

# EXPRESSION OF INTEREST (EOI) FOR CONSULTANCY SERVICES

Environment Protection Department (EPD) intends to hire Consultancy Services under following two ADP Schemes and hence invites EOI from interested firms:

- i. Commercialization Opportunities for Fly Ash utilization produced in the Punjab.**
- ii. Pollution Control and Resource Conservation in Foundries, Rice Husk Units and Stone Crusher.**

2. The firms will be short listed as per the provisions of the Punjab Procurement Rules 2014, evaluation criteria and other applicable laws. The scope of work/ TORs/short listing criteria are available in the office of Deputy Director (Imp), EPA Punjab Lahore and also available at PPRA website ([www.eproc.punjab.gov.pk](http://www.eproc.punjab.gov.pk)) and EPD website ([www.epd.punjab.gov.pk](http://www.epd.punjab.gov.pk))

3. The EOI must contain the following documents/ information:

- i. Valid legal entity of the firm i.e. registration with Securities & Exchange Commission or Registrar of Firms, etc.*
- ii. National Tax Number of the firm.*
- iii. CVs of key relevant staff permanently and exclusively employed with the firm.*
- iv. List of similar projects (along with cost) carried out by the firm during the past 10 years.*
- v. Audited statement of accounts of last five years.*
- vi. Annual turnover (last five years).*
- vii. Undertaking that the firm has not been blacklisted or debarred by any Government/Semi-Government organization of Pakistan.*

4. The interested firms are invited to submit their EOI in the office of Deputy Director (Imp), EPA Punjab by **30.11.2017 till 04:00 PM.**

**DIRECTOR GENERAL EPA PUNJAB  
NATIONAL HOCKEY STADIUM  
NEAR QAZZAFI STADIUM, LAHORE**  
Phone: +92 42 99232231

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# **Annexure-A**

## **DESCRIPTION OF THE ASSIGNMENT INCLUDING SCOPE OF THE INTELLECTUAL AND PROFESSIONAL SERVICES REQUIRED FOR CONSULTANCY SERVICES OF ADP SCHEME “COMMERCIALIZATION OPPORTUNITIES FOR FLY ASH UTILIZATION PRODUCED IN THE PUNJAB”**

### **1. Project Objective**

The objective of the Project is pollution abatement through resource recovery, waste minimization and waste recycling and to utilize fly ash as raw material input in production processes to address pollution problems of fly ash generation from various sources and to construct a pilot scale project by developing all documents needed for construction of a project wherein fly ash is utilized as raw material input in production processes with a full knowledge of the technical and institutional options available and estimation of the costs and benefits of the technology.

### **2. Scope of Work**

The consultant will take a holistic approach for construction of a pilot scale project by essentially carrying out the following activities:

2.1 The consulting firm shall prepare and submit an inception report within 4 weeks of assigning of the agreement which shall delineate, among other things, the methodology, work plan, and time schedule for carrying out the tasks under this consultancy.

2.2 Make inventory of fly ash producing industries/units with their location in the province.

2.3 Analyze problem assessment related to disposal of fly ash.

2.4 Find out international experiences/solution to this problem and compare practices in different countries regarding utilization of fly ash especially in South Asian region.

2.5 Propose most feasible option to utilize fly ash as raw material input in production processes, keeping in view local conditions.

2.6 Identify potential stakeholders for carrying out this pilot scale project

2.7 Comparison of alternative options of commercialization utilization of fly ash with respect to environmental, engineering, economic, and social aspects and advantages and disadvantages, capital investment, and O&M costs.

2.8 Background information report including literature review of the research studies on the commercialization utilization of fly ash conducted at national and international levels, especially in South Asia

2.9 Development of detailed engineering (civil and mechanical) drawings for construction of pilot scale project

- 2.10 Preparation of Bill of Quantities.
- 2.11 Specify standards for all types of material used in the construction of the pilot scale project.
- 2.12 Construction supervision of the pilot scale project of appropriate capacity in collaboration with a potential stakeholder.
- 2.13 Construction and operational manual of pilot scale project to utilize fly ash in making a production the Punjab province. The manual, inter alia, shall include construction planning, soil selection criteria, , site selection, detailed technical design, guidelines for site preparation, layout procedure, excavation works, mechanical parts, all related fixtures, loading platform, detailed technical specifications for all material and components used and operation manual.
- 2.14 Recommendations and development of SOPs for waste management.
- 2.15 Purchase and installation of emission monitoring equipment and developing SOPs for monitoring and reporting.
- 2.16 Development of documents for information dissemination and conducting of workshops and seminars with stakeholders.

### **3. Tasks**

The key tasks which need to be undertaken by the Consultancy Firm to achieve the aforementioned scope of work include:

- 3.1 Collect all key data / documents relating to the assignment to provide a strong evidence base;
- 3.2 Prepare inventory of fly ash producing industries/units with their special location in Punjab and analyze problem assessment related to disposal of fly ash.
- 3.3 Desk review of relevant data on different commercialization utilization options of fly ash and interventions and principles of best practices from international experience and find out most feasible option to utilize fly ash as raw material input in production processes, keeping in view local conditions
- 3.4 Extensive consultation with all major stakeholder groups throughout the process;
- 3.5 Preparation of background information report comprising literature review of the research studies on the fly ash conducted at national and international levels, especially in South Asia.
- 3.6 Preparation of detailed Technical design and engineering drawings for construction of pilot scale project.
- 3.7 Preparation of (Spreadsheet based) Bill of Quantities for construction of pilot scale project
- 3.8 Preparation of Construction and operational manual of pilot scale project to utilize fly ash in making a product in the Punjab province. The manual, inter alia, shall include construction planning, soil selection criteria, , site selection, detailed technical design, guidelines for site preparation, layout procedure, excavation

works, mechanical parts, all related fixtures, loading platform, detailed technical specifications for all material and components used.

3.9 Recommendations and development of SOPs for waste management.

3.10 Purchase and installation of emission monitoring equipment and developing SOPs for monitoring and reporting.

3.11 Development of documents for information dissemination and conducting of workshops and seminars with stakeholders.

#### **4. Deliverables & Specific Outputs**

The Consultancy Firm will deliver the following outputs:

4.1 Inception report

4.2 Background Information Report

4.3 Socio-Economic impacts report

4.4 Contract document for construction of pilot scale project after identification of potential stakeholders;

4.5 Manual for Construction and operational of pilot scale project to utilize fly ash in making a product in the Punjab province. The manual, inter alia, shall include construction planning, soil selection criteria, , site selection, detailed technical design, guidelines for site preparation, layout procedure, excavation works, mechanical parts, all related fixtures, loading platform, detailed technical specifications for all material and components used.

4.6 Construction supervision of pilot scale project.

4.7 Detailed Technical Design

4.8 Financial feasibility and feasibility report of pilot scale project

4.9 Prepare implementation framework of the pilot scale project

4.10 Report on social and private cost-benefit analyses

4.11 Purchase and installation of emission monitoring equipment and SOPs for their monitoring and reporting.

4.12 Optimizing the use of fly ash as raw material in production processing

4.13 Complete documentation for registration of the project for claiming carbon credits

4.14 Development of documents for information dissemination and conducting of workshops and seminars with stakeholders

#### **5. Conduct of the Consultancy**

The Consultant will be engaged by EPA on behalf of Environment Protection Department, Government of the Punjab. The Consultant will report to the committee constituted under the Convenership of Director (ML&I), Environmental

Protection Agency, Government of the Punjab. The Consultant will work closely with the team constituted by EPD, Government of the Punjab. EPA will ensure that the Consultant has all necessary information, contacts and meetings needed to perform the assignment.

**6. Requisite Qualification and Experience of the Consultant**

Project team shall comprise the personnel as prequalified in the EOI submitted by the Bidders and the said team shall only be changed subject to the condition that their qualification/experience of the replacement would not be less than the requirement specified in the agreement and that prior written approval of the Client has been obtained. Without prejudice to the generality of the foregoing, the Team Leader proposed by the Firms/Consortia in the EOI shall not be replaced except with another individual having similar experience and belonging to the same Firm.

In case, during the execution of the Project, it is revealed to the Client that the Project Team or any member thereof deputed by Consultant does not have the skill set required for the effective rendering of services under the Agreement for Consultancy Services, Consultant shall forthwith replace such member of the Project Team with a member possessing the required skill set.

**7. Deliverables of the Project and Associated Payments**

Consultant will be required, besides submitting periodic reports and other documents as set forth in this RFP and Draft Agreement for Consultancy Services of the Project, to submit the following Deliverables of the Project. The payments will be made by the Client accordingly as per the below table against submission of Deliverables in accordance with the terms set forth in the Draft Agreement for Consultancy of the Project. However, each such payment shall be subject to retention amount equal to five percent of the relevant payment, which shall be released in accordance with the terms of the Draft Agreement for Consultancy of the Project.

<b>No.</b>	<b>Deliverables</b>	<b>Timeline for submission from date of signing of Agreement</b>
1	Inception Report	4 weeks
2	Background Information Report	8 weeks
3	Economic and financial feasibility of the project and implementation framework	12 weeks
4	Socio-economic impact report	12 weeks
5	Documents for claiming carbon	12 weeks

No.	Deliverables	Timeline for submission from date of signing of Agreement
	credits	
6	Construction and operational manual comprising engineering design, technical design, and drawings, BOQs, etc.	16 weeks
7	Contract document for construction of pilot scale project with stakeholder	20 weeks
8	Construction and supervision of pilot scale project, Purchase and installation of emission monitoring equipment and SOPs for their monitoring and reporting.	48 weeks

The Client shall pay the Consultant a mobilization advance in the amount of 5% of the Agreement Price against an advance bank payment guarantee in accordance with the provisions of Draft Agreement for Consultancy.

The advance payments will be set off by the Client in equal portions against the lump-sum installments specified in the Special Conditions of Agreement contained in the Draft Agreement of Consultancy until said advance payments have been fully set off.

**8. Professional Liability of Consultant**

Professional liability as stated in the prevalent conduct and practice of consulting engineers prescribed by PEC and as given under rule 54 of Punjab Procurement Rules, 2014 shall be applicable to the consultant.

**9. Payment**

All payments made to the consulting firm are subject to sales tax and income tax deductible as per prevalent rules.

**10. Role of the Client**

No lodging, boarding, office accommodation, and logistics will be provided by the client to consulting firm. The client shall only assist the consultant, where possible, in obtaining information/data from other departments/ organizations.

**11. Project Duration**

The consulting firm will be required to complete the whole activity/ assignment and furnish the final documents/ reports within a period of 18 months from the award of contract.

**12. Proposal Evaluation**

Quality and Cost Based Selection Criteria will be used.

**13. Core Team Composition**

Team Composition is given below

**TEAM COMPOSITION REQUIRED FOR CONSULTANCY OF ADP SCHEME  
“COMMERCIALIZATION OPPORTUNITIES FOR FLY ASH UTILIZATION  
PRODUCED IN THE PUNJAB”**

<b>No</b>	<b>Position</b>	<b>Qualification &amp; Minimum Experience</b>
1	Team Leader	PhD/M.Sc (Environmental/Mechanical/ Chemical/Industrial/ Process engineering from an HEC recognized University. 10 years for PhD and 15 years for M.Sc with experience in Environmentally Cleaner Production Solution
2	Technology Transfer Expert	At least graduate with 16-years of education and practical hands-on experience in designing and construction of fly ash utilization project with proven success.
3	Civil Engineer	Masters in Civil Engineering from an HEC recognized University. 10 year experience in construction management and supervision.
4	Mechanical Engineer	Masters in Mechanical Engineering from an HEC recognized university. 10 year working experience in product lifecycle management and supervision Solid understanding of core concepts including mechanics, kinematics, thermodynamics, materials science Ability to communicate technical knowledge in a clear and understandable manner
5	Financial / Economic Expert	Post-graduation in economics or related field from an HEC recognized University. 5 years experience in financial and economic analyses
6	Socio-Economic Expert	Post-graduation in economics from an HEC recognized University. 5 years experience in consulting in any sector of environmental protection working on socio-economic analyses and behavioral change management.
7	Quantity Surveyor/Sub engineer	Diploma in Civil Technology from a Government recognized institution or an equivalent diploma. 10 year experience in preparation of Bill of Quantities.
8	Auto Cad Operator	Post Metric one-year certificate/diploma in AutoCAD applications from a reputed institution. 5 years experience and proficiency in advanced in AutoCAD, Microsoft Office, Windows and Micro station application. Have the capability to decipher construction plans. Basic knowledge of algebra as well as geometry to calculate amounts and figures Have the ability to visualize finished products as well as projects. Have manual drawing skills along with computer drawing. Should be familiar with Autodesk AutoCAD, PTC Pro-engineer, or PTC intra-link. Good knowledge of civil/ mechanical/ architectural terms.



## CONSULTANT PRE-QUALIFICATION/ SHORT LISTING CRITERIA

**(Commercialization Opportunities for Fly Ash Utilization Produced in the Punjab)**

**A. The presence of following items will be checked before firms are evaluated for short listing.**

- ✓ Valid legal entity of the firm i.e. registration with Securities & Exchange Commission or Registrar of Firms, etc.
- ✓ National Tax Number of the firm.
- ✓ CVs of key relevant staff permanently and exclusively employed with the firm.
- ✓ List of similar projects (along with cost) carried out by the firm during the past 10 years.
- ✓ Audited statement of accounts of last five years.
- ✓ Annual turnover (last five years)
- ✓ Undertaking that the firm has not been blacklisted or debarred by any Government/ Semi-Government organization in Pakistan.

**B. The firms submitting all the above said items will be evaluated according to the following criteria:**

	<b>Max Score</b>	<b>Component Score</b>
<b>Experience of Undertaking of the project</b>	<b>20</b>	
<b>Personnel detailed for the project</b>	<b>80</b>	

Any firm that scores less than 65 will be removed from the list.

**1. Experience and Understanding**

Only the largest similar assignment completed successfully by the firm in the last 10 years will be evaluated at this stage. After selecting the suitable assignment a corresponding weight will be selected from the table below:

		<b>Relative Size of Assignment</b>		
		<b>80 % or more</b>	<b>50% - 80%</b>	<b>Less than 50%</b>
<b>Similarity</b>	<b>Strong</b>	1	0.65	0.3
	<b>Medium</b>	0.65	0.4225	0.195
	<b>Weak</b>	0.3	0.195	0.09

Component Score = Weight from table\*20 (max score)

## 2. Personnel

The total marks for this section will be divided between proposed experts in equal proportions. Experts detailed to carry out the study will be evaluated according to the following criterion:

	<b>Max. Score</b>	<b>Component score</b>
Educational qualifications	20	
Number of years working on similar assignments	50	
Number of projects on which similar tasks have been undertaken	30	

### 2.1 Educational qualification

	<b>Score</b>
Bachelor degree or equivalent	16
Master degree or equivalent	18
Post-graduate or Doctorate or equivalent	20

Zero (0) points will be given for any degree below bachelors.

**2.2** A maximum of 50 will be awarded for 10 years' experience in the relevant field i.e. 5 per year.

**2.3** A maximum of 30 will be awarded for working in 5 projects of a similar nature i.e. 6 marks per project

The total score for the CV is added up to get "T", the component score will be calculated as:

$$\text{Component score} = (T/100)*80$$

## **Annexure-B**

### **DESCRIPTION OF THE ASSIGNMENT INCLUDING SCOPE OF THE INTELLECTUAL AND PROFESSIONAL SERVICES REQUIRED FOR CONSULTANCY SERVICES OF ADP SCHEME “POLLUTION CONTROL AND RESOURCE CONSERVATION IN FOUNDRIES, RICE HUSK UNITS AND STONE CRUSHER”**

#### **1. PROJECT OBJECTIVE**

Pakistan is basically an agricultural country. Poor management & unsustainable use of natural resources are leading country to environmental concerns. A number of serious environmental problems are inherent in the country, which are of great ecological concern in terms of its sustainable economic future.

It has been estimated only 1% of industrial wastewater in Pakistan is treated before discharge. According to various studies conducted on waste management in the country about 54,888 tons of solid waste is generated daily in urban areas of Pakistan. Air pollution is rapidly growing environmental concern in Pakistan. Some major causes of ambient air quality deterioration in the country are highly inefficient use of energy, accelerated growth in vehicle population and vehicle kilometers travelled, Increasing industrial activity without air emission control, open burning of solid waste, Use of ozone depleting substances (ODSs).

There are about 469 Furnace Mills, 537 Rice Mills and 206 Stone Crushers in Punjab Province. These industrial units essentially cater to the local market needs. Many of these units employ outdated, obsolete and inefficient technologies, thereby causing resource loss and environmental pollution. The Project aims at identification of appropriate measures / technologies applicable to selected industries (Foundries, Rice Husk Units and Stone Crushers) so as to control their pollution, further resource conservation will be suggested. The main objectives are as under:

- To implement the functions assigned under provisions of Punjab Environmental Protection Act 1997 (amended 2012) to Punjab EPA regarding control of industrial pollution.
- Promotion of best available technology to reduce air pollutant in conformity with Punjab Environmental Quality Standard in selected industrial units (Foundries, Rice Husk Units and Stone Crushers).
- Pollution Control and Resource Conservation in Foundries, Rice Husk Units and Stone Crusher which exist in large number in the province.
- Formulation of Sector Specific Guidelines to promote cleaner production techniques and practices in order to combat air pollution and mitigate air borne diseases
- Awareness raising / training workshops for technology transfer to stakeholders / industrial association.

#### **2. SCOPE OF WORK**

As far as the relationship of project objectives with Sectoral Objectives is concerned, the following provisions of Punjab Environmental Protection Act 1997 (amended 2012) demonstrate the desired relationship:

Section 6(1) of Act *ibid* asks for the following in its sub section c, j, q & t:

- Promote Public education and awareness of environmental issues through mass media and other means including seminars and workshops.
- Take all necessary measures for the protection, conservation, rehabilitation and improvement of environment, prevention and control of pollution.

Project will be executed in two Components.

**1<sup>st</sup> Component of Project:**

In first Component a consulting firm will be recruited under PPRA Rules for performing following tasks:

Consultancy on Pollution Control and Resource Conservation in Foundries, Rice Husk Units and Stone Crushers in the Punjab based on studies, data, and audits available with stakeholders.

In respect of each type (sub-type) of industry, the following shall be carried out:

- i. Identify major geographical clusters of each sub sector in terms of number of units of various sizes. GIS mapping of the foundries, rice husk units and stone crusher will be done under the project for this purpose collaboration from Industries Department/urban unit will be sought.
- ii. Estimate the total pollution contribution of the sector based on the number of units and individual contribution. Cost of economic, social pollution and mitigation cost will also be included. A database will be develop depicting pollution contribution along-with disposal of waste by foundries, rice husk units and stone crushers in Punjab.
- iii. Quantify the total number of units operating in the province through review of secondary data and information.
- iv. Develop uniform criteria and categorize units according to process and size as Small, Medium and Large based the criteria/process.
- v. Industry profiling with respect to its geographic locations, size, process, and target market orientation.
- vi. Process profiling with respect to resource balance including *inter alia* mass balance and energy balance.
- vii. Pollution profile comprising air, water, solid waste, noise, and occupational health and safety.
- viii. Identification, and if possible quantification, of inefficiencies in current processes and practices that contribute directly or indirectly to environmental pollution.
- ix. Process improvement options vis-à-vis better management practices, cleaner production options, etc.
- x. Benchmarking for efficiency and/or environmentally friendly technology standards and benchmarks for equipment, devices, and processes in terms of, for example, and where applicable, improvement in power consumption, reduction in fuels/coal consumption, reduction in gas consumption, increase in productivity, reduction in water consumption, improvement in yield, enhancement in utilization, etc.
- xi. Range of values for each pollutant in emissions, effluents, solid waste, and noise (particularly the criteria pollutants given in the Punjab Environmental Quality Standards) for size-wise each category of industrial unit.

- xii. Provide estimates of pollution contribution of individual Small, Medium and Large units as per their emissions, effluents, solid waste, etc.
- xiii. Provide generic but detailed templates for (energy, mechanical, process, etc.) audit of representative units of each type of industry.
- xiv. Estimate total pollution contribution of the sector based on the number of units and individual pollution contributions.
- xv. Recommendations for end-of-pipe solutions comprising best locally available technologies, comparative analyses where more than one options are available, and cost ranges.
- xvi. Design parameters for end-of-pipe pollution treatment solutions.
- xvii. Conceptual Engineering Design for proposed end-of-pipe pollution treatment solutions.
- xviii. Provide a primary level cost benefit analysis for the proposed good manufacturing practices and engineering solutions.
- xix. Suggest appropriate recommendations for small scale industry for implementation of the recommendations of this consultancy.
- xx. Environmental Management Plan, its costing, and its implementation scheme for size-wise each category of industrial unit.
- xxi. Preparation of B.O.Qs for proposed intervention of at least 02 types of Foundries, Rice Husk Units and Stone Crushers
- xxii. Construction/Supervision of proposed interventions on the selected sites to gauge adequacy of design
- xxiii. Preparation of road map for replication of successful interventions

## **2<sup>nd</sup> Component of Project:**

2<sup>nd</sup> Component will be the execution phase in which proposed pollution control and resource conservation techniques by the consultant will be designed, installed and executed with the stakeholders in the form of pilot project.

Arrangement of Awareness seminars/media campaigns on District level will be part of this phase.

### **Note:**

Consulting firm of Component-I will also continue for Execution, Supervision / Monitoring and assessment of the performance indicator of the Pilot Project during Component-II.

## **4. DELIVERABLES & SPECIFIC OUTPUTS**

### **4.1. Component- I**

The Consultancy Firm will deliver the following outputs (The details of deliverables for Component-I are given in Section 7 below (Deliverables of the project and associated payments):

- Inception report within two weeks after signing of the contract.
- Draft reports comprising, inter alia, all entries given in the “scope of work” and supported with available data.
- One Stakeholder Workshop for each of the three sectors. Consultant will be responsible for arranging the workshops, inviting the stakeholders and managing the logistics in consultation with EPD.

The consultant will be responsible for presenting the preliminary findings for each sector in the relevant workshop.

- Final reports after incorporating comments of Environment Protection Department and recommendations of Stakeholder Workshops.
- Design of best pollution control mechanism keeping in view the compliance of criteria pollutants as per Punjab Environmental Quality Standards
- Construction & implementation of proposed intervention in each type of industry
- Gauging adequacy of action taken and submit detailed report after due course of time.

#### **4.2. Component – II**

The Consultancy Firm will deliver the following outputs (The details of deliverables for Component-II are given in Section 7 below (Deliverables of the project and associated payments):

- Installation of Proposed pollution control and resource conservation techniques by the consultant with collaboration of stockholders in the form of pilot project. Environment Protection Department Punjab will bear the cost of Pilot Project. Industrial Units will be selected by the consulting firm with coordination of DG EPA and Field Offices of EPA Punjab.

### **5. CONDUCT OF THE CONSULTANCY**

The Consultant will be engaged by EPA on behalf of Environment Protection Department, Government of the Punjab. The Consultant will report to the Director (ML&I), Environmental Protection Agency, Government of the Punjab. The Consultant will work closely with the team constituted by EPD, Government of the Punjab. EPA will ensure that the Consultant has all necessary information, contacts and meetings needed to perform the assignment.

### **6. REQUISITE QUALIFICATION AND EXPERIENCE OF THE CONSULTANT**

Project team shall comprise the personnel as prequalified in the EOI submitted by the Bidders and the said team shall only be changed subject to the condition that their qualification/experience of the replacement would not be less than the requirement specified in the agreement and that prior written approval of the Client has been obtained. Without prejudice to the generality of the foregoing, the Team Leader proposed by the Firms/Consortia in the EOI shall not be replaced except with another individual having similar experience and belonging to the same Firm.

In case, during the execution of the Project, it is revealed to the Client that the Project Team or any member thereof deputed by Consultant does not have the skill set required for the effective rendering of services under the Agreement for

Consultancy Services, Consultant shall forthwith replace such member of the Project Team with a member possessing the required skill set.

## 7. DELIVERABLES OF THE PROJECT AND ASSOCIATED PAYMENTS

Consultant will be required, besides submitting periodic reports and other documents as set forth in the RFP and Draft Agreement for Consultancy Services of the Project, to submit the following Deliverables of the Project. The payments will be made by the Client accordingly as per the below table against submission of Deliverables in accordance with the terms set forth in the Draft Agreement for Consultancy of the Project. However, each such payment shall be subject to retention amount equal to five percent of the relevant payment, which shall be released in accordance with the terms of the Draft Agreement for Consultancy of the Project.

<b>Sr. No.</b>	<b>Deliverables</b>	<b>Timeline for submission from date of signing of Agreement</b>
<b>COMPONENT-I</b>		
i.	Inception Report	2 weeks
ii.	<ul style="list-style-type: none"> <li>• Inventory of Foundries, Rice Husk Units and Stone Crusher in the Punjab including but not limited to location, year of establishment, process description, environmental issues and pollution control measures adopted by said units in Punjab with coordination of EPA Field Officers.</li> <li>• Preparation of a comprehensive report containing details of processes adopted by the Foundries, Rice Husk Units and Stone Crusher in the Punjab.</li> <li>• Identification of best pollution control and resource conservation techniques adopted in the other countries for said units and acceptability/feasibility of said techniques in Punjab</li> </ul>	10 weeks
iii.	<ul style="list-style-type: none"> <li>• Preparation of Pilot Projects /preliminary drawings /cost estimates, Construction Manual, Comprising engineering design and drawings, BOQs etc. and implementation framework of identified technologies and techniques by the consultants.</li> <li>• Contract document for construction of model air pollution control system in selected Foundries, Rice Husk Units and Stone Crusher.</li> </ul>	10 weeks
iv.	<ul style="list-style-type: none"> <li>• Execution, Supervision/Monitoring &amp; assessment of the performance indicator of the Pilot Project and submission of final report after successful completion of Pilot Project.</li> <li>• Arrangement of Awareness seminars/media</li> </ul>	10 weeks

<b>Sr. No.</b>	<b>Deliverables</b>	<b>Timeline for submission from date of signing of Agreement</b>
	campaigns on District level regarding identified Pollution Control and Resource Conservation Techniques in the said Industrial Units.	
	<b>Total Component-I</b>	<b>32 Weeks (8 Months)</b>
<b>COMPONENT-II</b>		
i.	Installation of Proposed pollution control and resource conservation techniques by the consultant with collaboration of stakeholders in the form of pilot project. Industrial Units will be selected by the consulting firm with coordination of DG EPA and Field Offices of EPA Punjab.	12 weeks
ii.	Supervision for Maintenance of installed Pilot Projects for one year after successful completion.	48 Weeks
	<b>Total Component-II</b>	<b>60 Weeks (15 Months)</b>

## **8. Professional Liability of Consultant**

Professional liability as stated in the prevalent conduct and practice of consulting engineers prescribed by PEC and as given under rule 54 of Punjab Procurement Rules, 2014 shall be applicable to the consultant.

## **9. Payment**

All payments made to the consulting firm are subject to sales tax and income tax deductive as per prevalent rules.

## **10. Role of the Client**

No lodging, boarding, office accommodation, and logistics will be provided by the client to consulting firm. The client shall only assist the consultant, where possible, in obtaining information/data form other departments/ organizations.

## **11. Project Duration**

The consulting firm will be required to complete the whole activity/ assignment for Component-I in 32 weeks and time duration for execution of Component-II will be 12 weeks and Supervision for Maintenance of installed Pilot Projects for one year after successful completion will be 48 Weeks.

## **12. Proposal Evaluation**

Quality and Cost Based Selection Criteria will be used.

## **13. Core Team Composition**

Team Composition for component-I and Component-II are given below.



**TEAM COMPOSITION REQUIRED FOR CONSULTANCY OF ADP SCHEME  
“POLLUTION CONTROL AND RESOURCE CONSERVATION IN FOUNDRIES, RICE  
HUSK UNITS AND STONE CRUSHER”**

No.	Position	Qualification & Minimum Experience
<b>Team Composition for Component-I</b>		
1	Team Leader	PhD/MSc (Environmental/Mechanical/ Chemical/Industrial/ Process engineering from an HEC recognized University. 10 years for PhD and 15 years for MSc with experience in Environmentally Cleaner Production Solution
2.	Cleaner Production Technology Expert	PhD/MSc (Environmental/Mechanical/ Chemical/Industrial/ Process engineering  10 years for PhD and 15 years for MSc practical hands-on experience in designing and construction of similar projects environmentally Cleaner Production Solutions
3.	Environmental Expert	PhD/MSc, (Env/Chemical engineering) from an HEC recognized University.  10 years for PhD and 15 years for MSc experience of industrial pollution profiling and environmental assessments etc.
4.	Sector Expert (Foundries)	Practical hands-on experience in designing and construction of pollution control & resource conservation techniques for foundries with proven success.
5.	Sector Expert (Rice Husk Units)	Practical hands-on experience in designing and construction of pollution control & resource conservation techniques for Rice Husk Units with proven success.
6.	Sector Expert (Stone Crusher Units)	Practical hands-on experience in designing and construction of pollution control & resource conservation techniques for Stone Crusher Units with proven success.
7.	Cleaner Technology Design Expert	PhD/MSc (Mechanical/ Chemical/Industrial/ process engineering) from an HEC recognized University.  8 years for PhD and 15 years for MSc 5 year experience in industrial process and cleaner production
8.	Financial / Economic Expert	PhD/MSc in economics or related field from an HEC recognized University.  5 years for PhD and 8 years for MSc experience in financial and economic analyses
9.	Combustion Engineer/ Fuel Specialist / Mechanical Engineer	PhD/MSc/BSc, (Chemical/Mechanical engineering) from an HEC recognized University.  5 years for PhD and 8 years for MSc, 10 years for BSc experience in managing combustion/ fuel processes and their 17modeling.
10.	Electrical Engineer	PhD/MSc/BSc, (Electrical Engineering) from an HEC recognized University.  5 years for PhD and 8 years for MSc, 10 years for BSc experience in relevant field

<b>No.</b>	<b>Position</b>	<b>Qualification &amp; Minimum Experience</b>
11.	Auto Cad Operator	<p>Post Metric one-year certificate/diploma in AutoCAD applications from a reputed institution.</p> <p>5 years' experience and proficiency in advanced in AutoCAD, Microsoft Office, Windows and Micro station application.</p> <p>Have the capability to decipher construction plans.</p> <p>Basic knowledge of algebra as well as geometry to calculate amounts and figures</p> <p>Have the ability to visualize finished products as well as projects.</p> <p>Have manual drawing skills along with computer drawing.</p> <p>Should be familiar with Autodesk AutoCAD, PTC Pro-engineer, or PTC intra-link.</p> <p>Good knowledge of civil/ mechanical/ architectural terms.</p>
1.	Construction Supervisor	<p>Diploma in Mechanical/ Civil Technology from a Government recognized institution or an equivalent diploma.</p> <p>10 year experience in preparation of Bill of Quantities.</p>

## CONSULTANT PRE-QUALIFICATION/ SHORT LISTING CRITERIA

**(Pollution Control and Resource Conservation in Foundries, Rice Husk Units and Stone Crusher)**

**A. The presence of following items will be checked before firms are evaluated for short listing.**

- ✓ Valid legal entity of the firm i.e. registration with Securities & Exchange Commission or Registrar of Firms, etc.
- ✓ National Tax Number of the firm.
- ✓ CVs of key relevant staff permanently and exclusively employed with the firm.
- ✓ List of similar projects (along with cost) carried out by the firm during the past 10 years.
- ✓ Audited statement of accounts of last five years.
- ✓ Annual turnover (last five years)
- ✓ Undertaking that the firm has not been blacklisted or debarred by any Government/ Semi-Government organization in Pakistan.

**B. The firms submitting all the above said items will be evaluated according to the following criteria:**

	Max Score	Component Score
<b>Experience of Undertaking of the project</b>	<b>20</b>	
<b>Personnel detailed for the project</b>	<b>80</b>	

Any firm that scores less than 65 will be removed from the list.

**1. Experience and Understanding**

Only the largest similar assignment completed successfully by the firm in the last 10 years will be evaluated at this stage. After selecting the suitable assignment a corresponding weight will be selected from the table below:

		<b>Relative Size of Assignment</b>		
		<b>80 % or more</b>	<b>50% - 80%</b>	<b>Less than 50%</b>
<b>Similarity</b>	<b>Strong</b>	1	0.65	0.3
	<b>Medium</b>	0.65	0.4225	0.195
	<b>Weak</b>	0.3	0.195	0.09

Component Score = Weight from table\*20 (max score)

## 2. Personnel

The total marks for this section will be divided between proposed experts in equal proportions.

Experts detailed to carry out the study will be evaluated according to the following criterion:

	<b>Max. Score</b>	<b>Component score</b>
Educational qualifications	20	
Number of years working on similar assignments	50	
Number of projects on which similar tasks have been undertaken	30	

### 2.1 Educational qualification

	<b>Score</b>
Bachelor degree or equivalent	16
Master degree or equivalent	18
Post-graduate or Doctorate or equivalent	20

Zero (0) points will be given for any degree below bachelors.

**2.2** A maximum of 50 will be awarded for 10 years' experience in the relevant field i.e. 5 per year.

**2.3** A maximum of 30 will be awarded for working in 5 projects of a similar nature i.e. 6 marks per project

The total score for the CV is added up to get "T", the component score will be calculated as:

$$\text{Component score} = (T/100)*80$$