



**Government of Nepal
Water and Energy Commission Secretariat
Singha Durbar, Kathmandu**

Expression of Interest (EOI)

(National Consulting Service)

For

**Preparation of Energy Audit Guidelines for Industrial, Commercial and
Domestic Sectors**

**Job No. : WECS/01/074/75
Budget Head: 308101**

January, 2018



EOI Document for Preparation of Energy Audit Guidelines

Abbreviations

CV	-	Curriculum Vitae
EA	-	Executive Agency
EOI	-	Expression of Interest
GON	-	Government of Nepal
PAN	-	Permanent Account Number
PPA	-	Public Procurement Act
PPR	-	Public Procurement Regulation
TOR	-	Terms of Reference
VAT	-	Value Added Tax
WECS	-	Water and Energy Commission Secretariat



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A. Request for Expression of Interest

Government of Nepal
Water and Energy Commission Secretariat (WECS)
Singha durbar, Kathmandu, Nepal

Date of First Publication: 2074/09/.....

Name of Project: Preparation of Energy Audit Guidelines for Industrial, Commercial and Domestic sectors

1. Government of Nepal (GoN) has allocated fund from Government Budget toward the cost of "**Preparation of Energy Audit Guidelines for Industrial, Commercial and Domestic sectors**" and intends to apply a portion of this budget to eligible payments under the Contract for which this Expression of Interest is invited for National Consulting Service.
2. The Water and Energy Commission Secretariat now invites Expression of Interest (EOI) from eligible consulting firms to provide the following consulting services:
 - a. **Objective:** The main objective of this consulting service is to prepare "**Energy Audit Guidelines for Industrial, Commercial and Domestic Sectors**".
 - b. **Scope of Work:** The scope of work for this consulting service is as follows:
 - **Establish Baseline figures on Energy Consumption**
 - Industrial Sectors (Cement Industries, Still Rolling Mills, Brick Kilns, Sugar Industries, Dairy Industries, Noodles Making Industries, Pulp and Paper Industries, Beverage Industries)
 - Commercial Sector (Commercial Bank "A" Class, 5 Stars Hotels, Commercial High Rise Building)
 - ✓ Domestic Appliances (Air Conditioners, Refrigerator, Lighting Fixtures, Washing Machines, Ovens, Rice Cooker, Water Heater, Induction Heater)
 - **Conduct Energy Audit**
 - Conduct an on-site inspection of the facility or appliance.
 - Process and equipment parameters during normal operations that need to be measured are identified and listed.
 - Duration and frequency of measurement, measurement location, instrument to be used etc. are established.
 - Suitable data collection format is developed.
 - Data collection format is used to record data during the data collection process.
 - Measurement plan should include following:
 - ✓ Collection of corresponding relevant variables, e.g. operating parameters, production data from the management
 - ✓ Recording measurement method, equipment suppliers specifications, perform mass and energy balance to the extent possible,
 - ✓ Interpreting results in the form of chart, graph or table.
 - Comparison of actual energy consumption with national, regional and international baseline figures
 - Identification of energy saving opportunities



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- Recommendation of energy saving measure
 - Analysis of various technology options for their suitability in terms of cost effectiveness.
 - Financial and technical Feasibility study of energy saving measure as applicable
 - Preparation of draft Energy Audit report for all sub sectors and appliances
 - provide step-by-step advice for industries to develop strategy to identify energy efficiency opportunities and development of action plans to implement the options
 - Compilation of specific energy consumption relevant to sectors under study as applicable in selected countries and regions.
- **Preparation of Energy Audit guidelines for Industrial, Commercial and Domestic sectors and dissemination**
3. Interested eligible consultants may obtain further information and EOI document free of cost at the address **Water and Energy Commission Secretariat, GoN, Singha Durbar within 15th** day of first date of publication during office hours or visit the client's website www.weecs.gov.np
 4. Duly completed EOI documents in hard copy should be submitted to the address mentioned below clearly mentioning the name of the job in sealed envelopes before 12 Noon (NST- Nepal Standard Time) within 16th day of date of first publication of this notice :

The Secretary,
Water and Energy Commission Secretariat
Singha Durbar, Kathmandu
Tel: 4211423, Fax: 4211425, Email: weecs@mos.com.np

5. The consulting firm can apply either in single or in JV. The number of consulting firms in a JV should not exceed three including the lead firm. In addition, same consulting firm is not allowed to enter into more than one JV for the Job.
6. The EOI documents received shall be opened at 14:00(NST) on the 16th day of date of first publication of this notice in the presence of the applicants or their authorized representatives whosoever wish to attend. Absence of the applicant or their authorized representatives, however, shall not obstruct or prevent the opening of the EOI in anyway.
7. In case the last date of obtaining and submission of the EOI documents happens to be a holiday, the next working day will be deemed as the due date but the time will be the same as stipulated. EOI documents received after the stipulated due date & time shall be considered late, summarily rejected and returned unopened.
8. EOI will be assessed based on **Experience of Consulting Firm [40 %], Capacity of Consulting Firm [10%]** and **Qualification of key personnel [50%]**. Based on evaluation of EOI, only shortlisted firms will be invited to submit technical and financial proposal through a Request for Proposal (RFP).
9. Minimum score to pass the EOI is 60 percent of the total EOI marks. Applicants obtaining at least 60% marks in the EOI evaluation process shall be considered as qualified firms. Only top six out of such qualified firms will be allowed to participate in RFP Process.
10. Request for Proposal (RFP) for this job will be subsequently issued to qualified short listed firms. The Quality and Cost Based Selection (QCBS) procedure will be used for final selection of the consulting firm.
11. WECS reserves the right to accept or reject any or all EOI applications with or without giving any reason whatsoever.



B. Instructions for submission of Expression of Interest

1. Expression of Interest may be submitted by a sole firm or a joint venture of consulting firms.
2. Interested consultants must provide information indicating that they are qualified to perform the services (descriptions, organization and employee and of the firm or company, description of assignments of similar nature completed in the last 7 years and their location, experience in similar conditions, general qualifications and the key personnel to be involved in the proposed assignment).
3. This expression of interest is open to all eligible consulting firms.
4. The assignment has been scheduled for a period of **18 months**. Expected date of commencement of the assignment is **Baisakh 2075 B.S.**
5. A Consultant will be selected in accordance with the **QCBS** method.
6. Expression of Interest should contain following information:
 - (i) A covering letter addressed to the representative of the client on the official letter head of company duly signed by authorized signatory.
 - (ii) Applicants shall provide the following information in the respective formats given in the EOI document:
 - EOI Form:Letter of Application(Form 1)
 - EOI Form:Applicant's Information (Form 2)
 - EOI Form:Work Experience Details (Form 3(A), 3(B) & 3(C))
 - EOI Form:Capacity Details (Form 4)
 - EOI Form: Key Experts List (form 5).
7. Applicants may submit additional information with their application but short listing will be based on the evaluation of information requested and included in the formats provided in the EOI document.
8. The Expression of Interest (EOI) document must be duly completed and submitted in sealed envelope and should be clearly marked as "EOI Application for Short-listing for the **"Preparation of Energy Audit Guidelines for Industrial, Commercial and Domestic Sectors"** .The Envelope should also clearly indicate the **name and address of the Applicant as mentioned in EOI notice**.
9. The completed EOI document must be submitted on or before the date and address mentioned in the **"Request for Expression of Interest"**. In case the submission falls on public holiday the submission can be made on the next working day. Any EOI Document received after the closing time for submission of proposals shall not be considered for evaluation.



C. Terms of Reference (TOR)

1. Background:

Commercially viable gas and oil reserves are yet to be identified. Some small reserves of coal are scattered in the country that are found mainly in the western region. Nepal is heavily dependent on imported fossil fuels, costing billions of Nepalese Rupees (NR) to fulfill the country's energy requirements. Nepal has tremendous hydroelectric power potential, estimated at around 83,000 MW, of which 44,000 MW is considered to be economically viable. However, only around 2.4 % of the economically viable hydropower potential has currently been developed. The present generation capacity has been unable to cope with the rising electricity demand and electricity consumers in several sectors have been affected by regular load shedding.

Shortages of electricity supply and the need to reduce imported fuels for electricity generation, has made it imperative for Nepal to develop its vast hydropower potential as one of the key national economic development policies. The private sector is now playing a more active role in hydropower development. As a result, the hydropower investment projects and corresponding electricity grid expansions, worth billions of rupees, are underway. Under such situation, Energy efficiency (EE) measure applied to different aspects of energy use and consumption could play an important role to secure energy supply in general and enhance productivity and competitiveness of the Nepalese industry and commercial sector in particular.

Energy cost is a major component in industrial sectors such as Cement Manufacturing, Steel Rolling Mills, Brick Kilns, Sugar Production, Dairy, Noodles Making and Pulp and Paper Industries. It is also a major cost component in commercial building operations. Electricity is also used significantly by household equipment such as Air Conditioners, Refrigerator, Lighting Fixtures, Washing Machines, Ovens, Rice Cooker, and Water Heater etc.

Based on advancements in energy efficiency practices and technologies, it is now possible to reduce energy cost significantly in the industries, buildings and domestic use without reducing the comfort, utility and productivity. More efficient household equipment's are also available in the market. It is essential to promote and encourage adoption of energy efficiency in all such aspect to realize energy savings. This can be achieved by initiating a systematic energy assessment of industries and commercial enterprises, followed by implementation of the most cost effective energy efficiency measures. Careful and educated selection of household equipment will also result in significant energy savings.

The basic purpose of developing the energy audit guidelines is to raise awareness of energy auditors involved in Industrial enterprises, commercial building owners/managers and general public on the benchmarking/energy audit/assessment process, and to guide them on the process of identifying and implementing energy savings opportunities that may exist in their industry, buildings and home. The guidelines also aim to provide useful inputs about energy efficient appliances and technologies available.

In general, the key features of Energy Audit Guidelines of Industrial, Commercial and Domestic sectors include:

- Helping to achieve reduction in energy use and carbon emissions in a systematic way;
- Providing guidance on how to benchmark, measure, document and report energy use;



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- Creating a clear picture of current energy use status, based on which new goals and targets can be set;
- Evaluating and prioritizing the implementation of new energy-efficient technologies and measures;
- Providing a framework to promote energy efficiency throughout supply chain;
- Making better use of energy consuming assets, thus identifying potentials to reduce maintenance costs or expand capacity;
- Demonstrating to the stakeholders that corporate commitment to comply with their best practice to protect the environment; and
- Fulfilling the associated regulatory requirements and responding with confidence to green trade barriers in global market
- provide useful inputs about energy efficient appliances and technologies available
- identifying and implementing energy savings opportunities

Invariably the ultimate objective of the guideline is to improve and incorporate energy efficiency in industries, commercial enterprise and domestic sector. Energy efficiency will enhance the energy security and at the same time improve environmental performance. It also gives opportunity to grow our economies, provide jobs and increase the number of people with access to energy as well as a range of other benefits. This undertaking is an attempt to bring together methodologies for assessing the impacts of a range of benefits that energy efficiency brings. Policy makers have their own priorities for economic growth and social development and energy efficiency can contribute in many of them.

Objectives of Energy Efficiency guidelines are derived from the long-term vision and goals of improving Energy Efficiency. In general, the process of developing an Energy Efficiency Guidelines may be grouped under the headings listed below. Stakeholder participation and communication should be ensured during the process:

- Energy review
 - Benchmarking
 - Baseline
- Review of national, regional and global practices
- Review of best available Energy Efficient Technologies
- Identification of areas for improvement
- Identification of Energy Efficiency options
- Classification of Energy Efficiency options on the basis of payback period
- Development of action plan

The organization must record and maintain an energy review with certain documented methodology and criteria. An energy review is a process to determine an organization's energy performance based on data and/or actual measurement, leading to identification of opportunities for improvement. The review provides useful information for the development of the energy baseline and the selection of energy performance indicators (EnPIs). It also establishes the monitoring capability to support effective continuous improvement of the energy performance in the future.

To conduct the review, the organization shall establish an equipment list and identify different energy use and obtain energy consumption details for a specified period, normally a full year on a monthly basis.

When conducting the energy review, the following items should be noted:

1. Major equipment with significant energy consumption should be itemized, i.e. energy consumption record should be provided for each piece of equipment;



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2. Installation of sub-meter to monitor and record the energy consumption (such as electricity, diesel, gas and steam) of each major equipment;
3. When measurement of actual consumption is not available, estimation of energy consumption by power rating and operating hours may be adopted. However, assumptions and justifications for energy consumption estimation shall be clearly stated;
4. The energy review should be updated when necessary to add new equipment and expel obsolete items; and
5. Replacement of estimation by actual data through measurement as far as possible to enhance the accuracy of the energy profile.

Hence the guideline provides step-by-step advice for industries to develop strategy to identify energy efficiency opportunities and development of action plans to implement the options. The Energy Efficiency Guidelines may also be used by national institutions to recommend strategies, policies, and measures to strengthen the institutional arrangements and capacities of the national institutions promoting energy efficiency. These guidelines provide inputs to concerned decision-makers of national energy efficiency organizations on the path to be charted, the process to be followed, and the synergy to be created among the various stakeholders in order to realize the energy efficiency goals set by the respective governments.

The intent of the guideline is to present an analytical framework that can be pursued to achieve energy efficiency goals. It highlights the fact that energy efficiency promotion is a cyclic process. Irrespective of whatever level of success a country/organization may have achieved, there is always scope for further improvement as traditional barriers to energy efficiency are lifted, and there are further technological innovations as energy price keeps rising. The analytical framework defines the three pillars (Path, Partners and Process) that lay the foundation to a sustainable energy efficiency action plan. Government officials concerned with the subject will be able to initiate a gap analysis for assessing their present status in the cyclic process of energy efficiency promotion.

Nepal has not yet developed any comprehensive national energy policy and the only available national policy relating to energy is the Hydro-Power Development Policy. This policy aims to encourage national and foreign private sector investment in the development of hydroelectric power in order to meet its future electricity demand. Under the present condition well-structured energy efficiency guidelines for Industrial, Commercial and Domestic Sectors could prove to be very useful in addressing the energy shortages prevailing in the country.

2. Objectives of the study

The main objective of study is to prepare Energy Audit Guidelines for Industrial, Commercial and Domestic sectors of Nepal. The Specific Objective of guidelines under consideration are:

- To establish baseline of energy consumption in the Industrial, Commercial and Domestic Sectors. Domestic sector should cover refrigerator, lighting fixtures, washing machine, vacuum cleaner, rice cooker, oven and air conditioner.
- To develop Energy Audit guidelines that would ultimately, prescribe energy efficiency improvement measures to reduce energy consumption, improve energy and environmental performance of industries, commercial enterprises and domestic appliances.
- To illustrate the cost benefit analysis of identified energy efficiency improvement ;
- To outline the typical barriers to enhance energy efficiency.
- To include and/or strengthen EE guidelines in relevant policies and legislations



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- Make suitable recommendation in the form of step by step approach and best practices to improve energy efficiency in industries, commercial enterprises and domestic appliances.

3. Scope of Work (Activities)

Prior to embarking upon preparing the Energy audit guidelines, various range of the activities need to be conducted. The scope of work includes, but is not limited to, the following:

A. Establish Baseline figures on Energy Consumption

The consultant will establish a baseline of energy consumption for each sector and appliances as listed below:

- Industrial Sectors
 - ✓ Cement Industries
 - ✓ Steel Rolling Mills
 - ✓ Brick Kilns
 - ✓ Sugar Industries
 - ✓ Dairy Industries
 - ✓ Noodles Making Industries
 - ✓ Pulp and Paper Industries
 - ✓ Beverage industries
- Commercial Sector
 - ✓ Commercial Bank “A” Class
 - ✓ Five Stars Hotels
 - ✓ Commercial High Rise Building
- Domestic Appliances
 - ✓ Air Conditioners
 - ✓ Refrigerator
 - ✓ Lighting Fixtures
 - ✓ Washing Machines
 - ✓ Ovens
 - ✓ Rice Cooker
 - ✓ Water Heater
 - ✓ Induction Heater
 - ✓ Water Pump
 - ✓ Electric Fan

Baseline study must be centered on primary and secondary data collected during the literature review and field survey. Regional and international baseline figure also should be established through appropriate literature review. Baseline figure should be for all types of energy used and should be for suitable data period but in any case should include data of immediate past two years.

B. Conduct Energy Audit

- Conduct an on-site inspection of the facility or appliance.
- Process and equipment parameters during normal operations that need to be measured are identified and listed.



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- Duration and frequency of measurement, measurement location, instrument to be used etc. are established.
- Suitable data collection format is developed.
- Data collection format is used to record data during the data collection process.
- Measurement plan should include following:
 - Collection of corresponding relevant variables, e.g. operating parameters, production data from the management
 - Recording measurement method, equipment suppliers specifications, perform mass and energy balance to the extent possible,
 - Interpreting results in the form of chart, graph or table.
- Comparison of actual energy consumption with national, regional and international baseline figures
- Identification of energy saving opportunities
- Recommendation of energy saving measure
- Analysis of various technology options for their suitability in terms of cost effectiveness.
- Financial and technical Feasibility study of energy saving measure as applicable
- Preparation of draft Energy Audit report for all sub sectors and appliances
- provide step-by-step advice for industries to develop strategy to identify energy efficiency opportunities and development of action plans to implement the options
- Compilation of specific energy consumption relevant to sectors under study as applicable in selected countries and regions.

C. Preparation of Energy Audit Guidelines and dissemination

- Conduct stakeholder consultation for all three sectors as given
 - ✓ Industrial
 - ✓ Commercial
 - ✓ Domestic
- Conduct National workshop
- Prepare guideline to fulfill the requirement laid down as per the objective for all i.e., industrial, commercial and domestic sectors
- Stakeholders consultation and presentation of draft Energy audit reports and guidelines
- Finalization of Energy audit reports and Energy Audit guidelines
- Dissemination workshop

4. Study Approach

The study approach suggested are but not limited to the followings:

i) Consultation process:

The study will be conducted with due consultation with related agencies, professionals, academicians etc. Consultation workshops and meetings will be conducted as indicated in section 7 below with participants of different institutions and individuals with consent from WECS.

ii) Desk Study:

The Consultant shall carry out the proper desk study before field work.

- Literature survey on Energy Efficiency and Energy audit practices adopted within Nepal and elsewhere.



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- Review of national, regional and international Energy Efficiency guidelines for the similar sectors, if any.
- Review of regulation/standards/guidelines for Energy efficiency from different sources and elsewhere as applicable to Nepal. Include the current situation of the developed, emerging and developing countries as much as possible.
- Examine the legal requirements pertaining to EE standards and acts, as applicable in selected countries and regions.

iii) Field Visit

Field work related to energy audit of industrial, commercial and domestic sectors to be conducted frequently as soon as possible from the date of agreement. The consultant shall prepare and submit the work plan to WECS as a part of the Inception Report and get approval prior to the field visit. During the field work the consultant shall involve WECS Staff. All the costs incurred during the field work for logistics, equipments (Thermal Imaging Camera, Lux meter, Power analyzer, Combustion analyzer, Digital Camera, Clamp ampere meter, Thermo meter, Humidity meter Gas analyzer, Co2 meter etc.) hired for audit work, allowances, and transportation etc. will be borne by the consultant. The Consultant shall carry out the energy audit of the following:

S.N.	A. Industrial Sector	Qty.
1	Cement Industries	4
2	Steel Rolling Mills	4
3	Brick Kilns	4
4	Sugar Industries	4
5	Dairy Industries	4
6	Noodles Making Industries	4
7	Beverage industry	2
8	Pulp and Paper Industries	3
	B. Commercial Sector	
1	Hospitals/Nursing Home	4
2	Commercial Bank "A" Class	4
3	Hotels "5 Stars"	4
4	High Rise Buildings "Shopping Malls"	4
5	Medical Store	3
	C. Domestic Sectors	
1	Air conditioners	4
2	Refrigerator	4
3	Lighting Fixtures	4
4	Rice cooker	4
5	Water Heater	4
6	Water pump	4
7	Electric Fan	4
8	Induction Heater	4
9	Washing Machines	4
10	Ovens	4



iv) Data Analysis:

After completion of the field work the Consultant shall carry out the detailed data analysis and prepare the reports of the relevant sectors. The Consultant shall submit all the reports of the analyzed data of field work. After the data analysis the Interim Reports shall be prepared and submitted.

v) Management of the study.

Management of the study is an essential part for the execution of the assigned task. In this regard, the consultant shall work in close coordination with the project management unit at WECS. For establishment of a proper coordination mechanism, the following approach will be adopted:

a. Staffing: A project coordinator from WECS will work in close coordination with the consultants for day to day execution and monitoring of the study. All the correspondences and coordination with WECS from the consultant side will be the responsibility of the team leader.

b. Office: Any office space and office set up is the responsibility of the consultant. All the cost incurred for office setup and logistics shall be borne by the consultant.

c. Equipments for Energy Audit: For field Audit works, equipments like Thermal Imaging Camera, Lux meter, Power Analyzer, Combustion Analyzer, Digital Camera, Clamp ampere meter, Thermo meter, Humidity meter, Gas analyzer, CO₂ meter etc are required. The Consultants shall manage/hire all those required equipments. All the costs related to equipments shall be borne by the Consultant.

5. Deliverables:

In the process of preparation of Energy Audit Guidelines, the output of this study shall be in the form of reports with complied data, analysis and results in hard copy as well as in a digital form. The Consultants shall submit the following deliverables:

a) Inception Report: As soon as the study starts, the consultant shall prepare an Inception Report. In this report, the consultant shall elaborate: (i) Conceptual framework of the study, (ii) methodology, (iii) main tasks, (iv) work and staffing plans, and (v) reporting program. The consultant shall submit 5(five) hard copies and 1(one) soft copy of the Inception report within one month from the date of agreement. The Consultant shall organize one-day consultation workshop to present Inception Report. WECS will provide comments and suggestions on the Inception Report. Thereafter, the final inception report will be re-submitted by the consultant and subsequently approved by WECS.

b) Interim Report : The Consultant shall submit 5(five) hard copies and 1 (one) soft copy of the Interim Report within 8(Eight) months after approval of the Inception Report. Before submission of the Interim Report , the consultant shall complete the Desk Study, Field work(energy audit) and data analysis of Industrial sectors. All the field visits of industrial sectors and measurements shall be completed by this reporting period. The Interim Report shall contain analyzed data and results of Industrial sectors including preliminary Audit Guidelines. It shall also contain a detailed work plan for the next phase of the study. During the field work period, the Consultant shall submit the progress report after completing the field audit work of Industrial sector .The progress report shall contain detailed analyzed data and results of Industrial sectors. The Consultant shall organize one day workshop to present the Interim Report . WECS will provide comments and suggestions on the Interim Report. Thereafter, the Interim Report will be re-submitted by the consultant and subsequently be approved by WECS.



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c) Draft Report: The consultant shall submit 7(Seven) hard copies and 1(one) soft copy of the Draft Report after 8 (Eight) months of Interim report. After approval of Interim report , the consultant shall carry out field related work of Commercial and Domestic sector as well as analyze the Data. The Consultant shall submit the monthly progress report of Field Audit work of Commercial and Domestic sectors. The Draft report shall present the complete analysis and findings of the study along with guidelines for Industrial, commercial and domestic sectors. WECS may appoint a panel of experts to conduct an independent review of the Draft Report. The cost for such review shall be borne separately by WECS. WECS will provide comments and Suggestions on the Draft Report. Two days one night residential workshop shall be organized by the Consultant to present the Draft Report.

d) Final Report/Guidelines: The consultant shall incorporate all the comments and suggestions provided by WECS on the Draft Report and submit 10(Ten) hard copies and 1(one) soft copy of the Final Reports and 30(thirty) hard copies and 1(one) soft copy of Guidelines within 1(one) month after the approval of Draft Report. The Consultant shall submit the Energy Audit Guidelines both in English and Nepali.

6. Workshops and Meetings

The following workshops/meetings shall be organized by the consultant. The number of participants will be around 30 in each workshop.

- a. One-day workshop in Kathmandu to present and discuss the Inception Report
- b. One-day workshop/meeting in Kathmandu to present Interim Report
- c. Two –days one night residential workshop to present and discuss the draft report

All the costs involved in carrying out these workshops/meetings shall be borne by the consultant.

7. Staffing Requirements

The following are the requirements of experts for the study. However, the consultant may include additional experts during the project period without any additional expenses on the agreed amount.

S.N.	Description	Human Resource (Nos.)
1	Team Leader	1
2	Electrical Energy Expert	1
3	Thermal Energy Expert	1
4	Legal Expert	1
5	Economist/Financial Analyst	1
6	Mechanical/Industrial Engineer	1
7	Electrical Engineer	1
8	Supporting Staff	4



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The responsibility of the experts are, but not limited to, the following:

7.1. Team Leader

The team leader shall have substantial experience in the area of Energy Sector/Energy Efficiency/Energy Audit. S/he shall at least have Master's degree in Electrical /Mechanical/Industrial/ Renewable Energy Engineering/Energy Management with at least 10 years of professional experience in related field with specific experience in Energy Efficiency/Energy Audit / Energy sector / preparation of Policy/ Guidelines/ Manuals/Directives. S/he will be responsible to:

- Take full responsibility for the consulting team and as per the scope of work, provide overall direction to the consulting team, and coordinate between individual experts;
- Carry out extensive consultations with the key stakeholders obtaining suggestions and concurrence with the contents of the plan.
- In cooperation with WECS, carry out extensive consultations with the key stakeholders and obtain suggestions and concurrence as per the contents of the study;
- Prepare detailed schedules for the fieldwork and office works;
- Organize meetings and workshops ;
- Ensure timely delivery and quality control of the outputs required as per the scope of work.

7.2. Thermal Energy Expert

The thermal energy expert shall at least have Master's degree in Mechanical/Industrial/Renewable Energy Engineering/Energy Management with Bachelor's degree in Mechanical/Industrial Engineering. S/he shall at least have 10 years of professional experience in related field with specific experience in Energy Efficiency/Energy Audit / Energy sector / preparation of Policy/ Guidelines/ Manuals/Directives. S/he will be responsible to:

- Work closely with other members of the core technical team and assist the team leader.
- Carry out most of the fieldwork, diagnostic work and guideline preparation work
- Monitor, review and analyze the inputs provided by different experts in the team;
- Assist the Team Leader in timely delivery of all outputs and preparation of reports.

7.3. Electrical Energy Expert

The electrical energy expert shall at least have Master's degree in Electrical/ Renewable Energy Engineering/Energy Management with Bachelor's degree in Electrical engineering. S/he shall at least have 10 years of professional experience in related field with specific experience in Energy Efficiency/Energy Audit / Energy sector / preparation of Policy/ Guidelines/ Manuals/Directives. S/he will be responsible to:

- Work closely with other members of the core technical team and assist the team leader.
- Carry out most of the fieldwork, diagnostic work and guideline preparation work
- Monitor, review and analyze the inputs provided by different experts in the team;
- Assist the Team Leader in timely delivery of all outputs and preparation of reports.



7.4. Legal Expert

The Legal Expert shall at least have Master's degree in law with 10 years of professional experience in related field with specific experience in preparation of Policy/ Guidelines/ Manuals/Directives. S/he will be responsible to:

- Work closely with other members of the core technical team and assist the team leader.
- Preparation of framework and carry out most of the legal works related to energy audit guidelines
- Review and analyze the inputs provided by different experts in the team;
- Prepare the guidelines in the required format towards its submission & approval to the cabinet.
- Assist the Team Leader in timely delivery of all outputs and preparation of reports.

7.5. Economist/Financial Analyst

Economist/Financial analyst shall at least have Masters' degree in Economics/Finance/Commerce with at least 10 years of professional experience in project related to Economical/Financial Analysis. S/he will be responsible to:

- Work closely with other members of the core technical team and assist the team leader.
- Preparation of framework and carry out most of the economic and financial works related to energy audit guidelines
- Ensure that economic/financial assessments carried out are undertaken with correct methodologies.
- Assist the Team Leader in timely delivery of all outputs and preparation of reports.

7.6 Mechanical/Industrial Engineer

The Mechanical/Industrial Engineer shall at least have Bachelor's degree in Mechanical/Industrial Engineering with at least 5 years of professional experience in related field with specific experience in Energy Efficiency/Energy Audit / Energy sector / preparation of Policy/ Guidelines/ Manuals/Directives. S/he will be responsible to:

- Work closely with other members of the core technical team and assist the team leader.
- Carry out all the field work and data analysis related to Energy Audit
- Assist the Team Leader and Energy Expert in field work , data analysis, report preparation etc

7.7 Electrical Engineer

The Electrical Engineer shall at least have Bachelor's degree in Electrical Engineering with at least 5 years of professional experience in related field with specific experience in Energy Efficiency/Energy Audit / Energy sector / preparation of Policy/ Guidelines/ Manuals/Directives. S/he will be responsible to:

- Work closely with other members of the core technical team and assist the team leader.
- Carry out all the field work and data analysis related to Energy Audit
- Assist the Team Leader and Energy Expert in field work , data analysis, report preparation etc.



8. Work Schedule:

The Consultant shall complete the entire study project within a period of 18 months from the date of signing the agreement with WECS. It is the responsibility of the Consultant to plan in detail the work schedule and expert person-months schedule to complete the assigned work within the assigned time frame.

9. Payment Mode:

The payment schedule will be as mentioned in the table below

S.N.	Payments	Payment (%) of total contract amount	Preconditions of payment
1.	First Installment	25	After submission and approval of Inception Report
2.	Second Installment	30	After submission and Approval Interim Report
4.	Third Installment	25	After submission and Approval of Draft Report and Draft Guideline
5.	Fourth Installment	20	After submission and approval of Final Report and Final Manual

10. Language of the Report:

All the reports should be prepared and submitted in English. The Consultant shall submit the guidelines in the required format in both English and Nepali Language towards its submission & approval to the cabinet.

11. Time period:

Maximum time required for this study is estimated to be **18 months** from the date of signing the contract.

12. Competencies:

The Organization/Consulting firm should have the following competencies:

- a. Excellent communication skill, good working relationship with the government and other organizations, and ability to collect and analyze data and information;
- b. Excellent ability to quickly grasp and synthesize inputs from a range of disciplines related to this subject area; and

13. Qualifications:

The consulting firm should provide lists of qualified human resources with proven track records. The study team should comprise of specialist and/or knowledge-based human resources having required qualifications and experiences in relevant fields/thematic areas to carry out the works as included in the scope of this study. S/he should have fluent written and oral communication in English.



D. Evaluation of Consultant’s EOI Application

Consultant’s EOI application which meets the eligibility criteria will be ranked on the basis of the Ranking Criteria.

i) Eligibility & Completeness Test	Compliance
Notarized Copy of Registration Certificate of the firm(of each member of JV, in case of JV)	Consultant shall submit document
Notarized Copy of VAT & PAN Registration Certificate((of each member of JV, in case of JV))	Consultant shall submit document
Copy of Tax Clearance Certificate or tax submission certificate of FY 2073/74 (of each member of JV, in case of JV)	Consultant shall submit document
Self declaration letter of the firm(In case of JV, the Consultants should submit Self Declaration either separately or jointly by signing each member of JV)	Consultant shall submit document
Joint Venture Agreement between the JV Partners duly signed by authorized signatories & stamped with company seal of each member of joint venture & clearly mentioning name of the lead firm, name of JV Partners, role and responsibility of each members, name of the authorized signatories (in case of a JV)	Consultant shall submit document
Power of attorney of authorized signatories of JV agreement from their respective firm with signature & stamp for each member of JV (in case of a JV)	Consultant shall submit document
Power of attorney to lead firm by JV partners (in case of a JV)	Consultant shall submit document
EOI Form 1: Letter of Application	Consultant shall duly filled the given form
EOI Form 2: Applicant’s Information Form	Consultant shall duly filled the given form
EOI Form 3: Experience (3(A) and 3(B))	Consultant shall duly filled the given form
EOI Form 4: Capacity	Consultant shall duly filled the given form
EOI Form 5: Qualification of Key Experts	Consultant shall duly filled the given form

ii)	EOI Evaluation Criteria	Minimum Requirement	Score
A.	Evaluation of personnel		
	Experience of Personnel		50
	Team Leader	Minimum Master's degree in Electrical /Mechanical/Industrial/ Renewable Energy Engineering/Energy Management with at least 10 years of professional experience in related field with specific experience in Energy Efficiency/Energy Audit / Energy sector / preparation of Policy/ Guidelines/ Manuals/Directives.	
	Thermal Energy Expert	Minimum Master's degree in Mechanical/Industrial/Renewable Energy Engineering/Energy Management with Bachelor's degree in Mechanical/Industrial Engineering. S/he shall at least have 10 years of professional experience in related field with specific experience in Energy	



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		Efficiency/Energy Audit / Energy sector / preparation of Policy/ Guidelines/ Manuals/Directives.	
	Electrical Energy Expert	Minimum Master's degree in Electrical/ Renewable Energy Engineering/Energy Management with Bachelor's degree in Electrical engineering. S/he shall at least have 10 years of professional experience in related field with specific experience in Energy Efficiency/Energy Audit / Energy sector / preparation of Policy/ Guidelines/ Manuals/Directives.	
	Legal Expert	Minimum Master's Degree in law with 10 years of professional experience in related field with specific experience in preparation of Policy/ Guidelines/ Manuals/Directives.	
	Economist/Financial Analyst	Minimum Masters' degree in Economics/Finance/Commerce with at least 10 years of professional experience in related field with specific experience in Economical/Financial Analysis.	
	Mechanical/Industrial Engineer	Minimum Bachelor's degree in Mechanical/Industrial Engineering with at least 5 years of professional experience in related field with specific experience in Energy Efficiency/Energy Audit / Energy sector / preparation of Policy/ Guidelines/ Manuals/Directives	
	Electrical Engineer	Minimum Bachelor's degree in Electrical Engineering with at least 5 years of professional experience in related field with specific experience in Energy Efficiency/Energy Audit / Energy sector / preparation of Policy/ Guidelines/ Manuals/Directives	
B.	Experience of Consulting Firm (within last 7 Years)		40
	General Experience	Experience in planning/design/Energy sector/infrastructure development/	
	Specific experience	Experience in preparation of Policy/ Guidelines/ Manuals/Directives.	
C.	Capacity of Firm		10
a	Financial Capacity: Average Annual Turn Over of the best three fiscal years in recent last five consecutive fiscal years (in NRs.)	At least 20 Million	
b	Equipments : Equipments related to the proposed assignment	Equipments required for Energy Audit as defined in ToR	

Note: Curriculum Vitae (CV) of the key professionals shall be submitted with expert's original signature in blue indelible ink along with the notarized copy of the Nepal Engineering Council (NEC)'s certificate of the professionals required to be registered as per NEC Act, 2055 and Regulation, 2057, and Academic qualification Certificates shall also be submitted for each expert.



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EOI Forms & Formats

Form 1. Letter of Application

Form 2. Applicant's information

Form 3. Experience (General, Specific and Geographical)

Form 4. Capacity

Form 5. Qualification of Key Experts



1. Letter of Application

(Letterhead paper of the Applicant or partner responsible for a joint venture, including full postal address, telephone no., fax and email address)

Date:

To,

The Water and Energy Commission Secretariat

Singha Durbar, Nepal

Telephone No.: +977 1 4211415, 4211417, 4211421

Fax No.: +977 1 4211425

Email Address: wecs@mos.com.np

Sir/Madam,

1. Being duly authorized to represent and act on behalf of (hereinafter "the Applicant"), and having reviewed and fully understood all the short-listing information provided, the undersigned hereby apply to be short-listed by **Water and Energy Commission Secretariat** as Consultant for **WECS/01/074/75** "Preparation of Energy Audit Guidelines for Industrial, Commercial and Domestic sectors" .
2. Attached to this letter are copies of original documents defining:
 - a) the Applicant's legal status;
 - b) the principal place of business;
3. **Water and Energy Commission Secretariat** and its authorized representatives are hereby authorized to verify the statements, documents, and information submitted in connection with this application. This Letter of Application will also serve as authorization to any individual or authorized representative of any institution referred to in the supporting information, to provide such information deemed necessary and requested by yourselves to verify statements and information provided in this application, or with regard to the resources, experience, and competence of the Applicant.
4. **Water and Energy Commission Secretariat** and its authorized representatives are authorized to contact any of the signatories to this letter for any further information.¹
5. All further communication concerning this Application should be addressed to the following person,

¹ Applications by joint ventures should provide on a separate sheet, relevant information for each party to the Application.



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Ms. Kiran Gautam
Senior Divisional Engineer
Water and Energy Commission Secretariat
Singha Durbar, Nepal
Telephone No.: +977 1 4211415, 4211417, 4211421
Fax No.: +977 1 4211425
Email Address: weecs@mos.com.np

6. We declare that, we have no conflict of interest in the proposed procurement proceedings and we have not been punished for an offense relating to the concerned profession or business and our Company/firm has not been declared ineligible.
7. We further confirm that, if any of our experts is engaged to prepare the TOR for any ensuing assignment resulting from our work product under this assignment, our firm, JV member or sub-consultant, and the expert(s) will be disqualified from short-listing and participation in the assignment.
8. The undersigned declares that the statements made and the information provided in the duly completed application are complete, true and correct in every detail.

Signed :

Name :

For and on behalf of (name of Applicant or partner of a joint venture):



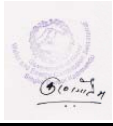
EOI Document for Preparation of Energy Audit Guidelines

2. Applicant's Information Form

(In case of joint venture of two or more firms to be filled separately for each constituent member)

1. Name of Firm/Company:
2. Type of Constitution (Partnership/ Pvt. Ltd/Public Ltd/ Public Sector/ NGO)
3. Date of Registration / Commencement of Business (Please specify):
4. Country of Registration:
5. Registered Office/Place of Business:
6. Telephone No; Fax No; E-Mail Address
7. Name of Authorized Contact Person / Designation/ Address/Telephone:
8. Name of Authorized Local Agent /Address/Telephone:
9. Consultant's Organization:
10. Total number of staff:
11. Number of regular professional staff:

(Provide Company Profile with description of the background and organization of the Consultant and, if applicable, for each joint venture partner for this assignment.)



3. Experience

3(A). General Work Experience

(Details of assignments undertaken. Each consultant or member of a JV must fill in this form.)

S. N.	Name of assignment	Location	Value of Contract	Year Completed	Client	Description of work carried out
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8						
9						
10						
11						
12						
13						
14						
15						



3(B). Specific Experience

Details of similar assignments undertaken in the previous seven years

(In case of joint venture of two or more firms to be filled separately for each constituent member)

Assignment name:	Approx. value of the contract (in current NRs)
Country: Location within country:	Duration of assignment (months):
Name of Client:	Total No. of person-months of the assignment:
Address:	Approx. value of the services provided by your firm under the contract (in current NRs;):
Start date (month/year): Completion date (month/year):	No. of professional person-months provided by the joint venture partners or the Sub-Consultants:
Name of joint venture partner or sub-Consultants, if any:	Narrative description of Project:
Description of actual services provided in the assignment: Note: Provide highlight on similar services provided by the consultant as required by the EOI assignment.	

Firm's Name: _____



4. Capacity

4(A). Financial Capacity

(In case of joint venture of two or more firms to be filled separately for each constituent member)

Annual Turnover	
Year	Amount Currency

Average Annual Turnover

--

(Note: Supporting documents for Average Turnover should be submitted for the above.)



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4(B). Equipment related to the proposed assignment

No	Equipment Required	Requirements Description
1.		
2.		
3.		
4.		
5.		



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5. Key Experts (Include details of Key Experts only)

(In case of joint venture of two or more firms to be filled separately for each constituent member)

SN	Name	Position	Highest Qualification	Work Experience (in year)	Specific Work Experience (in year)	Nationality
1						
2						
3						
4						
5						