TERMS OF REFERENCE

“Strengthening the environmentally-sound management and final disposal of PCBs, in Paraguay.”

(GEF ID 9357, SAP Project ID. 150368)

Provision of Services for the

Final Elimination of PCB-contaminated equipment, oils, and wastes in Paraguay
1. Background Information

Polychlorinated biphenyls (PCBs) are chlorinated derivatives of the organic compound biphenyl. PCBs were once widely deployed as dielectric and cooling fluids in electrical equipment, in carbonless copy paper, in coatings and in heat transfer fluids. Such wide application of the material was widely attributed to its inherent stability and longevity. As a result of the material’s proven toxicity to humans and the environment the production of PCBs was banned. The classification of PCBs as Persistent Organic Pollutants was confirmed by the Stockholm Convention (SC) on Persistent Organic Pollutants (POPs) in 2001.

Paraguay ratified the Stockholm Convention (SC) on Persistent Organic Pollutants (POPs) in 2001 and submitted its first National Implementation Plan (NIP) to the Conference of Parties (COP) in June 2006. The NIP outlines the roadmap for national management of POPs and identified the development of a comprehensive polychlorinated biphenyls (PCBs) national inventory and elimination of known stocks as one of the top national POPs priorities.

This UNIDO-GEF project entitled “Strengthening the environmentally-sound management and final disposal of PCBs, in Paraguay” (GEF ID 9357, SAP ID 150368) will contribute to meeting the SC goals of phasing-out the use of equipment containing PCBs (e.g., transformers, capacitors or other equipment containing liquid stocks) by the year 2025, and of treating and eliminating the recovered PCBs and the environmentally sound management (ESM) of PCB wastes by the year 2028.

The project also aims to enhance Inclusive and Sustainable Industrial Development (ISID) through the strengthening of national capacities for the ESM of POPs, including disposal of up to 700 tons of PCBs and related wastes, and reduction/elimination of PCB releases from serviced electrical equipment at workshops and interim storage locations, to avoid cross-contamination of electrical equipment and to protect human health and the environment.

The project has two components:

- Component 1. Environmentally sound management and final disposal of PCB-containing equipment, wastes and stockpiles.
- Component 2. Project monitoring and evaluation.

This project is being implemented by the United Nations Industrial Development Organization (UNIDO) and executed through the Ministry of Environment and Sustainable Development (MADES).

The project objective is to protect human health and the environment through environmentally sound management and final disposal of PCB-containing equipment and wastes, including disposal of up to 700 tons of PCBs and related wastes and reduction/elimination of PCB releases from serviced electrical equipment at workshops and interim storage locations, to avoid cross-contamination of electrical equipment and to protect human health and the environment.

The Project has planned the treatment and/or disposal of equipment, oil and waste contaminated with PCBs for which this tender is published.
2. Scope of proposed Contracted Services

2.1. Objective

The objective of this tender is to treat and/or eliminate the below-described 339 tons of PCB-contaminated equipment, oils, and waste (hereinafter “Equipment, Oil and Waste”), in an environmentally sound manner, identified during the execution of the project, “Strengthening the environmentally-sound management and final disposal of PCBs, in Paraguay” - (GEF 9357).

2.2. Description of PCB-contaminated “Equipment, Oil and Waste”

The National Electrical Administration (ANDE) is the Paraguayan public company responsible for supplying the electrical service in all of Paraguay’s territory. Therefore, they are the owners of the largest amount of transformers, some containing PCB-contaminated oils. ANDE has many storage facilities in different parts of the country. The vast majority of the distribution transformers are out of service, including the transformers that were involved in the fire that occurred in 2015. These are stored in warehouses located on ANDE property, in the Barrio Laurelty, in the city of San Lorenzo, approximately 15 km from the capital city of Asunción.

ANDE has experience of eliminating/Managing PCB-contaminated transformers on two separate occasions, in 2017 and in 2018.

One of the disposal alternatives used was exportation to a facility in Europe for final treatment and disposal and the second was under an auction scheme where the transformers and oils were treated on site and then the disposed of by exportation to metal processing.

Within the framework of this project, it is planned to continue with the elimination of stocks of PCB-contaminated equipment, oils and waste owned by ANDE, including an additional amount of equipment belonging to other owners.

The vast majority of the equipment is located in the ANDE warehouse in San Lorenzo and has been duly analyzed and identified in relation to the concentration of PCBs. ANDE will be in charge of moving the rest of the out of service transformers to this same site. Additionally, ANDE will receive equipment from other owners at its facilities. In this way, all the equipment, oils and waste contaminated with PCBs that will be the object of this tender are duly identified, have been analyzed and will be stored in the ANDE San Lorenzo warehouse.

Table 1 illustrates a summary of the inventory, grouped according to the following items: burned equipment, equipment contaminated with less than 500 ppm, equipment contaminated between 500 and 5000 ppm, equipment contaminated with more than 5000 ppm, equipment with PCB contamination level undefined, oils and waste. In Annex 1 there is a detailed table with the total of the inventory. The final disposal of all of the PCB-contaminated equipment and oils is very important but there is one priority and it involves the equipment that was affected by the fire in 2015. Burned equipment is equipment that is seriously damaged. Its final elimination was a commitment established with the Paraguayan government from the initial formulation of this project. Due to the damaged state of this equipment, it will have to be exported for final disposal.

The equipment, oil, and waste to be treated and/or eliminated have concentrations above 50 ppm of PCBs. The equipment may include transformers and their parts, dielectric fluids or oils and contaminated waste.
Table 1. Summary of the inventory of PCB-contaminated equipment, oils, and waste.

<table>
<thead>
<tr>
<th>Equipment with PCB concentration (ppm)</th>
<th>Equipment (units)</th>
<th>Total weight (tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 ppm ≤ PCB &lt; 500</td>
<td>204</td>
<td>47,270</td>
</tr>
<tr>
<td>500 ppm ≤ PCB &lt; 5000</td>
<td>19</td>
<td>6,074</td>
</tr>
<tr>
<td>5000 ppm ≤ PCB</td>
<td>1</td>
<td>1,190</td>
</tr>
<tr>
<td></td>
<td>224</td>
<td>54,534</td>
</tr>
<tr>
<td>Oils &lt;500</td>
<td>NA</td>
<td>91,238</td>
</tr>
<tr>
<td>Burned equipment</td>
<td>696</td>
<td>187,275</td>
</tr>
<tr>
<td>Waste</td>
<td>NA</td>
<td>3,745</td>
</tr>
<tr>
<td>Equipment with PCB not quantified</td>
<td>15</td>
<td>2,277</td>
</tr>
<tr>
<td></td>
<td></td>
<td>284,535</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>339,069</td>
</tr>
</tbody>
</table>

All of the equipment has been weighed (total weight of 339,069 tons). However, the final weights will be assessed and confirmed during the waste packing process. In case the final weight significantly exceeds the weight mentioned in this ToR, the contractor must alert UNIDO and obtain approval before proceeding. If additional amounts are found during the implementation of the contract, these must be discussed and agreed with UNIDO in advance. In any case, the changes might be reflected in the scope of the Contract at a later stage via an amendment (in such a case, the Contractor shall apply the same or lower unit cost for the treatment/elimination of PCB-containing equipment, to be agreed upon with UNIDO, depending on the additional amount determined).

2.3. General information

The tender calls mainly for the treatment and/or elimination of PCB-contaminated Equipment, Oil and/or Waste that has already been identified. Depending on the PCB concentration, the contaminated equipment and oils could be treated locally in Paraguay or exported for incineration/treatment in authorized facilities abroad. The proposals may contain a combination of alternatives. This is with the exception of burned equipment, which due to its physical condition, must be exported for disposal.

Listed below are a series of aspects that must be taken into account by bidders:

1. The contractor, and/or its associated sub-contractor(s), with regard to technical/local support, transport and disposal of PCBs in Paraguay shall consider the environmental laws and regulations approved in Paraguay regarding the management of hazardous waste and related operations. Among these, the following shall be considered:
• Law No. 567/2015 ratifying the Basel Convention, which limits toxic trade of hazardous wastes and ensures their proper disposal, and Law No. 1262/1998 approving the amendment to the aforementioned Convention.
• Law No. 2135/2004 approving the Rotterdam Convention, which provides guidelines on the prior consent procedure and prevents international trade for certain chemicals.
• Law No. 2333/2004 approving the Stockholm Convention that eliminates the production of Persistent Organic Pollutants (POPs)).
• Law No. 42/90 on the Prohibition of the Importation, Disposal and Use of Products Classified as Hazardous Industrial Waste or Toxic Waste
• Law No. 3.956/09 on the Integrated Management of Solid Waste in the Republic of Paraguay
• Resolution of the Secretariat of the Environment No. 1190/2008 establishing measures for the management of PCBs in Paraguay
• Resolution of the Secretariat of the Environment No. 1402/2011 establishing protocols for the treatment of polychlorinated biphenyls within the framework of the implementation of the Stockholm Convention
• Law 294/1993 on Environmental Impact Assessment
  Decrees 453/2013 and No. 954/2013 regulating Law 294/1993

2. The proposed treatment plant will require permits and authorizations in compliance with Paraguayan regulations.

3. The export of Equipment, Oil and Waste must be completed under the Basel Convention protocols and regulations.

4. An interim storage for collection, repacking, labelling, and consolidation before exporting, will be provided by ANDE and it is located in San Lorenzo.

5. The same interim storage facilities shall be used for both treatment and export consolidation purposes. The contractor shall ensure proper and safe PCB storage conditions. In the event that the Contractor requires additional conditions, these will be at their own expense.

6. The transport of any decontaminated recoverable material, including oil, to a recovery plant within the country or conditioning for export will be the responsibility of the contractor and must comply with existing national regulations, as well as international regulations, if applicable.

7. The decontamination, treatment and/or elimination service should consider national and/or international regulations/standards. A certificate of decontamination, and/or treatment and final sound elimination method of PCBs in Equipment, Oil and Waste must be submitted.

8. The total number of tonnages to be eliminated will be determined by the amount of available project budget and the final acceptable price. The contractor should indicate which is its minimum tonnage acceptable for the unit price quoted.

2.3.1. Field work installaons

It has been planned that the activities corresponding to the treatment and conditioning for export will be carried out in a delimited area of the ANDE San Lorenzo warehouse (Laurenty Complex) in which three special security warehouses are located, where the PCB-contaminated equipment, oils and waste are stored.

A description of said area is presented in Annex 2, including the general location of the site, its surroundings and accessibility, details of the design of the warehouses, the services available, the existence of oil storage tanks, safety aspects, among others.

Terms of Reference dated 31 July 2023
In principle, it is expected that, except for duly justified reasons, all the operations required by this tender corresponding to the treatment and conditioning will be carried out inside Warehouse #3.

The contractor must respect the protocols established by ANDE for entry and development of activities within the property.

The contractor must return the property in the same or better conditions, taking responsibility for the decontamination and/or building repairs that may have occurred in these facilities during their use.

The hours to be considered for the development of the work on the ANDE property will be from 7:00 a.m. to 4:00 p.m. If due to weather conditions, deadlines or other requirements, it is necessary to extend said hours, authorisation must be requested from ANDE.

2.3.2. Environmental Permits


Annexes 3 and 4 correspond to the respective ministerial resolutions. Technical documents that were duly submitted by ANDE to MADES will be provided to the awarded company once the contract is signed.

At the initial stage of contract implementation the awarded company must submit an Adjustment to the existing Environmental Management Plan. This Adjustment must, first, be presented to ANDE for approval. The awarded company must allow period of ten (10) working days for the final verification and signature by the President of ANDE. Second, the awarded company must submit this Adjustment to the Ministry of the Environment and Sustainable Development (MADES). For this process, the awarded company will hire a consultant/consulting company, who will prepare the abovementioned Adjustment. The consultant/consulting company must (1) be registered in MADES (according to legal requirements), and (2) have proven experience in managing environmental permits related to hazardous waste for undertakings of a similar size. The awarded company must present evidence supporting the technical suitability of this consultant/consulting company and request the consent of the Project Coordinator before proceeding to hire/after contract award.

From this moment on, the President of ANDE will sign: i) Simple power of attorney to the Consultant, Affidavit; ii) Official note of presentation of the Adjustment Report of the Environmental Management Plan to MADES, which will be delivered to the Consultant for presentation in MADES. Once the Report has been submitted to MADES, through the Environmental Information System (SIAM) - Canal Verde/Green Channel (Projects or activities of high investment, which have a priority procedure), the Company must send ANDE the file of the Entry Table of MADES, as well as the weekly pdf file for monitoring the Project, until the approval of the PGA Adjustment is obtained, the original of which must be delivered to ANDE.

As these are permits that enter the Canal Verde/Green Channel (high investment projects or activities, which have a priority procedure), it is estimated that MADES will grant the environmental authorization within a maximum period of 30 days, provided that the information has been submitted following the guidelines established by MADES, duly detailed, ensuring its quality.

For these purposes, the winning company must provide all the technical information required on the technology, equipment, operation, emission generation, monitoring and control plan, risk identification and contingency plan, among others. It must be considered that the information to be presented will be of a purely technical and non-commercial nature.
2.4. PCB Treatment and/or Elimination Service

2.4.1. Overall Technical Requirements

The Bidder must provide the necessary equipment, materials, and qualified personnel for the conditioning/treatment and final disposal of the Equipment, Oil and Waste (in accordance with the characterization detailed in the present ToR) and is responsible for their use and application for the duration of the service.

The Bidder must specify in its proposal what kind of treatment plant will be used.

The proposed PCB destruction technology by non-combustion treatment must not release Dioxins and Furans or any other Persistent Organic Pollutants (POPs) into the environment and fulfil the national control parameters of air pollutant emissions. Best Available Technologies (BAT) and Best Environmental Practices (BEP) required under the Stockholm Convention (SC) must be applied. The technology proposed by the Bidder should preferably not generate hazardous toxic waste. Any waste generated during the local processes and operations considered in the service must be included in the treatment and final disposal of wastes. The final destination of the decontaminated oils and equipment must be specified in the proposal.

Non-combustion PCB destruction technology must be sufficiently effective to reduce the concentrations of PCB in dielectric oils and transformers, assuring its application in a wide range of matrices (porous and non-porous).

The bidder may consider dismantling and decontamination of the solid components of the transformers, the commercialization of recyclable materials and the final disposal of the rest of the waste generated in the process. Decontamination must be carried out using the BAT/BEP, according to the guidelines developed by the Basel Convention. The decontamination process may not be used for burnt transformers.

In those cases where the transformers could be decontaminated for further commercialization by the bidder, the PCB concentration must be reduced to below 35 ppm after at least 90-days post-treatment, depending on the initial concentration. Sample analysis for final concentrations shall be performed by an accredited laboratory. The PCB analysis test costs will be covered by the Bidder and will be the basis for the technical report required to confirm the final concentrations for the issuance of the corresponding certificate of decontamination.

The Bidder is responsible for the decontamination process and the transformers and their parts, which means that any material will not return to the beneficiary. A treatment certificate should be provided.

The proposed technology must have inherent safety features and be designed and developed to protect workers, the general public and the environment. The inherent safety of the technology must be demonstrated by means of a sworn statement detailing historical events of damage, accidents, and other related incidents. “Inherent Safety” should also be understood to mean that the hazardous substances have been destroyed, and that any other potentially hazardous substance generated as a by-product of using the technology has been destroyed as well.

2.4.2. Technical Specifications for Treatment Operations

The technical proposal for the decontamination treatment of the Equipment, Oil and Waste with concentrations below 5000 ppm must include relevant and necessary details, which assure compliance with the technical requirements specified in the present ToR. The following details must be presented at a minimum in the proposal:

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2.4.2.1. General Description

A general description of the activities involved in the service is provided in the paragraphs below.

- Detailed description of the PCB destruction technology, including relevant chemical reactions, process flow diagrams and PCB destruction processes for each type of product or waste.
- Detailed description of the equipment decontamination technology, including process flow diagrams.
- Identification of waste generated (name and category), in accordance with the Basel Convention. Detailed description of treatment and final disposal for each type of waste.
- Specification of the final destination of the decontaminated oils and equipment.
- Description and quantification of all emissions (gaseous emissions, liquid effluents and solid waste) generated by the proposed treatment, as well as the treatment that will be applied for final disposal in compliance with national environmental legislation.
- Specification and demonstration of compliance with national regulations on safety and environmental protection measures. Please refer to point 2.3 for environmental regulations and 2.6.3 on general legal requirements.
- Description of how the service offered complies with the Stockholm Convention (SC) and the Basel Convention (BC).

2.4.2.2. Treatment System Specifications required for proposal.

- Treatment system capacity in tons per day (t/d).
- Concentration range capacities (in ppm) of PCBs for the treatment system for the different matrices that will be processed.
- Main typical operating parameters for the treatment system (temperature, pressure, concentrations, etc.).
- Specific consumption of chemical products and other consumables used in the treatment.
- Destruction Efficiency (DE) guaranteed and Destruction and Removal Efficiency (DRE) for each type of matrix according to the Equipment characterization for PCB concentration ranges below 2000 ppm. Local treatment options for equipment and oils with values equal or greater than 2000 and less than 5000 may be accepted if they are duly justified.
- Estimated weight (in tons) of wastes generated per treated Equipment, for PCBs in ranges below 5000 ppm, and their characterization, treatment, and final disposal.
- Physical characteristics of the equipment to be used in the treatment system (dimensions and weights).

Once the Bidder has decontaminated the oils and equipment, the Bidder must dispose of the decontaminated oils and equipment in an environmentally sound manner and in accordance with local regulations.
2.5. PCB “Equipment, Oil and Waste” Conditioning and Export Services

The Bidder is responsible for providing all services, logistic arrangements, packing materials, personal protective equipment (PPE), required equipment, and labour required to perform all the procedures required for the conditioning of Equipment, Oil and Waste for the consolidation of the cargo to be exported.

ANDE will provide a site at San Lorenzo warehouse that will serve as temporary storage.

The Contractor will be responsible for remediating any oil spill, contamination or other damage caused during the work, the selected Contractor must solve the situation, and return the facilities in the same conditions in which they were delivered by ANDE at the start of the project.

The selected Contractor will be responsible for the conditioning, draining, packing, consolidation, treatment, export, and disposal of Waste generated during the handling and treatment of PCBs present in equipment in an environmentally sound manner. Services may include but are not limited to processing all Basel Convention Notification forms for each type of waste, paperwork for permits, insurance and authorizations for the treatment and export of the Equipment, Oil and Waste. Paraguayan regulations must be complied with during the execution of the service. Should a specific matter not be addressed in the national regulation, well-known international standards must be observed.

As general reference, the selected Contractor shall observe the guidelines set forth in the United Nations Environment Programme (UNEP) document entitled "Destruction and Decontamination Technologies for PCBs and other POPs wastes under the Basel Convention (Volume B), A Training manual for Hazardous Waste Project Managers". Other complementary references for the selected Contractor are UNEP’s “Environmentally Sound Management of PCBs in the Mediterranean” and the “Guidelines on BAT and BEP relevant to Article 5 and annex C of the Stockholm Convention on POPs”.

Regarding technical details, the aforementioned references shall be observed. However, in case of differences, UNEP guidelines should prevail. If required, an ad-hoc technical decision shall be made after a consultation and agreement with UNIDO.

2.5.1. Management of documentation for treatment, transport, and export permits

The successful Bidder will be responsible for managing all information regarding treatment, transport, and export permits, in accordance with national and international legal requirements.

2.5.2. National and International Transport

For all Equipment, Oil and Waste, the successful Bidder will be responsible for land and maritime transport from the treatment plant, and/or to the boarding port, and/or to the final disposal facilities abroad. To this end, the Bidder will provide all the elements required for conditioning, packing, labelling, consolidating, stowing, loading, unloading, etc. This includes an international insurance policy.

2.5.3. Storage

ANDE will provide the interim storage facility for grouping, packing, and loading of transport containers

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for shipment. The successful Bidder must provide the necessary packaging, conditioning and labelling services and materials relevant to the aforementioned operations in sufficient quantities and quality.

Under no circumstance shall the PCB-containing Wastes, including those generated during operations of the service remain exposed in public areas or private areas with public access.

The aforementioned operations shall not lead to a priori generation of PCB contaminated sites or to worsening preexisting conditions.

2.5.4. Conditioning for International Transport

Each shipment will be repacked in UN-approved packing materials and in fulfilment of the International Maritime Dangerous Goods Code and the Accord Dangereux Routier regulations (IMDG/ADR) for the maritime and land transport of hazardous goods, labelled and weighed prior to its international transport to elimination facilities abroad. The terms established in the "Agreement for the Facilitation of Transport of Dangerous Goods in MERCOSUR" (1999) must also be complied with.

The Bidder is responsible for providing all inputs and services for the collection of the cargo to be shipped. These operations are to be executed in the interim storage facilities.

To prevent spills and losses during maritime or land transport, all fluids contained in transformers or containers (plastic or metal drums or other) must be drained by the Bidder to suitable containers for maritime or land shipment. For the conditioning of drained equipment and drums, bins with a layer of absorbent material will be used. Containers to be shipped must be appropriately labelled. All containers used for shipment must be certified by the United Nations as indicated for this type of waste in the IMDG and ADR codes.

2.5.5. Labelling

All waste to be exported must be appropriately labelled and in compliance with IMDG/ADR international and national regulations for the transport of dangerous goods and hazardous waste. The appropriate Trans-frontier Shipment Notification for PCB solids, PCB liquids and solids must be completed and presented to the Paraguayan competent authority for the corresponding processing as stipulated in the Basel Convention regulations.

2.5.6. Treatment and elimination methods

The technical proposal presented by the Bidder must include a description of the treatment and elimination methods to be used for the elimination of PCBs in Equipment, Oil and Waste, as well as a description of all operations, such as conditioning, required prior destruction and elimination operations. All methods described must adhere to environmentally sound management of PCBs.

The following information must be presented along with the technical proposal:

- Complete description of treatment and elimination method.
- Information regarding experience in similar hazardous waste disposal projects of PCBs or wastes using the same technology and the same equipment (or a previous model) in the last five years. It is required to present at least 3 concrete examples of similar projects in terms of the technology used and volume of equipment/oils treated.
- Information on how the contractor will manage the processing of all permits, authorizations and certifications required for import, export, or transit operations, as well as authorization for transport within Paraguayan’s national territory in compliance with Paraguayan regulations, the Basel Convention and eventually the MERCOSUR regulation.
2.6. Other Requirements

2.6.1. Safety & Contingency Plans

The Bidder must consider the methodology of the service, organization of activities and controls, and characteristics of the PCB-containing Equipment, Oil and Wastes to safeguard occupational safety and ensure safe working conditions during the execution of the service.

In the technical proposal, the Bidder must present a list of all risks involved in each one of the activities scheduled for the service and a Contingency Plan detailing all procedures involved in each case.

Prior to the start of field operations, the Bidder must guarantee the availability of all necessary elements required to fulfil the measures established in the Contingency Plan.

Should a leak or spill occur during any of the activities, the Bidder will be responsible for the cost to remediate and eliminate any contaminated material with the same standards as the elimination of the Equipment, Oil and Waste and the restitution of the affected area to its original condition. Likewise, the Bidder will be responsible for third party claims for damages caused by omission, error, or accident during the manoeuvres prior to the treatment of Equipment with PCBs and/or the preparation of PCB-contaminated Waste and metal housings, as well as during transport.

2.6.2. Insurance

The Bidder shall contract a Civil Responsibility Insurance policy covering all risks related to environmental damage resulting from accidents during the execution of its services. Coverage must include eventual restoration and/or remediation of affected environmental components, as well as civil liabilities resulting from environmental damage due to leaks, spills and/or accidents. The insurance must cover risks for all activities to be carried out. Therefore, it must cover land and maritime transport, interim storage, any treatment operations considered, export and final disposal operations (destruction, elimination, and final disposal).

The insurance must be issued to cover the Bidder, UNIDO, and ANDE as holder of the Equipment, Oil and Waste. In case each phase of the service is to be handled by separate subcontracted companies, insurance must be contracted for each phase of the service and issued to the Bidder, UNIDO, ANDE and the respective subcontracted company.

The Bidder shall provide Proof of insurance regarding Personal Accident and Sickness Insurance for its personnel in compliance with current regulations.

2.6.3. Other Legal Requirements

The Bidder is responsible for compliance with all applicable Paraguayan regulations. The unawareness of the same will not be in any case cause of justification of omissions, errors, delays or higher costs. Therefore, the Bidder must evaluate the need for legal advice in accordance with all aspects related to this tender, including, but not limited to, environmental, labour, temporary importation of equipment, rates and taxes, and any other.

2.7. Contract General Timeframe

In total, execution of the service in Paraguay from the start of service until export and/or treatment may not exceed one hundred and eighty (180) calendar days.
As a general guideline, the duration of conditioning operations to prepare for the shipment of the Equipment, Oil and Waste (draining transformers, packaging, etc.) should not surpass twenty (20) calendar days.

2.8. Bidder experience and capacity

The Bidder must prove that they have a minimum of 5 years of experience in the treatment, conditioning and export for the elimination of oils, equipment and waste contaminated with PCBs.

The Bidder must provide references and documentation that demonstrates its participation as main contractor in the implementation of at least 3 contracts similar to the current one, in terms of volume and complexity, completed satisfactorily. Each one of the referred contracts must involve at least a total of 30 tons of oils, equipment and waste contaminated with PCBs.

The Bidder must demonstrate through the technical proposal that it has the human resources and the necessary equipment to complete all the works involved in this tender.

In the case of a consortium of companies, the experiences and capabilities of each of the companies may be integrated in order to satisfy the aforementioned requirements.

2.9. Personnel

The technical proposal must include the CVs of the key personnel to carry out the tasks/activities as considered under these Terms of Reference. Suitable education, technical and functional experience, skills, aptitude, capacities and training of all the key personnel must be assured. Documentation supporting each team member’s qualifications must be annexed to the proposal.

The Bidder must designate a Team Leader in charge of coordinating the execution of the service and one Technical Expert to provide technical oversight and advice (for the items described in Table Nº 1); both will be responsible for all coordination and communications activities with the Project. The Team Leader will report to UNIDO and will jointly make the necessary adjustments to the activities.

The Team Leader shall represent the contractor in Paraguay. As such, the Team Leader must be present in Paraguay when performing the services. The Team Leader is responsible for coordinating and communicating at the technical level with the Project Coordinator designated by the Project Manager, regarding the activities related to the local treatment of PCB Equipment, Oil and Waste.

2.9.1. Personnel Requirements - Treatment services

The minimum key personnel requirements for the treatment services follows.

- One Team Leader for Treatment services with at least 10 years of experience in the treatment of PCB-containing and PCB-contaminated Equipment, Oil and Waste. Degree in Chemistry or Chemical Engineering or similar specialized studies, and knowledge of chemical processing and treatment of persistent organic pollutants, particularly PCBs.

- One Technical Expert, who can be an Electrical Engineer or Mechanic-Electrician with at least five years of experience with the treatment system being proposed and with work experience with electrical transformers and similar equipment and related wastes.

2.9.2. Personnel Requirements – Conditioning/Export services

The minimum key personnel requirements for the export services follows:
• One Team Leader for Conditioning/Export services, with at least 10 years of experience regarding conditioning and export activities of PCB wastes and treatment of PCBs. Degree in Electrical Engineering, Mechanical Engineering, Civil Engineering, Chemical Engineering, Industrial Engineering or similar specialized studies and knowledge of export services and requirements under the Basel Convention.

• One Technical Expert, who can be an Electrical Engineer, Mechanic-Electrician, or Industrial Engineer with at least five years of experience in maintenance and management of equipment with PCBs, particularly for export operations.

2.10. Subcontracting
In case of sub-Contractors or associated groups of Companies, a letter of intent shall be signed by all legal entities/companies. It should clearly indicate the Contractor (representative/leader of Company) both during the bidding process and during the execution of the Contract, in particular the company responsible for the disposal of Waste, as well as the transport and shipping companies responsible for the movement of the Equipment and Wastes from their sources to their treatment and/or disposal locations.

2.11. Language
All written communications with the Project must be in English. Members of the Bidder’s professional team must have working-level and communication skills in Spanish and English or shall be assisted by an authorized and skilled translator.

2.12. Supervision
UNIDO, through the National Project Coordinator, will be supervising all activities that the contractor will execute in Paraguay. The National Project Coordinator will provide the contractor with any additional information necessary related to PCB-containing Equipment, Oil and Waste to be eliminated.

The contractor will report to UNIDO and to the National Project Coordinator, and will jointly make any necessary adjustments to the activities, and jointly coordinate the execution of the project activities. Any change to the activities scheduled in the technical proposal will be agreed upon in advance with UNIDO. The National Project Coordinator will inform the National Persistent Organic Contaminant Program (PRONACOPs) of the progress of the work and its completion.

2.13. Deliverables

2.13.1. Report on preparatory activities to be submitted to UNIDO within 30 days from the entry into force of the Contract.

• Work plan including all the procedures and operations to be used during the service. These will be considered during inspections and control checks of activities to be carried out periodically.

• Verification that all project activities, including treatment operations if applied, meet all necessary legal and technical requirements prior to commencement.

• An Environmental Management Plan (which includes a Hazardous Materials Management Plan, Contingency Plan, and Waste Management Plan) in compliance with Paraguayan regulations, as
well as a Labor Regulation in Paraguay.

- Presentation of the Basel Convention Notification to the competent authority of the import and export countries regarding the volume and route of the exportation accepted by the countries involved.
- Presentation of contract agreements for all subcontracts.

### 2.13.2. Biweekly reports

These reports must reflect the progress of the period based on the proposed schedules, the inconveniences detected must be detailed and the solution proposals must be provided.

#### 2.13.3. Report on the completion of treatment (if any), conditioning, export and elimination services to be submitted to UNIDO within 120 days from the entry into force of the Contract.

- Report of all Equipment, Oil and Waste received, detailing how each one was treated or conditioned, and the amount exported, as well as eliminated (must include a registry). The information contained in this registry should allow for the traceability of the Equipment, Oil and Waste. The registry shall be submitted in the final report; however, this must always be available to UNIDO. The National Project Coordinator will share with MADES and ANDE all the information regarding the disposal of equipment, oil and wastes.
- Presentation of the "Goods Declaration for Export" and the Basel Convention Movement Tracking Forms duly signed in Box 18.

#### 2.13.4. Post-treatment/elimination certification to be submitted to UNIDO within 180 days from the entry into force of the Contract.

- Decontamination of oils and equipment must be duly certified.
- Analysis report from an accredited laboratory that PCB concentrations are below 35 ppm after at least 90 days post-treatment, depending on the initial concentration.
- Once elimination/treatment operations are completed, the Bidder must present the original copy of the certificate of disposal issued by the waste treatment/elimination company and the Movement Tracking Form signed in both boxes 18 and 19. The certificate must detail the wastes eliminated and must be issued to ANDE.

#### 2.13.5. Final Report to be submitted to UNIDO within 180 days from the entry into force of the Contract.

A final report will be prepared with a summary of the activities conducted and a list of the deliverables and results obtained during the services provided. Conclusions on lessons learned, findings and recommendations.
2.14. Expected Payments

- Payment 1: Upon completion of deliverables 2.14.1
- Payment 2: Upon completion of deliverables 2.14.3
- Payment 3: Upon completion of deliverables 2.14.4 and final report

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Annexes to the ToR:

ANNEX 1: Complete Inventory

ANNEX 2: Laurelty Complex – ANDE

ANNEX 3: Laurelty Complex Environmental Impact Statement (No. 1012/2014)

ANNEX 4: Laurelty Complex Environmental Audit Resolution (No. 2541/2022)