Cleaner Production Assessments across four zones.



What CPAs Look For

Assessments reviewed production processes to identify energy and resource hotspots, including:

- Energy use (equipment, boilers, motors)
- Water use and losses
- Material use and waste
- Process efficiency and control
- Maintenance practices

Identifying Resource Hotspots

International and national experts conducted on-site assessments to identify areas of excessive consumption, avoidable losses or process inefficiencies. These hotspots often included:

- Energy-intensive equipment
- Inefficient motors
- Poorly optimised boilers
- Excessive fuel use
- Water losses
- Waste generation
- Weak maintenance practices
- Inefficient process control

From Findings to Practical Recommendations

Each company received a detailed report with practical and cost-effective recommendations, including opportunities for:

- Boiler optimisation and condensate recovery
- Fuel optimisation
- Efficient motor systems
- Predictive and preventive maintenance
- Energy monitoring
- Water recovery and recycling
- Improved waste management
- Better production and process control

The Purpose of CPAs

To help manufacturers understand how resources are used, identify losses, and uncover opportunities for improved efficiency, lower costs and cleaner production.

Key Lesson from 42 Assessments

"Manufacturers cannot improve what they do not understand or measure."

From Assessment to Action

The real value of a CPA lies not only in identifying what is wrong, but in acting on what is found.

Business Plan Support

For selected companies, the project provided support in developing business plans around identified IEE and RECP opportunities, helping to bridge the gap between technical assessment and actual investment.

Small inefficiencies can become significant costs when repeated every day across a production line.
A leaking system, unnecessary machine idling or avoidable material loss may appear minor in isolation, but collectively they can affect productivity, operating cost and environmental performance.

Measure Understand your current resource use

Identify Find the hotspots

Improve Find the practical solutions

Invest Mobilise resources

Monitor Track results and sustain gains

ENERGY EVENTS TO WATCH OUT FOR

2027 Energy Calendar: *Key Events for Industry Stakeholders*

Event	Date & Location	Why It May Matter to Stakeholders	Participation
World Future Energy Summit 2027	12–14 January 2027, Abu Dhabi, UAE	Strong clean-energy and sustainability platform covering renewables, clean technology, decarbonisation,	Registration is open; visitor registration is complimentary. World Future Energy Summit
Africa Energy Indaba 2027	2–4 March 2027, Cape Town, South Africa	Particularly relevant for African energy policy, investment, power infrastructure, energy security and project	Delegate, exhibitor and some free exhibition options are available. Africa Energy Indaba
CERAWeek 2027	8–12 March 2027, Houston, USA	One of the major global energy leadership gatherings, bringing together executives, governments, investors	Registration is available through the organiser. CERAWeek 2027
Nigeria International Energy Summit — NIES 2027	15–18 March 2027, Abuja, Nigeria	A major Nigerian platform for energy policy, investment and industrialisation. The 2027 theme is “Energy	Registration and sponsorship opportunities are open. Nigeria International Energy Summit
World Energy Congress 2027	26–29 April 2027, Riyadh, Saudi Arabia	A high-level global energy forum expected to convene 18,000+ participants, 100+ ministers and delegates from about 150 countries	Registration is open. World Energy Congress
Enlit Africa 2027	11–13 May 2027, Cape Town, South Africa	Strong relevance to power, utilities, renewable energy, storage, grids, water security, investment, mobility, data centres and	Pre-registration, exhibition, sponsorship and speaking-interest options are available; expo-floor visitor access is planned to be
World Hydrogen Summit & Exhibition 2027	18–20 May 2027, Rotterdam, Netherlands	Useful for stakeholders following green hydrogen, industrial decarbonisation, CCUS, energy storage, project finance and	Registration of interest is open for delegates and exhibitors. World Hydrogen Summit
The smarter E Europe 2027	8–10 June 2027, Munich, Germany	One of Europe’s largest integrated energy exhibitions, bringing together Intersolar Europe, ees Europe, Power2Drive	Suitable for technology scouting, partnerships and exhibition opportunities. The smarter E Europe 2027
WEC Nigeria Annual Energy Summit 2027	14–15 June 2027, Transcorp Hilton, Abuja	Focuses on Nigeria’s energy security, transition policy, green financing, inclusive energy access, hydrogen, storage, mini-grids and	General registration is not yet open; stakeholders can register interest. Sponsorship and exhibition opportunities are being
NOG Energy Week 2027	27 June–1 July 2027, Abuja, Nigeria	One of Nigeria’s established energy-sector gatherings, spanning upstream, midstream, downstream, gas,	Delegate, exhibition, sponsorship and technical-contribution opportunities are available. NOG Energy Week 2027
Gastech 2027	14–17 September 2027, Houston, USA	Major global platform for natural gas, LNG, low-carbon solutions, electrification, power and grid technologies, AI and energy investment. (Gastech Exhibition & Conference 2026)	Visitor registration, delegate passes and exhibition bookings are available. Gastech 2027

Sustainable Nigeria

IEE & RECP NIGERIA

SUSTAINABILITY & RESOURCE EFFICIENCY

Stay Connected with the IEE & RECP Journey

Explore project information, updates and available resources through our website and social platforms.

Scan to Visit the Project Website

The GEF-UNIDO IEE & RECP Project has generated valuable lessons, experiences and practical insights for Nigerian industry.

Follow our social platforms to stay informed on Industrial Energy Efficiency and Resource Efficient and Cleaner Production.

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Use energy better. Use resources wisely. Reduce losses. Create more value.