REQUEST FOR EXPRESSIONS OF INTEREST
CONSULTING SERVICES

Arab Republic of Egypt
GREATER CAIRO AIR POLLUTION MANAGEMENT AND CLIMATE CHANGE
"GCCC" PROJECT - PROJECT (P172548)

Assignment Title: Assessment and Technical Assistance services for E-waste Recyclers.
Reference No. (as per Procurement Plan): EG-EEAA-458996-CS-CQS

The Greater Cairo Air Pollution Management and Climate Change Project (herein "the Project") aims at reducing air emissions from critical sectors and increasing resilience to air pollution in Greater Cairo. The Project aims more specifically at reducing air emissions which is a key step toward the reduction of pollution concentrations and improvement of air quality. The Project will focus on two of the primary sources of air pollution in the Greater Cairo (GC) region (i.e., Cairo, Giza and Qalyoubia Governorates): open burning of solid waste and vehicle emissions; and will include six main components aiming at: (i) enhancing the air quality management framework and decision support system in Egypt; (ii) improving Solid Waste Management services; (iii) reducing air and climate pollutants from vehicle emissions; (iv) furthering stakeholder engagement, awareness and communication; (v) project management and monitoring & evaluation (M&E); (vi) addressing the important issue of unintended emissions of POPs.

Brief description about the Enhanced E-Waste and HCW management for Reduction of uPOPs:

It is an additional finance (AF) to the parent project; this new activity focuses on reduction of unintended persistent organic pollutants (uPOPs) aligns with the "GEF Project Design and Review Considerations in Response to the COVID-19 Crisis and the Mitigation of Future Pandemics". This new component will comprise 3 sub-components.

Sub-component 6.1: Supporting effective E-Waste management, models, and solutions

Activities under this sub-component aim to support the implementation of Egypt National Policy Framework and Legal Directive on E-Waste and piloting solutions and models for E-Waste management and recycling to reduce air pollution and climate pollutant emissions. Activities are designed to support the country in a life-cycle approach to e-waste from understanding upstream issues, such as causes and generation of e-waste to safe recycling and safe extraction of precious commodities.

Specific activities will include: (i) strategy development and guidance for used electronic equipment, particularly at the household level including batteries and electrical appliances and their integration into existing strategies for the refurbishment, recycling, disposal and/or take back of equipment/eWaste and establishment of safe exposure limits for key uPOPs; (ii) technical

assistance and capacity building for key public and private sector entities and agencies for the enforcement and implementation of upcoming Extended Producer Responsibility (EPR) schemes for new electronic equipment; (iii) support to recyclers of E-Waste, including: assessment and technical assistance for enhanced efficiency in recycling processes, development of strategies and support for safe and effective recycling of batteries, development of risk assessment studies and risk mitigation strategies and capacity building for recyclers to ensure safer/cleaner processing for improved human and environmental health; (iv) support for alignment with the globally harmonized system on waste and E-Waste, particularly with regard to developing train-the-trainer programs and other training/educational tools and products; (v) support for updating and monitoring of E-Waste data and utilization of the uPOPs tool kit and E-Waste calculator for E-Waste processing and needs assessment for establishing an integrated management information system (MIS; (vi) piloting collection, safe dismantling, and recycling of E-Waste, particularly older equipment and household level E-Waste at strategic locations and segregation and hazardous waste disposal, particularly waste which will not be targeted through EPR; (vii) testing of 'take-back' schemes and enhancing engagement with the private sector; (viii) testing of financing tools for start-ups and small and medium enterprises in E-Waste recycling and exploration of supporting enterprises in possible markets for recycled materials (e.g., gold, copper, silver) nationally, regionally, and internationally; and (ix) supporting further integration of informal sector players and those recently 'formalized.'

The requested services covered by these terms of reference are to support the Project Coordination Unit (PCU) and the Technical Implementation Units (TIUs) of "Greater Cairo Air Pollution Management and Climate Change (GGAP&CC) Project" in the implementation of the service of **Assessment and technical assistance** to E-Waste recyclers for enhanced efficiency and safer/cleaner processing of WEEE in Egypt.

The Ministry of Environment (MoE) now invites eligible consultancy firms to indicate their interest in providing the services. Interested suppliers should provide information demonstrating that they have the required qualifications and relevant experience to perform the scope.

The shortlisting criteria are:

#	**1. Shortlisting criteria**	**Percentage**
	2. The consultancy firms expected to have: ● Proven experience in working on similar projects and assignments, particularly in safety& Environmental standards, E-waste processing technologies, E-waste risk mitigation and adaptation strategies, and integration of informal recyclers. ● **Proven history of developing risk assessment studies and mitigation strategies in line with national and international legislations and standards**	40%

	• Proven experience in economic and market analysis • **Experience in conducting training and capacity-building programs for recyclers.** **Experience in assessing and incorporating start-ups and SMEs into the recycling ecosystem.**	
2	The Consultancy firms are expected to have a minimum of 5-7 years of experience providing consulting in the waste management sector, with a strong recommendation for experience in E-waste management.	20%
3	Key staff are expected to have Extensive experience in managing similar projects with strong leadership skills.	40%

Minimum % for qualification 75 %

The Consulting Firm will be selected in accordance with the Request for Proposal with the **Consultants Qualification Selection** - CQS method" set out in the Procurement Regulations".

Further information can be obtained at the address below during office hours 09:00 to 17:00.

Expressions of interest must be delivered in a written form to the address below (in person, or by mail, or by e-mail) by 23rd February- 12pm (CLT)

Greater Cairo Air Pollution Management and Climate Change "GCCC" Project
Attn: **Ms. Heba Elkarkari – Procurement Consultant**

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The detailed Terms of Reference "TOR" including the scope of work and deliverables for the assignment is found below.

CONSULTANT TERMS OF REFERENCE

ASSESSMENT AND TECHNICAL ASSISTANCE TO E-WASTE RECYCLERS (FORMAL, INFORMAL, POTENTIAL STARTUPS & SMES) FOR ENHANCED EFFICIENCY AND SAFER/CLEANER PROCESSING OF E-WASTE IN EGYPT

I. Background

As part of the "Sustainable Development Strategy (SDS): Egypt Vision 2030", the country committed to halving its fine particulate matter (PM10) air pollution by 2030. Significant improvements have been made towards that goal in recent years. In fact, Cairo's PM10 concentration fell by about 25 percent over the past decade. Despite these improvements, the city's pollution levels are still several times the WHO recommended concentrations and higher than national guidelines as these high levels are taking their toll on the health and quality of life of the population, in particular poor people.

In response to this situation, the World Bank-financed Greater Cairo Air Pollution Management and Climate Change Project (P172548) approved in September 2020, aims at reducing air emissions from critical sectors and increasing resilience to air pollution in Greater Cairo. The Project aims more specifically at reducing air emissions which is a key step toward the reduction of pollution concentrations and improvement of air quality. The Project focuses on the two main sources of air pollution: open burning of solid waste and vehicle emissions and geographically covers Greater Cairo (i.e., Cairo, Giza and Qalyoubia Governorates --GC) region; and includes five main components aiming at: (i) enhancing the air quality decision support system in Egypt; (ii) improving Solid Waste Management services; (iii) reducing air and climate pollutants from vehicle emissions;(iv) furthering stakeholder engagement, awareness and communication ; and (v) Project Management and Monitoring & Evaluation.

In addition to the 5 main component, The Ministry of Environment also received a grant from the Global Environment Facility (GEF) to implement "Improving Management of E-waste and Healthcare Waste to Reduce Emissions of Unintentionally Produced Persistent Organic Pollutants (UPOPS)" project. The project is to be executed under the "Greater Cairo Air Pollution Management and Climate Change Project" (GCAPM&CC or 'parent' project) as an additional financing to the project. The GEF grant will be implemented through activities under Component 6 of the GCAPM&CC project. The activities to be undertaken under the GEF project/Component 6 are complementary to those within the parent project, particularly its solid waste management component, as well as sharing the overall objective of the parent project: to reduce air and climate emissions from critical sectors and increase resilience to air pollution in Greater Cairo.

The activities to be implemented under the GEF project/Component 6 are designed to address the above issues and to expand on the work completed under previous GEF projects in the region to address on-going gaps in the sectors and contribute to the reduction of uPOPs and overall improved air quality in the Greater Cairo region. It comprises 4 subcomponents:

- Subcomponent 6.1: Supporting effective E-Waste management, models, and solutions. This subcomponent will support the implementation of the National Policy Framework and Legal Directive on E-Waste and pilot solutions and models for E-Waste management and recycling to reduce air pollution and climate pollutant emissions. Subcomponent
- Subcomponent 6.2: Supporting effective healthcare waste management, models, and solutions. This subcomponent will support activities to strengthen the enabling environment for sound management of Healthcare Waste and piloting innovative solutions for sound management of Healthcare Waste for reduction of air pollution, climate pollutant and uPOPs emissions to yield long-term results and systems-wide change. This work will be done in close collaboration with Subcomponent 2.2 which is implementing activities focused on creating model hospitals for proper HCWM and long-term changes to create safer hospital and community environments during pandemics and other health emergencies.
- Subcomponent 6.3: Supporting the preparation of Egypt's application to Minamata Convention. This subcomponent will build knowledge and capacity within involved agencies, EEAA, Health, etc. to identify regulatory and policy needs for meeting obligations of Minamata convention and technical needs of agencies to meet Egypt's commitments under the convention.
- Sub-component 6.4: Supporting additional monitoring and evaluation (M&E) and specialized project management costs.

II. Objective of the Assignment

The objective of this assignment is to hire a qualified consulting firm ("the consultant") to support the Project Coordination Unit (PCU) and the Technical Implementation Units (TIUs) of "Greater Cairo Air Pollution Management and Climate Change (GGAP&CC) Project" in the implementation of the service of Assessment and technical assistance to E-Waste recyclers for enhanced efficiency and safer/cleaner processing of WEEE in Egypt. This service will support the implementation of the 2nd work pillar of subcomponent 6.1, where subcomponent 6.1 has 4 work pillars as indicated below:

Work pillar 1: Polices, legislation and Standard Operation Procedures (SOP)

Work pillar 2: Technical assistance and industry development

Work pillar 3: Train of the Trainer and building capacities

Work pillar 4: adoption of Best available technologies (BAT)/ best Environmental Process (BEP) and pilot solutions and models

III. Scope of Work

The scope of work for this assignment pertains to the second work pillar of sub-component 6.1 of component 6. The primary objective is to evaluate the current practices of formal WEEE recyclers, identify areas for improvement to enhance efficiency, safety, and sustainability in the recycling process, and assess the practices of informal players. Furthermore, the assignment aims to identify potential support mechanisms for integrating informal players into the formal recycling system and explore the inclusion of start-ups and small and medium enterprises in E-Waste recycling.

To achieve the scope and objectives of the assignment, the consultant must be thoroughly familiar with the Greater Cairo Air Pollution Management and Climate Change Project Appraisal Document (GCAP&CC PAD) and the Project Paper on the GEF grant titled "Improved Management of E-Waste and Healthcare Waste for Reduction of UPOPs Emissions (P176688)."; and the toolkits and standards on UPOP of the Stockholm convention.

The consultant should also have comprehensive knowledge of the outcomes and deliverables of the previous GEF/UNDP project, "Protect Human Health and the Environment from Unintentional Releases of POPs Originating from Incineration and Open Burning of Healthcare and Electronic Waste," which was implemented from 2016 to 2021. Additionally, the consultant must be well-versed in international conventions relevant to the management of e-waste, particularly the Stockholm Convention and the Basel Convention.

Familiarity with all relevant national legislation and standards, as well as the status of the e-waste market at both national and international levels, is essential. This knowledge will enable the consultant to establish a sustainable framework, models, and guidelines that ensure the sustainable management of e-waste in Egypt.

Furthermore, the consultant should be aware of ongoing projects in Egypt with similar objectives, such as Phase Two of the Sustainable Recycling Industries (SRI) on E-Waste, implemented by CEDARE, and the SWITCH to Circular Economy Value Chains (SWITCH2CE) project on e-waste, being implemented by UNIDO-Egypt.

IV. Detailed Tasks

The following are the detailed tasks to be carried out by the consultant.

Work pillar 2: Technical assistance and industry development to enhance efficiency, safety and sustainability of WEEE recycling process.

Task 1: Support to formal recyclers of E-Waste, including: assessment and technical assistance for enhanced efficiency in recycling processes, development of strategies and support for safe and effective recycling of batteries, development of risk assessment studies and risk mitigation strategies and capacity building for recyclers to ensure safer/cleaner processing for improved human and environmental health.

The management of Waste Electrical and Electronic Equipment (WEEE) represents a critical environmental and public health challenge in Egypt. With the rapid increase in electronic consumption, the volume of e-waste has surged significantly. In response, the number of WEEE recycling facilities has grown over the past decade. The first WEEE recycling facility was established in 2013. As of today, there are approximately 31 recycling facilities, with potential growth to 40 facilities. Most of these facilities (about 75%) are in Greater Cairo. A detailed list of the facilities, including addresses and contact information, will be available upon the commencement of work. This growth necessitates assessment and avail technical support of recycling facilities to increase the efficiency and ensure sustainable recycling practices across these facilities for environmental protection and public health safety.

Based on the above, the consultant will support the TIU, and PCU in

1.1. **Assess/evaluate the current practices of all existing formal recycler for Enhanced Efficiency in Recycling Processes and identify opportunities for enhancing material recovery and opportunities for safe and effective recycling of batteries and hazardous fractions. The consultant must evaluate the following Areas:**
    - **Infrastructure Efficiency**
        i. Review and assess the masterplan of the building (storage area, entrance, manufacturing/processing area, etc..) and check its compliance with the production capacity of the facility
    - **Operational Efficiency**:
        i. Review the existing recycling processes and workflows.
        ii. Identify bottlenecks and inefficiencies in the current operations.
        iii. Evaluate the use of technology and automation in the recycling process.
    - **Compliance and Standards**:
        i. Assess compliance with local and international regulations and standards.
        ii. Review adherence to environmental, health, and safety guidelines.
    - **Material Recovery**:
        i. Evaluate the effectiveness of material recovery processes for key materials (e.g., metals, plastics).
        ii. Identify opportunities for improving recovery rates and reducing waste.
    - **Safe disposal and recycling of hazardous fractions**
        i. Evaluate the effectiveness of safe disposal and recycling of hazardous fractions and materials, particularly focusing on batteries, printed circuit boards (PCBs), plastic with brominated Flame Retardants, and hazardous

fractions with associated hazardous releases (Persistent Organic Pollutants (PoPs) and Unintentional Persistent Organic Pollutants (UPoPs).

ii. Quantitative assessment for POPs, UPOPs, and hazardous materials and releases using UPOPs toolkit and any other internationally recognized methodology.

iii. Identify opportunities for safe disposal and recycling of hazardous fractions and materials for enhancing safe/cleaner processing for improved human and environmental health.

- **Economic Viability**:
  i. Analyse the cost-effectiveness of current recycling operations.
  ii. Identify potential areas for cost reduction and revenue enhancement.
- **Sustainability Practices**:
  i. Assess the implementation of sustainable practices in the recycling process.
  ii. Identify opportunities for reducing the environmental footprint of recycling operations.
- **Monitor & Evaluation**
  i. Assess the existing monitoring & evaluation system
  ii. Implement a system for ongoing monitoring and evaluation to ensure continuous improvement

1.2. **Development of risk assessment studies and risk mitigation strategies in accordance with national regulations and international standards for each recycling facility. The consultant must implement the following tasks**

1.2.1. Development of Risk Assessment Studies that include the following

- **Risk Identification**:
  i. Identify potential risks associated with each stage of the recycling process.
  ii. Categorize risks into human health risks, environmental risks, and operational risks.
- **Risk Analysis**:
  i. Analyse the likelihood and impact of identified risks.
  ii. Use risk assessment tools and methodologies to quantify risks.
- **Documentation**:
  i. Prepare a comprehensive risk assessment report detailing findings and risk levels.
  ii. Include visual aids such as risk matrices and flowcharts.

1.2.2. Development of Risk Mitigation Strategies

- **Strategy Formulation:**

i. Develop specific strategies to mitigate identified risks.
ii. Focus on both preventive measures and contingency plans.

- **Implementation Planning:**
  i. Create a detailed implementation plan for each mitigation strategy with priorities and associated cost.
  ii. Assign responsibilities and timelines for each task.
- **Resource Allocation**:
  i. Identify and allocate necessary resources (e.g., equipment, personnel, budget) for implementing mitigation strategies.
- **Monitoring and Evaluation**:
  i. Establish key performance indicators (KPIs) to monitor the effectiveness of mitigation strategies.
  ii. Schedule regular reviews and updates to the mitigation plan.

1.3.Capacity building for recyclers to ensure safer/cleaner processing for improved human and environmental health. The consultant must implement the following tasks

- **Training Needs Assessment**:
  i. Conduct a needs assessment to identify knowledge gaps and training requirements among recyclers.
  ii. Develop a training plan based on the assessment findings.
- **Training Program Development:**
  i. Design training modules covering risk management, safety procedures, and best practices for recycling.
  ii. Include practical sessions, workshops, and hands-on training.
- **Training Delivery:**
  i. Conduct training sessions for recyclers
  ii. Provide training materials such as manuals, presentations, and videos.
- **Evaluation and Feedback**:
  i. Assess the effectiveness of training programs through feedback surveys and assessments.
  ii. Make necessary adjustments to improve future training sessions.

Final Report and Presentation

i. Compile all findings, strategies, and recommendations of Task1 into a final comprehensive report.

Task 2: Supporting further integration of informal sector players

Informal e-waste recycling is a significant component of Egypt's waste management system, particularly in urban areas such as Cairo, Giza, Qalubeia, Alexanderia, Sharkia, Behera, Suez, Menoufia, kafr Elsheikh, and Beni suef. The informal sector plays a crucial role in the collection and processing of electronic waste (e-waste). Efforts have been made to integrate this sector with formal recycling initiatives, notably through the GEF/UNDP project titled "Protect Human Health and the Environment from Unintentional Releases of POPs Originating from Incineration and Open Burning of Healthcare and Electronic Waste," which was implemented from 2016 to 2021.

However, this sector faces several challenges, particularly related to health, social, and environmental risks. Despite these risks, the informal sector remains vital to the economy. It provides livelihoods for many individuals and aids in the recovery of valuable materials from e-waste.

Based on the above, the consultant will support the TIU and PCU in:

- **Initial Research and Data Collection & Stakeholder identification and Engagement**
  i. Conduct a comprehensive literature review on the current state of the informal E-waste sector.
  ii. Identify key stakeholders in the informal sectors and formal competent Authorities, including informal workers, informal collection centres, informal refurbish workshops, informal recycling workshops, NGOs, Ministry of Environment, Ministry of social solidarity, Ministry of Industry, etc..
- **Field Surveys, Interviews, and assessment of Current practices**
  i. Design and conduct field surveys and interviews with informal E-waste stakeholders to understand their practices, challenges, and needs.
  ii. Analyze the data collected to assess the efficiency, safety, and environmental impact of current informal E-waste practices.
- **Development of integration strategy and policy recommendations**
  i. Research and evaluate different models for integrating the informal sector into the formal E-waste management system.
  ii. Develop a strategy for integrating informal E-waste workers into the formal sector, considering legal, economic, and social aspects.
  iii. Formulate policy recommendations based on the research findings and proposed integration strategy.

- **Capacity Building and Training Programs**
    i. Design capacity-building and training programs for informal E-waste workers to facilitate their transition to the formal sector.
    ii. Conduct training sessions for recyclers

- **Monitoring and Evaluation Framework**
    i. Develop a framework for monitoring and evaluating the integration process and its impact on both the informal and formal sectors.

- **Final Report and Presentation**
    i. Compile all findings, strategies, and recommendations into a final comprehensive report.

Task 3: Assessing the feasibility and potential to include start-ups and small and medium enterprises (SMEs) in E-Waste recycling system

To ensure comprehensive coverage of all potential stakeholders in the Egyptian E-Waste management system, we request the consultant to assess the feasibility and potential of integrating start-ups and small and medium enterprises (SMEs) into the E-Waste recycling framework and value chain in Egypt. The consultant is also expected to explore innovative approaches and identify opportunities for collaboration within this segment.

Based on the above, the consultant will support the TIU and PCU in:

- **Preliminary Research and Planning**
    i. Conduct a comprehensive literature review on E-Waste management practices, focusing on successful models involving start-ups and SMEs.
    ii. Identify key stakeholders, including government agencies, existing recycling companies, start-ups, SMEs, and industry experts.
    iii. Identify gaps and opportunities for SMEs and start-ups.
    iv. Assess the current environment for supporting Startups and SMEs through incubator, accelerators, and Venture Capitals (VCs)

- **Market Analysis and Feasibility Study**
    i. Conduct surveys and interviews with potential start-ups and SMEs
    ii. Assess the current market size and potential for E-Waste recycling
    iii. Assess the technical, economic, and operational feasibility of including start-ups and SMEs in the E-Waste recycling system
    iv. Assess reasons for previous startups failure to sustain their activity in the e-waste sector.

- **Business model development & Pilot Program Design**
    i. Develop sustainable business models for start-ups and SMEs in the E-Waste recycling sector.

ii. Design a pilot program to test the integration of start-ups and SMEs in the E-Waste recycling system.
iii. Identify and assess potential risks associated with the integration of start-ups and SMEs

- **Final Report and Presentation**

i. Compile all findings, analyses, and recommendations into a comprehensive final report.

The consultant while developing the Tasks must consider the assessment developed by GEF/ UNDP project and the one developed by similar projects such as SRI project (listed below)
List of Guidelines developed by the aforementioned GEF/UNDP project:

- ✔ Evaluation and review (Audits) of recycling, recovery and refining facilities in Egypt (SRI project, March 2023).
- ✔ Assessment of WEEE Management in Egypt (GEF/UNDP project, 2016)
- ✔ A Baseline assessment on POPs, UPOPs, and associated hazardous releases (mercury, lead, cadmium) from E-waste processing (GEF/UNDP project, 2020)
- ✔ A technical report on "Identification and assessment of BAT/ BEP for recycling and disposal of hazardous fractions containing POPs and U-POPs in Egypt and worldwide" (GEF/UNDP project, 2020)
- ✔ A technical report on "Identification and assessment of BAT/ BEP for recycling and disposal of hazardous fractions containing heavy metals (mercury, lead, cadmium) (GEF/UNDP project, 2020)

V. Duration of the assignment

The Expected duration of the assignment is 18 Months.

VI. Deliverables[1]

The Consultant shall prepare the following deliverables in English [and in Arabic] in 1 paper copy and complete digital files in format and manner acceptable to the PCU and TIUs. Reports would be prepared initially in draft and finalized within two to three weeks following the receipt of comments from PCU/ TIU. The final reports and training modules shall be delivered in bilingual (in English and Arabic) and in the following formats: word, pdf, and ppt files (Digital and hard copies) to PCU and TIU.

[1] All deliverables will be the property of the Government of Egypt

Task 1:

Deliverable	Contents	Expected Delivery Date
Inception report and workplan	Inception report with detailed workplan	2 weeks from contract signing
Assessment reports, risk assessment studies, risk mitigation strategies	● A summary assessment report covered all the findings and recommendation ● Detailed assessment report, risk assessment study and risk mitigation strategy for each recycler with detailed findings and recommendations as clarified in the detailed tasks part of this TOR	5 months from contract signing
Workshops	● Workshop with all relevant Authorities and recyclers to present the finding and recommendations ● Workshop with each recycler to present and discuss the finding, recommendation, risk assessment, and risk mitigation strategies.	2 Months from issuing the reviewed and agreed final assessment reports
Needs assessment report and training plan	Training assessment report that identifies the knowledge gaps and training requirements among recyclers. And a comprehensive plan outlining the training strategy based on the assessment findings.	1 Month after issuing the reviewed and agreed final assessment report of the recyclers
Training modules and practical sessions outlines	Well-designed training modules covering all needs identified in the assessment report with clear delivery models and Detailed outlines for practical sessions, workshops, and hands-on training activities.	2 Months after issuing the reviewed and agreed final needs assessment report and training plan
Training sessions and materials	Successfully conducted training sessions for recyclers. In addition to manuals, presentations, and videos provided to participants.	3 Months after issuing the reviewed and agreed final

		training modules
Evaluation report and improvement plan	A report assessing the effectiveness of the training programs through feedback surveys and assessments. And Recommendations and adjustments for future training sessions based on the evaluation findings.	1 month After conducting all training sessions
Final report	A final report and a presentation summarizing and compiling all findings, strategies, and recommendations of Task1 into a final comprehensive report.	6 weeks after conducting the training sessions

Task 2:

Deliverable	Contents	Expected Delivery Date
Inception report and workplan	Inception report with detailed workplan	2 weeks from contract signing
Preliminary assessment report	A detailed report summarizing findings on informal E-waste management practices from existing studies, reports, digital platform and stakeholder map and a plan for stakeholder engagement, including interviews and focus group discussions.	1 month from contract signing
Assessment of current practices	An assessment report highlighting key findings of the field survey and areas for improvement. with qualitative and quantitative data on the informal E-waste sector.	3 Months from contract signing
Integration strategy and policy brief	A comprehensive integration strategy includes a comparative analysis of various integration models, including case studies from other regions or countries, strategic plan document outlining the proposed integration approach, steps for implementation, potential challenges, and policy brief with actionable recommendations for government and regulatory bodies.	2 Months after issuing the reviewed and agreed final report of assessment of current practices

Training modules and Training program	Well-designed Training modules and a schedule for capacity-building workshops.	1 Month after issuing the reviewed and agreed final integration strategy and policy brief
Training sessions and materials	Successfully conducted training sessions for informal workers. In addition to manual, presentations, and videos provided to participants.	2 Months after issuing the reviewed and agreed final training modules and program
M&E framework document	An M&E framework document with key performance indicators and evaluation methods.	1 month after conducting the training sessions
Final report	A final report and a presentation for stakeholders summarizing the entire assessment and proposed integration plan.	1 month after conducting the training sessions

Task 3:

Deliverable	Contents	Expected Delivery Date
Inception report and workplan	Inception report with detailed workplan	2 weeks from contract signing
Preliminary assessment report	initial report summarizing key findings, best practices, and case studies, Stakeholder map and engagement plan.	2 months from contract signing
Market analysis and feasibility study	Market analysis report detailing demand, supply, pricing trends, and potential buyers. Feasibility study report with SWOT analysis.	4 Months from contract signing

Business model, pilot project design with risk assessment	Business model canvas and financial projections. Pilot program proposal, including objectives, methodology, and evaluation criteria. Risk assessment report with mitigation strategies	2 Months after issuing the reviewed and agreed final version of market analysis and feasibility study
Final report and presentation	A Final comprehensive report that includes all the studies and analysis of this task and presentation slides	1 Month after issuing the reviewed and agreed final report of the business model and pilot project design

VII. Expertise of the consulting Firm/Organization

- Highly organized entity with the ability to produce quality work and meet tight deadlines.
- Proven experience in working on similar projects and assignments, particularly in safety& Environmental standards, E-waste processing technologies, E-waste risk mitigation and adaptation strategies, and integration of informal recyclers.
- Proven experience in economic and market analysis.
- Proven track record of recyclers engagement.
- Demonstrable experience with stakeholders' engagement in the waste sector, government institutions, formal recyclers, and informal recyclers, and other relevant stakeholders;
- At least 5-7 years of experience in conducting in undertaking similar assignments;
- Proven track record of having successfully completed at least one similar assignment either at the national or regional level.

VIII. Key Team Members

The nature of the service requires the consultant/firm to assemble well-qualified and experienced team of experts, of sufficient size and capacity, covering the professional disciplines required to professionally undertake the assignment, meeting the agreed targets, timelines, quality assurance

and standards. The required total minimum person-months input is variable depending on the specific tasks assigned. However, it will not exceed 18 months.
The team shall be a multidisciplinary team comprising at least the following key experts:

#	Specialist	Qualifications
1	Team leader/Project Manager	● Minimum of a Master's degree in Environmental science, environmental management, planning, or any related discipline. ● At least 20 years of professional experience in environmental science and disciplines ● Project management certifications such as PMP Certification Training or similar are often preferred ● Ability to plan project timelines, manage resources, and multitask effectively ● Experience in working in the public sector will be an added advantage. ● Experience in working with various stakeholders (including senior government officials, policymakers, traditional leaders, formal/informal recyclers, etc.) and maintaining professional relationships ● Very Good understanding of the hazardous waste business/value chain sector in Egypt and the region. ● Demonstrable experience to supervise, manage, and advise the team in the implementation of similar assignments. ● Demonstrable experience of cooperation with stakeholders from the waste informal and formal sector, government institutions ● Demonstrable qualifications, experience, and skills in the field of waste management (such as development of waste management strategies including life-cycle management, collection systems, waste segregation etc…) ● Demonstrable experience in conducting socio-economic studies in the waste management or e-waste sector or in related fields. ● Strong analytical and problem-solving skills. ● Excellent verbal and written communication skills (in English and Arabic languages), ● Have a demonstrable ability to write concise assessment document, risk mitigation plans, integration strategies, and feasibility studies. ● Ability to evaluate potential problems and develop solutions ● Good ICT skills and data manipulation tools The team leader will manage the entire assignment process and will be responsible for all deliverables, ensuring good quality standards.

2	Industrial Engineer	● Minimum of Bachelor's or Master's degree in Industrial Engineering or any relevant discipline. ● At least 7 years of professional experience working in process optimization and workflow ● Experience in efficiency improvement in industrial settings. ● working for the public sector will be an added advantage. ● Proven track record in Assessment/evaluate and provide technical assistance to E-waste recyclers either formal or informal at national, regional or international level ● Experience in recovering key materials such as metals and plastics. ● Knowledge of advanced E-waste recycling technologies and E-waste management ● Deep knowledge of Egypt environment, Economy, and social challenges and opportunities across sectors ● Proven capacity to work with multiple stakeholders, including government entities, formal and informal recyclers, development partners, and the private sector. ● Strong capability in English writing, research and analytical skills, ● Proven ability to work in a team and in a politically sensitive intercultural environmental with minimum supervision.
3	E-waste specialist	● A bachelor's degree in environmental science, chemistry, engineering, or a related field ● Advanced degrees or certifications in waste management or environmental protection can be beneficial. ● At least 5 years of experience in the E-waste management industry. ● professional understanding of the E-waste business/value chain sector in Egypt and the region. ● Hands-on experience with handling and disposing of E-waste is essential.

		● Experience in E-Waste components like batteries, plastics, and PCBs. ● Familiarity with hazardous waste regulations and safe disposal practices ● Very good understanding of local, and international regulations regarding E-waste management and environmental protection. ● Good understanding of hazardous materials and safe handling practices. ● Experience and past performance on similar assignments. ● Demonstrated experience working with a variety of stakeholders, including senior government officials, private sector officials, formal and informal recyclers, etc ● Strong analytical and problem-solving skills. ● Attention to detail and a commitment to environmental sustainability. ● Good communication skills.
4	Waste economics senior specialist	● An Advanced degree in economics, finance, or a related field ● A minimum of 7 years professional experience conducting economic analysis and financial modelling. ● Experience in cost-benefit analysis for environmental projects ● Experience working in the waste management sector and related knowledge of public-private partnerships is highly desired. ● Demonstrated competence and experience in conducting analysis and identification of sustainable financing mechanisms for the environmental and/or waste management sector is an asset ● Good knowledge in e-waste management and economics ● Proven track record in developing cost management/financial models of WEEE or other types of waste is highly desired ● Strong analytical and quantitative skills. ● Good ICT skills and data manipulation tools

5	Environmental Engineer or Scientist	● An advanced degree in Environmental Sciences, Hazardous Waste Management, Environmental Engineering, Natural Sciences, and/or Natural Resource Management, or any other related field. ● Minimum (3) years of experience in the field of E-Waste management and environmental impact assessments. ● experience in regulatory compliance. ● In-depth knowledge of local and international environmental regulations and standards. ● Excellent writing and communication skills. ● Strong interpersonal skills and ability communicate and work well with diverse people. ● In-depth understanding and knowledge of Egypt Technological Context. ● Good ICT skills and data manipulation tools
6	Training and capacity building expert	● Bachelor's degree in Education, Environmental Science, or a related field. ● 5-7 years of experience in conducting training needs assessments. ● Experience in developing and delivering training programs for industrial workers. ● Expertise in recycling processes, experience in conducting training sessions ● Good knowledge in e-waste management and recycling practices ● Proven experience in similar assignment is highly valued ● Strong communication and instructional design skills ● Good ICT skills and data manipulation tools
7	Risk Assessment Specialist	● Bachelor's or Master's degree in Risk Management, Environmental Science, or a related field. ● Certification in Risk Management (e.g., CRM) is a plus. ● 5-7 years of experience in conducting risk assessments for environmental projects. ● Expertise in developing risk mitigation strategies for environmental projects. ● Good knowledge in e-waste management and economics

		● Proven experience in similar assignment is highly valued ● Strong communication and instructional design skills ● Proficiency in using risk assessment tools and methodologies.
8	Market and feasability analyst	● Bachelor or master degree in Economics, Business Administration, or related fields. ● Knowledge of technical, economic, and operational feasibility studies ● Strong research and analytical skills, experience in identifying market gaps and opportunities. ● Knowledge of stakeholder mapping, excellent communication skills, experience in engaging with government agencies and industry experts.
9	Administrative assistance	● Bachelor's degree in business administration, management, or a related field ● Excellent written and verbal communication skills for preparing documents and interacting with colleagues and clients. ● Strong ability to manage multiple tasks, prioritize, and maintain an organized workspace. ● Precision in handling tasks and ensuring accuracy in documentation and scheduling. ● Strong verbal and written communication, active listening, and relationship-building skills ● Capable of coordinating workshops, meetings, and write workshop reports and minutes of meetings. ● Good ICT skills and data manipulation tools ● Background in administrative support is beneficial.

IX. Administrative and Reporting Arrangements

The Consultant will report to the Project Coordinator of the Greater Cairo Air Pollution Management and Climate Change Project and the Senior Advisor for Component 6. The Consultant will work closely with the senior advisor of component 6 at the Project Coordination Unit (the PCU) and with the TIUs, who will also make available to the Consultant all related studies and information and facilitate his task on the ground. The PCU will in that respect provide the following to the Consultant:

- All relevant available documents, reports, and data related to the project activities.
- Facilitate for the Consultant, any required meeting with various stakeholders, as well as the consultations and validation workshops.