

**Central Pollution Control Board**  
**'Parivesh Bhawan', East Arjun Nagar**  
**Shahdara, Delhi-110032**

**Expression of Interest (EOI)**

Central Pollution Control Board (CPCB) invites Expression of Interest (EOI) from reputed Institutions/Organizations for executing the project, "**Development of environmental standards and guidelines for edible oil and vanaspati refineries**". For details please visit <http://www.cpcb.nic.in/Tenders.php>. Last date for receipt of EOI is October 30<sup>th</sup>, 2014 by 5.00 P.M.

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**Shahdara, Delhi-110032**

**Notice inviting Expression of Interest (EOI) for executing the project “Development of environmental standards and guidelines for edible oil and vanaspati refineries”.**

**Terms of Reference (TOR)**

**1.0 Introduction:**

India is one of the leading oil seeds producing countries in the world with 15,000 oil mills, 689 solvent extraction units, 251 Vanaspati plants and over 1,000 refineries. Broadly, edible oil/fat products can be categorised into four categories, vegetable refined oil, hydrogenated oil (vanaspati), bakery fats/margarine, and de-oiled cakes.

Oil mills crush oil seeds and extract oil, 70% of which is sold in the open market. The remaining 30% is refined and sold as branded oil. After the extraction of oil, residual seeds are processed further by solvent extractors, to make solvent-extracted oil. Most of the solvent extracted oil is used to make ‘Vanaspati’, by hydrogenation and is similar to the milk product ghee and absorbs around 10% of the total edible oil supply in India.

The quantity and quality of waste generated from this industry depends upon the process involved and the efficiency of the system in minimizing the loss of oil during the separation. Process wastes are generated in solvent extraction, refining and vanaspati sections and the occasional floor washing and filter press washing are discharged from expellers. Wastewater from the vegetable oil industry contains mainly free and emulsified oil, oilcake particles as suspended impurities, dissolved fatty acids which contribute to COD & BOD and inorganic dissolved solids.

CPCB prepared a report, “COINDS for edible oil and vanaspati industries” in the year 1994 and Standards for ‘edible oil and vanaspati industries’ have been notified under the E (P) Rules, 1986. Since the earlier study report has become outdated, a revision of the same is being taken up, incorporating new trends and technologies that have evolved over the years in the industry sector. Similarly the standards and guidelines for the sector needs to reviewed according to the changes in manufacturing process and technology and hence the study is proposed.

**2.0 Objectives and Scope of work:**

Objective of the proposal is;

- ✚ To prepare/revise the comprehensive industry document of Edible oil and Vanaspati refinery industries including general information on the industry, its present status in India, its water and air pollution potential, different treatment options available, existing air and water pollution control technologies and related issues, solid/hazardous waste generation, treatment and disposal etc.
- ✚ To review the existing effluent and emission standards of Edible oil and vanaspati refinery Industry.

To fulfill the above said objectives, the following scope of work is envisaged;

**a. Part 1 - Interim report with collection & collation of information (General):**

1. Inventory of Edible oil and vanaspati refinery industries, based on scale of operation, their capacity and location
2. Classification industries, details of manufacturing process, material balance, pollution prevention and control technologies for pollution abatement.
3. Data on raw material, water, energy and other chemicals usage.
4. Characteristics of wastewater, different segments of generation, its treatment and management practices.
5. Characteristics of emission, emission sources and priority pollutants at various point and non-point sources and technologies adopted to control.
6. Quantification of solid waste/hazardous waste generation and its characterization, treatment and disposal methods.
7. Preliminary field visits to 10 industries in consultation with CPCB covering all products and process based on questionnaire survey for dry study.

**Submission of interim report with following deliverables:**

- ❖ Summary of questionnaire & literature survey and dry study results,
- ❖ Criteria for selection of units for detailed study and proposing units for detailed study for consideration of CPCB.
- ❖ Tentative list of monitoring/sampling locations like process streams, emission and effluent inlets, outlets and other intermediate operations to carry out overall performance evaluation of control systems
- ❖ Parameters to be analyzed in each emission/effluent sample monitored/collected and characterization of solid waste.

***The interim report will be submitted within six month from the date of award of work.***

**b. Part 2 - In-depth study and compilation of information:**

Based on the interim report submitted, in-depth studies are to be carried out at least in 10 representative industries, as approved by CPCB. CPCB will approve the list of monitoring/sampling locations and parameters. Identification of units to be monitored shall be based on the capacity, location, production technique followed, practices adopted for

treatment of their effluent & control of air emission and disposal system followed. The in depth study should include;

- ❖ Study of manufacturing process in detail, including all unit processes and unit operations.
- ❖ Identification and quantification of sources of pollution and pollutants in effluents and emission.
- ❖ Performance evaluation of ETP and air pollution control systems to review emission and effluent standards.
- ❖ Identification and characterization of Hazardous wastes/solid waste generated.
- ❖ Effluent analysis covering the relevant parameters of the sector including pH, B.O.D, C.O.D, oil & Grease, SS, TDS, Phosphate, Sulphate, Nickel, solvents including Hexane and any other parameter identified in the interim report.
- ❖ Monitoring of relevant parameters for source emissions and characterization of solid waste/hazardous wastes.
- ❖ Study also should involve preparation of material balance and water balance for respective industries.

The list of tentative parameters for monitoring is based on the standards already notified. However final conclusion will be after phase I report discussion. Monitoring and sampling shall be conducted by MoEF & CC recognized laboratory/NABL accredited laboratory.

***The in-depth study will be completed within fifteen (15) months from the date of award of work.***

### **c. Part 3 - Preparation of COINDS & Review of Environmental Standards:**

**Based on information submitted in the interim report and detailed information generated in studies a comprehensive industry document (COINDS) for the Edible oil and Vanaspati refinery industry sector shall be prepared with following deliverables.**

- Compiled field study results with interpretation and integrating with information presented in interim report giving environmental profile of the sector.
- Inventory of the sector with general description of various production processes with effluent and emission quantification and characteristics.
- Comparison of various plants, best treatment facilities and suggesting best practicable technology based on size of the plant/outcome of the study.
- Overall performance evaluation of pollution control systems.
- The report should also include characterization of hazardous waste/solid waste and details on its generation and guidelines for safe disposal.
- Best available techniques as observed in the units studied and as identified in literature survey.

### **Review/Development of Standards:**

- Standards for discharge of effluents are to be modified, if necessary, including new parameters based on the project outcome.
- The existing emission standard also should be reviewed.
- The rationale for fixing of standards and scope of their achievability will also be described.
- International environmental standards followed in the industry sector may be presented for comparison and interest
- The review/modification of standards needs to be presented before the Peer and core Expert committee of CPCB and has to be accepted by the committee.

### **5.0 Time Schedule**

A maximum of two years is allotted for the submission of final draft report to the Central Pollution Control Board from the date of receipt of first installment. The final report shall be presented before Peer & Core expert committee meeting for finalization of standards proposed.

### **6.0 Mode of Execution**

The project can be executed on MOU/Agreement basis. The Private firms and their consortium /Reputed Institute including CSIR lab or IITs/International reputed firms may indicate the concept and submit an approach paper along with cost of project, break-up in different heads i.e. manpower, analysis charges, transportation, laboratory facilities etc..

### **7.0 Mode of Payment**

The payment will be made after submission of bill and utilization certificate at different stages as detailed below in the following terms:

- I. 20 % of the consultancy fee after award and signed the MOU/agreement.**
- II. 10% of the consultancy fee after completion of Part 1 and submission of dry study report.**
- III. 20 % of the consultancy fee after completion of Part 2 and submission of in-depth study report.**
- IV. 30 % of the consultancy fee after submission of draft final report after Part 3.**
- V. 20 % of the consultancy fee after accepting the report by the Peer and core Expert committee of CPCB and MoEF & CC.**

#### **Terms and Conditions**

- I. The executing agency shall carry out the literature survey and questionnaire survey and submit the interim report after conducting preliminary visits.
- II. The Executing agency shall carry out the monitoring, sampling and analysis work in identified edible oil and vanaspati units during the period as mutually agreed upon.
- III. The list of identified units for which monitoring, sampling and analysis work shall be carried out, shall be finalized after preliminary visit.
- IV. The proposal should contain the details of the infrastructure / laboratory facilities available with the interested party or third party (in case of laboratory) and also provide

a list of personnel proposed to be deployed for the assignment, outlining specifically the qualifications & experience of each person relevant to this project and each member's role and responsibility.

The evaluation of the 'Technical Bid' shall be undertaken based on the following Criteria:

S No.	Criteria
1	Work Experience of the organization with documentary proof
2	Specific Experience relevant to the assignment with documentary proof
3	Technical approach and methodology
4	Qualification and competence of key staff with documentary proof
5	No. of scientific and technical persons
6	Facilities for analysis of parameters (In case of agency / third party)

- V. CPCB shall evaluate the technical bids received from the agencies/organizations and those agencies/organizations found eligible as per the criteria conditions shall only be considered for financial bid(s). Technical adequacy and capability shall be considered as the primary selection criteria.
- VI. Financial bids shall only be opened for technically qualified bids and It may be noted that mere quoting the lowest rates will not entitle any agency/organization to get the work order.
- VII. The agency can quote rate in lump sum for full project i.e. consultation and analysis costs.
- VIII. Service tax shall be paid as per the applicable norms and TDS shall be made as per rules applicable. Applicable Taxes shall be deducted at source.
- IX. All the short listed agencies/organizations are required to give technical presentation at CPCB, Delhi and technical presentation shall be a part of technical evaluation of the bids.
- X. The Executing agency shall deposit 10% of the project cost as bank guarantee after award of work against advance payment.
- XI. The Executing agency shall carry out the monitoring, sampling and analysis works as per the procedure and norms stipulated in 'Standard Methods or any other recognized method like IS or US EPA'.
- XII. The Executing agency shall co-ordinate with the concerned Zonal Offices of CPCB and local SPCBs officials for efficient monitoring and sampling works.
- XIII. The Executing Agency shall also provide the monitoring schedule to the concerned SPCBs /PCC and Zonal Offices of CPCB to ensure their participation in the monitoring& sampling works.
- XIV. All the information and data generated or collected during the execution of the work shall be treated as confidential and sole property of CPCB and the findings of the study as whole or partially shall not be published without prior permission of CPCB.
- XV. The project shall be implemented as per the rates finalized and CPCB will not provide any additional fund on account of any further cost escalation due to delay in project implementation or due to any other reasons.

- XVI. CPCB shall not bear any responsibility for the personnel engaged under the project.
- XVII. During the course of implementation of the project, the executing agency shall provide the information to the participating CPCB's officials regarding the methodologies/ techniques being adopted for implementation of the project.
- XVIII. The Executing Agency shall submit 3 copies of final draft report along with CD (Softcopy) on completion of the project. For any delay in submission of the final report beyond the specified period, penalty @ 1%per week of the project cost shall be charged subject to maximum penalty of 15% of the project cost.
- XIX. It shall be at the sole discretion of the Competent Authority, CPCB either to award the entire project or part of the project or reject any proposal without assigning reasons thereof.
- XX. Proposal being submitted must be signed by an authorized person representing the company/ firm.
- XXI. The parties submitting the proposal are requested not to erase or mutilate any word(s) or figures occurring in the quotation. The overwriting is not allowed.
- XXII. The bids shall be valid for a period of 06 months from the date of their opening.
- XXIII. In case of any dispute, the decision of the Chairman, CPCB will be final and binding to both the parties.

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