



**NATIONAL PRODUCTIVITY COUNCIL
REGIONAL DIRECTORATE,
PATNA**

Advertisement No: NPC/PAT/1/2025-26

Date: 05/05/2025

Advertisement for Annual rate contact for hiring of instrument and technical support services for following activity:

- a. **conducting water audit study**
- b. **conducting energy audit study**
- c. **conducting safety audit study**

1. INTRODUCTION

National Productivity Council (NPC) is national level organization to promote productivity culture in India. Established by the Ministry of Industry, Government of India in 1958, it is an autonomous, multipartite, non-profit organization with equal representation from employers' & workers' organizations and Government, apart from technical & professional institutions and other interests. NPC is a constituent of the Tokyo-based Asian Productivity Organization (APO), an Inter-Governmental Body, of which the Government of India is one of the founder members.

NPC teams up with its clients to work out solutions towards accelerating productivity, enhancing competitiveness, increasing profits, augmenting safety, and reliability, and ensuring better quality. It provides a reliable database for decision-making, improved systems and procedures, work culture as well as customer satisfaction both internal & external. The solutions can be all-encompassing or specific depending on the nature of the problem. Promotional and catalytic in nature, NPC's services have bearings on economic growth and quality of life. The Council promotes a comprehensive view of productivity focused on improving triple bottom line – economic, environmental, and social and adds value for all the stake holders through generation & application of advanced knowledge for inclusive Growth. For further details, please visit our web site: www.npcindia.gov.in

Energy Management (EM) Division of NPC offers Consultancy / Training services since 1964. NPC has core strength of 30 EM professionals which include about 20 BEE certified Energy Auditors. The areas of expert services of this division are enlisted below:

- Energy Management and Audit in All Types of Industries, Commercial Buildings & Establishment, Power-Generating Plants, Distribution System.
- Water audit/Balance study in all types of industries.
- Demand Side Management Potential with Focus on the Industrial Sector.

- To Strengthen Policy Aspects and Increase Public Awareness of Energy Conservation Issues Through Modular Training Programmes for Senior, Middle and Shop Floor Level Executives.
- Technological Upgradation and Resource Conservation in SME's Through Cluster Approach.
- Providing Technical Expertise Services to APO Member Countries in Energy Efficiency.
- Providing Hands on Training at Centre Excellence For Training In Energy Efficiency And Indo-Japan Project On Regional Energy Efficiency Centre At Dr. Ambedkar Institute Of Productivity, Chennai, Sponsored By DIPP, With Support From BEE & NEDO, Japan.
- NPC Has Been Conducting the Prestigious National Certification Examination For Energy Managers And Energy Auditors On Behalf Of The Bureau Of Energy Efficiency (BEE), Ministry Of Power, India, Since 2004.

SECTION-1 Invitation of Techno-Commercial Proposals

1. NPC invites sealed offers from the firms having experience and expertise in conducting water audit, safety audit and energy audit (for providing the Instruments and technical support services) of industrial establishment as per on Annual Rate Contract Basis for a period of **one year only** and no escalation in the rates will be considered by NPC at any cost.
2. Agency/Vendors are advised to study the document carefully. Online Submission shall be deemed to have been done after careful study and examination of the bid document with full understanding of its implications.
3. Not more than one RFQ shall be submitted by one bidder or bidders having business relationship. Under no circumstance will father and his son(s) or other close relations who have business relationship with one another (i.e. when one or more partner(s)/director(s) are common) be allowed to tender for the same contract as separate competitors. A breach of this condition will render the tenders of both parties liable to rejection.
4. Agency/vendors that have downloaded the tender from the NPC website www.npcindia.gov.in shall not tamper/modify the tender form including downloaded price bid template in any manner. In case if the same is found to be tempered/modified in any manner, tender will be completely rejected, and tenderer is liable to be banned from doing business with NPC.
5. Bids will be opened as per date/time as mentioned in the Clause 6. After online opening of Technical-Bid the results of their qualification as well Price-Bid opening will be intimated.
6. Schedule for Invitation to Bid
 - a) Addressee and Address:
The Regional Director
National Productivity Council,
3rd Floor, Sudama Bhawan, Boring Road Crossing, Patna - 800001
Email: patna@npcindia.gov.in
 - b) Name of the Contact Person for any clarification:

JK Singh

Regional Director

National Productivity Council,

3rd Floor, Sudama Bhawan, Boring Road Crossing, Patna - 800001

Email: patna@npcindia.gov.in

c) Important Dates:

The following table provides information regarding the important dates of the Bid process:

CRITICAL DATE SHEET

Published Date	05th May 2025
Submission Start Date & Time	6th May 2024 from 11:00 Hrs.
Submission End Date & Time	19th May 2025 up to 11:00 Hrs.
Technical Bid Opening Date & Time	19th May 2025 , 15:00 Hrs.
Financial Bid Opening Date & Time	20th May 2025 , 13:00 Hrs.

7. Proposal Submission Process

- i. Agency/vendor needs to submit the technical detail and financial quotation for above mentioned work as separate attachments through email. (Separate attachments in PDF format).
- ii. Technical Bid Contains signed & scan copy of the advertisement inviting proposal, filled in Annexure-I and supporting documents.
- iii. The Financial quotations contain only the Annexure-II. Rate should be quoted per unit basis.
- iv. **Please note that Agency/vendor need to submit the financial quotation (in PDF file format) with password protection separately.**
- v. **Both the documents should be submitted via mail to patna@npcindia.gov.in on or before the specified date and time (no quotation/offer will be entertained after the stipulated date and time). No clarification would be sought by NPC after receipt of tenders. All the agency must ensure that their bid is complete in all respects and conforms to tender terms and conditions. Mail Subject may be filled with Advertisement Number (Advt. No: NPC/PAT/1/2025-26 Date: 05th May 2025)**
- vi. **After Bid Submission end date and time on successful qualifying the technical evaluation process, NPC will request (vide email: patna@npcindia.gov.in) to share the password of financial bid for evaluation. The password to be share through return email only.**
- vii. No email to share the financial bid password will be sent from NPC if the vendor does not meet the technical criteria(s).

8. Important Instructions

- i. **The financial quote to be as per the annexure-II and should clearly mention the professional fees for each region & water consumption wise.**
- ii. **The quoted rate should be valid for one year as per annexure-II. No claim for**

compensation or loss due to fluctuations in prices or any other reasons/ causes will be entertained during the period of contract.

iii. **Travel (TO/FRO) charges up to the unit location should be in the scope of Vendor/agency, however Boarding & Lodging will be provided by client end/NPC.**

iv. **Vendor/Agency should deploy minimum two experts and one instrument operator during the field study for minimum two days or completion of study.**

v. Even though proposal may satisfy the above requirements, the same may be disqualified for the following reasons:

- If misleading or false representation of facts are made or deliberately suppressed in the information provided in the forms, statements, and enclosures of this document.
- If they have a record of poor performance such as abandoning work, not properly completing the contract or financial failures/weaknesses.
- If confidential inquiry reveals facts contrary to the information provided by the agency/vendor or unsatisfactory performance in any of their previous engagement.

vi. All agencies must follow the project monitoring and quality review guidelines as decided by NPC on case-to-case basis.

vii. Any agency can be debarred if the performance during the execution of project or compliance to the guidelines is found to be unsatisfactory.

viii. National Productivity Council reserves the right to accept or reject any or all the quotations either fully or partly at any stage without assigning any reason. Further, NPC reserve the right to terminate the contract at any time during the contract period due to unsatisfactory performance of agency.

ix. All the information collected during the process of study is strictly confidential and no part of the work to be reported anywhere.

Section-2 Support to be provided to NPC

RD Patna intends to conduct Energy audit, safety audit and water audit study in Bihar and Jharkhand.

2.1 WATER AUDIT

1. RD Patna intends to conduct water audit study in Bihar and Jharkhand.

A detail study to be carried for water balance/conservation options of various water sources in the units in the following region,

Sr. No.	State	Water consumption per Day (KL/Day)		
		100-500	501-1000	More than 1000
1.	Bihar			

		Water audit study at all sector/type of industries as per Format provided by NPC.
2.	Jharkhand	

The Agency is expected to provide instrumentation support (as mentioned at Clause 2 of this section) and skilled manpower for measurement and data collection as per the scope of work. As per scope of work, **2 to 3 days** estimated for field studies in unit. The agency also to prepare a field measurement report as per the template provided by project Co-coordinator of NPC.

Details scope of study in above areas in view of following points. The services, including but not limited to Following, should be provided,

- The Agency/vendor has to provide the instrument at the project site along with technical qualified person to operate the instrument and assist NPC team for completing the field study.
 - The Agency/vendor has to do the Study of water sources (size, capacity, quantity, quality), Existing water distribution system, associated losses, Water usage for process, utilities, domestic & others , Identification of water consumption of each existing meter/sub-meter, Monitoring and measurements using pressure and flow meters and various other devices as required, Mapping of raw water, process, recirculating water, cooling & domestic, recycling & effluents, Study of various treatment & disposals schemes , Baseline Water Quantification - Draw a water map (water balance) for the entire factory premises to understand the water consumption area and pattern by carrying out flow measurement study. Preparation of detailed water balance schematic diagram, If required, study of existing pre-treatment system from design point of view with consideration of seasonal variations of inlet water quality and suggest areas of improvement w.r.t. operational efficiency, Calculation of Rainwater Harvesting Potential for the site , Estimating specific water use and conservation potential , Identification and Recommendations of projects based on reduce, reuse & recycle on water conservation
 - The Agency/vendor shall also required to submit the field measurement and other data taken during the field study. Specific format if required shall be provided by NPC after commencement of study.
 - The Agency/vendor shall also assist NPC team in compilation, analysis and formulation of report. Format for the same shall be provided on site.
2. The following instruments must be in possession of the agency at work site during the field study. Instruments should be owned by the bidder and all the instruments must have a valid calibration certificate in the bidder name. The detail of certificates to be submitted with the technical documents.

- a. **Ultrasonic Water Flow meter,**
- b. **TDS Meter,**
- c. **Clamp meter**
- d. **Thermometer**
- e. **pH meter**

3. Agency/vendor should have the experience of conducting minimum **10 nos.** of detailed water audit study in industries in last two year period and the list & supporting documents to be provided with the technical details. **Only Industrial experience** would be consider during the evaluation of documents. Agency should provide the complete detail about instruments with calibration report and information about their technical manpower.

4. Selection criteria:

NPC would assess the technical detail first and after qualification in technical, the financial quotation would be considered. Final Selection would be based on L1 (Least Cost System) criteria.

In case of identical financial bids by more than one bidder the following tie-breaker procedure will be adopted to break tie:-

- Average turnover of the bidder for last three financial year: more the turnover more the preference
- Duration of establishment: longer the period of establishment more the preference.

5. Duration:

This rate contract would be valid for one year period only. Water audit field study with report submission to be completed within 45 days of issuing the work order of each audit per unit wise. Hence, Agency/vendor team will be required to report to the client premises within a week from date of awarding the work.

6. Payment & Other Terms:

The agency would submit the bill and 100 % payment only after on completion of each study and acceptance of report by client (unit)/NPC.

2.2 ENERGY AUDIT:

1. NPC Patna intends to conduct Energy Audit in Bihar and Jharkhand. A detailed study to be carried for energy conservation options of various energy sources like Electricity and Fuel oil at mines/units.
2. The Agency is expected to provide instrumentation support (as mentioned at Clause 2 of

this section) and skilled manpower for measurement and data collection as per the scope of work. The agency also to prepare a field measurement report as per the template provided by Project Coordinator of NPC. All the information collected during the process of Audit are strictly confidential and no part of the work to be reported anywhere.

Following are the indicative list of systems for performance evaluation, but not limited to,

- A. Electrical Distribution System
- B. Lighting System
- C. Heating, Ventilation & Air-Conditioning System (HVAC system)
- D. Diesel Generator (DG) Sets
- E. Motor Load Survey
- F. Energy monitoring & Accounting System

Details scope of study in above areas in view of following points.

- A. Study of Crushing and Conveying System
 - i. Specific Crusher Consumption & Conveyor consumption
 - ii. Loading of Crusher & Conveyors
 - iii. Optimization of Belt Loading
 - iv. Compressed Air System performance
- B. Study of Water Pumping System
 - i. Study of Water network
 - ii. Water consumption quantity and optimization
 - iii. Pump Performance
 - iv. Water Balance of entire mine
- C. Study of Lighting System of Industry which Should Include
 - i. Standard lighting Level with respect to actual requirement
 - ii. Optimizations of lighting in office buildings, roads, shop floor, conveyor corridor lights, security related lights.
 - iii. Cost benefits
 - iv. Efficiency of lighting fixtures
 - v. Maintenance Techniques
 - vi. Lighting control
- D. Study of Power Supply Scheme at industry/ Mines & Recommendations For Optimization Of Power Supply Use

- i. Power factor
 - a) Suggestion for power factor correction at respective sites/substations.
 - b) Improvement study & harmonic study and suggestion for sizing of inductor rating and sizing.
 - ii. Distribution loss
 - iii. Transformer loss
 - iv. Study of Diesel Generators
 - v. Estimation for specific fuel consumption of DG Sets,
 - vi. Estimation of load unbalance of DG sets.
 - E. Study Of Electric Motor, Drive System & Transformer Which Should Include:
 - i. Motor selection & sizing
 - ii. Motor controller & its efficiency
 - iii. Power analysis of critical motors/Feeders
 - iv. Maintenance technique
 - v. Harmonic Analysis
 - vi. Other Areas
 - vii. Energy accounting for earth mover equipment's.
 - viii. Performance analysis of installed renewable energy systems.
 - ix. Scope identification for renewable energy integration.
 - x. The fuel consumption pattern of all individual mining equipment to be studied on the data for last three years and measures for improvement may be suggested.
 - xi. Innovations for reduction of electrical energy and fuel consumption to be suggested.
 - F. Recommendation Should Include
 - vii. Short term recommendations with details of execution method
 - viii. Long term recommendations with details of execution method
3. The following instruments must be in the possession of the agency at work site during the field study. All the instruments must have a valid calibration certificate. The same to be submitted along with field measurement report.
- a. Three Phase Power Analyzer,
 - b. Ultrasonic Water Flow meter,
 - c. Digital Hygro Meter,
 - d. Thermo Anemometer &
 - e. Lux meter
4. Mandatory Qualification criteria: (i) Agency/vendor should have experience of

conducting minimum 5 nos. of energy audit in commercial building and the list & supporting documents to be provided with the technical details. (ii) Agency should provide the complete detail about instruments with calibration report / certificate and (iii) information about their technical manpower.

5. Selection criteria:

NPC would assess the technical detail first. Agencies submitting documentary proof meeting the mandatory conditions for items in sl. no 4 mentioned above, will qualify Technical Evaluation

Least Cost Selection / L1: Bidders offering services at least cost among the technically responsive bidders will be selected.

6. Duration:

Energy audit field study with report submission to be completed within one month from issue of LoI / work order.

7. Payment & Other Terms:

100 % payment only after on completion of study and acceptance of report by client (unit) /NPC.

2.3 SAFETY AUDIT:

1. NPC Patna intends to conduct safety Audit in Bihar and Jharkhand. A detailed study to be carried for safety audit at mines/units.
2. The Agency is expected to provide instrumentation support (as mentioned at Clause 2 of this section) and skilled manpower for measurement and data collection as per the scope of work. The agency also to prepare a field measurement report as per the template provided by Project Coordinator of NPC. All the information collected during the process of Audit are strictly confidential and no part of the work to be reported anywhere.
3. Details scope of study in above areas in view of following points.

Exhaustive preparation of External Safety Audit Report after carrying out Risk Assessment for all plant activities which should involve contour mapping of all the hazardous chemicals involving latest software.

3.1 The audit would be carried out as per

- a. IS: 14489:1998 (Reaffirmed 2018) - “Code of Practice on Occupational Safety and Health Audit” along with other applicable statutory acts & rules such as
- b. Factories Act, National Building Code, 2016,
- c. Bihar Factories Rules, 1950, with its 2016 amendments
- d. Pressure vessel acts, Gas cylinder rules, Indian Electricity Rules, 1956 (as amended up to date),
- e. IS: 5216 (Part-I&II) Recommendations on Safety Procedures and practices in Electrical Work, IS: 4770: 1968 - Specifications for Rubber gloves for Electrical Purpose,
- f. IS: 2309 Protection of Buildings and Allied Structures against Lightning,
- g. Gazette Notification dated 20th September 2010 issued by Central Electricity Authority regarding Regulations for measures relating to safety and Electric Supply.

3.2 The audit will be conducted under following broad areas:

A. External Safety Audit as per IS: 14489:1998 (Reaffirmed2018)

☐ Review all aspects of safety systems & procedures both management and technical aspects as per IS: 14489:1998 (Reaffirmed 2018) “Code of Practice on Occupational Safety and Health Audit” that are being followed in the unit. To quote a few:

- Safety & Health policy
- Safety & Health organization
- Accident reporting, investigation & analysis
- Safety Inspections
- Safety educations & training
- First Aid
- General working conditions
- Hazard identification & control
- Safe operating procedures
- Work permit system
- Waste Disposal
- Personal protective equipment
- Fire Protection
- Emergency Preparedness
- Plant layout and area classification
- Static electricity
- Pressure Vessels (Fired & Un-fired)
- New equipment review
- Lifting machines & Tackles
- Mobile equipment & vehicular traffic
- Access
- Material Handling
- Tank storage vessel area
- On-site gas cylinders storage area
- Communication system adopted in plant
- Transportation

B. Electrical Safety Audit (Flameproof Equipment Integrity & Static Charge Audit) of Hazardous and Non-Hazardous Plants, Arc Flash Study using E-Tap software

Percentage Voltage unbalance in the existing system

- Review of Electrical Spec. for Installations like Transformers; PCC panels; MCC panels; Motors etc.
- Verification of statutory compliance with respect to Central Electricity Authority/Indian Electricity Rules 2010 and amendments in 2015 and 2018.
- Physical inspection to identify electrical hazards (shock, fire, explosion, overloading) and to suggest electrical safety Rules
- Review of plant lightning protection system (need, adequacy, installation and maintenance)
- Review of static electricity hazards in the plant operations (if applicable)
- Review of hazardous area classification and selection of flameproof electrical equipment in the plant, including maintenance aspects (if applicable)
- Review of electrical preventive maintenance system (including tests, documentation, history cards, etc).
- Review of electrical accidents and near misses in the plant to identify the root causes Review of electrical systems & procedures (work permits, interlocks, lockout tags, etc).
- Review of the importance given to electrical safety in the company safety policy, safety committee, continuous electrical risk identification, etc.
- Assessing the integrity of insulation of cables by review of insulation resistance test reports
- Review of the earthing system (installation & maintenance aspects), including review of earth resistance test reports
- To identify areas of overloading by carrying out load current measurements and compared against cable current carrying capacity calculation
- To estimate life of electrical switchgears & wires based on no of operations.
- To prepare Single line diagram (SLD) of existing basic electrical distributions system. (Main & PCC, MCC up to DB)

Compliance Part:

1. Electrical Safety Audit
2. Thermography
3. Adequacy of Lightning arrestor
4. Arc flash study
5. Earthling Test
6. Preparing SLD

C. Fire Safety

a. Review all aspects of Fire Safety:

This includes checking of adequacy of following facilities:

- i. Automatic Fire Detection and Alarm System
- ii. Automatic Sprinkler System
- iii. Smoke detector
- iv. Fire Dampers
- v. Fire Control Room.
- vi. Portable fire extinguishers
- vii. Fire hydrant system including Static Water Storage Tanks
- viii. Availability of dedicated supply lines for operating the fire hydrant pumps in case of emergency / power failure / availability of Diesel driven pump
- ix. Fire alarm and manual call points
- x. Emergency Lighting System
- xi. Fire exit/escape route, Corridors and Passageways, Internal & External Staircases, Fire Lifts
- xii. Escape Lighting
- xiii. Presence of Combustible Material/Fire load & general House Keeping
- xiv. FIRE DRILL AND EVACUATION PROCEDURES including Assembly points

Suggest improvements over the existing Safety Systems & Procedures, if any.

Review of Disaster Management Plan (on-site emergency plan) / Fire Safety Manual etc.

The following instruments must be in the possession of the agency at work site during the field study. All the instruments must have a valid calibration certificate. The same to be submitted along with field measurement report.

- a. Earth meter,
 - b. Flow meter,
4. Mandatory Qualification criteria: (i) Agency/vendor should have experience of conducting minimum 5 nos. of safety audit in commercial building/units and the list & supporting documents to be provided with the technical details. (ii) Agency should provide the complete detail about instruments with calibration report / certificate and (iii) information about their technical manpower.

5. Selection criteria:

NPC would assess the technical detail first. Agencies submitting documentary proof meeting the mandatory conditions for items in sl. no 5 mentioned above, will qualify
Technical Evaluation

Least Cost Selection / L1: Bidders offering services at least cost among the technically responsive bidders will be selected.

6. Duration:

Safety audit field study with report submission to be completed within one month from issue of LoI / work order.

7. Payment & Other Terms:

100 % payment only after on completion of study and acceptance of report by client (unit) / NPC.

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ANNEXURE-I**Format of Application for submission of technical Proposal**

1.	Name of the Company	
2.	Type of Organization (Please provide copies of Memorandum & Articles of Association, etc.)	
3.	Year of Establishment	
4.	Address of Corporate Office, Telephone/Tele fax Numbers, corporate email-ID and website URL name of the Applicant	
5.	Names, Address and Email IDs & mobile numbers of Authorized Representatives/contact persons	
6.	Name and addresses of Directors/Partners/Proprietors/Key Managerial Personnel	
7.	GSTNo. (attach supporting documents)	
8.	Company or Firm PAN Number (attach supporting documents)	
9.	Details of Applicant's Account 1. Bank Name & Branch 2. Account Name 3. Account Number 4. IFSC (attach supporting documents)	
10	Turnover for last three years (attach Supporting Documents)	
11.	Nature of present or previous association with NPC (if any) for providing similar or any other nature of service wrt following: a. Water Audit b. Energy Audit c. Safety Audit (attach supporting documents)	
12.	List the business association / work executed /any empanelment of Similar Nature wrt following: a. Water Audit b. Energy Audit c. Safety Audit Provide Supporting Documents	

13.	Reference Name and contact details Persons in Client organizations for verification of credentials of the applying agency.	
14.	Details of Skilled Manpower for conducting the field Study: (Curriculum Vita of the team members to be attached)	
15.	List of instruments available for Water Audit, Energy Audit, and Safety Audit as per the defined scope. (Attach the calibration certificates of the instruments)	
16.	Have you been blacklisted /debarred by any of the Government Undertakings/ Companies /Organizations, and if so, name of the i. Company as well as period of debarring and reasons thereof	

(Authorized Signature & Seal)

ANNEXURE-II**A. Format of Application for submission of Financial Proposal-Water Audit**

Sr. No.	State	Quoted Amount (in Rupees)		
		Water consumption per Day (KL/Day)		
		100-500	501-1000	More than 1000
1.	Bihar			
2.	Jharkhand			
	Applicable Taxes (GST):	GST would be paid extra as applicable		

#Send password protected file separately as mentioned in section-2.

B. Format of Application for submission of Financial Proposal-Energy Audit

Sr. No.	State	PROFESSIONAL FEE & SUPPORT FOR INSTRUMENTATION & SERVICES FOR CONDUCTING ENERGY AUDIT OF MINE OR COMMERCIAL BUILDING OR INDUSTRIAL UNIT	
		Connected Load upto 500 kW	Connected Load greater than 500 kW
1.	Bihar		
2.	Jharkhand		
	Applicable Taxes (GST):	GST would be paid extra as applicable	

#Send password protected file separately as mentioned in section-2.

C. Format of Application for submission of Financial Proposal-Safety Audit

Sr. No.	State	PROFESSIONAL FEE & SUPPORT FOR INSTRUMENTATION & SERVICES FOR CONDUCTING SAFETY AUDIT OF COMMERCIAL BUILDING OR INDUSTRIAL UNIT	
		Commercial Building	Industrial Unit
1.	Bihar		
2.	Jharkhand		
	Applicable Taxes (GST):	GST would be paid extra as applicable	

#Send password protected file separately as mentioned in section-2.

(Authorized Signature & Seal)