



No.DD (Lab)/EPA/42/2019
GOVERNMENT OF THE PUNJAB
ENVIRONMENTAL PROTECTION AGENCY
Gate No.08, Near National Hockey Stadium, Ferozpur Road, Lahore
Dated: 23 /01 / 2020



THROUGH REGISTERED POST

To,

042-99231854

1. Director, Institute of Environmental Engineering & Research (IEER), University of Engineering and Technology, Lahore
2. Principal, College of Earth & Environmental Sciences, University of the Punjab, Lahore.
3. President, Lahore Chamber of Commerce & Industries, 11-Shahrah-e-Aiwan-e-Sanat-o-Tijarat, Lahore.
4. CEO, The Urban Unit, Shaheen Complex, 503 Egerton Rd, Lahore
5. Engineering, General Consultants EGC, 49-D, Sir Syed Road, Block D-I Gulberg – III, Lahore.
6. National Engineering Services Pakistan (Pvt) Ltd, 1-C, Block – N, Model Town Extension, Lahore.
7. ES Consultants (Pvt) Ltd, 83-A/E-I, Main Blvd Gulberg, Block – A Block E- 1, Gulberg – III, Lahore.
8. Osmani & Company (Pvt) Ltd, IEP Building, Liberty Roundabout Lahore, Block D-1, Gulberg-III, Lahore.
9. Environ Consult (SMC) (Pvt) Ltd, 265, Street – 8, Extension Cavalry Ground, Lahore.
10. JERS Engineering Consultants (JEC), 24 – Civic Center Township, Lahore
11. Techno Legal Consultants (Pvt) L td, JV Solouion Environmental & Analytical Laboratory (SEAL), 385-Ravi Block, Allama Iqbal Town, Lahore.
12. DMC, Lahore (Pvt.) Ltd 274, Lane G4.Block G4 Phase 2 Johar Town, Lahore
13. G 3 Engineering Consultants (Pvt) Ltd, 57 – M Block D Gulberg – III, Lahore
14. Engineer Consultancy Services Punjab (Pvt) Ltd, 83-A/E-I, Main Blvd Gulberg, Block A, Block E-I, Gulberg – III, Lahore.
15. Halcrow Pakistan (Pvt) Ltd, 3rd Floor, Nawa-e-Waqat House, G-7/1, Mauve Area, Islamabad.
16. MM Pakistan (Pvt) Ltd, 2nd Floor, CTI Building, 27-Empress Road, Muhammad Nagar, Gari Shahu, Lahore.
17. Asian Consulting Engineers (Pvt) Ltd, C-3, Jhelum Block Green Forts 2, Lahore.
18. ECO-CARE Consultancy Services (Pvt) Ltd (ECCS), House #7, Sikandar Ali Malhi Road, Canal Park, Gulberg – II, Lahore.
19. EMC Pakistan (Pvt) Ltd, Office #403, 4th Floor, Green Trust Tower, Blue Area, Islamabad.

Subject: **Terms Of References (Tors) To Rationalize, Revise And Develop Industry Specific Environmental Quality Standards**

Please refer to the matter cited as subject.

2. EPA Punjab intends to hire the consultancy services to rationalize, revise and develop industry specific Environmental Quality Standards under an ADP Scheme. EPA has already made an attempt to hire a suitable consultant but none of the firms is qualified for the said task. Consultant Selection Committee of Environment Department has recommended that PC-II / TORs might be developed afresh in consultation with all stakeholders to rationalize its cost and scope. Now, EPA is in a process to revise PC-II of project for which TORs has to be revised.

3. It is requested to submit your valuable feedback/comments/views on TORs of project till **12.02.2020** to the undersigned for successful implementation of the project (Copy of TORs enclosed, softcopy of TORs may be downloaded from EPD website <https://epd.punjab.gov.pk/tenders>).

Engr. Muhammad Imran
Assistant Director (Imp)

CC:

1. Chief (Environment & Climate Change), P&D Department.
2. PA to Director General, EPA, Punjab.
3. PS to Secretary, EPD Punjab.

TERMS OF REFERENCE

1.0 CONTEXT

The Environmental Protection Agency (EPA), Punjab is a Regulatory body under provisions of the Punjab Environmental Protection Act, 1997 (Amendment 2012) in the Province of the Punjab.

2.0 PURPOSE

The purpose of this study under an ADP scheme titled, " **PC II for Rationalization, Revision, and Development of Environmental Quality Standards and Industry Specific Standards**" is revision/rationalization of existing and development of new industry/process specific Punjab Environmental Quality Standards (PEQS). The consultancy is cuts across many disciplines and is highly legal and technical in nature requiring hiring services of a local Consulting Firm in association with International Experts. The scope of the consultancy is:

- 1- Develop a framework for deriving environmental quality standards;
- 2- Review, rationalize, and revise existing Punjab Environmental Quality Standards (PEQS);
- 3- Identify industrial processes in the province, including but not limited to the list provided herein, which need to be environmentally regulated by specifying Environmental Quality Standards;
- 4- Develop process flow diagrams and mass-balances of the identified processes/industrial units;
- 5- Specify best available/applicable treatment options for each process/industrial unit;
- 6- Specify reference effluent/emission values both with and without treatment;
- 7- Coordinate and consult stakeholders on the framework and derived standards;
- 8- Workout both private and social costs and benefits of derived standards;
- 9- Arranging workshops/Seminars in phases for input of stakeholders on draft PEQS.

3.0 EXISTING PUNJAB ENVIRONMENTAL QUALITY STANDARDS (PEQS) WHICH NEED REVISION AND RATIONALIZATION

The following environmental quality standards will be reviewed, and updated if needed, in the light of the framework developed under this project for deriving environmental quality standards:

- PEQS for Municipal and liquid Industrial Effluents
- PEQS for Industrial Gaseous Emissions
- PEQS for Motor Vehicle Exhaust and Noise
- PEQS for Ambient Air
- PEQS for Drinking Water
- PEQS for Ambient Noise

4.0 NEW ENVIRONMENTAL QUALITY STANDARDS REQUIRED TO BE MADE

PEQS for Municipal and Industrial Liquid Effluents (32 parameters) and Industrial Gaseous Emissions (16 parameters) are uniform for all sectors of industry. Thus, environmental standards are same for Textile, Paper, Tanneries, Cement, Chemical, Fertilizer, Sugar, Distilleries, Electroplating, etc.

Optimum and efficient internalization of environmental pollution costs requires industry specific environmental standards. EPA has identified the following major processes for which environmental standards are required:

1. Environment Quality Standards for Aluminum Industry
2. Environment Quality Standards for Asbestos Products
3. Environment Quality Standards for Battery Manufacturing Industry
4. Environment Quality Standards for Boilers run of different types of fuels, including bagasse
5. Environment Quality Standards for Brick Kiln Sector
6. Environment Quality Standards for Briquette Industry (Coal)
7. Environment Quality Standards for Calcium Carbide Plant
8. Environment Quality Standards for Carbon Black Industry
9. Environment Quality Standards for Cement Plants and Cement plants with co-processing
10. Environment Quality Standards for Ceramic industry
11. Environment Quality Standards for Chlor-Alkali (Caustic Soda)
12. Environment Quality Standards for Coal Mines and Coal Washeries
13. Environment Quality Standards for Coke Ovens
14. Environment Quality Standards for Common Effluent Treatment Plants
15. Environment Quality Standards for Controlled environment poultry and layer farms
16. Environment Quality Standards for Copper, Lead or Zinc Smelters
17. Environment Quality Standards for Cupola Furnace
18. Environment Quality Standards for Dairy Industry
19. Environment Quality Standards for Diesel/Petrol/Kerosene/Furnace Oil Generator Set (Old and New)
20. Environment Quality Standards for Dyes and Dye Intermediate Industry
21. Environment Quality Standards for Edible Oil & Vanaspati Industry
22. Environment Quality Standards for Electroplating, Anodizing Industry
23. Environment Quality Standards for Fermentation Industry (Distilleries, Maltries & Breweries)
24. Environment Quality Standards for Fertilizer Industry
25. Environment Quality Standards for Food & Fruit Processing Industry
26. Environment Quality Standards for Foundries
27. Environment Quality Standards for Glass Industry
28. Environment Quality Standards for Grain Processing, Flour Mills, Pulse Making or Grinding Mills
29. Environment Quality Standards for Hazardous Waste Incinerator Emissions
30. Environment Quality Standards for Hospital Wastes
31. Environment Quality Standards for Hotel Industry Effluents
32. Environment Quality Standards for Incinerators of all types, including for Pharmaceutical Industry, and hazardous substances
33. Environment Quality Standards for Inorganic Chemical Industry
34. Environment Quality Standards for Integrated Iron and Steel Plant
35. Environment Quality Standards for Pulp & Paper Industry
36. Environment Quality Standards for Leather Industry
37. Environment Quality Standards for Natural & Synthetic Rubber Processing Industry
38. Environment Quality Standards for Nitric Acid Plant
39. Environment Quality Standards for Oil Refinery, Oil Drilling, and Gas Extraction Industry
40. Environment Quality Standards for Paint Industry
41. Environment Quality Standards for Paper and Board Industry
42. Environment Quality Standards for Pesticide Industry

43. Environment Quality Standards for Petrochemical Storage, Basic and Intermediates, including gasoline, diesel, CNG, LNG, etc. storage and filling stations
44. Environment Quality Standards for Pharmaceuticals Industry
45. Environment Quality Standards for Polymers and Plastics
46. Environment Quality Standards for Refractory Industry
47. Environment Quality Standards for Seed Processing Industry
48. Environment Quality Standards for Slaughter House, Meat & Sea Food Industry
49. Environment Quality Standards for Soda Ash Industry
50. Environment Quality Standards for Solar power generation
51. Environment Quality Standards for Starch Industry
52. Environment Quality Standards for Stone Crushing Unit
53. Environment Quality Standards for Sugar Industry
54. Environment Quality Standards for Sulfur Recovery Unit (SRU) in Petroleum Oil Refinery
55. Environment Quality Standards for Sulfuric Acid Plant
56. Environment Quality Standards for Tanneries
57. Environment Quality Standards for Thermal Power Plants
58. Environment Quality Standards for Tobacco Industry
59. Guidelines for Disposal of Solid Waste, Drill Cuttings and Drilling Fluids for Offshore and Onshore Drilling Operation, Standards for Boilers using Agriculture Waste as Fuel and Guidelines for Pollution Control in Ginning Mills

In addition to these and the existing PEQS, environmental quality standards, rules, and guidelines are also needed in following areas:

1. Surface water bodies
2. Noise Emission & Vibration Standards for anthropogenic sources
3. Land / Soil Quality
4. Solid Waste
5. Hazardous Waste
6. Reuse/recycling of treated liquid effluent for irrigation/ horticulture purpose

Therefore, the existing PEQS shall be rationalized for their effective enforcement and facilitation of polluters in taking remedial measures for compliance through designing cost effective pollution control devices/systems/plants. While new standards in deficient areas shall be formulated.

5.0 PROFESSIONAL LIABILITY OF CONSULTANT

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

6.0 PAYMENT

All payments made to the consulting firm are subject to sales tax and income tax deductions as per the governing laws.

7.0 ROLE OF CLIENT

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

8.0 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. The duration for peer review by Independent Consultants will be 1 month each inclusive in 18 months.

9.0 DELIVERABLES

Consulting firm will provide two hardcopies and softcopies (in Word and Portable Document Formats) of following reports:

9.1 INCEPTION REPORT

The consulting firm shall prepare and submit an inception report within 30 days of signing of the agreement which shall include and explain the methodology of work plan and time schedule for approval of EPA.

9.2 WORKSHOPS/SEMINARS

The consulting firm shall organize workshops/seminars with stakeholders as per requirement in consultation with EPA.

9.3 ENVIRONMENTAL QUALITY STANDARDS

These shall, for each process/industry, necessarily comprise the following:

- i) Process description
- ii) Process mass balances
- iii) Best available treatment technologies for the process
- iv) Effluent/Emission quality without treatment
- v) Rationale for environmental quality standard
- vi) Environmental Quality Standards

Core Team for Consultancy (18 Months)

#	Position	Job Description, Qualification, and Experience	Person-month Input
1	Team Leader International Consultant	To oversee consultancy and be responsible for all deliverables of the consultancy. His/her main role is envisaged to be development of framework to derive environmental quality standards for the province. Qualification and Experience PhD/Masters or equivalent, (Environmental Management, Natural Resource Management, Climate Change, or any other field of Environmental Protection and/or Management, or any other field related to environment including for example biology, chemistry, physics, etc.) Experience 10 years for PhD 15 years for Masters	3 Intermittent spread over the entire period of the consultancy
2	Air Quality Expert International Consultant	In respect of each process identified, the air quality expert is expected to: <ul style="list-style-type: none"> • provide rationale for emission standard; • guide preparation of mass-balance for the process; • derive environmental quality standard • recommend best available treatment option for meeting the standard Qualification and Experience PhD/Masters or equivalent in environmental/chemical engineering of any other field relevant 5 years for PhD 10 years for MSc	1.5 Intermittent spread over the entire period of the consultancy
3	Wastewater Treatment Expert International Consultant	In respect of each industrial process identified, the wastewater treatment expert is expected to: <ul style="list-style-type: none"> • provide rationale for effluent standard; • guide preparation of mass-balance for the process; • derive environmental quality standard • recommend best available treatment option for meeting the standard Qualification and Experience PhD/Masters or equivalent in environmental/chemical engineering of any other field relevant 5 years for PhD 10 years for MSc	1.5 Intermittent spread over the entire period of the consultancy
5	Environmental Economist International Consultant	Environmental economist is expected to provide costs and benefits (both private and social) of implementation of each standard. Qualification and Experience PhD/Masters or equivalent in environmental/chemical engineering of any other field relevant 5 years for PhD 10 years for MSc	3 Intermittent spread over the entire period of the consultancy
6	Air Quality Expert Local Consultant	Assist international consultant in deriving ambient air and air emission quality standards for the identified processes. His duties may, <i>inter alia</i> , include frequent field visits. Qualification and Experience	12 Intermittent spread over the entire period of

#	Position	Job Description, Qualification, and Experience	Person-month Input
		PhD/Masters or equivalent in environmental/chemical engineering of any other field relevant 5 years for PhD 10 years for MSc	the consultancy
7	Wastewater Treatment Expert Local Consultant	Assist international consultant in deriving effluent quality standards for the identified processes. His duties may, <i>inter alia</i> , include frequent field visits. Qualification and Experience PhD/Masters or equivalent in environmental/chemical engineering of any other field relevant 5 years for PhD 10 years for MSc	12 Intermittent spread over the entire period of the consultancy
8	Environmental Economist Local Consultant	Assist international consultant in cost-benefit (both private and social) analyses of the proposed environmental quality standards. The assignment may require frequent field visits. Qualification and Experience PhD/Masters or equivalent in environmental/chemical engineering of any other field relevant 5 years for PhD 10 years for MSc	12 Intermittent spread over the entire period of the consultancy