

LETTER OF INVITATION

Subject: CONTRACTING SERVICES FOR “INSTALLATION OF THE GEOTHERMAL SYSTEM AT THE GROUND FLOOR OF NEECA BUILDING”

Issue Date: 28th May, 2024

Submission Deadline: 10:30 AM, 13th June, 2024

Bids Opening Time & Date: 11:00 AM, 13th June, 2024

Dear Sir/Madam,

We are writing to invite you to submit a proposal for the above-mentioned services by the date and time mentioned above. The following documents, attached with this letter, are intended to enable you to submit a complete and responsive proposal.

2. Your offer comprising a technical proposal and a financial proposal, in accordance with the guidelines in Request for Proposal/Terms of reference, should reach the following address by the submission deadline:

Manager Admin
Energy Conservation Fund (ECF)
NEECA Building, Sector G-5/2, Islamabad
Telephone No. 051-2274431

3. Requests for additional information should be addressed to the above-mentioned officer in writing in accordance with the guidelines in Request for Proposal/Terms of reference.

4. Your technical and financial proposals should reach at the address given above on or before the last date mentioned for submission. Late submission of proposals will not be entertained.

5. You are requested to acknowledge receipt of this letter and let us know whether or not you intend to submit a proposal.

Regards,
Manager Admin
Energy Conservation Fund (ECF)

REQUEST FOR PROPOSAL

Energy Conservation Fund (ECF)

NEECA Building, Sector G-5/2, Islamabad.

Contact No. 051-2274431

**CONTRACTING SERVICES FOR “INSTALLATION OF THE GEOTHERMAL
SYSTEM AT THE GROUND FLOOR OF NEECA BUILDING”**

ENERGY CONSERVATION FUND (ECF)

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1 Instructions to Prospective bidders

- a. The purpose, nature and cost of the services required by means of this RFP are elaborated in the Terms of Reference (TOR).
- b. The Prospective bidder shall bear all costs associated with the preparation and submission of the Proposal, ECF will not be responsible or liable for those costs, regardless of the conduct or outcome of the solicitation.

1.1 Qualification of the Bidders

The following bidders will be eligible to apply for this tender:

1. Bidders registered with PEC/SECP/any other relevant council, and FBR (ATL) etc.
2. The applicant company should have a proven track record of expertise in the field.
3. The applicant company should have already implemented heat exchange projects in Pakistan with capacity of 20 tons or more.
4. The applicant company should have International recognition/experience for its technology and impact.
5. An affidavit stating that the bidder has never been blacklisted by any government agency or authority and that an affidavit to the effect that 5% earnest money has been placed in the financial proposal.

1.2 Solicitation of Documents

a. Contents for solicitation documents

Energy Conservation Fund (ECF) is inviting proposals from qualified and experienced in the geothermal system in Pakistan. ECF is dedicated to advancing energy efficiency and conservation efforts in our nation. The installation of a geothermal system at NEECA building marks a transformative leap toward a greener and more energy-efficient future. This state-of-the-art project not only reinforces ECF's commitment to innovation, cost-effectiveness, and environmental consciousness but also serves as a showcase to persuade stakeholders in both public and private buildings to adopt geothermal systems for enhanced energy efficiency. The success of the project will position ECF as a leader in sustainable building practices.

Implementing a geothermal system brings numerous benefits, making it an attractive option for sustainable construction. Its exceptional energy efficiency is a standout feature, leveraging the stable temperature of the Earth to provide heating and cooling solutions with significantly lower energy consumption than traditional HVAC systems. The pilot project, featuring four selected split air conditioning systems, is a strategic step toward the broader adoption of geothermal technology in the NEECA building. Upon the successful demonstration of this pilot, there are plans to convert the entire split system, spanning from the basement to the fifth floor, into a geothermal system in the future.

This technical proposal is hereby submitted to the worthy Managing Director of NEECA for thorough review and approval. Envisioning a NEECA building that

stands as a beacon of sustainable practices in the building sector, we anticipate your support in making this transformative project a reality. This state-of-the-art project not only reinforces ECF's commitment to innovation, cost-effectiveness, and environmental consciousness but also serves as a showcase to persuade stakeholders in both public and private buildings to adopt geothermal systems for enhanced energy efficiency.

Proposals must offer services for the total requirement. Proposals offering only part of the requirement will be rejected. The prospective bidder is expected to examine all corresponding instructions, forms, terms, and conditions contained in the Solicitation Documents. Failure to comply with these documents will be at the prospective bidder's risk and may affect the evaluation of the Proposal.

b. Clarification/Additional Information of solicitation documents

A prospective bidder requiring any clarification/ additional information of the Solicitation Documents may notify ECF in writing at the mailing address indicated in the RFP. ECF will respond in writing to any request for clarification/ additional information of the Solicitation Documents that it receives earlier than one week prior to the deadline for the submission of Proposals. Written copies of the response (including an explanation of the query but without identifying the source of inquiry) will be sent to all prospective bidders that have received the Solicitation Documents through email.

c. Amendments of solicitation documents

- i.** At any time prior to the deadline for submission of Proposals, ECF may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the Solicitation Documents by amendment.
- ii.** All prospective bidders that have received the Solicitation Documents will be notified in writing through email of all amendments to the Solicitation Documents.
- iii.** In order to afford prospective bidders reasonable time in which to take the amendments into account in preparing their offers, ECF may, at its discretion, extend the deadline for the submission of Proposals.

1.3 Preparation of Proposal

a. Language of the proposal

The Proposals prepared by the Prospective bidder and all correspondence and documents relating to the Proposal exchanged by the Prospective bidder and ECF shall be in the English language.

b. Documents comprising the proposal

- i.** A covering letter from the Prospective bidder that is in accordance with Annexure C;
- ii.** A technical proposal, including documentation to demonstrate that the Prospective bidder meets all requirements.
- iii.** A financial proposal completed.
- iv.** Experience of providing services to reputable corporate entities at national level along with proof.

- v. Bidders registered with PEC/SECP/any other relevant council (Readable Certified True Copy) latest by 2 months, and Active Taxpayer Status of (NTN & STRN) etc.
- vi. Bank maintenance Letter.
- vii. Affidavit on judicial paper that the firm has never been backlisted, 2.5 % Bid Bond (demand draft/ pay order) in favor of “Energy Conservation Fund” and Correctness of information.
- viii. CVs of Proposed Personnel’s which will be involved to deliver the assignment.

1.3.1 Technical Proposal

a. Preparation of Technical Proposal:

Technical Proposal should detail the capability and experience of delivering the services specified in the ToR. Bidder should be required to provide information as itemized in the “Selection Criteria” and the Prospective bidder shall structure its technical proposal as follows:

- i. Expertise of Prospective bidder (excluding letters of association, if any).
 - This section should highlight the corporate capability of the Prospective bidder, including the year and state/country of incorporation and a brief description of the Prospective bidder’s past and present activities. Publicity material such as brochures and other printed matter should not be included in the proposal.
- ii. Proposed Approach and Work Plan (excluding annexes, if required).
 - This section should demonstrate how the Prospective bidder proposes to undertake each of the activities required by the TOR in order to meet or exceed the requirements. This should include the approach proposed by the Prospective bidder for conducting Market Survey for lighting.
 - A clear timetable showing the timing of each activity and the dates of delivery of the outputs and deliverables identified in the TOR must be provided.
 - All the management arrangements, including arrangements for supervision, quality assurance, logistics, etc. should be addressed in this section of the proposal.
- iii. Proposed Personnel (maximum two pages for introduction/overview, team leader’s curriculum vitae and other proposed personnel).
 - All the proposed personnel must be identified by name and the position assigned in relation to the TOR.
 - Only information that is directly relevant to the requirements of the TOR should be provided.
 - Undertaking by all proposed personnel as per Annexure-D.
- iv. **General instructions**

- The technical proposal should not contain any financial information whatsoever on the services offered. Financial information shall be separated and only contained in the financial proposal.
- Information which the Prospective bidder considers proprietary, if any, should be clearly marked “proprietary” next to the relevant part of the text and it will then be treated as such accordingly.
- During the term of agreement, the consulting firm/Corporate entity shall not change, without prior approval of ECF, the team of professional(s) and/or association with other entities as originally proposed in the technical proposal. ECF reserves the right to reject any such proposed change(s).
- The Prospective bidder(s) must include at least one reference in the proposal for verification by ECF. If deemed appropriate, ECF may visit the offices of bidder(s) at any stage for the purpose of technical evaluation before awarding the contract.
- The ECF permits consultants (individuals and firms, including Joint Ventures and their individual members) from Pakistan to offer consulting services for the project.
- Furthermore, it is the Consultant's responsibility to ensure that its Experts, joint venture members, Sub-consultants, agents (declared or not), sub-contractors, service providers, suppliers and / or their employees meet the eligibility requirements.

1.3.2 Financial Proposal

a. Preparation of Financial Proposal and its Validity:

- i. Each Financial proposal for the whole assignment will relate to the estimates of the cost of undertaking each task/assignment. The total cost (grand total) should be all-inclusive, lump-sum amount (fixed price) in Pak Rupees. **Open-ended financial proposal shall be rejected.**
- ii. The Prospective bidder (s) shall hold the financial proposal valid for at least Six (06) Months from the last date of submission of proposals, during which time the Prospective bidder will maintain, without change, the cost and the personnel proposed for the assignment. ECF will make every effort to select a consulting firm/Corporate entity within this period.
- iii. The Prospective bidder shall provide a detailed budget for satisfactory completion of required services, and this budget shall provide for all the costs which the TOR requires the Prospective bidder to bear. The budget must be consistent with all aspects of the technical proposal, including the approach, work plan, activities, outputs, personnel and level of effort proposed by the Prospective bidder.
- iv. A separate line item for the level of effort, unit rate and cost of each consultant/firm’s services should be provided. Similarly, the Prospective bidder must show separate line-item estimates, including unit rates, for all significant out-of-pocket costs (e.g., travel, hotel, communication, vehicle rental, printing and publication, etc.).
- v. Furthermore, the bidder should also keep in view the bill of quantity in Annexure-E, while providing the cost.
- vi. Bidder must mention all applicable taxes in the financial proposal.

b. Proposal Currency

All prices shall be quoted in Pak Rupees.

c. Period of validity of proposals

- i. Proposals shall remain valid for Six (06) Months from the last date of submission of proposals. A Proposal valid for a shorter period may be rejected by ECF on the grounds that it is non-responsive.
- ii. In exceptional circumstances, ECF may solicit the Prospective bidder's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing. Any Prospective bidder granting the request will not be required nor permitted to modify its Proposal.

2 Submission of Proposals

a. Sealing and marking of proposals

- i. The Prospective bidder shall seal the Proposals in one outer and two inner envelopes, as detailed below:
 - I. The outer envelope shall be addressed to the officer identified in the RFP, and marked **RFP: "Installation of the Geothermal System at the Ground Floor of NEECA Building."**
 - II. Both inner envelopes shall indicate the name and address of the Prospective bidder. The bidder(s) will submit 3 copies of technical proposal with the copies duly marked "Copies" and three 3 copies of financial proposal with the copies duly marked "Copies", placed in separately sealed envelopes, clearly and appropriately marked as "Technical and Financial Proposal" respectively. These two sealed and clearly marked envelopes should then be placed in an outer envelope. If the inner envelopes are not sealed and marked as per the instructions in this clause, ECF will not assume responsibility for the Proposal's misplacement or premature opening. **[Add electronic copy in flash drive in original envelope]**

- ii. The envelopes must also clearly bear the instructions as:

"Do not open, except in the presence of Consultant/firm/Selection Committee (SC)"

- iii. All the pages of the financial proposals should be initialed by the person or persons duly authorized for signing the proposals. The proposals must contain no interlineations or overwriting except as necessary to correct errors made by the Contracting Firm /Corporate Entity. In that case the person or persons signing the proposal must initial such corrections.
- iv. Bid Bond at the rate of 2.5% of grand total amount of financial proposal applied by the bidder in the form of Bank Draft/Pay Order shall be submitted by the Contracting firm/ Corporate entity in the name of **Energy Conservation Fund (ECF)** along with the financial proposal. This bid bond will be forfeited in case of non-compliance to the terms by the selected consulting firm/ Corporate entity as a penalty. Upon successful completion of assignment, the bid bond will be returned to the Prospective bidder. After evaluation of Proposals by the Selection Committee (SC), the bid bonds will be returned to the rejected (unsuccessful) Prospective bidders. If the bid bond is not accompanied with the proposals, the proposals will be rejected. In case, none of the bidder qualifies the evaluation criteria (60% Marks), the bid bonds will be returned to the all unsuccessful Prospective bidders.

- v. A Proposal submitted by a Joint Venture shall be signed by all members so as to be legally binding on all members, or by an authorized representative who has a written power of attorney signed by each member's authorized representative.

b. Deadline for submission of proposals

- i. Proposals must be received by ECF at the address specified in the RFP, no later than the date and time indicated in the RFP.
- ii. ECF may, at its own discretion extend this deadline for the submission of Proposals by amending the solicitation documents in accordance with clause sec (1.1), clause (c): Amendments of Solicitation Documents, in which case all rights and obligations of ECF and Prospective bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

c. Late Proposals

Any Proposal received by ECF after the deadline for submission of proposals shall be rejected.

d. Modification and withdrawal of Proposals

- i. The Prospective bidder may withdraw its Proposal after the Proposal's submission, provided that written notice of the withdrawal is received by ECF prior to the deadline prescribed for submission of Proposals.
- ii. No Proposal may be modified subsequent to the deadline for submission of proposals.
- iii. No Proposal may be withdrawn in the interval between the deadline for submission of proposals and the expiration of the period of proposal validity specified by the Prospective bidder in its covering letter.

3 Opening and Evaluation of Proposals

a. Clarification of proposal

To assist in the examination, evaluation and comparison of Proposals, ECF may at its discretion, ask the Prospective bidder for clarification of its Proposal. The request for clarification and the response shall be in writing and no change in price or substance of the Proposal shall be sought, offered or permitted.

b. Preliminary examination

- i. ECF will examine the Proposals to determine whether they are complete, whether any computational errors have been made, whether the documents have been properly signed, and whether the Proposals are generally in order.
- ii. Prior to the detailed evaluation, ECF will determine the substantial responsiveness of each Proposal to the Request for Proposals (RFP). For purposes of these clauses, a substantially responsive Proposal is one which conforms to all the terms and conditions of the RFP without material deviations. The determination of a proposal's

responsiveness is based on the contents of the Proposal itself without recourse to extrinsic evidence.

- iii. A Proposal determined as not substantially responsive will be rejected by ECF and may not subsequently be made responsive by the Prospective bidder by correction of the non-conformity.

c. Evaluation of Proposals

The evaluation of the bids will be done on Technical as well as financial basis, which will be on **80-20 rule**, i.e., 80% weightage will be given to Technical Bids and 20% to Financial Bids.

To qualify the technical evaluation, the Prospective bidder(s) will have to secure at least 60% marks and be within 10% of marks secured by the highest placed bidder(s). Aggregate scores below 60% shall mean that the proposal is not responsive, while the responsive proposal shall be rated in the range of 60 - 100 per cent. A technical proposal is liable to be considered not responsive, in case it does not contain any information or does not follow the instructions as specified in the "Request for Proposal".

3.1 Evaluation Criteria

i. Professional Capability of Consulting Firm / Corporate Entity 20% Marks

The consulting firm / company are expected to be equipped with professional skills to carry out all the tasks of the scope of work of this assignment effectively and efficiently.

- Number of completed relevant projects in last 05 years in Pakistan/abroad for at least 20 ton capacity (5 Marks for each project) 10% Marks
- Specific Experience of heat exchange system. 10% Marks

ii. Proposed Personnel 20% Marks

(A) Project Manager 10% Marks

- Team leader should have appropriate qualifications, experience and expertise in projects of similar nature for completing the activity described in the terms of reference. He should be at least a graduate in engineering field from HEC verified university with 05 years' experience with demonstrable projects to his credit. (5 Marks) (Higher qualifications and experience will be preferred) having diversified experience in energy sector and specifically in heat exchange system design and execution.
- CV of the project manager must include information on at least 2 successful completed projects related to heat exchange system, including information on when and for whom the activities were undertaken. (5 Marks)

(B) Other Professionals (Team Members) 10% Marks

Qualifications, capabilities and adequacy of key professional staff proposed to complete the assignment described in the terms of reference.

- **Design Engineer:** Academic Final Degree (2 marks for BSc Engineering, Msc Engineering) (3 marks for having 05 or above years of experience as design of heat exchange system)
- **Site Engineer:** (One profile) (2 marks for MSc, BSc in engineering, per developer) (3 marks for having 3 or above years of experience as design and execution of heat exchange system and other energy related projects.)

iii. Methodology, Work plan, Innovation 40% Marks

- Demonstration of understanding of the objectives 10 % Marks
- Quality and adequacy of proposed methodology to be used in the design and execution of heat exchange system. 10 % Marks
- Innovativeness and Proposed presentation 10% Marks
- Work plan/schedule/organization of work. 10% Marks

iv. Financial Bids.

The financial bid must be cost-effective without compromising on the quality of the Technical Bids. **20% Marks**

Total: 100% Marks

4 Award Of Contract

a. Award criteria, negotiation and award of contract

- i. ECF reserves the right to accept or reject any Proposal, and to annul the solicitation process and reject all Proposals at any time prior to award of contract, without thereby incurring any liability to the affected Prospective bidder or any obligation to inform the affected Prospective bidder or Prospective bidders of the grounds for ECF's action. For purposes of transparency, however, ECF may allow any Prospective bidders who requests to examine the results of the technical and financial evaluation of all proposals within the premises of ECF.
- ii. The Selection Committee (SC) shall evaluate the technical proposal received before deadline. The consulting firms/ companies who are technically qualified will be invited for a meeting to open financial proposals. The SC will determine if the financial proposals are complete and without computational errors, and they will be adjusted to correct any arithmetical errors.
- iii. ECF does not bind itself by the issuance of this "Request for Proposal" for selecting any consulting firm/ corporate entity and reserves the right to alter, add to, reduce, or cancel the services to be provided without assigning any reason.
- iv. ECF shall negotiate with the first-ranked Prospective bidder to obtain the best value for money in relation to the TOR. ECF reserves the right to demand any such change in personnel, approach and work plan that would enable the Prospective bidder to improve its responsiveness to the TOR.

- v. Prior to the expiry of the period of proposal validity, ECF will award the contract to the qualified Prospective bidder after combined evaluation of technical and financial proposals, and with whom ECF has successfully concluded contract negotiations on Work Plan / TORs etc.

b. Signing of the agreement

Within 7 (seven) days of receipt of the agreement the successful Prospective bidder with whom an agreement has been successfully negotiated shall sign and stamp the agreement and return it to ECF.

5 Confidentiality

Information relating to evaluation of proposals and recommendations concerning awards shall not be disclosed to the firms who submitted the proposals or to other persons not officially concerned with the process, until the successful firm has been notified that it has been awarded the contract.

6 Payment terms/Schedule

After the award of contract, the assignment is required to be completed within **6 weeks**. Phases of the assignment (as per ToRs) will be conducted in a sequence (one after the other). ECF will make payments, subject to the satisfactory approval of work for each task. Delivery of work and payment schedule will be as given below:

Sr.#	Milestone	% Amount	% Cumulative Amount
1	Week 0 - Mobilization	25%	25%
2	Week 2 - Barino/HDPE loop Insertion	30%	55%
3	Week 4 - Installation of Circulation/Exchangers	20%	75%
4	Week 6 - Testing and Commissioning of Project	20%	95%
5	05% to be retained till the warranty period of six months from the commissioning of the system	05%	100%

7 Delay and Non-Compliance

- i. Full amount of bid bond shall be forfeited by the ECF;
 - a) In case the consultant/firm doesn't comply with the terms of reference, or
 - b) Withdraws its bid after award of contract.
- ii. In case the consultant/firm doesn't deliver, the requisite deliverables by the specified time frame, ECF reserves the right to
 - a) Deduct Rs. 2,000/- per day from final payment until the completion of work, or
 - b) If the total deducted amount becomes equivalent to the bid bond value, the contract shall be terminated by ECF and the full amount of bid bond shall be forfeited in favor of ECF.

Terms of Reference

1. Background Terms of Reference

National Energy Efficiency & Conservation Authority (NEECA) is a federal authority established under the National Energy Efficiency & Conservation (NEEC) Act 2016. NEECA has the mandate for initiating, catalyzing, and coordinating all energy conservation activities in different sectors (Agriculture, Industry, Transport, Building and Power) of the economy. EE&C has emerged as a key area of intervention in lieu of energy security and its role in climate change mitigation. NEECA formulated the first ever National Energy Efficiency & Conservation (NEEC) Policy 2022 to implement EE&C agenda in Pakistan.

Provision of reliable, affordable, efficient, secure, and clean energy has become the primary driver for sustainable economic growth of a country. (EE&C) under the Goal 07 of the Sustainable Development Goals (SDGs) is key component of all kinds of policies and planning for energy sector. Pakistan's current energy saving potential is approximately 10-12 Million Ton of Oil Equivalent (MTOE). National Energy Efficiency & Conservation Authority (NEECA) has taken certain initiatives as a part of its mandate to exploit this energy saving potential to curb the energy sector challenges. NEECA believes that there is realization about the importance of EE&C but lack of awareness about the technical information and energy consumption behavior has become a missed opportunity. Further, by not including EE&C practices in daily life caused the energy saving potential untapped.

NEECA has initiated various behavior modification activities at national level to create a culture of conservation for sustainable development. Mainly, NEECA has initiated Energy Talks/ Thursday Series to cover the key dimension of EE&C in key sectors of the economy to highlight its importance. Similarly, continuous efforts are being made for behavior modification through social media platforms in the form of short documentaries, visuals and facts about various EE&C measures and strategies. The findings of the technical reports, energy saving potential in different sectors, causes of wasting energy resources and energy performance standards of different equipment and appliances further needs massive awareness raising to contribute to national level energy saving targets.

A. Objective

Objective

Geothermal systems are recognized for their unparalleled efficiency in heating and cooling. This project is poised to revolutionize energy performance of Ground floor of NEECA building, significantly reducing carbon footprint and operating costs of split air conditioning system at ground floor of NEECA building.

With the successful demonstration of this pilot project, the entire split system in the NEECA building, installed from the basement to the fifth floor, will be converted into a geothermal system in the future.

B. Scope of Work

1. The selected firm is expected to develop an approach and methodology for “Proposal for Geothermal System Installation at Ground Floor of NEECA Building”. The specific scope of work including bill of quantity for this project is provided in Annexure-E.

2. The selected firm is expected to provide operation and maintenance services for the geothermal system for six months after installation of the system. The scope covers the below:

I. **Maintenance:** It includes the fixing the any issue during the operational phase of the geothermal system along with the efforts to keep system live and up. The services are:

- Install and operate the monitoring devices with the geothermal system to collect the data of energy saving for future data analysis and decision making.
- Supervise the process of periodic replacement of water from the geothermal system

3. There may be 20 % variation in the scope of work at discretion of the ECF.

C. Deliverable/Specific Outputs Scope of Work

The expected deliverables include

- Four bore holes for geothermal system
- Grouting the bore holes
- Installation of the HDPE pipes
- Installation of the circulation
- Development of Heat Exchanger
- Installation, testing and commissioning of complete system

The format of all deliverables will be agreed with the ECF during the assignment. All documents will be produced in English and will be submitted electronically and as hard copies to ECF.

D. Duration of Assignment

1. Development and implementation period for installation of the geothermal system will be 4-6 weeks.
2. The period for Maintenance and support service shall be till the warranty period.

General Conditions of Agreement

1. Legal Status

The Consultant/firm shall be considered as having the legal status of an independent consultant/firm Vis-à- Vis. The consultant/firm's personnel and sub-contractors shall not be considered in any respect as being the employees or agents of ECF/NEECA.

2. Source of Instructions

The consultant/firm shall neither seek nor accept instructions from any authority external to ECF/NEECA in connection with the performance of its services under this agreement. The consultant/firm shall refrain from any action which may adversely affect ECF and shall fulfill its commitments with the fullest regard to the interests of ECF.

3. Consultant/firm's Responsibility for Employees

The consultant/firm shall be responsible for the professional and technical competence of its employees and will select, for work under this agreement, reliable individuals who will perform effectively in the implementation of this agreement, respect the local customs, and conform to a high standard of moral and ethical conduct.

4. Assignment

The consultant/firm shall not assign, transfer, pledge or make other disposition of this agreement or any part thereof, or any of the consultant/firm's rights, claims or obligations under this agreement except with the prior written consent of ECF.

5. Sub-Consultant/firm

In the event that the consultant/firm requires the services of sub-consultant/firm, the consultant/firm shall obtain the prior written approval from ECF and clearance of all sub-consultant/firms. The approval of ECF of a sub- consultant/firm shall not relieve the consultant/firm of any of its obligations under this agreement. The terms of any sub-consultant/firm shall be subject to and conform to the provisions of this agreement.

6. Officials Not to Benefit

The consultant/firm warrants that no official of ECF has received or will be offered by the consultant/firm any direct or indirect benefit arising from this consultant/firm or the award thereof. The consultant/firm agrees that breach of this provision is a breach of an essential term of this consultant/firm.

7. Indemnification

The consultant/firm shall indemnify, hold and save harmless, and defend, at its own expense, ECF, its officials, agents, servants and employees from and against all suits, claims, demands, and liability of any nature or kind, including their costs and expenses, arising out of acts or omissions of the consultant/firm, or the consultant/firm's employees, officers, agents or sub-contractors, in the performance of this agreement. This provision shall extend, inter alia, to claims and liability in the nature of workmen's compensation, product liability and liability

arising out of the use of patented inventions or devices, copyrighted material or other intellectual property by the consultant/firm, its employees, officers, agents, servants or sub-consultant/firm's. The obligations under this Article do not lapse upon termination of this agreement.

8. Insurance and Liabilities to Third Parties

8.1 The consultant/firm shall provide and thereafter maintain insurance against all risks in respect of its personnel, property and any equipment used for the execution of this agreement that is required under the law of the land.

8.2 The consultant/firm shall, upon request, provide with satisfactory evidence of the insurance required under this Article.

9. Encumbrances/Liens

The consultant/firm shall not cause or permit any lien, attachment or other encumbrance by any person to be placed on file or to remain on file in any public office or on file with against any monies due or to become due for any work done or materials furnished under this agreement, or by reason of any other claim or demand against the consultant/firm.

10. Title to Equipment

Title to any equipment and supplies that may be furnished by shall rest with ECF and any such equipment shall be returned to ECF at the conclusion of this agreement or when no longer needed by the consultant/firm. Such equipment, when returned to ECF, shall be in the same condition as when delivered to the consultant/firm, subject to normal wear and tear. The consultant/firm shall be liable to compensate for equipment determined to be damaged or degraded beyond normal wear and tear.

11. Copyright, Patents and Other Proprietary Rights

ECF shall be entitled to all intellectual property and other proprietary rights including but not limited to patents, copyrights, and trademarks, with regard to products, or documents and other materials which bear a direct relation to or are produced or prepared or collected in consequence of or in the course of the execution of this agreement. At ECF's request, the consultant/firm shall take all necessary steps, execute all necessary documents and generally assist in securing such proprietary rights and transferring them to ECF in compliance with the requirements of the applicable law.

12. Use of Name, Emblem or Official Seal of

The consultant/firm shall not advertise the fact that it is a consultant/firm with ECF, nor shall the consultant/firm, in any manner whatsoever use the name, emblem or official seal of ECF, or any abbreviation of the name of ECF or ECF in connection with its business or otherwise.

13. Confidential Nature of Documents and Information

13.1 All reports, drawings, photographs, recommendations, estimates, documents and all other data compiled by or received by the consultant/firm under this agreement shall be the property of ECF, shall be treated as confidential and shall be delivered only to authorized officials on completion of work under this agreement.

13.2 The consultant/firm may not communicate at any time to any other person, Government or authority external to ECF, any information known to it by reason of its association with ECF which has not been made public except with the authorization of ECF; nor shall the consultant/firm at any time use such information to private advantage. These obligations do not lapse upon termination of this agreement.

14. Force Majeure; other Changes in Conditions

14.1 Force majeure, as used in this Article, means acts of God, war (whether declared or not), invasion, revolution, insurrection, or other acts of a similar nature or force which are beyond the control of the Parties.

14.2 In the event of and as soon as possible after the occurrence of any cause constituting force majeure, the consultant/firm shall give notice and full particulars in writing to ECF, of such occurrence or change if the consultant/firm is thereby rendered unable, wholly or in part, to perform its obligations and meet its responsibilities under this agreement. The consultant/firm shall also notify ECF of any other changes in conditions or the occurrence of any event which interferes or threatens to interfere with its performance of this agreement. The notice shall include steps proposed by the consultant/firm to be taken including any reasonable alternative means for performance that is not prevented by force majeure. On receipt of the notice required under this Article, ECF shall take such action as, in its sole discretion; it considers being appropriate or necessary in the circumstances, including the granting to the consultant/firm of a reasonable extension of time in which to perform its obligations under this agreement.

14.3 If the consultant/firm is rendered permanently unable, wholly, or in part, by reason of force majeure to perform its obligations and meet its responsibilities under this agreement, ECF shall have the right to suspend or terminate this agreement on the same terms and conditions as are provided for in Article 7, "Termination", except that the period of notice shall be seven (7) days instead of thirty (30) days.

15. Termination

15.1 Either party may terminate this agreement for cause, in whole or in part, upon thirty day's notice, in writing, to the other party. The initiation of arbitral proceedings in accordance with Article 16 "Settlement of Disputes" below shall not be deemed a termination of this agreement.

15.2 In the event of any termination by ECF under this Article, no payment shall be due from ECF to the consultant/firm except for work and services satisfactorily performed in conformity with the express terms of this agreement. The consultant/firm shall take immediate steps to terminate the work and services in a prompt and orderly manner and to minimize losses and further expenditures.

15.3 Should the consultant/firm be adjudged bankrupt, or be liquidated or become insolvent, or should the consultant/firm make an assignment for the benefit of its creditors, or should a Receiver be appointed on account of the insolvency of the consultant/firm ECF may, without prejudice to any other right or remedy it may,

terminate this agreement forthwith. The consultant/firm shall immediately inform of the occurrence of any of the above events.

16. Settlement of Disputes

16.1. Amicable Settlement

The Parties shall use their best efforts to settle amicably any dispute, controversy or claim arising out of, or relating to this agreement or the breach, termination or invalidity thereof. Where the parties wish to seek such an amicable settlement through conciliation, the conciliation shall take place in accordance with the Arbitration Act, 1940.

17. Observance of the Law

The consultant/firm shall comply with all laws, ordinances, rules, and regulations bearing upon the performance of its obligations under the terms of this agreement.

18. Authority to Modify

No modification or change in this agreement, no waiver of any of its provisions or any additional contractual relationship of any kind with the consultant/firm shall be valid and enforceable against ECF unless provided by an amendment to this agreement signed by the authorized official of ECF.

19. Taxation

Income Tax, Sales Tax or any other applicable tax will be deducted from the payments as per provisions of the Income Tax Ordinance 2001.

20. Authority of Member in Charge

In case the Consultant is a Joint Venture, the members hereby authorize the member specified in the Joint Venture agreement to act on their behalf in exercising all the Consultant's rights and obligations towards the Procuring Agency under this Contract, including without limitation the receiving of instructions and payments from the Procuring agency.

**Points for Inclusion in Prospective Bidder's
Covering Letter**

Mandatory

- The date of submission must be clearly indicated.
- Use letterhead or provide the complete address, telephone number and facsimile number.
- The Prospective bidder must confirm that the services specified in the solicitation documents, including the TOR, will be completed within the time stipulated by ECF in these documents.
- The Prospective bidder must confirm that the technical and financial proposals are valid for Six (06) months from the date of submission of proposals.
- The signatory must be an authorized officer of the Prospective bidder.
- The covering letter should not be longer than 1,500 words.

Optional

- Briefly state, in two or three paragraphs, why you feel qualified to offer the services required by ECF.
- Provide the name of the contact person and relevant contact information, such as telephone number, email address and mobile phone number.

**Undertaking
For professional(s)/consultant/firm(s)**

I, the undersigned, hereby permit M/s. _____
to designate me as a professional in their technical proposal specifically for the purpose of completing
the activities mentioned in Scope of Work. Further, I confirm my availability during the term of
conduct of this activity.

Signature: _____

Name: _____

Date: _____

1 Project Summary

The proposed Geothermal System is designed as a Vertical Closed Loop Geo-Exchange Retrofit System, integrating seamlessly with current split air conditioning infrastructure at ground floor of NEECA building. With a tentative capacity of 6 tons (72,000 Btu/hr.) and a unique loop design involving four 400 ft deep and 7inch dia bores, the system promises to bring about efficiency gains ranging from 35% to 45%. For the pilot project, four split air conditioning systems have been selected. With the successful demonstration of this pilot project, the entire split system in the NEECA building, installed from the basement to the fifth floor, will be converted into a geothermal system in the future.

2 Detail of the Project

2.1 Project Type

A 6-ton Vertical Closed Loop Geo-Exchange Retrofit System as a pilot project to enhance energy efficiency at NEECA building.

2.2 Capacity (tentative)

Integration with 6 Ton (72,000 Btu/hr.). Heating + Cooling split type units.

2.3 Loop Design

400 ft/7inch x 4 bores (as marked)

2.4 Power Consumption by the System

The geothermal system will only consume 100 watt/ton in operation phase.

2.5 Efficiency gains (Expected)

The targeted efficiency gains of 35-45% for this geothermal system.

2.6 Project Time Line

The installation of this geothermal system will be completed in 4-6 weeks' time.

Activity ID	Activity	Duration (Weeks)	Span (Weeks)					
			1	2	3	4	5	6
1.1	Sub-soil boring and grouting.	3	Yellow	Yellow	Yellow			
1.2	Installation of Geo-Loops.	2		Red	Red			
1.3	Installation of Circulation System.	2			Orange	Orange		
1.4	Installation of heat exchangers.	2				Blue	Blue	
1.5	Testing and commissioning.	1						Green
	Total Duration	6						

2.7 Project Bill of Quantities

S.No.	Description	Unit	Quantity
1.1	Sub-soil boring of required 7" dia in all kinds of soil (common, soft rock-hard rock) to required depth.	Rft.	1600
1.2	Grouting of Borehole according to thermal conductivity.	Rft.	1600
1.2	Supply and fixing of Geothermal HDPE pipes PN-12.5 of 40-mm outer dia for closed loops and design pressure including welding, fittings, elbows, tees, flanges complete etc and testing and commissioning.	Rft	3200
1.3	Provision and installation of circulation pump with all accessories and fitting etc. complete	Nos.	4
1.4	Development of Heat Exchanger with Enclosure	Nos.	4
1.5	Supply, Transportation, Installation, Testing & commissioning of all systems.	Nos.	4
1.6	Miscellaneous including Monitoring Devices	-	-

3 Project Execution

Side galleries shall be utilized for boring of up to 400ft (7inch) dia bores and connected to the ground level outdoor units through underground piping. The physical appearance of the vicinity shall remain unchanged after backfill. Custom built Heat transfer jacket with enclosure to provide controlled microclimate (22-26 °C) for the increasing efficiency of the AC system for a Coefficient of Performance (COP) of 2.5 at ΔT of 20°C to a COP of 4.5 when ΔT is less than 5°C.

Note:

1. Taxes must be included in the proposal.
2. The cost is based on the 6.0 Tons of System.
3. System Warranty: The contractor must give the warranty of the system for its leakage and operation.
4. Functional Guaranty: The contract must give the guaranty that the system will save at least 40% of the energy consumption.
5. Contractor must mention the periodic maintenance cost of geothermal system if any.