



| | | |
|---|--|------------------------|
|  | Project: Recovery of Valuable Metals from WPCBs | 1002-100kg Pilot Plant |
| | Pre-Qualification Document: Integrator Pre-Qualification Document | |
| Page 1 of 9 | Doc. No: IBC-T1002PQ-02 | Rev No: 02 |

TABLE OF CONTENTS

Table of Contents

| | | |
|--------------|--|-----------|
| I. | INTRODUCTION AND BIDDING PROCEDURE..... | 3 |
| II. | INTEGRATOR COMPANY GENERAL INFORMATION | 4 |
| III. | FABRICATION FACILITIES | 5 |
| | a. FABRICATION WORKSHOPS | 5 |
| | b. WELDING..... | 5 |
| | c. SURFACE PREPARATION AND PAINTING | 6 |
| | d. FABRICATION PLANT AND MACHINERY | 6 |
| IV. | STEEL WORK FABRICATION FACILITY SITE LAYOUT | 7 |
| V. | ENGINEERING CAPABILITY | 7 |
| VI. | PROJECT MANAGEMENT | 8 |
| VII. | QUALITY ASSURANCE | 9 |
| VIII. | CURRENT AND RECENT MAJOR PROJECTS | 9 |
| IX. | COMPANY LICENSES AND CERTIFICATES..... | 10 |
| X. | FINANCIAL CRITERIA | 10 |
| XI. | CLIENT TESTIMONIALS | 10 |

| | | |
|---|--|------------------------|
|  | Project: Recovery of Valuable Metals from WPCBs | 1002-100kg Pilot Plant |
| | Pre-Qualification Document: Integrator Pre-Qualification Document | |
| Page 2 of 9 | Doc. No: IBC-T1002PQ-02 | Rev No: 02 |

I. INTRODUCTION AND BIDDING PROCEDURE

INTRODUCTION

The objective of the project is to set up a 300 Kg per day (3 batches of 100 kg per day) zero-discharge Demonstration Plant to recover Tin and Lead from Printed Circuit Boards (PCBs) through a hydrometallurgy process. This proposed work is a joint development project between IIT, Madras (Research Institution) and the Bharat Heavy Electricals Limited (BHEL), Trichy (Industry). The demonstration plant will be erected in the New Growth Area, MHD, BHEL, Trichy. The following documents are enclosed as Annexures:

- a. The Block Flow Diagram of the Process as Annexure “A”
- b. The Process description as Annexure “B”

BIDDING PROCEDURE

The first stage of bidding involves a pre-qualification bid to help identify fabricators or integrators who have the capabilities to execute the project. This will be followed by a Request for Proposal (RFP) which will contain the technical details and scope of work for the proposal. The RFP will be sent to only the companies which have successfully pre-qualified.


The Pre Qualified Integrator’s Bid in response to this shall be submitted in two parts viz. PART-1 & PART-2 in two separate sealed envelopes:

- a. PART – 1 : Technical bid with Unpriced Commercial Bid.
- b. PART – 2 : Priced Commercial Bid

Technical and Unpriced commercial Bid (PART-1) and the documentation thereof shall be submitted as 1 (one) original and 3 (Three) copies (4 sets in all).

The Pre Qualified Bidder shall also submit one soft copy of the Technical and Unpriced Commercial Bid after bid opening of the Technical and Unpriced Commercial Bid Documents.

Interested Integrators must confirm in writing, accepting the above procedure in the covering letter accompanying his pre-qualification document duly filled in.

| | | |
|---|--|------------------------|
|  | Project: Recovery of Valuable Metals from WPCBs | 1002-100kg Pilot Plant |
| | Pre-Qualification Document: Integrator Pre-Qualification Document | |
| Page 3 of 9 | Doc. No: IBC-T1002PQ-02 | Rev No: 02 |

II. INTEGRATOR COMPANY GENERAL INFORMATION

Please provide a short description of the company, year of establishment, type of ownership, general activity and major fields of activity.

Short description of the company's capability to provide a comprehensive turnkey package from the design, concept through detailed engineering, manufacture and the erection of structural steel and non-structural components. Availability of extensive CAD, 3D, project management and planning software.

| | |
|-------------------------------------|--|
| GENERAL INFORMATION | |
| Contact Details: | |
| Head Office & Fabrication Facility: | |
| Telephone : | |
| Facsimile : | |
| E-mail : | |
| Website : | |

1. Description of the products of the company such as:

Light, medium and heavy structural steel fabrication for skid mounting all types of equipment in carbon and alloy steels including but not limited to:

- a. Thermic Fluid Heaters
- b. Reactors with external and internal heating and agitators
- c. Pressure Vessels
- d. Specialty equipment like dryers, mixers etc.
- e. Heat Exchangers
- f. Distillation, absorption and solvent extraction equipment
- g. Evaporators and vacuum systems
- h. Integration of third-party equipment and systems in the system skids

2. Fabrication capacity in tonnes per annum and the fabrication tonnage executed in the last four years.

3. Details of Manpower

Number of Personnel in Departments such as: (Engineers and Technicians to be separately indicated)

- a. Management
- b. Administration
- c. Accounts



Project: Recovery of Valuable Metals from WPCBs

1002-100kg Pilot
Plant

**Pre-Qualification Document: Integrator Pre-
Qualification Document**

Page 4 of 9

Doc. No: IBC-T1002PQ-02

Rev No: 02

- d. IT
- e. Proposals
- f. Design/Drawing Office
- g. Fabrication
- h. Inspection, Quality Assurance
- i. Planning

III. FABRICATION FACILITIES

| S.NO | FABRICATION FACILITIES | AREA |
|------|--|----------------|
| 1. | No. of separate Fabrication Workshops: | |
| 2. | Surface Preparation and Painting Areas: | m ² |
| 3. | Computer aided design/drawing office: | m ² |
| 4. | Facility area total in: | m ² |
| 5. | Covered workshop space in: | m ² |
| 6. | Main Workshop: | m ² |
| 7. | Heavy Fabrication Workshop: | m ² |
| 8. | Light Fabrication Workshop: | m ² |
| 9. | Assembly Area: | m ² |
| 10. | Material Storage: | m ² |
| 11. | Any additional area available near the fabrication facility that could be used in for loading / unloading etc. | |
| 12. | Any access to Quay and water depth | |

a. FABRICATION WORKSHOPS

Describe the fabrication workshops and their functionality and flexibility to produce a multitude of products ranging from conventional structural steelwork, through to plate/ box girders etc. as well as chemical process equipment in Carbon and alloy steels

b. WELDING

Describe Company's capability in welding procedures:

- Shielded metal arc welding (SMAW) using low hydrogen and iron powder electrodes
- Flux cored arc welding (FCAW) using the self-shielding method in semi/automatic Mode
- Submerged arc welding (SMAW) in automatic and semi-automatic modes
- Gas metal arc welding (GMAW)
- Other processes such as tungsten-arc, gas metal-arc and electro slag welding.



| | | |
|-------------|--|------------------------|
| | Project: Recovery of Valuable Metals from WPCBs | 1002-100kg Pilot Plant |
| | Pre-Qualification Document: Integrator Pre-Qualification Document | |
| Page 5 of 9 | Doc. No: IBC-T1002PQ-02 | Rev No: 02 |

- Describe welder qualification details according to ASME IX, AWS D1.1 and BS EN 287.

c. SURFACE PREPARATION AND PAINTING

Describe Company's surface preparation and painting facilities

d. FABRICATION PLANT/MACHINERY

Please provide a list of plant and machinery at the company's fabrication shop. The list may be below is indicative and can be complemented by other items:

PLEASE PROVIDE MACHINERY LIST IN THE FOLLOWING TABLE:

| MANDATORY | DESCRIPTION | CAPACITY | QTY |
|-------------------------|---------------------------------------|----------|-----|
| X | CNC Profile Cutters | | |
| | Plate Stripping Machine | | |
| X | Section sawing machine | | |
| | Plate bevelling Machine | | |
| | Section Drill line | | |
| X | Other drilling machines | | |
| X | Plate Processing Machines | | |
| X | Milling Machine | | |
| X | Oxy Fuel cutting set | | |
| | Punch and Shear Angle <i>Line</i> | | |
| X | Pipe Profiling machine | | |
| X | Section Bending Machine | | |
| OUTSOURCING CAN BE DONE | Grit Blasting Machine | | |
| X | Air Compressor | | |
| | Hydraulic Press | | |
| | Ironworker punch machine | | |
| X | Other Punching Machine | | |
| X | Radial Drill | | |
| | Hydraulic Flange Straightener Machine | | |
| | Tee & H Beam assembly machine | | |
| X | Band Saw | | |
| | Radial Arm Drill Machine | | |
| | Crop and Punch Machine | | |
| X | Portable Drill Machine | | |
| X | Pipe Thread Cutting Machine | | |
| | Angle Punch and Crop Machine | | |
| X | Lathe Machine | | |
| X | Hydraulic Guillotine for Steel Plate | | |



Project: Recovery of Valuable Metals from WPCBs

1002-100kg Pilot Plant

Pre-Qualification Document: Integrator Pre-Qualification Document

Page 6 of 9

Doc. No: IBC-T1002PQ-02

Rev No: 02

| MANDATORY | DESCRIPTION | CAPACITY | QTY |
|-----------|--|----------|-----|
| X | MIG Welding Units | | |
| X | Other Welding Machines | | |
| X | Sub-Arc Welding Unit | | |
| X | Electrode Conditioning Equipment | | |
| X | Submerged Arc Gantry Welding Machine | | |
| X | EOT Cranes | | |
| X | Gantry Cranes | | |
| HIRED OK | Manual Blasting /Painting | | |
| HIRED OK | Mobile Hydraulic Crane | | |
| HIRED OK | Forklift | | |
| HIRED OK | Tractor Unit | | |
| HIRED OK | Trailers | | |
| | Hydraulic Flange Straightener Machine | | |
| | Hydraulic Guillotine for Steel Plate | | |
| X | Other Hand Tools | | |
| X | Diesel Power generator (entire Facility) | | |
| X | Other Tools and Tackles | | |
| X | Other lifting devices | | |
| X | List of Safety Equipment | | |
| X | NDT Equipment | | |

***ITEMS MARKED “X” ARE MANDATORY**

IV. STEEL WORK FABRICATION FACILITY SITE LAYOUT

Attach Steel Work Fabrication Facility Site Layout


V. ENGINEERING CAPABILITY

Describe the Company’s detailed engineering capability, advanced project management techniques, management and training of a skilled work force and maintaining high quality fabrication and erection skills. Clearly state discipline wise Engineers and Technicians

Describe the Engineering Function comprising of the Design Office for undertaking designs of process equipment and structures from first principles.

Describe the Drawing Office for the production of shop drawings with resources required to:

- Offer the Client both design and shop drawing facilities.
- Act as an ‘in-house’ technical support function to both works fabrication and construction.

| | | |
|---|--|------------------------|
|  | Project: Recovery of Valuable Metals from WPCBs | 1002-100kg Pilot Plant |
| | Pre-Qualification Document: Integrator Pre-Qualification Document | |
| Page 7 of 9 | Doc. No: IBC-T1002PQ-02 | Rev No: 02 |

- Development of basic design data or conceptual designs into drawings from which equipment and steel fabrication and erection can be carried out.
- Design/detailing to recognized international codes, standards and recommended practices (British Standards, American Standards, DIN Standards, Euro Norm Standards).
- Computer Aided Design analysis packages.
- Drafting utilizing 3D and 2D drafting packages.

Office Facilities:

Hardware:

- Drafting
- No. of desktop computers
- No. of A0 Plotters
- No. of A4/A3 Laser Printers
- No. of A0 Photocopier/ Scanner
- No. of A3 Scanner

Design:

- No. of desktop computers
- No. of A4/A3 Laser printer

Software

- 3D drafting software
- 2D CAD drafting software AutoCAD and AutoCAD lite version
- Structural analysis and design and drafting software
- Viewers
- Production Monitoring System

VI. PROJECT MANAGEMENT


Describe the company's approach and methodology and established project management structure to provide the Client with a product that:

- Meets the required quality standard as laid down in the contract specification.
- Is delivered in accordance with the budget and the program.
- Project Manager, to oversee all aspects of the contract from award to final handover.

Describe the various activities of this team to include:

- Taking "possession" of the contract and ensuring that the Contract requirements are clearly understood by all parties.
- Establishing the Quality requirements and, where deemed necessary, producing contract specific Quality documentation in place of the general Quality documents.



| | | |
|--|--|------------------------|
|  | Project: Recovery of Valuable Metals from WPCBs | 1002-100kg Pilot Plant |
| | Pre-Qualification Document: Integrator Pre-Qualification Document | |
| Page 8 of 9 | Doc. No: IBC-T1002PQ-02 | Rev No: 02 |

- Developing the Contract program making use of up to date computer aided project planning packages (For Example PRIMAVERA) to establish the sequence of work and resources required to successfully complete the work within the constraints of the Contract.
- Controlling and coordinating activities throughout the various phases of the contract to ensure progress is in line with the budget and the program. Establishing clear lines of communication between the company, the Client and the Client's representatives, suppliers and subcontractors, to enable any changes, queries or deviations from the specification to be efficiently communicated to relevant parties.

VII. QUALITY ASSURANCE

Describe integrated quality management system in accordance with ISO, OHSAS 18001:2007 and ISO 14001:2015 if any, which ensures that services and products conformation to the Client,'s specified requirements.

Describe or provide Third Party Certification for compliance with ISO 9001: 2015, ISO 14001:2015 and OHSAS 18001:2007.

Provide ASME / IBR Stamps held by the Company

Provide any Welding Certification by Velosi for welding process in compliance with requirement of ISO 3834-2:2005 for comprehensive quality requirements for fusion welding of metallic materials

Copies of the relevant approval/authorization certificates are to be enclosed.

VIII. CURRENT AND RECENT MAJOR PROJECTS

Please provide order(s) executed by the Company, during the last 3-4 years before the original bid submission:


- Specify orders executed for "Similar item " of value not less than INR 50,00,000/-
- Similar item means "Supply of Skid Mounted Process Plant to any Industry incorporating electrical and third-party PLC instrumentation systems completely integrated as part of the overall skid system."

Indicating:

- Project Client,
- Country,
- Tonnage,
- Completion Date,
- Responsibility Description in design, fabrication, erection and commissioning.

Further, details of similar orders executed in the last 3-4 years with proof of completion in the form of acceptance certificate or Client Testimonials should be provided.

List of Key personnel involved in these projects and their current availability status.

| | | |
|---|--|------------------------|
|  | Project: Recovery of Valuable Metals from WPCBs | 1002-100kg Pilot Plant |
| | Pre-Qualification Document: Integrator Pre-Qualification Document | |
| Page 9 of 9 | Doc. No: IBC-T1002PQ-02 | Rev No: 02 |

IX. COMPANY LICENSE AND CERTIFICATES

Companies should provide the following or similar documents

- Commercial License, if any
- Industrial Licenses
- Local License to operate
- ISO 9000 / 14001 Certificates
- Safety Certifications
- Copy of other Certificates such as ASME, IBR etc.

X. FINANCIAL CRITERIA:

The annual turnover (ATO) of the bidder during at least one of the last four financial years shall be at least INR 50,00,000/ (Fifty Lacs)- Company shall attach documents to confirm the above.

Annual audited and published financial statements (balance sheet, P & L account, auditor report and all other schedules/notes to balance sheet and P & L account) of the bidder shall be considered as financial proof. The order value and turnover for the purpose of PQC shall be rounded off to the next thousand Rupees.

In case, the annual audited and published financial statements are available in the public domain like third party repositories (for example, Registrar of companies or equivalent) excluding websites, etc. under bidder's control, the same shall be accepted.

XI. CLIENT TESTIMONIALS:

Please provide any testimonials of similar jobs executed by your company.

For Queries, please contact:

Email: spush@iitm.ac.in

Contact No: +91- 44 – 2257 4161