Terms of Reference

Preparation of DPRs for Implementation of Energy Conservation Measures at a Government Establishment

1. KEY DATES AND DETAILS

Event	Dates
Closing Time for Submission of Proposals	22/08/2025 at 17:30 hrs IST
Pre-bid Queries from Bidders	11/08/2025 at 17:30 hrs IST Please send your queries to the following email ID only: procurement_gef6@iiec.org Pre-bid queries received after this deadline shall not be considered.
Method to Submit Proposal	**Proposals must be submitted to:** **Procurement Team** International Institute for Energy Conservation (IIEC) 944 Mitrtown Office Tower, 27 Floor, Suite no. S27089, Samyan Mitrtown, Rama IV Road, Wangmai, Pathumwan, Bangkok 10330, Thailand. ***E-mail:*** procurement_gef6@iiec.org The Bidder shall submit only an electronic version (in PDF format) of the proposal strictly in separate attachments as mentioned below – **Subject Line: Preparation of DPRs for Implementation of Energy Conservation Measures at a Government Establishment** **File 1: Technical Proposal (not more than 25 pages)** including expertise of firm/organization, approach, methodology, implementation/work plan and team members' CVs. The CV of each team member should not exceed 3 pages. However, CVs do not count as a part of 25 pages limit. **File 2: Financial Proposal (not more than 2 pages)** **File 3: Copy of Work Orders showcasing relevant experience. (not more than 15 pages)** **File 4: Certificate of Registration (legal status), Financial audited statement of last 3 years (not more than 15 pages)** (The proposal document should be single-spaced, 12-point Times New Roman font in Microsoft Word, at least one-inch

	margins) Proposals with conditional offers or variables, submitted in any manner other than as detailed in this section or submitted after the deadline, shall be deemed invalid and may be excluded from consideration.
Expected execution date of the Contract	01/09/2025

2. BACKGROUND

Energy conservation in buildings has become a crucial aspect of achieving global sustainability goals. As urbanization continues to increase, optimizing energy usage in both new and existing buildings is critical to reducing our carbon footprint. Among the various challenges in energy conservation, heritage buildings with historical and architectural significance present a unique opportunity to blend modern energy efficiency solutions with the preservation of cultural heritage.

Implementing energy conservation measures in older buildings with heritage value requires additional considerations to harmonize non-intrusive energy conservation measures with their historical character, optimizing inherent passive systems while sensitively integrating modern technologies to enhance performance without compromising architectural integrity. Over time, these heritage buildings have evolved to accommodate increased occupancy and modern amenities, often through ad-hoc integration of cooling systems and appliances that compromise their original design intent. Successfully implementing energy conservation measures in heritage buildings serves as a powerful demonstration of achieving net-zero goals while preserving historical architecture, inspiring similar transformations across the building sector.

As a part of the effort to diversify its programs, EESL is assessing the various opportunities to support the implementation of energy conservation measures in buildings in the national capital region, aiming to showcase pathways toward net-zero energy performance. The GEF-6 project is supporting EESL in this endeavour. With this background, IIEC is seeking to engage a consultant/agency to conduct a feasibility study leading to the preparation of a detailed project report for energy efficiency implementation in buildings.

Under the GEF-6 Cycle, the **Global Environment Facility (GEF)** is supporting **Energy Efficiency Services Limited (EESL)**, for the execution of the **"Creating and Sustaining Markets for Energy Efficiency"** Project. While **United Nations Environment Programme (UNEP)** is the implementing agency for this project, EESL is the 'executing agency'. The objective of this GEF project is to reduce greenhouse gas (GHG) emissions through energy efficiency through scaling up and new technology applications. Since the start of 2024, the **International Institute for Energy Conservation (IIEC)** has been assisting EESL as a technical executing agency in the execution of the tasks under the GEF-6 project.

3. ABOUT INTERNATIONAL INSTITUTE FOR ENERGY CONSERVATION (IIEC)

The International Institute for Energy Conservation (IIEC) was established in the USA in 1984 as a non-governmental, not-for-profit organization and has regional offices in India, the Philippines, and Thailand. IIEC's mission is to accelerate the global adoption of energy efficiency and renewable energy policies, technologies, and practices to enable economic and environmentally sustainable development. IIEC pursues this mission in

developing countries and countries in transition through fieldwork undertaken by its regional offices. For the last four decades, IIEC has been providing solutions to the problems posed by the rapidly increasing energy demand in developing and industrializing countries. IIEC works with governments and the private sector to develop, implement, and evaluate energy efficiency and renewable energy policies, programs, and projects.

4. STUDY OBJECTIVE

The primary objective of this feasibility study is to evaluate and recommend energy conservation measures for heritage buildings in the National Capital Region (NCR), ensuring a balance between energy efficiency and the preservation of architectural integrity.

The study aims to:

1. Evaluate energy-saving strategies to optimize inherent building systems.
2. Propose non-intrusive, modern, energy-efficient technologies including a cost-benefit analysis of the recommended measures in form of the Detailed Project Reports.

5. SCOPE OF WORK

The selected agency shall be responsible for conducting detailed surveys and identifying Energy Conservation measures that are cost-effective and implementable in the building*. The agency shall be responsible for the preparation of DPRs, developing BoQs, and technical specifications of the proposed ECMs, which can be directly incorporated in the tenders for public procurement.

The scope of work of the assignment is broadly categorized as follows:

1. Conduct a detailed energy/resource conservation audit of the building to map the baseline data relevant to energy-saving opportunities.
2. Develop layouts/SLDs of the building services and inventory of the equipment from the available building logs and observations from the survey. Agency shall assess the shifting requirements, design plan for new systems essential for retrofit/replacement of equipment identified under EE projects and integration plan with existing low side systems.
3. Identify the Energy conservation measures (ECMs) and analyse the energy saving opportunity, GHG emission impact, investment required, and economics for each ECM.
4. Develop suitable retrofit solutions, including specifications of the equipment, scope of the assignment, compatibility with existing systems.
5. Support in preparation of bidding documents on DPRs detailed below for procurement of agencies for execution of projects. The document shall comprise technology specification, scope of assignment, payment terms, deliverables, qualifying requirements of agency, rate reasonability sheet with respect to CPWD Schedule of Rates, General terms of conditions, special terms of conditions etc.,
6. Develop a Measurement and Verification (M&V) Plan for each energy-saving measure proposed, Quality Assurance Plan (QAP), Implementation plan and compliance plan for As-Build documentation.
7. Prepare Documentation of the changes/restoration/replacement options for statutory approval in compliance with heritage# restoration requirements for approval from concerned agencies, including PMO, HCC, Central Vista Committee, and NDMC requirements. The agency shall support in coordination/liaison with CPWD, building's authorities and other relevant agencies.

8. Prepare three (3) Detailed Project Reports (DPRs) for a large campus comprising multiple options of energy saving measures (ECMs), suitable for the execution of retrofitting projects outlined below and in accordance with the heritage preservation guideline:

Note *The buildings are in a large complex in New Delhi, having a contract demand of 3000-5000 KVA and multiple type of cooling & heating systems in the range of 2000-4000 TR. The broad areas of ECMs comprising interventions in cooling systems, lighting, pumping, real-time energy management system (RTEMS) and building management system (BMS) etc.,

#- For buildings of heritage value, any retrofit requires approvals, and the approval process may be facilitated with the knowledge support of the specialised organisations such as the Indian National Trust for Art and Cultural Heritage (INTACH).

The DPRs shall have the scope of EE retrofit projects covered under the ECMs on the following key areas as summarised below:

DPR 1: ELECTRICAL ENERGY EFFICIENCY PROJECTS UNDER ELECTRIC UTILITIES OTHER THAN HVAC:

(i) Electricity Distribution covering APFC, STATCOM. Assess the options for relocation of electrical utilities
(ii) Hot water generation (Sanitary)
(iii) Water Pumping System
(iv) Water efficiency
(v) Energy Efficient Lighting System
(vi) Real Time Energy Monitoring System

DPR 2: HEATING, VENTILATION AND AIR CONDITIONING PROJECTS:

(i) Retrofit of Central HVAC System, Options for expansion / relocation of the central cooling plant & equipment.
(ii) Unitary/Package AC (Efficiency improvement/integration with central HVAC)
(iii) Ceiling fans
(iv) Hot water generation/space heating (Heat Pump)
(v) Other saving opportunities (passive interventions, optimization and diversification of HVAC load)
(vi) Building Management System for HVAC, and other services.

DPR 3: THERMAL ENERGY EFFICIENCY PROJECTS:

(i) Energy cost reduction strategies through fuel switching
(ii) Clean Cooking

The following is the indicative structure of the DPRs:

(The final DPR structure and relevant information shall be as per the requirements of technology. The structure shall be finalised in consultation with IIEC, EESL, and the Client.

(i) Description of the buildings and systems.
Describe the current systems, operations, processes, data logs, layouts, energy SLDs, metering, and reporting of energy consumption, etc.

(ii) Energy Baseline Development covering impact on external and internal variables.
Describe in general terms how the baseline for each energy-saving measure is defined.

a. Variables affecting baseline energy use
   - State the variables such as operating hours, set point changes, etc.
   - Describe how each variable will be quantified, i.e. measurements, monitoring, assumptions, manufacturer data, maintenance logs, engineering resources, etc.

b. Define key system performance factors characterizing the baseline conditions, such as comfort conditions, lighting intensities, temperature set points, etc.

c. Describe baseline adjustment.
   - Parameters covering external and internal variable.
   - Details of equipment i.e. location, type, model, quantity, etc.
   - Desired uncertainty level
   - Sampling plan, including details of usage groups and sample sizes
   - Duration, frequency, interval, and seasonal or other requirements of measurements
   - Expected accuracy of measurements/monitoring equipment
   - Results of measurements and formulas for baseline adjustment.

d. Explain data analysis performed

(iii) Energy Savings estimation
   - Explain analysis methodology used
   - Detail all assumptions and sources of data
   - State equations used, savings calculation details, and detail any adjustments that may be required

(iv) Operational & Maintenance Cost Savings
   - O&M Savings Justification
   - Describe how savings are generated
   - Detailed cost savings calculations

(v) Total costs and savings
   - Post-Installation M&V Activities
   - Prepare a detailed project cost estimate and cash flow projections
   - Preparation of technical specifications with sufficient detail to support procurement

Design document preparation

Preparation of the baseline, assessment of hourly and seasonal cooling and heating demand profile, total Refrigerant quantity in equipment and rate of refrigerant replacement, including layouts and Architectural, MEP, and structural drawings (as applicable).
Complete planning of cable route, road crossing trench, manhole, etc, for MEP Services, including architectural and structural design and drawings, e.g, foundation, trench, shaft, etc, required for approvals and implementation of ECMs.

Preparation of BOQs, scope, detailed technical specification, and cost estimations as per CPWD schedule of rates/DSR and on market rates supported by a minimum 3 numbers of Techno-commercial quotes.
Preparation of the implementation plan.
Consultation meetings with Technology Service Providers (TSP), Client, EESL, & CPWD.
Measurement & Verification (M&V) plan.
Preparation of documentation assessing the heritage impact of the proposed interventions for statutory approvals.

Note: *During the preparation of the Detailed Project Report (DPR) and the documents, the bidder will need to interact with technology solution providers, Officials of CPWD overseeing civil and electrical work at the building, the building's authority, and specialized organizations such as INTACH.*

6. DELIVERABLES & TIMELINES

The shortlisted Organization/Agency is expected to complete the deliverables as per the timelines mentioned below-

Deliverables	Timeline
1) Inception Report	Within 7 days of the inception meeting
2) Draft DPR & Documents	Within 8 weeks from the date of the award of the contract
3) Final DPR & Documents	Within 12 weeks from the date of the award of the contract

7. SUBMITTAL & REPORTING

Interested organisations/agencies must provide information indicating that it is qualified to perform the services, along with budgetary quotes, by submitting separate proposals as described above via email to procurement_gef6@iiec.org with the subject as '***Preparation of DPRs for Implementation of Energy Conservation Measures at a Government Establishment'*** in the subject line by **22nd August 2025 at 17:30 hrs IST**.

Proposals should include the following information.

- Brief background about your organisation.
- Organizational & team's relevant experience.
- A narrative outlining the vision for the work along with the suggested methodology, work plan, and/or other technical inputs for the assignment.
- Team composition, individual qualifications & experience.
- References of similar projects/studies with contact details (email and telephone).
- Budget information. The Organization/Agency should submit a detailed cost proposal in USD only.

8. SCHEDULE OF PAYMENTS

S. No.	Milestone	Percentage of Total Contract Value (%)
1	Inception Report with Work Plan	20 % of the contract value
2	Submission & Approval of Draft DPR & Documents	30 % of the contract value
3	Submission & Approval of Final DPR & Documents	50 % of the contract value

9. QUALIFYING REQUIREMENTS

- Have a legal status in India enabling the firm to carry out the assignment.
- Have at least Ten (10) years of experience in carrying out assignments on Investment-Grade Energy Audits in buildings or Development of DPRs for implementation of Energy Conservation Measures in Buildings or similar nature of work in buildings/campuses.
- Experience in successfully carrying out at least 2 studies, on Investment-Grade Energy Audits in buildings or Development of DPRs for implementation of Energy Conservation Measures in Buildings or similar nature of work in buildings/campuses.
- Average annual turnover for the last three financial years should be at least USD 500,000.
- In addition to the above, preference shall be given to the bidders with:
    - Experience on any assignment involving energy audit of Heritage buildings.
    - Demonstrated experience of working with CPWD and other central government departments for assignments related to Investment-Grade Energy Audits in buildings or Development of DPRs for implementation of Energy Conservation Measures in Buildings or similar nature of work in buildings/campuses.

Note: Bidders shall submit the relevant supporting documents showcasing their qualifications and experience relevant to the qualifying criteria mentioned above. However, IIEC holds the right to seek any additional documents during the evaluation process as deemed necessary.

10. EVALUATION CRITERIA

The evaluation of bids shall be done on Quality Based Selection with **80%** (Eighty percent) weightage to technical score and **20%** (Twenty percent) weightage to financial bid. The following are the qualification criteria for the selection of an organization/agency.

- Pre-screening: All applications meeting the minimum eligibility criteria and conformance to the application content requirements will be evaluated by the Evaluation Committee (EC).
- The minimum technical score required to pass is 70%.
- Final Evaluation: The proposals will be evaluated based on the marks obtained as per the criteria provided below against each category by the EC.

Parameters	Marks	Maximum Marks
Quality of Technical Proposal ***Sub-Criteria:*** a. Adequacy of the proposed methodology in responding to the Terms of Reference. b. Technical approach and work plan. c. Specific experience of the proposed team members.	25 20 20	**65**
Specific experience of the Organization/Agency relevant to the assignment	15	**15**
Bid cost competitiveness	20	**20**
TOTAL		**100**

11. TEAM COMPOSITION AND EDUCATIONAL & PROFESSIONAL QUALIFICATIONS

S. No	Role	Minimum Number of professionals	Minimum Education Qualification	Minimum Experience Criteria
1	Project Lead	1	Master's degree in engineering /technology/ MBA	Should have at least 15 years of experience with at least 10 years of similar studies experience, preferably in buildings. Should have knowledge of Energy Efficiency Standards and Codes (e.g., **Energy Conservation Building Code** (ECBC), **National Building Code** (NBC), and **local heritage preservation regulations**).
2	Building Energy Efficiency Expert	1	Bachelor's degree in engineering / Architecture	Should have at least 10 years of experience with at least 05 years of similar studies experience, preferably in buildings/HVAC. Should have experience in conducting energy audits of **heritage buildings** or **historically significant properties**.
3	Energy Auditors	2	Bachelor's degree in engineering	Should be a BEE Certified Energy Auditor with at least 05 years of experience in energy audit; preferably in buildings.
4	Field Engineers	2	Bachelor's degree in engineering	Should have at least 3 years of experience in building energy audit; Experience with

S. No	Role	Minimum Number of professionals	Minimum Education Qualification	Minimum Experience Criteria
				all forms of audit requirements; Should have experience in managing field activities.

The agency shall also demonstrate the availability of backstopping support and adequate support staff/resources for supporting the project team in conducting various tasks of the assignment.

12. INSTRUCTIONS FOR BIDDERS

- Bidders are requested to submit the complete proposal as mentioned on Page 1 of this RFP document.
- Files/ Folders greater than 20 MB in size will not be delivered in the above-mentioned email ID, resulting in non-submission of the bids.
- The bidders can submit the proposal and documents in a maximum of two separate emails due to the size limitations of email as mentioned above.
- Submission of bids through any open source or links to shared drives such as Google Drive, OneDrive, WeTransfer, Dropbox, etc. shall not be entertained and will stand disqualified.
- Project references and the associated documentary evidence should be easily identifiable for ease of evaluation.
- Submission of Financials should indicate the component of local taxes, as applicable.

13. TERMS AND CONDITIONS

- JV/consortium or any kind of subcontracting will not be allowed for this assignment.
- The maximum cumulative liability of the Consultant/ agency entering a contract with the Client shall be limited to the Contract Value.
- IIEC is under no obligation to accept any proposal or part thereof received in response to this RfP.
- IIEC reserves the right to seek clarification or request any additional documents as deemed necessary. Furthermore, the IIEC reserves the right to modify or cancel the RFP (including extending the deadline for the receipt of proposals) without justification or compensation payable to the bidder.
- It will be at IIEC's discretion that it may accept a request for an interim payment based on the situation of the ongoing project.
- IIEC will not reimburse bidders' expenses, including those related to responding to this RFP. In case any additional tasks are required, the consultant should seek prior approval in writing from IIEC.
- Confidentiality: All data and information received from IIEC and partner organizations, provided to the agency for this assignment is to be treated confidentially and are only to be used in connection with the execution of these Terms of Reference (a specific separate confidentiality agreement may be agreed between the Consultancy and IIEC, if needed to provide information more freely). All intellectual property rights arising from the execution of these Terms of Reference are assigned to IIEC. The contents of written materials obtained and used in this assignment may not be disclosed to any third parties without the expressed advance written authorization of IIEC and its partner organizations.