



PNOC ALTERNATIVE FUELS CORP.

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REQUEST FOR QUOTATION / PROPOSAL

The PHILIPPINE NATIONAL OIL COMPANY (PNOC) through its Bids and Awards Committee (BAC), invites all interested and PhilGEPS-registered suppliers / contractors / consultants to submit quotations / proposals for the following company requirements:

Date: : **May 26, 2021**
Project Title : **Validation of Air Pollution Load Allocation for the PNOC Industrial Park in Bataan for 2021**
Reference No. : **2021-05-105**
ABC : **PhP750,000.00**
Submission Deadline: **June 3, 2021 (10:00 AM)**

Accomplished **Price Quotation/Proposal and Compliance Forms** may be submitted through registered or electronic mail to the PNOC Procurement Management Division at the above address or to procurement@pnoc.com.ph and rqvergara@pnoc.com.ph no later than the submission deadline together with the following documentary requirements and information:

- Mayor's/Business Permit / BIR Certificate of Registration (for individual consultant)
- PhilGEPS Registration Number
- Signed Terms of Reference / Technical Specifications Sheet (if applicable)
- Latest Income / Business Tax Returns
- Notarized Omnibus Sworn Statement - Annex "A" (Unnotarized copy may be submitted prior to submission deadline, but the notarized one shall be submitted after the award or before payment)

The PNOC reserves the right to accept or reject any or all quotations/proposals or parts thereof, to waive formality therein or to accept such or to award any that are considered most advantageous to the company.

Thank you.


EVANGELINE B. ALBAYTAR
Chairperson
Bids and Awards Committee

PRICE QUOTATION / PROPOSAL AND COMPLIANCE FORM

Validation of Air Pollution Load Allocation for the PNOC Industrial Park in Bataan for 2021

TERMS OF REFERENCE

PROJECT : (Consultant for PECC Requirement) Validation of the Air Pollution Load Allocation for the PNOC Industrial Park in Bataan for 2021

JUSTIFICATION: *To validate the air pollution load allocation determined during the 2001 Programmatic EIS using new and updated project information and stack sampling results. This is done in order to confirm the existing air pollution allocations or to determine if there are any adverse environmental consequences that may necessitate a re-allocation of the existing pollution load. The validation of the air pollution load is a requirement stipulated in the issued Programmatic Environmental Compliance Certificate (PECC) to PNOC Industrial Park.*

I. SPECIFIC SCOPE OF WORK:

The Consultant shall perform all the services/ work as necessary to fulfill the objectives of the consultancy contract.

More particularly, the Consultant will be expected to carry out tasks such as:

A. Establish an Air Quality Profile of the Study Area

- i. Determination of the PNOC Industrial Park Airshed;
- ii. Establishment of site and regional meteorology
 - a. Air Quality Modeling Study
 - i. Wind data gathering to assess the ambient air quality data ;
 - ii. One-year data to be taken from NPC MET Station in Limay, Bataan;

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- iii. Conduct of emissions inventory
 - a. Inventory of pollutant sources with the use of questionnaires and actual plant visits inside and outside of the Park
 - i. Emission sources shall include point sources, mobile sources (vehicular emissions), households and commercial establishments (cooking and garbage burning), and agricultural burning.
 - 1. Point sources
 - a. Stack inventory from locators and industries within the airshed
 - b. Data generated to include the height of stack, diameter of stack, volume of gases leaving the stack, emission concentrations of pollutants, pollution control devices used and management measures adapted, sources of pollutants (from the process), and location of the stack (northing, easting).
 - c. Field investigation, data collection, and validation through a walk-through of the facilities and interviews with concerned plant personnel
 - d. Estimation of emission per pollutant
 - 2. Mobile Source emissions
 - a. Vehicle count along the Roman Highway (fronting the Park) and two arterial roads (one in Lamao and the other in Limay)
 - b. Data collection on Shipping traffic along the coast of Limay
 - c. Estimation of emission per pollutant
 - 3. Household emissions
 - a. Emissions from cooking and garbage burning
 - b. Estimation of emission per pollutant

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4. Agricultural emissions
 - a. Emissions due to agricultural burning, particularly ricelands after harvest
 - b. Estimation of emission per pollutant
5. Fugitive emissions including odor causing substances
 - a. Losses from equipment leaks or evaporative losses from impoundments, spills, or leaks which can cause nuisance when released in amounts that cause odor or physiological effects to the public
 - b. Identification of pollutant characteristics
 - c. Identification of potential fugitive emissions of industries located outside the Park
- iv. Monitor ambient air quality (primary and secondary data collection)
 - a. Establish existing ambient air quality condition by conducting an actual sampling of criteria pollutants at different locations
 - b. Analyze the air quality monitoring records of industries inside the airshed
 - c. Perform air quality modelling
 - i. Primary data collection
 - ii. Secondary data collection
- v. Measure background noise level in the airshed
 - a. Conduct of noise sampling in several sampling stations covering areas inside the Park complexes of the PVC Plant, PE Plant, and PP Plant within the Park
- vi. Conduct air quality modelling
 - a. Analyze current conditions and impact of the current developments made at the Industrial Park
 - b. Calculate actual pollutant concentrations from continuous point, flare, area, line, volume and open pit sources emitting non-reactive pollutants. Use of steady state Gaussian plume model to account for the ff.:

- i. Settling and dry disposition of particles
 - ii. Building downwash;
 - iii. Plume rise as a function of downwind distance;
 - iv. Separation of point sources;
 - v. Terrain adjustment;
 - vi. Rural and urban areas;
 - vii. Transport distances up to 50 km;
 - viii. 1-hour to annual averaging times;
 - ix. Stack tip downwash;
 - x. Buoyancy induced dispersion;
 - xi. Special treatment of calm conditions;
 - xii. Pollutant half-life
 - c. Calculate the average ambient ground level concentrations of SO₂, NO₂, TSP, PM-10, CO and Pb at the current development stage of the Park and comparison with the air quality management goals stated in the Park's 2002 PEIS.
 - d. Present modelling results as contour maps showing the highest possible concentrations and long-term average concentrations of each pollutant
 - i. Determination of hot spots and potential hot spots;
 - ii. Determine the frequency of exceedances to short-term NAAQG
 - iii. Assess the contribution of the Park, short-term and long-term ambient concentrations of criteria pollutants resulting from emissions of existing industries inside the Park and comparison with the NESSAP standards
 - iv. Calculation of the long-term average concentrations (annual) for SO₂, TSP, PM10 and Pb and generate contour maps for each pollutant resulting from emissions of all sources inside the airshed

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- vii. Determine carrying capacity.
 - a. Determination of the carrying capacity of the airshed through the maximum allowable load (MAL) calculation;

B. Environmental Status Assessment

- i. Meteorology*
- ii. Existing Air Quality*

C. Carrying Capacity Analysis

The consultant may use the same methodology for carrying capacity analysis as was done in the 2001 PEIS or provide a new methodology that is acceptable to the DENR- EMB. The analysis must be the same or similar to the analysis being done for the Region 3 airshed which will be or is being conducted by the Airshed Governing Board of the Bulacan-Pampanga-Bataan Airshed. The consultant must update himself with the technical studies being done since the PAFC airshed will be a special airshed within the same Bulacan-Pampanga-Bataan airshed

D. Environmental Management Strategies

Update the Environmental Strategies for the air sector in the 2001 PEIS and determine if the allocations provided and the manner of allocation of the air pollutants load is still consistent with the reduction of any possible hotspots in the vicinity of the Park which is caused by the air pollutants within the Park

E. The Consultant shall also include the ff. in the study:

- i. Discuss and compare proposed changes with original configuration*
- ii. Modeling (airshed/MAL) - discuss and compare proposed changes with original configuration (justify any deviation from original methodology)*

- iii. Conduct of GHG estimates for existing for all combustion, process, transport and other sources using IPCC emission factors and inclusion of mitigating measures and GHG sequestration program.
- iv. Conduct of combined 4 dispersion modeling per EMB Dispersion modeling guidelines (MC 2008-003) for construction/operation, line and area source, and point source for existing equipment/components.
- v. Identify the ff. (Parameters for modeling: TSP, CO, NOx as NO2 and Sox as SO2 and other appropriate parameters
 - a. Hot spot areas: Controlled and uncontrolled maximum and 98th percentile ground level concentration (GLC max) 1 hr, 24 hr and 8 hr
 - b. Receptor areas: Controlled and uncontrolled maximum and 98th percentile ground level concentration (GLC max) 1 hr, 24 hr and 8 hr
 - c. Plant boundary receptor areas: maximum and 98th percentile ground level concentration (GLC max) 1 hr, 24 hr and 8 hr
 - d. Identify receptor locations on the ff. as per section 4.6.1 of MC 2008-003 Size and range of grid. The approximate range applicability of plume model is:
 - e. Receptors < 50 m from source /fence line
 - f. Receptors 50m-100m from source/fence line
 - g. Receptors 100m – 10 km from source/fence line
 - h. Receptor > 10 km from source/fence line
 - i. Identify domain of primary and secondary impact area
 - j. Identify baseline condition of the Park, has it reached the carrying capacity in terms of ambient air quality standards based on local and international standards/ guideline value;
 - k. Identify if expansion will exceed the present carrying capacity of the area as increment ambient air quality;
 - l. Recommend air quality monitoring. Provide individual isopleth diagrams and output files

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F. The ff. data (softcopy) shall be submitted to DENR EMB prior to model run, for validation:

- i. Controlled and uncontrolled emission source pathway input data w/ coordinates
- ii. Building BPIP Profile data
- iii. Cartesian domain data (domain size, center, spacing, boundary /fence line)
- iv. Meteorological data (eg. Surface and profile upper air) MM5 or WRF data for validation

II. PROJECT LOCATION:

PNOC Industrial Park at Mariveles, Bataan

III. MATERIALS REQUIREMENT/S:

A. Personal protective equipment

IV. PROJECT EXECUTION REQUIREMENT/S:

A. The winning contractor shall directly designate qualified employee to supervise the work from start to end of the contract.

V. ADDITIONAL REQUIREMENTS:

A. *General Conditions*

1. A joint inspection must be conducted by the Contractor at PNOC Industrial Park Representatives on the specific works to be done for the project.
2. The contractor is required to inspect and examine the site and surroundings of the proposed project to arrive at an estimate of the labor, materials equipment, facilities and services necessary to carry out the work.

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3. The Contractor is required to secure the required surety, performance and guarantee bonds prior to the commencement of work.
4. The Contractor must conduct proper training and safety orientation meeting to all personnel involved in the work prior to commencement.
5. The Contractor is required to coordinate all activities and work relative to the project with the PNOC Industrial Park representative for proper monitoring and coordination.
6. The Contractor shall commence work on the agreed Start Date and shall carry out the work in accordance with the program of work submitted by the CONTRACTOR, as updated, with the approval of PNOC and complete the project by the completion date as indicated in the Scope of Work.
7. The Contractor shall be liable for all fire and accident claims and other related claims arising from injuries and damages, which may occur in relation to the execution of the project.
8. The contractor shall hold PNOC and its personnel free from any and all liabilities to persons or damages to properly occasioned by any act or omissions of the contractor including any and all expenses which may be incurred by PNOC and its personnel in the defence of any claim, occasion or suit.

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9. The minimum work experience requirements for key personnel are the following:

Key Personnel	Qualifications	Relevant Experience
Project Manager	Licensed Engineer	<ul style="list-style-type: none"> Has at least 10 years of cumulative experience in air modelling Experience in preparation of assessment reports
Team Leader	Licensed Engineer	<ul style="list-style-type: none"> Has at least 5 years of experience as Team Leader handling related projects Has satisfactorily completed at least 1 project as Team Leader for air modelling

10. The minimum major equipment requirement is the following:

Equipment	Capacity	Number of units
Laptop / Computer	Standard	1

11. The Contractor must comply with all standard health and safety requirements to include, among others, the use of personal protective equipment by all workers, installation of safety signage, proper ID and observe company rules and regulations on safety and security.

12. The work shall be executed in the best and thorough manner throughout the project timeline to the satisfaction of PNOC, as represented by its engineers and supervisors who will jointly interpret the meaning of the scope of work and its conditions and shall have the power to reject any work, method of accomplishing every part of work and material used which in

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their judgment are not fully in accordance with the specifications and/or description as provided in the scope of work and are deemed to be disadvantageous to PNOC.

13. The Contractor shall be liable for all direct and consequential damages arising out of any failure to perform the work accordance with the schedule and with terms and conditions of the contract documents.

B. Site Possession

1. The Contractor confirms site inspection that he has inspected the site where the work will be performed that he is fully aware of the conditions which might affect the nature, extent and cost of the work required; that PNOC shall in no way be responsible for any costs or expenses which may be incurred on account of failure of the Contractor to make an accurate examination of present and/or assessment of future factors that may affect the cost of execution.
2. Tapping of equipment and other related work shall be properly coordinated with PNOC designated representative for provision of electrical power source for outlets.
3. The Contractor shall be liable for all direct and consequential damages arising out of any failure to perform the work in accordance with the schedule and with terms and conditions of the contract documents.
4. The PNOC shall designate a specific area to be used by the Contractor as temporary facilities/storage area/administration area in connection with the project.

VI. COMPLETION OF WORK

Work should be completed within ninety (90) days reckoned from the date of receipt of the Notice to Proceed.

Five (5) hardcopies and two (2) electronic copies of the final report shall be submitted to PNOC.

VII. WARRANTY PROVISIONS: Not applicable

VIII. DEFINITION OF SIMILAR PROJECT:

Contracts similar to the Project shall be:

- a. Bidders should have conducted at least two (2) Air Modeling/ Air Pollution Load Validation Study;
- b. Completed with five (5) years prior to the deadline for the submission and receipt of bids

#	Item Description	Qty	Unit Price
1	Validation of Air Pollution Load Allocation for the PNOC Industrial Park in Bataan for 2021	1 lot	P

Total Amount (in words): _____

TERMS AND CONDITIONS

- 1. All entries shall be typed or written in a clear legible manner.
- 2. Bidder shall offer one (1) bid only. Alternative bids shall be rejected.
- 3. All prices offered herein are valid, binding and effective for THIRTY (30) calendar days upon issuance of this document.
- 4. As a general rule, price quotations to be denominated in Philippine Peso shall include all taxes, duties and/or levies payable.
- 5. In case of tie quotations, tie breaking shall be on draw lots or toss coin.
- 6. In case supplier pro forma quotation is submitted, conditions will be governed by the submitted signed Terms of Reference / Technical Specifications Sheet.

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We undertake, if our Proposal is accepted, to supply/deliver the goods/services in accordance with the specifications and/or delivery schedule.

We agree to abide by this quotation/proposal for a period of thirty (30) calendar days, which is the price's validity period and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Until a Contract or a Purchase Order is executed, this Quotation/Proposal shall be binding upon us. We understand that you are not bound to accept the lowest or any Proposal you may receive.

Signature over Printed Name : _____

Designation/Position : _____

Name of Organization : _____

Organization Address : _____

Tel No. / Mobile No. and Email Address : _____