



**Reserve Bank of India  
Estate Department  
Bhopal**

**निविदा आमंत्रण सूचना - (एनआईटी)**

**बैंक के मुख्य कार्यालय भवन, भोपाल का ऊर्जा ऑडिट आयोजित करने का काम**

1. यह एक खुली निविदा पूछताछ है। आरबीआई, भोपाल में बैंक के कार्यालय भवनों में ऊर्जा ऑडिट करने के लिए ऊर्जा लेखा परीक्षकों से मुहरबंद निविदाएं आमंत्रित की जाती हैं। कार्य पर ₹75,000/- (जीएसटी सहित) की लागत आने का अनुमान है और इसे 6 सप्ताह के भीतर पूरा किया जाना है।
2. **पात्रता:** ऊर्जा ऑडिट करने के लिए इच्छुक निविदाकर्ता को **ऊर्जा दक्षता ब्यूरो द्वारा मान्यता प्राप्त ऊर्जा लेखा परीक्षक** होना चाहिए। फर्म के पास पिछले 5 वर्षों (1 मई 2019 के बाद) में किसी भी सरकारी/कॉर्पोरेट/आवासीय भवनों में कम से कम **दो ऊर्जा ऑडिट** करने का अनुभव होना चाहिए। पात्रता मानदंड के संबंध में दस्तावेजी साक्ष्य निविदा के भाग-I के साथ प्रस्तुत किए जाने हैं।
3. दो अलग-अलग सीलबंद कवरों में विधिवत भरे हुए निविदा दस्तावेज (तकनीकी-वाणिज्यिक) एक सीलबंद लिफाफे में जमा करते हुए, **सुश्री रेखा चंदनावेली, क्षेत्रीय निदेशक, भारतीय रिज़र्व बैंक, होशंगाबाद रोड, भोपाल-462011** को संबोधित करते हुये **18 जुलाई 2024 के अपराह्न 2.00 बजे** तक प्रस्तुत करने होंगे। मुहरबंद कवरों पर **“बैंक के कार्यालय भवन, भोपाल का ऊर्जा ऑडिट आयोजित करने के काम हेतु निविदा”** साफ अक्षरों में लिखा जाना है।
4. निविदा दस्तावेज़ को भारतीय रिज़र्व बैंक कार्यालय, भोपाल के स्वागत काउंटर पर रखे कोटेशन/निविदा बॉक्स में जमा किया जाना है।
5. निविदा दस्तावेज़ (Part-I) **18 जुलाई 2024 को अपराह्न 3.00 बजे** निविदा फर्म कर्ताओं के प्राधिकृत प्रतिनिधियों की उपस्थिति में खोला जाएगा।
6. कृपया नोट करें कि निविदा दस्तावेज़ के सभी पृष्ठों पर आपके हस्ताक्षर एवं मुहर लगाई जानी चाहिए। सभी आंकड़े स्पष्ट रूप से अंकों तथा अक्षरों में लिखे जाने चाहिए। निविदा दस्तावेज़ भरते समय कृपया अलग-अलग प्रकार की स्याही, भिन्न-भिन्न व्यक्तियों के हस्ताक्षर उपरिलेखन (ओवरराइटिंग) कांट-छांट, सुधार, अतिरिक्त नोटिंग इत्यादि न करें, जिससे निविदा को अस्वीकार किया जा सकेगा।
7. बैंक न्यूनतम मूल्य का निविदा स्वीकार करने के लिए बाध्य नहीं है तथा बैंक कोई कारण दिए बिना कोई भी निविदा पूर्णतः या उसका कोई भी हिस्सा स्वीकार करने या सभी निविदा दस्तावेज़ को अस्वीकार करने का अपना हक सुरक्षित रखता है।

क्षेत्रीय निदेशक  
भारतीय रिज़र्व बैंक  
भोपाल



भारतीय रिज़र्व बैंक  
संपदा विभाग, भोपाल

ऑफलाइन निविदा नोटिस

**बैंक के मुख्य कार्यालय भवन, भोपाल का ऊर्जा ऑडिट आयोजित करने का काम**

भारतीय रिज़र्व बैंक, भोपाल उपरोक्त कार्य के लिए पात्र और इच्छुक ठेकेदारों से मुहरबंद निविदा आमंत्रित करता है। इस कार्य पर ₹75,000/- (जीएसटी सहित) खर्च होने का अनुमान है।

2. उपर्युक्त कार्य हेतु सारणी नीचे दी गई है:

निविदा दस्तावेज़ जारी करना	27 जून 2024 को 12:00 बजे से
निविदा दस्तावेज़ जमा करने की अंतिम तिथि	18 जुलाई 2024 को 14:00 बजे तक
भाग-I (अर्थात तकनीकी बोली) खुलने की तिथि और समय	18 जुलाई 2024 को 15:00 बजे
भाग-II (अर्थात मूल्य बोली) : भाग-II खुलने की तिथि और समय	सूचना अलग से दी जाएगी।

क्षेत्रीय निदेशक  
भारतीय रिज़र्व बैंक  
भोपाल



**Reserve Bank of India  
Estate Department  
Bhopal**

Tender for  
Conducting Energy Audit of Bank's Office Building  
at Bhopal

**Part I**

Name of the Tenderer: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

<b>Due Date of Submission</b>	<b>: Before 2.00 PM on July 18, 2024</b>
<b>Date of opening of Part I of tender</b>	<b>: At 3.00 PM on July 18, 2024</b>
<b>Venue</b>	<b>: Estate Department, RBI Bhopal</b>

**CARE: - PART I AND PART II TO BE SUBMITTED IN A SEPERATE SEALED ENVELOPES**

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**Section I**  
**Form of Tender**

Place \_\_\_\_\_

Date \_\_\_\_\_

To,

The Regional Director  
Estate Department,  
Reserve Bank of India  
Bhopal

Madam,

We have carefully examined the specifications, designs and schedule of quantities relating to the Energy Audit specified in the memorandum hereinafter set out and having visited and examined the site of the Energy Audit as specified in the said memorandum and having acquired the requisite information relating thereto as affecting the tender. We hereby offer to conduct the Energy Audit as specified in the said memorandum within the time specified in the said memorandum at the rates mentioned in the attached Schedule of Quantities and in accordance in all respects with specifications, designs and instructions in writing referred to in articles of agreement, general instructions to the tenderers and special conditions, conditions hereinbefore referred to, specifications, data sheet and schedule of quantities and with such equipments as are provided for, by and in all other respects, in accordance with such conditions so far as they may be applicable.

**MEMORANDUM**

(a)	Description of works	Conducting Energy Audit of Bank's Office Building at Bhopal
(b)	Estimated cost	<b>Rs. 75,000.00 (Rs. Seventy-five thousands only)</b> (inclusive of GST)
(c)	Terms of payment	As per clause 13 of Commercial Conditions.
(d)	Earnest Money	<b>Rs. 1500/-.</b>
(e)	Time allowed for completion of work from tenth day after the date of letter advising acceptance of tender.	<b>Six weeks</b>

2. We also agree that our tender will remain valid for acceptance by the Bank for 90 days from the date of opening of Part I of the tender and this period of validity can be extended for such period as may be mutually agreed between the Bank and us in writing.
3. Should this Tender be accepted, I/we hereby agree to abide by and fulfill all the Terms and Conditions of the Tender and in default thereof, to forfeit and pay to you or your successors, or assignees or nominees such sums of money as are stipulated in the

conditions contained in the tender together with the written acceptance of the Contract.

4. I/We understand that you reserve the right to accept or reject any or all the tender either in full or in part without assigning any reason therefor. We have deposited a sum of **Rs. 1500/-** as earnest money with the Reserve Bank of India, which amount is not to bear any interest. Should we fail to execute the Contract when called upon to do so, we do hereby agree that this sum shall be forfeited by the Reserve Bank of India.

**5. The Tender is submitted in two parts in separate sealed envelopes as under:**

- Part I shall have proof of EMD (DD/NEFT) and all commercial terms and conditions and technical particulars. Valid MSE registration certificate to be enclosed with the Tender document in case of EMD exemption.
- Part II shall have the Price Bid in sealed cover in the Bank's proforma.

Dated this \_\_\_\_\_ day of \_\_\_\_\_ 2024.

For and on behalf of M/s \_\_\_\_\_

\_\_\_\_\_  
(Signature with seal)

Name \_\_\_\_\_

Designation \_\_\_\_\_

Place \_\_\_\_\_

Date \_\_\_\_\_

(Certified true copy of the Power of Attorney of the above signatory should be enclosed).

Witnesses

(1) Signature with \_\_\_\_\_  
name, address and date \_\_\_\_\_  
\_\_\_\_\_

(2) Signature with \_\_\_\_\_  
name, address and date \_\_\_\_\_  
\_\_\_\_\_

## Section II

### नियम एवं शर्तों के अधीन करार Articles of Agreement

यह करार वर्ष 2024 की \_\_\_\_\_ तारीख को भोपाल में, प्रथम पक्षकार भारतीय रिज़र्व बैंक जिसका मुख्य कार्यालय होशंगाबाद रोड़, भोपाल 462016 –में है (जिसे आगे बैंक कहा जाएगा (तथा द्वितीय पक्षकार मेसर्स ----- जिसका पंजीकृत कार्यालय ----- में स्थित है जिसे आगे "ठेकेदार" कहा जाएगा (के बीच किया जाता है।

ARTICLES OF AGREEMENT made the .....day of....., 2024 between the Reserve Bank of India (hereafter called "Bank") having its office at Hoshangabad Road, Bhopal - 462011 on the one part and M/s \_\_\_\_\_ having its Registered Office at \_\_\_\_\_ (Thereinafter called "the Contractor") on the other part.

चूंकि, नियोक्ता, बैंक के कार्यालय भवन, भोपाल की Energy Audit का कार्य कराने का इच्छुक है ( जिसे आगे उक्त कार्य कहा जाएगा) और उसने निर्धारित कार्य का वर्णन करते हुये ड्राइंग, विशिष्टताओं और परिमाणों की सूची आमंत्रित की है। तथा चूंकि संख्या \_\_\_\_\_ से, ..... तक की उक्त ड्राइंग, विशिष्टताओं, और परिमाणों की सूची पर पार्टियों या उनकी ओर से हस्ताक्षर किए गए हैं।

WHEREAS the Employer is desirous of **Conducting Energy Audit of Bank's Main office building, RBI, Bhopal** (hereinafter called "the said work") and has caused drawings, specifications and schedule of quantities describing the work to be done. AND WHEREAS the said drawings from Numbers \_\_\_\_\_ to \_\_\_\_\_, the specifications, and the schedule of quantities have been signed by or on behalf of the parties hereto.

और चूंकि ठेकेदार निर्धारित शर्तों और विशेष परिस्थितियों में निर्धारित शर्तों के अनुसार और संविदा की परिमाणों की सूची और संशोधित शर्तों के अधीन काम करने के लिए सहमत हो गया है और अंतिम रूप से दोनों पक्षों द्वारा स्वीकृत है (जिसे आगे सामूहिक रूप से "उक्त शर्तें" कहा जाएगा), उक्त ड्राइंग में दर्शाए गए और / या उक्त विशिष्टताओं में वर्णित कार्यों और इसमें निर्धारित दरों पर परिमाणों की सूची में शामिल, राशि के बराबर या इस तरह का अन्य योग (जिसे आगे "उक्त अनुबंध राशि" कहा जाएगा) इसके लिए देय हो जाएगा।

AND WHEREAS the Contractor has agreed to execute upon the subject work to the conditions set forth herein and to the conditions set forth in the special conditions and in the schedule of quantities and conditions of Contract as modified and finally accepted by both the parties ( all of which are collectively hereinafter referred to as "the said Conditions") the works shown upon the said drawings and/or described in the said Specifications and included in the Schedule of quantities at the respective rates therein set forth, amounting to the sum as therein arrived at or such other sum as shall become payable there under (hereinafter referred to as "the said Contract Amount").

**अब दोनों पक्ष पारस्परिक रूप से इस पर निम्नानुसार सहमत हैं :**

**NOW IT IS HEREBY AGREED AS FOLLOWS:**

उक्त संविदा के संबंध में भुगतान समय पर और संविदा की उक्त शर्तों के अनुसार किया जाना है, ठेकेदार उक्त शर्तों के अधीन ड्राइंग में दर्शाए गए और उक्त विशिष्टताओं तथा परिमाणों की अनुसूची में वर्णित कार्य को निष्पादित करेगा और पूरा करेगा।

In consideration of the said Contract amount to be paid at the times and in the manner set forth in the said conditions, the Contractor shall, upon and subject to the said conditions, execute and complete the work shown upon the said drawings and described in the said specifications and the schedule of quantities.

2.1. नियोक्ता ठेकेदार को उक्त संविदा राशि या किसी अन्य राशि का भुगतान करेगा जो उस समय और उक्त शर्तों में निर्दिष्ट तरीके से देय हो।

The Employer shall pay the Contractor the said Contract amount or such other sum as shall become payable at the times and in the manner specified in the said conditions.

2.2. उक्त शर्तों में "आर्किटेक्ट" शब्द का अर्थ मुख्य महाप्रबंधक, परिसर विभाग, केंद्रीय कार्यालय, भारतीय रिजर्व बैंक, भोपाल से है और किसी भी कारण से इस अनुबंध के प्रयोजन हेतु उनको आर्किटेक्ट नहीं होने पर, ऐसे अन्य व्यक्ति या व्यक्तियों को नियोक्ता द्वारा उक्त प्रयोजन के लिए नामित किया जाएगा, जो ऐसा व्यक्ति नहीं होगा जिस पर ठेकेदार किसी कारण से आपत्ति उठाए और नियोक्ता उसे उपर्युक्त माने, बशर्ते कि कोई व्यक्ति अथवा व्यक्तियों जिसे बाद में आर्किटेक्ट के रूप में नियुक्त किया गया हो उस समय लिखित में दिए गए किसी भी पिछले निर्णयों या अनुमोदन या निर्देश को अनदेखा या ओवररूल करने का अधिकार नहीं होगा।

The term "Architect" in the said conditions shall mean CGM, Premises Department, Central Office, Reserve Bank of India, Bhopal and on his ceasing to be the architect for the purpose of this Contract for whatever reason, such other person or persons as shall be nominated for that purposes by the Employer, not being a person to whom the Contractor shall object for reasons considered to be sufficient by the Employer PROVIDED ALWAYS that no person or perhaps persons subsequently appointed to be architect under this Contract shall be entitled to disregard or overrule any previous decisions or approval or direction given or expressed in writing by the architect for the time being.

2.3. उक्त शर्तों और उक्त कार्य के संबंध में निविदा स्वीकृति पत्र की तिथि तक नियोक्ता और ठेकेदार के बीच में हुये किसी भी पत्राचार को इस करार का हिस्सा माना जाएगा और पक्षकारों द्वारा इनका क्रमशः पालन किया जाएगा, स्वयं को उक्त शर्तों के समक्ष प्रस्तुत करेंगे और उक्त शर्तों के अनुसार करार का निष्पादन करेंगे।

The said conditions thereto and any correspondence exchanged between the Employer and the contractor in connection with the said work till the date of letter of acceptance of their tender shall be read and construed as forming part of this Agreement and the parties hereto shall respectively abide by, submit themselves to the said Conditions and perform the agreements on their part respectively in the said Conditions contained.

2.4. उक्त शर्तों को इस करार के एक भाग के रूप में माना जाएगा और इसके पक्षकार उक्त शर्तों का पालन



करेंगे और शर्तों के अनुसार इस करार को निष्पादित करेंगे।

The said Conditions thereto shall be read and construed as forming part of this agreement and the parties hereto shall respectively abide by, submit themselves to the said conditions and perform the agreements on their part respectively in the said conditions contained.

2.5. मूल निविदा दस्तावेज की धारा III और IV तक के साथ यहां उल्लिखित ड्राइंग, करार और दस्तावेज और बैंक द्वारा उक्त प्रणाली के रखरखाव हेतु ठेकेदार को भविष्य में जारी किए जानेवाले सभी व्यापक वार्षिक रखरखाव अनुबंध कार्य आदेश इस अनुबंध का आधार रहेंगे, जो निविदा दस्तावेज में उल्लिखित उपकरणों के जीवनकाल तक मान्य रहेंगे।

The drawings, agreement and documents mentioned herein along with the Sections III and IV of the original tender document and Annexures, work orders that would be issued by the Bank to the Contractor for the said work shall form the basis of this Contract which will be valid as mentioned in the tender document.

2.6. यह संविदा न तो एक निश्चित एकमुश्त संविदा है और न ही काम का एक हिस्सा है, लेकिन यह Energy Audit काम करने हेतु एक संविदा है, जिसके लिए दर अनुसूची और प्रोबेबल क्वांटिटी या उक्त शर्तों में निहित दरों/राशि के अनुसार भुगतान किया जाएगा।

This Contract is neither a fixed lump sum contract nor a piece work but is a contract to carry out the work in respect of provision of Conducting Energy Audit, to be paid for at the rates/amount contained in the Schedule of Rates and Probable Quantities or as provided in the Said Conditions.

2.7. ठेकेदार उक्त शर्तों में निर्धारित तरीके से सिविल कार्यों, विद्युत अधिष्ठापन, फिटिंग और अन्य सहायक कार्यों से संबंधित सभी कार्यों को पूरा करने के लिए हर उचित सुविधा को वहन करेगा और ऐसे कार्यों के पूरा होने के बाद दीवारों, फर्श आदि को हुये किसी भी नुकसान को ठीक करेगा।

The Contractor shall afford every reasonable facility for carrying out of all works relating to civil works, electrical installations, fittings and other ancillary works in the manner laid down in the said conditions, and shall make good any damages done to walls, floors, etc., after the completion of such works.

2.8. नियोक्ता इस संविदा की अवधि के दौरान किसी भी समय कार्य के स्वरूप और ड्राइंग में कुछ जोड़कर अथवा कुछ हटाकर अथवा उसके कुछ भाग को रखकर परिवर्तन करने का स्वयं अधिकार सुरक्षित रखता है जो इस संविदा पर प्रतिकूल प्रभाव डाले बिना होगा।

The Employer reserves to itself the right of altering the drawings and nature of the work by adding to or omitting any items of work or having portions of the same carried out at any time during the currency of Contract, without prejudice to this Contract.

2.9. समय अवधि इस करार का महत्वपूर्ण भाग माना जाएगा और ठेकेदार यहाँ सहमति व्यक्त करता है कि उक्त नियम एवं शर्तों के अनुसार कार्य आदेश/स्वीकृति पत्र जारी होने के 10वें दिन से कार्य प्रारम्भ कर देगा और समय के विस्तार के प्रावधानों के अधीन सम्पूर्ण कार्य **छह सप्ताह** के भीतर पूरा करेगा, अन्यथा नियोक्ता उक्त

शर्तों के अनुसार परिसमापन क्षति की वसूली करने का हकदार होगा।

Time shall be considered as the essence of this Contract and the Contractor hereby agrees to commence the work from the tenth day of issue of works order/letter of acceptance as provided for in the said Conditions and to complete the entire work within **Six weeks** subject nevertheless to the provisions for the extension of time, failing which the employer shall be entitled to recover liquidated damages as per the said conditions.

10. इस संविदा के तहत बैंक द्वारा सभी भुगतान केवल भारतीय रिजर्व बैंक, भोपाल में किए जाएंगे।

All payments by the Employer under this Contract will be made only at Reserve Bank of India, Bhopal.

11. इस करार या इससे संबंधित सभी विवाद भोपाल में उत्पन्न माने जाएंगे और इनके निर्धारण का क्षेत्राधिकार सिर्फ भोपाल में स्थित न्यायालयों को होगा।

All disputes arising out of or in any way connected with this agreement shall be deemed to have arisen at Bhopal and only Courts in Bhopal shall have jurisdiction to determine the same.

12. यह कि इस संविदा के सभी भागों को ठेकेदार द्वारा पढ़ और पूरी तरह से समझ लिया गया है।

That the several parts of this Contract have been read by the Contractor and fully understood by the Contractor.

13. **गैर प्रकटीकरण खंड Non-disclosure clause:**

ठेकेदार बैंक के बुनियादी ढांचे उपकरणों आदि के बारे में प्रत्यक्ष या अप्रत्यक्ष रूप में किसी भी सूचना / प्रणालियों / सामग्री तथा विवरण, जो इस करार के संबंध में अपने संविदात्मक दायित्वों का निर्वहन करने के दौरान ठेकेदार के संज्ञान में आ सकते हैं, का खुलासा तृतीय पक्ष को नहीं करेगा तथा हर समय इस कठोर विश्वास को बनाए रखेगा। ठेकेदार लागू कानून के अनुपालन तथा दायित्व का निर्वहन करने के लिए वर्तमान आवश्यकता के अतिरिक्त करार के विवरण को निजी और गोपनीय मानेगा। ठेकेदार बैंक की पूर्व लिखित सहमति के बिना किसी भी स्थान पर अथवा किसी भी व्यापार अथवा तकनीकी दस्तावेज़ में कार्य के किसी भी विवरण को प्रकाशित करना, प्रकाशित करने की अनुमति तथा खुलासा नहीं करेगा। किसी भी गोपनीय सूचना के प्रकटीकरण के परिणामस्वरूप बैंक को हुए किसी भी नुकसान की क्षतिपूर्ति ठेकेदार करेगा। उपरोक्त का पालन करने में विफल होने पर इसे ठेकेदार की ओर से करार का उल्लंघन माना जाएगा तथा बैंक नुकसान का दावा करने तथा कानूनी कदम उठाने के लिए पात्र होगा। ठेकेदार इस करार के तहत गोपनीय जानकारी के गैर प्रकटीकरण के दायित्व को पूरी तरह से सुनिश्चित करने के लिए अपने कर्मचारियों के संबंध में उचित कार्रवाई करेगा। गैर प्रकटीकरण तथा गोपनीयता के संबंध में ठेकेदार की बाध्यता, इस करार के समाप्त होने के पश्चात भी रहेगी।

The contractor shall not disclose directly or indirectly any information, materials and of the Bank's infrastructure/ system/equipment's etc. which may come to the profession or knowledge of the contractor during the course of discharging its contractual obligations in connection with the agreement, to any third party and shall at all times hold the same in strictest confidence. The contractor shall treat the details of the contract as private and confidential, except to the extent necessary to carry out the obligations under it or to comply with applicable laws. The contractor shall not publish, permit to be published, or disclose any particulars of the works in any trade or technical paper or elsewhere without the previous written consent of the Employer. The contractor shall indemnify the Employer for

any loss suffered by the Employer as a result of disclosure of any confidential information. Failure to observe the above shall be treated as breach of contract on the part of the contractor and the Employer shall be entitled to claim damages and pursue legal remedies. The contractor shall take all appropriate actions with respect to its employees to ensure that the obligations of non-disclosure of confidential information under this agreement are fully satisfied. The contractor's obligations with respect to non-disclosure and confidentiality will survive the expiry or termination of this agreement for whatever reason.

#### 14. **यौन उत्पीड़न खंड Sexual harassment Clause:**

बैंक के किसी भी कर्मचारी के विरुद्ध ठेकेदार के किसी भी पीड़ित कर्मचारी की लैंगिंग उत्पीड़न संबंधी शिकायत का संज्ञान बैंक द्वारा गठित क्षेत्रीय शिकायत समिति द्वारा लिया जाएगा।

- a) The contractor shall be solely responsible for full compliance with the provisions of "the Sexual Harassment of women at work place (Prevention, Prohibition and Redressal) Act, 2013. In case of any complaint of sexual harassment against its employee within the premises of the Bank, the complaint will be filed before the internal complaints committee constituted by the contractor/Agency or Local Complaints committee as the case may be and the contractor/ agency shall ensure appropriate action under the said Act in respect of the Complaint.
- b) Any complaint of sexual harassment from any aggrieved employee of the service provider against any employee of the Bank or any employee of any other firm working in the Bank shall be taken cognizance of by the Regional Complaints Committee constituted by the Bank.
- c) The Contractor shall be responsible for any monetary compensation that may need to be paid in case the incident involves the employees of the contractor, for instance any monetary relief to Bank's employee or other firm's employee, if sexual violence by the employee of the contractor is proved.
- d) The Contractor shall be responsible for educating its employees about prevention of sexual harassment at work place and related issues.
- e) The Contractor shall provide a complete and updated list of employees who are deployed within the Bank's premises.

#### 15. **अप्रत्याशित घटना Force Majeure:**

इस करार के तहत दायित्वों को पूरा करने में किसी चूक के लिए कोई भी पार्टी जिम्मेदार नहीं मानी जाएगी, यदि चूक किसी पार्टी के नियंत्रण से परे कार्य के परिणामस्वरूप हुई हो (जैसे दैवी संकट, युद्ध की स्थिति, विद्रोह, मजदूर हड़ताल, किसी सरकारी कार्य, भूकंप, तूफान, टाइफून और अन्य प्राकृतिक आपदा आदि)। प्रत्येक पक्ष इस करार के तहत निष्पादन किए जाने वाले कार्यों को जारी रखने के सभी संभव प्रयास करने के लिए सहमति व्यक्त करती है। यदि अप्रत्याशित घटनाओं के कारण कार्य निष्पादन में बाधा की अवधि 30 दिनों से अधिक हो जाती है, तो पार्टी जिसकी कार्य निष्पादन क्षमता प्रभावित नहीं हुई है, लिखित सूचना देते हुए इस करार को निरस्त कर सकती है।

If either party is unable to perform its obligations under this Agreement due to the occurrence of an event beyond its control (such as acts of God, war like situations, riots, labor strike, government actions, earthquakes, cyclones, typhoons, and other natural calamities, etc.), that party will not be deemed to

have defaulted under this Agreement. Each party agrees to use all reasonable efforts to enable performance under this Agreement to continue. If the period of non-performance due to a force majeure event exceeds 30 days, the party whose ability to perform has not been so affected may, by giving written notice, terminate this Agreement.

<p>यदि ठेकेदार एक साझेदारी फार्म अथवा व्यक्ति हो If the Contractor is a partnership or an individual</p>	<p>गवाह जिनकी मौजूदगी में ऊपर उल्लिखित दिनांक और वर्ष को नियोक्ता और ठेकेदार दोनों ने इस करार को निष्पादित करने हेतु हस्ताक्षर किया है और यह डुप्लीकेट में तैयार की गई है। IN WITNESS WHEREOF the Employer and the Contractor have set their respective hands to these presents and two duplicates hereof the day and year first herein above written.</p>
<p>यदि ठेकेदार एक कंपनी हो If the Contractor is a company</p>	<p>गवाह जिनकी मौजूदगी में ऊपर उल्लिखित दिनांक और वर्ष को इस करार को निष्पादित करने हेतु नियोक्ता और ठेकेदार दोनों ने अपने विधिवत प्राधिकृत अधिकारियों के माध्यम से मुहर सहित हस्ताक्षर किया है तथा यह डुप्लीकेट में तैयार की गई है IN WITNESS WHEREOF the Employer has set its hands to these presents through its duly authorized official and the Contractor has caused its common seal to be affixed hereunto and the said two duplicates / has caused these presents and the said two duplicates hereof to be executed on its behalf, the day and year first hereinabove written.</p>

### हस्ताक्षर खण्ड

#### Signature Clause:

भारतीय रिज़र्व बैंक की ओर से निम्नलिखित द्वारा हस्ताक्षर और सुपुर्द किया गया।  
SIGNED AND DELIVERED by the Reserve Bank of India by the hand of

श्री /Shri ..... (नाम और पदनाम)/(Name and designation)  
.....  
.....की उपस्थिति में/in the presence of

(1)

-----  
(नाम और पदनाम)  
(Name & Designation)  
संपदा विभाग

Estate Department  
भारतीय रिज़र्व बैंक, भोपाल कार्यालय  
Reserve Bank of India, Bhopal

(गवाह/witness)

(2)

(नाम और पदनाम)

(Name & Designation)

संपदा विभाग

Estate Department

भारतीय रिज़र्व बैंक, भोपाल कार्यालय

Reserve Bank of India, Bhopal

(गवाह/witness)

द्वारा हस्ताक्षरित और सुपुर्द SIGNED AND DELIVERED BY

-----  
यदि पार्टी साझेदारी फ़र्म या एक व्यक्ति है तो सभी साझेदारों द्वारा या उन सभी की ओर से हस्ताक्षरित किया जाना चाहिए  
If the party is a partnership firm or an Individual should be signed by all or on behalf of all the Partners  
निम्न की उपस्थिति में In the presence of:

(1)

-----  
पता/Address: -----  
-----

(गवाह/Witness)

(2)

-----  
पता/Address: -----  
-----

(गवाह/Witness)

**Note:**

बैंक, ठेकेदार के साथ करार से पहले करार की शर्तों में संशोधन करने का अधिकार सुरक्षित रखता है ।

Bank reserves the right to modify the contents of the Articles of the Agreement before the agreement is entered with the contractor

### **Section III** **Commercial Conditions**

1. Sealed tenders are invited from accredited energy auditors for conducting energy audit in Bank's office buildings at Bhopal.

#### **2. Eligibility:**

i) The intending tenderer for energy audit should be **qualified accredited energy auditor** by Bureau of Energy Efficiency.

In support of the above, the firms should submit the **valid letter of accreditation** issued by Bureau of Energy Efficiency. The above documents shall be submitted along with Part I of the tender, failing to submit the same will disqualify from further tendering process.

ii) The participating firm should have carried out at least two energy audits in last 05 years (after 01/05/2019) for any government/corporate/residential buildings and submit the necessary documents in this regard for consideration.

3. **Earnest Money Deposit (EMD):** The Earnest Money Deposit shall be paid by the tenderer either in the form of Demand Draft drawn in favour of Reserve Bank of India payable at Bhopal or through NEFT (Annexure III). The EMD draft or proof of EMD (either DD/NEFT) shall be submitted along with Part I of the tender.

i) Vendors having MSEs (Micro and Small Enterprises only) Udyam Registration Number (Udyog Aadhar Memorandum Number) irrespective of the category are exempted from the payment of cost of tender documents and submission of EMD at the time of bidding. Bidders must submit MSE (Micro and Small Enterprises only) registration certificate at the time of submission of tender documents (Part I) for claiming exemption of EMD.

4. **Pre-Bid Clarification:** The pre-tender clarification by the intending tenderers can be sought through e-mail (estatebhopal@rbi.org.in) or by visiting the Bank on or before July 18, 2024 in Estate Department, RBI Bhopal to clarify any point/doubt in respect of the tender. All the intending tenderers are advised to go through the tender documents in detail. The issues will be discussed and all the tenderers will be advised suitably. The tenderers are expected to get all the issues clarified before filling up the tender and therefore should desist from deviating from the Bank's tender conditions/specifications in their technical (Part I) and Price bids (Part II).

#### **5. Submission of Tender:**

The tender shall be prepared and submitted in sealed envelopes in two parts, viz., Part I and Part II clearly indicating on the covers "Part I – Technical and Commercial" and "Part II – Price Bid", respectively. The covers shall be superscribed "**Tender for Conducting Energy Audit of Bank's Main Office Building, RBI at Bhopal**" and addressed to Regional Director, Estate Department, Reserve Bank of India, Bhopal. The full name, postal address, e-mail address and telephone/telefax/mobile number of the tenderer shall be written on both the sealed envelope covers and Tender document. Insertions, post scripts, additions and alterations shall not be valid unless confirmed by the tenderer's signature. All copies of the tenders should be completed in all respects with all attachments/enclosures/annexures. The tender shall be submitted/dropped in the tender

box kept at the Main enquiry (ISS) not later than 02:00 PM **on July 18, 2024.**

6. The tenders and proof of EMD (original DD/NEFT details) for the above work shall be submitted in separate sealed covers addressed to Regional Director, Reserve bank of India, Bhopal-462011, so as to reach him not later than 02.00pm on July 18, 2024. The proof of EMD shall be submitted along with Part-I of the tender document. The envelopes shall be super-scribed "**EMD - Tenders for conducting energy audit of Bank's office building at Bhopal**". Part-I of the tenders will be opened on July 18, 2024 at 3.00 pm. Any information and enclosure other than prices against the items appearing in part-II shall not be considered for evaluation.
7. Part-II of the tenders will be opened on a subsequent date under intimation to all the tenderers. Tenderers are advised to use only the forms supplied by the Bank/downloaded from website and not to use any other forms. Incomplete tenders are liable for rejection. In case the tenders are submitted from downloaded tender forms from the website, if any change/modification thereto is found subsequently, such tenders are liable for disqualification. However, if they desire to submit additional information, they may do so on their own letter head/paper. Each page of the forms shall be signed, sealed before submission. All the information called for, shall be complete in all respects. Information furnished on sheets other than those supplied may not be considered. However, the firms can enclose only the relevant catalogues/leaflets/brochures of the manufacturers of the equipment offered. No terms and conditions or any other information/ enclosures shall be included in tender Part-II. EMD shall not be submitted along with Part II of the tender under any circumstances. Incomplete tenders or tenders not complying with the requirement are liable for rejection.
8. The tenders shall be valid for acceptance by the Bank for a period of 90 days from the date of opening of tender Part-I and shall be extended by such period as may be mutually agreed to.
9. **Prices:** The price quoted for the work shall be firm till completion of the work and shall include all taxes including service tax as applicable and cost of transportation/accommodation etc. of the equipments and persons deputed.
10. This contract is a fixed lump sum contract in respect of the entire energy auditing and to be paid for according to, at the rates contained in the schedule of rates and as provided in the said conditions.
11. The employer reserve to itself the right of altering the items to be executed by adding to or omitting any items without prejudice to this contract. However, the Auditor shall not be entitled to any payment for the works done exceeding the tender quantities unless specifically approved in writing by the Bank's engineer.
12. **Completion Period:** The time for completion of the entire work is **6 weeks** from tenth day after the date of letter advising acceptance of tender. The site survey, data collection/measurements and draft report shall be completed in 6 weeks and the final report shall be submitted within seven days thereafter.

### **13. Terms of payment**

The following terms of payment shall be applicable for the work:

- i) 80% of the quoted amount after completion of energy audit and submission of draft report to the Bank. Draft report and final reports should include all the required information and audit findings in the format indicated in this tender including the annexures.
- ii) Balance 20% of the quoted amount on submission of the final report (having colour printed in three sets/copies duly spiral bounded) to the Bank. The final report should be submitted with in 10 days after the submission of draft report.

All payments for the work will be made after necessary statutory deductions.

**14. Liquidated Damages for non-completion:** Time is the essence of the contract with respect to the tenderer's scope of works to be carried out under this contract. The entire work shall be completed within six weeks from the 10th day of letter of acceptance failing which liquidated damages at a rate of 0.25 % of the contract cost per week of delay beyond the stipulated period with an upper ceiling of 10% of the contract amount, will be levied.

#### **15. Insurance**

The contractor shall take following insurance at his cost to cover all kinds of risks from the time of start of Audit till completion of audit, in the joint names of the Reserve Bank and the contractor (RBI being the first) before commencement of work and it shall cover the following risks.

- (a) Workmen compensation policy for the employees of the contractor at site.

16. The Reserve Bank of India does not bind itself to accept the lowest or any tender and reserves to itself the right to accept or reject any or all the tenders, either in whole or in part, without assigning any reasons for doing so.

17. On receipt of intimation from the employer of the acceptance of his/ their tender, the successful tenderer shall be bound to sign the formal contract and within fourteen days thereof, the successful tenderer shall sign an agreement in accordance with the draft agreement and the schedule of conditions but the written acceptance by the Reserve Bank of India of a tender will constitute a binding contract between the RBI and the person so tendering, whether such formal Agreement is or is not subsequently executed. The cost of necessary stamp paper for execution of the agreement shall be borne by the successful tenderer.

18. If the Auditor being individual or a firm commits any act of insolvency or shall be adjudged an Insolvent or being an incorporated company shall have an order for compulsory winding up made against it or pass an effective resolution for winding up voluntarily or subject to supervision of the court and official Assignee or liquidator in such acts of solvency or winding up, as the case may be, shall be unable within seven days after notice of him requiring him to do so, to show to the reasonable satisfaction of the Bank's Engineer that he is able to carry out and fulfill the contract and to give security therefore, if so required by the Bank's Engineer. Or If the Bank's Engineer shall clarify in writing to the employer that the Auditor is solvent and is in a position to carry out the work.

Date:  
Place:

Signature of tenderer  
Name and Address



### List of clients

(For whom similar scope has been completed in the last 5 years.)

Sr. No.	Details	Name of client (1)	Name of client (2)	Name of client (3)
1	Address, fax and telephone numbers			
2	Establishment name, location and address.			
3	Brief details of the work			
4	Date of award of contract			
5	Date of completion of work			
6	Whether the Establishment is with central air-conditioning system			

## Section IV

### **Terms and Conditions**

#### **1. Introduction**

Reserve Bank of India, Bhopal is desirous of undertaking Energy audit of the Electrical/Electromechanical installations provided in the office building at Bhopal. The office building receives power supply at 33 KV from the Electricity supply authorities. In addition, diesel generator set and UPS system of suitable capacities have been installed to meet critical applications during power outages.

#### **2. Objective**

- a. The objective of energy audit is to have Energy Performance Assessment of equipments and utilities in the electrical sub-station, Electric power distribution network, HVAC systems, Electric motors and drives, Fans and blowers, Water pumping systems, UPS systems, Lighting systems, Diesel generator sets etc. including study of energy consumption pattern and management of power demand in the building.
- b. Based on the above observations, to identify opportunities for energy saving and to have recommendations for the same along with cost benefit analysis.

#### **3. Terms & conditions**

##### **A. Equipments/measuring instruments**

i) All the equipments/instruments required for site measurements for carrying out the energy audit will have to be arranged by the firm without any extra payment to the Bank. The firm should have the following minimum equipments/instruments for energy audit:

1. Three-phase Power analyser
2. Ultra-sonic flow meter
3. Pressure gauges
4. Thermometers
5. Anemometers
6. Thermography camera
7. Harmonic Analyzer

ii) All testing instruments/meters shall be accompanied with valid calibration certificate.

iii) The site measurements should be recorded in the presence of Bank's personnel.

Please note that the Bank will not provide any kind of assistance in the form of men/material and the firm will have to make their own arrangement for all assistance.

## **B. Work at site**

The firm may visit the premises and ascertain site conditions. The work has to be carried out in a working office building without causing inconvenience to the normal working of the Bank. No power shut down will be provided during office hours. Power shut down required for the work will be given on holidays and after office hours at the discretion of the Bank. No extra claims will be admissible later on these grounds.

The firm should deploy only qualified and experienced Engineers/Technician having requisite licenses and BEE certified Energy Auditor (EA) certificate to carry out such works. Utmost care shall be exercised by the firm in carrying out the work to ensure that no damage is caused to persons and properties. The Bank will not be liable for any injury or damage to persons and any such happening will be entirely the responsibility of the firm

### **Scope of Work:**

#### **A. Methodology:**

Energy audit activities shall include the following:

1. **Pre Audit:** Meeting with Bank's technical team, Visual inspection of the site & verification of various documents regarding energy consumption and electrical installation.
2. **Audit:** Auditing and performance analysis to determine the condition of electrical installation as detailed below.
3. Submission of **Draft report** to Bank and discuss the report with Bank's representative.
4. Submission of **Final report** to Bank after incorporating the changes as per discussions with the Bank's representative.
5. Energy Audit should be conducted in conformity to the relevant BEE directives including Part III Sec4, 116 No.2/11(6)/05-BEE, dated 28-04-2010 or the latest, if any published.

#### **B. Equipment details**

The energy audit of the electrical / electromechanical installation as detailed in [annexure-I](#) shall be conducted. The major list of equipments is as under:

1. Electricity Supply and Distribution (Transformers, VCBs, ACBs, MCCBs, SFU, LT panels, APFC etc.,)
2. Central Air Conditioning System (Chillers, Compressors, motors, pumps, cooling towers, panels etc.,)
3. Air Handling Units
4. Split / Package Air Conditioners
5. UPS
6. Lighting, fans
7. Kitchen Equipment's
8. Water Pumps, Fire Pumps
9. Lifts
10. DG sets
11. CVPS and SBS machines
12. Grid interactive solar power system
13. Any other existing electrical system not mentioned above

**C. The energy audit of the electrical installation shall cover, in particular, the following activities:**

**i) Building Energy Bills Analysis**

Analysis of energy consumption pattern in the building with respect to peak demand, load pattern, power factor for the last 3 years

**ii) Electricity Supply and Distribution network-**

**Distribution Transformer(s)**

Study and analysis of the utility pattern of transformer(s), checking no load loss of the transformers, measuring all Day Efficiency for each transformer etc..

**LT Distribution Panels**

1. General inspection of the LT distribution panel(s) for its maintenance and working including checking all the meters mounted on it.
2. Performing thermography for the cable termination wherever required and analysis of the observations
3. Measurement and analysis of demand and power factor, suggestions to reduce the demand and improve the power factor.
4. Study on Metering system and suggestion for improvement.
5. Study on V, I, KW fluctuation and profiling, V & I imbalances in the network.
6. Detailed examination of the existing energy use of the facility with break up.
7. Study and examination of use of electric energy, cost balance with break up.
8. Performance evaluation of installed capacitors to ensure deliverance of desired output, level of losses, management of system power factor and operation of capacitors.

**iii) Air Conditioning Systems–**

**Centralised Air Conditioning System**

1. Performance evaluation of existing central air conditioning system(s) in all the areas, measurement and analysis of indoor temperatures and suggest to optimise the energy utilisation.

**Chillers -**

1. Measuring all the operating parameters such as water flow (If the actual flow found to be in variation with the designed flow, the same needs to be adjusted to match designed flow before taking observations) inlet & out water temperatures, gas suction & discharge pressure, Power Consumption etc., after stabilising the parameters.
2. Calculation of operating Input KW per TR (IKW / TR) of Chiller(s) at minimum three different available load conditions for each chiller.
3. Comparison of actual parameters with the design values, and suggestion for corrective actions to be implemented.

### **Pumps -**

1. Measuring all the operating parameter such as water flow, suction & discharge head, power consumption etc.
2. Performance Evaluation of chilled water & Condenser water pumps and compare the same with the design or generally expected efficiency of such pumps.

### **Cooling Towers -**

1. Measurement of various parameters for cooling tower fans, water flow rate, air flow rate, dry bulb temperature (DBT) wet bulb temperature (WBT) sump temperature, relative humidity etc.
2. Evaluation of cooling tower performance (Range, approach, and effectiveness) and comparing it with designed data.

### **Air Handling Units**

1. Measurement of airflow, Relative Humidity(RH), Supply air temperature (T<sub>sa</sub>), Return air temperature (T<sub>ra</sub>), Chilled Water Inlet and outlet temperature i.e. T<sub>in</sub>, T<sub>out</sub> through cooling coil and energy consumption of Air Handling Units (AHUs).
2. Examination of Air Handling Units for air delivery capacity, capacity utilization, temperature pattern, pressure drop and operational pattern with respect to time to identify potential energy saving measures.
3. Calculation of actual tonnage of AHUs and Measurement of operating zone temperatures under each unit. Comparison of actual parameters with the design values.

### **Package/ precision Air Conditioners / Split or window air conditioners**

1. Evaluation of operating Coefficient of Performance (COP) of Precision and package Air Conditioner. Identification and suggestions for performance improvement and energy saving potential.
2. Calculation of actual tonnage and comparison of actual parameters with the design values and corrective actions.

#### **iv) UPS**

1. Measurement and analysis UPS loading, redundancy, operating efficiency, load pattern to suggest measures for energy cost reduction, Measurement and analysis of Harmonics as per standards.

#### **v) Lightning and fans**

1. Examination of the performance of existing lighting system in all the areas, measurement of illumination levels, etc.
2. To look possibilities to reduce energy use by incorporating energy efficient lighting system.
3. Study of operating electrical parameters like voltage, current etc. in the lightening circuits.

#### **vi) Diesel generator sets**

1. General Inspection of DG set.
2. The DG sets are to be tested for operational performance and parameters including fuel consumption, power generated, Voltage, Ampere, KW, KWh, KVA should be recorded during the audit.

#### **vii) Kitchen equipments**

1. Examination of the performance of the existing kitchen equipments, measurement of power consumption etc., to improve efficiency and optimizing power consumption.
2. To look possibilities to reduce energy use by incorporating energy efficient equipments.

#### **viii) Fire Hydrant Pumps and Domestic water Pumps**

1. Performance analysis of all major motors (above 10 HP) needs to be studied for possible energy savings opportunities by the application of following items.
  - a. Possibility of on /off control
  - b. Interlocking
  - c. Downsizing motors etc.

#### **D. Energy Audit Report**

The report shall contain complete building information, inventory of all equipments. It should include the log sheet data collected/measured at site, analysis of data (Log sheet and actual measured), observations of operational performance of various equipments, findings and recommendations for achieving energy and cost saving.

The recommended energy saving measures shall be categorized as (i) short term, (ii) medium term and (iii) long term measures for energy conservation. The report should also include energy use indices and comparison with industry averages.

The report should provide the estimated cost, estimated savings and simple pay back for each recommended energy saving measures in a chart. A detailed description of each energy conservation measure and supporting calculation with energy use and savings calculations, economic analysis and any assumptions that are made regarding operation or equipment efficiency shall be included. The recommendations for energy efficiency shall include the technical particulars of the equipment, life expectancy and details of manufacturer etc.

Date:

Place:

Seal & Signature of Agency

Report

on

Energy Audit of Bank's Office Building

at Bhopal

Duration of Energy Audit:

Name of the Energy Audit Agency: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

## **Summary of Recommendations**



**Remarks**

Annexure –I

**Details existing Electrical Systems**

**Details of Power Supply:**

Sanctioned Load (KVA)	
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	Capacity (KVA)	Voltage ratio	Type of cooling (oil / air)
Transformer No. 1 Rating			
Transformer No. 2 Rating			

**Details of Major Power Equipments:**

Central A C Plant Data	Capacity (TR)	compressor Motor 1 (KW)	compressor Motor 2 (KW)	Chilled Water Flow (LPM)	Condenser Water Flow (LPM)
Chiller No. 1					
Chiller No. 2					

**Chilled Water Pumps**

	Flow (LPM)	Head (M)	Motor (KW)
Chilled Water Pump 1			
Chilled Water Pump 2			
Chilled Water Pump 3			
Chilled Water Pump 4			

**Condenser Water Pumps**

	Flow (LPM)	Head (M)	Motor (KW)
Condenser Water Pump 1			
Condenser Water Pump 2			
Condenser Water Pump 3			
Condenser Water Pump 4			

**Cooling Towers**

	Capacity (TR)	Flow (LPM)	Motor (KW)
Cooling Tower 1			
Cooling Tower 2			
Cooling Tower 3			

Air Handling Units (AHUs)	Location	Capacity (TR)	Air Flow (CFM)	Motor (KW)	Area catered (M <sup>2</sup> )
AHU 1					
AHU 2					
AHU 3					
AHU 4					
AHU 5					
AHU 6					
AHU 7					

### **Hot Water Generator**

	Make	Capacity (KW)
Hot Water Generator 1		
Hot Water Generator 2		

### **Lightening**

#### **Internal Lightening (Floor wise)**

Sr. No.	Floor	Type of fitting	Wattage	Qty.	Total carpet area covered (M <sup>2</sup> )

#### **External Lightening**

Sr. No.	Location	Type of fitting	Wattage	Qty.	Total ground areacovered (M <sup>2</sup> )

### **Lifts**

Lifts No.	Location	Make	Passenger Capacity	Speed (M/S)	No. of floors served	Whether controller V3For not
1						
2						
3						
4						
5						

**Standalone A. C. units where central AC is also provided (Area wise)**

Sr. No.	Location	Type of AC (window / split / package etc.)	Qty	Capacity of each AC (TR)	Area catered (M <sup>2</sup> )	Expected per day operating hours

**Standalone A. C. units where central AC is not provided (Area wise)**

Sr. No.	Location	Type of AC (window / split / package etc.)	Qty	Capacity of each AC (TR)	Area catered (M <sup>2</sup> )	Expected per day operating hours

**DG Sets**

	Location	Make	Rating (KVA)
DG SET No. 1			
DG SET No. 2			

**Special Equipment viz. Shredding & Briquetting Machine, CVPS machine etc.**

Sr. No.	Name of the machine	Make	Power Rating of the machine (KW)	Expected per day operating hours

**UPS Details**

Sr. No.	Location	Make	Capacity (KVA)

**Performance Evaluation of Main Equipments-Sample Formats**

**Central AC Plant**

**Chiller No. \_\_\_\_\_**

Sr. No.	Chilled water inlet Temp. (Tin)°C	Chilled water outlet Temp. (Tout)°C	Chilled Water Flow (LPM)	Suction Pressure	Discharge Pressure	Capacity (TR)	Input Power (KW)	IKW/ TR	Remarks/ Comments/ Suggestions

**Capacity of the Chiller (TR) = (Tin -Tout)\*Water Flow rate (LPM)\*60/3024**

**Efficiency of Chiller in KW/TR = Total Power input (in KW)/Total Tonnage**

**Air Handling Units**

**Air Handling Unit (AHU) No. \_\_\_\_\_**

Sr. No.	Return / Inlet Air		Supply / outlet Air		Air Flow (CFM)	Tons of Refrigeration (TR)	Input KW	IKW/ TR	Remarks/ Comments/ Suggestions
	Dry Bulb Temp. Tdb (°C)	Wet Bulb Temp. Twb (°C)	Dry Bulb Temp. Tdb (°C)	Wet Bulb Temp. Twb (°C)					

**AHU TR = 1.699\*Air Flow (CFM)\* Density of Air (Kg/M³)\*(Hin-Hout)/(4.18\*3024)**

Where :

Hin = Enthalpy of inlet Air at AHU (KJ/Kg)  
 Enthalpy of outlet Air from AHU

Hout = (KJ/Kg)

Density of Air = 1.18 Kg/M³ at standard Temperature and Pressure

**Note: Enthalpy is to be read from Psychrometric Chart corresponding to DB and WB Temp.**

**Chilled Water Pumps**

Chilled Water Pump No. \_\_\_\_\_

Sr. No.	Discharge Pressure (Pdisc) Kg/cm <sup>2</sup>	Suction Pressure (Psuc) Kg/cm <sup>2</sup>	Chilled Water Flow (LPM)	Developed Hydraulic Power (KW)	Measured Input Power (KW)	Pump efficiency	Remarks / Comments / Suggestions

**Developed Hydraulic Power (KW) = Flow (LPM) \* (Pdisc-Psuc) Kg/cm<sup>2</sup> \*9.81/6000**

**Pump Efficiency =\_Developed Hydraulic Power (KW)/ Input Electric KW**

**Condenser Water Pump**

Condenser Water Pump No. \_\_\_\_\_

Sr. No.	Discharge Pressure (Pdisc) Kg/cm <sup>2</sup>	Suction Pressure (Psuc) Kg/cm <sup>2</sup>	Condenser Water Flow (LPM)	Developed Hydraulic Power (KW)	Measured Input Power (KW)	Pump efficiency	Remarks/ Comments/ Suggestions

**Developed Hydraulic Power (KW)= Flow (LPM)\*(Pdisc-Psuc)\*9.81/6000**

**Pump Efficiency =\_Developed Hydraulic Power (KW)/ Input Electric KW**

**Cooling Tower**

Sr. No.	Water inlet Temp. (Tin)°C	Water outlet Temp. (Tout)°C	Water Flow (LPM)	Wet Bulb Temp. Twb (°C)	Cooling Tower Capacity (TR)	Cooling Tower Efficiency	IKW/ TR	Remarks/ Comments/ Suggestions

**Range= Tin-Tout**

**Approach= Tout-Twb**

**Cooling Tower Efficiency = Range\*100/(Range+Approach)**

**Cooling Tower Capacity (TR) = (Tin -Tout)\*Water Flow (LPM)\*60/3024**

### Internal Lightening (Floor wise)

Sr. No.	Floor	Type of fitting	Calculated Wattage per Fitting	Qty	Total Wattage (KW)	Total carpet area covered (M <sup>2</sup> )	Light Power Density (W/M <sup>2</sup> )	Measured Average Light Level (Lux)	Light Efficiency (Lux/LPD)

### DG set

1. Run the DG set at available load
2. The initial and final reading of the diesel tank and Energy meter needs to be recorded.

Sr. No.	Rating of DG set (KVA)	Make of DG set	Start Time	Stop Time	Period of Operation (Hrs.)	Diesel Consumed (Ltrs.)	Generated Energy (KWH)	Specific fuel Consumption (KWH/Ltr)	Remark /Observation

### UPS

1. Measurement on each UPS needs to be recorded

Sr. No.	Rating of UPS (KVA)	Make of UPS	Input Voltage			Input Current			Total current Harmonic Distortion THDi	Total Voltage Harmonic Distortion THDv	Remarks
			Vrn	Vyn	Vbn	Ir	Iy	Ib			

### LT Panels: LT Panels at Substation including capacitor

#### Panel Name:

Sr. No.	Input Voltage			Input Current			Input KW	Input KVA	P.F.	Total current Harmonic Distortion THDi	Total Voltage Harmonic Distortion THDv	Remarks
	Vrn	Vyn	Vbn	Ir	Iy	Ib						

**NEFT Details for effecting e-payments**

Name of the Institution: Reserve Bank of India, Bhopal

Address (in full): Reserve Bank of India, Bhopal-462011

1	Name of the Account Holder (as appearing in the Bank Account)	Reserve Bank of India, Bhopal
2	<b>Account Number</b>	<b>186003001</b>
3	Type of Account (Savings, Current etc.)	Current
4	<b>PAN Number</b>	<b>AAIFR5286M</b>
5	Name of the Bank	RBI, Bhopal
6	Name of the Branch	RBI, Bhopal
7	Address of the Bank	RBI, Bhopal
8	<b>NEFT/IFS Code</b>	<b>RBIS0BLPA01 (0 in the code represents ZERO)</b>
9	Name of the Account	<b>RBI, NEFT, Inward Received</b>
10	GST Number	<b>23AAIFR5286M1ZO</b>





**Reserve Bank of India  
Estate Department  
Bhopal**

Tender for  
Conducting Energy Audit of Bank's Office Building  
at Bhopal

**PART II (Price Bid)**

Name of the Tenderer: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

**Due Date of Submission : Before 2.00 PM on July 18, 2024**  
**Date of opening of Part I of tender : At 3.00 PM on July 18, 2024**  
**Venue : Estate Department**  
**RBI Bhopal**

**CARE: - PART I AND PART II TO BE SUBMITTED IN SEPERATE SEALED ENVELOPES**

**Reserve Bank of India  
Estate Department  
Bhopal**

**Bill of Quantity**

**Name of Work: Tender for Conducting Energy Audit of Bank's Office Building at  
Bhopal**

<b>Sl. No.</b>	<b>Description</b>	<b>Qty</b>	<b>Rate excluding GST (Rs.)</b>	<b>GST as applicable (Rs.)</b>	<b>Total rate = (4) + (5) (Rs.)</b>
<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>	<b>(5)</b>	<b>(6)</b>
<b>1</b>	Rate for conducting Energy Audit of the Bank's office building and submitting the detailed Energy Audit Reports (03 spiral binding copies having colour print out) as per the scope specified in the tender Part-I.	L.S. (Lumps um)			

Amount in words:

Date:

Seal and Signature of the agency

Place