



**राष्ट्रीय कृषि और ग्रामीण विकास बैंक**  
**NATIONAL BANK FOR AGRICULTURE AND RURAL**  
**DEVELOPMENT**

**Department of Premises, Security and Procurement**  
**NABARD, Gujarat Regional Office,**  
**2<sup>nd</sup> Floor, NABARD Tower,**  
**Opposite Municipal Garden,**  
**Usmanpura, Ahmedabad – 380013**  
**Telephone – 079-27554024 / 079-27554041**  
**Email – [dpsp.ahmedabad@nabard.org](mailto:dpsp.ahmedabad@nabard.org)**

**नाबार्ड टॉवर, उस्मानपुरा, अहमदाबाद में संबद्ध पाइपलाइनों और कूलिंग टॉवर सहित एचवीएसी (हीटिंग, वेंटिलेशन और एयर कंडीशनिंग) प्रणाली की आपूर्ति, संस्थापना, परीक्षण व कमीशनिंग और पुरानी इकाइयों, पाइपलाइनों की पुनःखरीद के लिए निविदा**

**Tender for Supply, Installation, Testing, and Commissioning of HVAC (Heating, Ventilation, and Air Conditioning) System with associated Pipelines and Cooling Tower and Buyback of Old Units, Pipelines at NABARD Tower, Usmanpura, Ahmedabad**

**निविदा आमंत्रण सूचना**  
**Notice Inviting Tender**

संदर्भ सं NB.Guj./ 132965 /DPSP-324/2025-26

Date: 22 दिसंबर 2025

**कार्य का विवरण:** नाबार्ड टॉवर, उस्मानपुरा, अहमदाबाद में संबद्ध पाइपलाइनों और कूलिंग टॉवर सहित एचवीएसी (हीटिंग, वेंटिलेशन और एयर कंडीशनिंग) प्रणाली की आपूर्ति, संस्थापना, परीक्षण व कमीशनिंग और पुरानी इकाइयों, पाइपलाइनों की पुनः खरीद के लिए निविदा

1. राष्ट्रीय कृषि और ग्रामीण विकास बैंक (नाबार्ड) ने **₹56.00 लाख** की अनुमानित लागत पर नाबार्ड टॉवर, उस्मानपुरा, अहमदाबाद में संबद्ध पाइपलाइनों और कूलिंग टॉवर के साथ एचवीएसी सिस्टम (चिलर प्लांट) की आपूर्ति, संस्थापना, परीक्षण व कमीशनिंग और पुरानी इकाइयों, पाइपलाइनों की पुनः खरीद के लिए निविदा आमंत्रित की है।

2. आपसे अनुरोध है कि उपर्युक्त करार के लिए इस निविदा दस्तावेज़ में दिए गए विवरण और उल्लिखित अन्य आवश्यकताओं के अनुसार दो बोली प्रणाली में अपना प्रस्ताव प्रस्तुत करें। निविदा दस्तावेज़ <https://www.nabard.org> & CPP पोर्टल से डाउनलोड किया जा सकता है।

3. बोली पूर्व बैठक नाबार्ड क्षेत्रीय कार्यालय, उस्मानपुरा, अहमदाबाद 380013 में **29 दिसंबर 2025** को आयोजित होगी। बोली-पूर्व बैठक में भाग लेने से पहले बोलीकर्ता साइट का सर्वेक्षण करके कार्य/ सेवा की व्यवहार्यता के बारे में पर्याप्त जानकारी प्राप्त करके आश्वस्त हो जाएँ। बोली-पूर्व बैठक में आप जो भी स्पष्टीकरण चाहते हैं, वह बैठक तिथि से कम से कम एक कार्यदिवस पहले लिखित में अपने प्रश्न हमें **dpsp.ahmedabad@nabard.org** पर भेजें। बोली-पूर्व बैठक के सभी स्पष्टीकरण इस निविदा का हिस्सा माने जाएँगे।

4. पैनल में शामिल विक्रेताओं से अनुरोध है कि वे नाबार्ड टावर, उस्मानपुरा, अहमदाबाद 380013 के दूसरे तल पर पर परिसर, सुरक्षा और अधिप्राप्ति विभाग में रखे निविदा बॉक्स में **12 जनवरी 2026**, 3 बजे तक अपनी बोलियां प्रस्तुत करें। किसी भी अन्य माध्यम जैसे ईमेल / डाक द्वारा / कूरियर आदि

**Name of Work: Tender for Supply, Installation, Testing, and Commissioning of HVAC (Heating, Ventilation, and Air Conditioning) System with associated Pipelines and Cooling Tower and Buyback of Old Units, Pipelines at NABARD Tower, Usmanpura, Ahmedabad**

1. National Bank for Agriculture and Rural Development (NABARD) invite tender for the captioned work i.e. Tender for Supply, Installation, Testing, and Commissioning of HVAC System (Chiller Plant) with associated Pipelines and Cooling Tower and Buyback of Old Units, Pipelines at NABARD Tower, Usmanpura, Ahmedabad with estimated cost of **₹56.00 lakhs**.

2. You are requested to submit your offer in **Two Bid System** for the aforesaid contract as per the detailed specifications and other requirements as mentioned in this tender document. The tender document will be available for download at <https://www.nabard.org> and CPP Portal.

3. The Pre-Bid meeting will be held at 1500 Hrs on **29 December 2025** at **NABARD Regional Office, Usmanpura, Ahmedabad 380013**. To be eligible to participate in the pre-bid meeting, the bidder should have already conducted a site survey and should have satisfied himself about the overall feasibility of the work/service. Any clarifications being sought in the pre-bid meeting should be submitted in writing at least 01 working day prior to the date of pre-bid meeting by email to **dpsp.ahmedabad@nabard.org**. All the clarifications of the pre-bid meeting will be part of tender.

4. Vendors are requested to submit their bids in the Tender Box on 2<sup>nd</sup> floor, Department of Premises. Security and Procurement, NABARD Tower, Usmanpura, Ahmedabad 380013 latest by 15:00 hours **12 January 2026**. Tender received in any other mode like Email/By



से प्राप्त निविदाएँ सीधे ही अस्वीकार कर दी जाएंगी और उन पर विचार नहीं किया जाएगा। बोलीकर्ताओं को सूचित किया जाता है कि वे अपनी बोलियाँ दो अलग-अलग लिफाफों में प्रस्तुत करें- एक लिफाफे में तकनीकी बोली और दूसरे में मूल्य बोली। दोनों लिफाफों को एक सीलबंद लिफाफे में एक साथ संलग्न करते हुए उसे निर्दिष्ट निविदा बॉक्स में जमा करें।

5. निविदा की तकनीकी बोली (भाग -1) नाबार्ड, गुजरात क्षेत्रीय कार्यालय, अहमदाबाद-380013 में **12 जनवरी 2026** को दोपहर 03.00 बजे या बाद में, नाबार्ड की सुविधानुसार खोली जाएगी।

6. जो बोलीकर्ता तकनीकी मूल्यांकन में पात्र पाए जाएँगे, उनकी कीमत बोली (भाग II) एक भिन्न तिथि पर खोली जाएगी। यदि इस निविदा दस्तावेज़ के नियमों में कोई विरोधाभास है तो इस दस्तावेज़ को प्राथमिकता दी जाएगी।

7. तकनीकी बोली, कीमत बोली, कार्य के दायरे और आवश्यक सेवाओं, सफल बोलीकर्ता के चयन आदि के बारे में इस निविदा के नियमों-शर्तों और इस निविदा दस्तावेज़ के अन्य हिस्सों में विस्तार से उल्लेख किया गया है।

8. नीचे दिए गए बैंक खाते में एनईएफ़टी के माध्यम से **₹1,12,000/- (रुपये एक लाख बारह हजार मात्र)** की बयाना राशि जमा करवाई जाए। बगैर ईएमडी प्राप्त होने वाली निविदाएँ निरस्त कर दी जाएंगी।

खाताधारक का नाम	NABARD
चालू खाता नंबर	NABADMN02
बैंक का नाम	NABARD Head Office, Mumbai
आईएफएससी Code	NBRD0000002

9. बोलीकर्ताओं द्वारा जमा कराई गई ईएमडी पर कोई ब्याज देय नहीं होगा। सफल बोलीकर्ता को कार्य दिए जाने के बाद असफल बोलीकर्ताओं की ईएमडी लौटा दी जाएगी। आपसे अनुरोध है कि निविदा दस्तावेज़ के साथ खाते में राशि जमा कराने की रसीद की प्रति भी प्रस्तुत करें। ऐसा नहीं करने पर निविदा स्वीकार नहीं की जाएगी। (ईएमडी राशि जमा कराने के बाद निविदाकर्ता इस ट्रांजेक्शन का

post/Courier, etc will be summarily rejected and not be entertained. **Bidders are advised to submit their bids in two separate covers—one containing the Technical Bid and the other containing the Price Bid. Both covers should be enclosed together in a single sealed envelope and deposited in the designated Tender Box.**

5. Technical Bid (Part- I) of Tender will be opened at NABARD Regional Office, Usmanpura, Ahmedabad 380013 on **12 January 2026** at 1500 hrs or later as per convenience of NABARD.

6. Price Bid (Part II) of bidders who qualify the technical evaluation will be opened on a separate date. If there is any conflict between the rules of this tender document, then this document will be given preference.

7. Instructions regarding Technical Bid, Price Bid, scope of work/services required, selection of successful bidder etc have been elaborated in the Terms and Conditions of the tender and other parts of the tender document.

8. An Earnest Money Deposit of **Rs. 1,12,000/- (Rupees One Lakh Twelve Hundred only)** should be remitted by NEFT into the account mentioned below. Tender without EMD shall be rejected.

Payee Name	NABARD
Current Account No	NABADMN02
Name of the Bank	NABARD Head Office, Mumbai
IFSC Code:	NBRD0000002

9. No interest shall be paid on the EMD submitted by the bidders. EMD of unsuccessful bidders would be refunded after the award of work to the successful bidders. We request you to give us a copy of the acknowledgement crediting our Account along with tender document failing which the tender will not be considered for acceptance.

(After depositing the EMD amount, the tenderer is advised to send an email to [dpsp.ahmedabad@nabard.org](mailto:dpsp.ahmedabad@nabard.org) with the details of



<p>विवरण हमें ईमेल से <b>dpsp.ahmedabad@nabard.org</b> पर भेजे।</p> <p>10. बोली खोलने की तिथि से 90 दिनों तक यह बोली स्वीकार करने के लिए वैध मानी जाएगी।</p> <p>11. निविदा में उल्लिखित नियमों व शर्तों के प्रति सहमति के रूप में इस ऑफर में शामिल सभी दस्तावेजों और निविदा के सभी पृष्ठों पर बोलीकर्ता के हस्ताक्षर हों व सील लगी हो।</p> <p>12. नाबार्ड को यह अधिकार है कि वह बगैर कोई कारण बताए एक या एकाधिक बोलीकर्ताओं की कोई भी या सभी निविदाएँ आंशिक या पूर्ण रूप से निरस्त करे।</p> <p>13. सफल बोलीकर्ता इस ऑफर को स्वीकार करने की तिथि से 07 दिन के भीतर संलग्न मानक प्रारूप में नाबार्ड के साथ एक करार निष्पादित करेगा। ऐसा नहीं करने पर बोलीकर्ता की ईएमडी जब्त कर ली जाएगी।</p> <p>14. जो बोलीकर्ता बैंक के साथ संलग्न मानक प्रारूप में प्री कॉन्ट्रैक्ट इंटीग्रिटी पैक्ट निष्पादित करने के इच्छुक हैं, वे ही बोली प्रक्रिया में सहभागिता के लिए पात्र होंगे। गुजरात के लिए नामित स्वतंत्र बाहरी मॉनिटर श्री जगदीप कुमार घई, पीटीए एंड एफई (सेवानिवृत्त) हैं, जिनका पता फ्लैट नं. 1032, ए विंग, वनश्री सोसाइटी, सेक्टर 58 ए एंड बी, पाम बीच रोड, नेरूल, नवी मुंबई-400706 है और ईमेल- <b>jkghai@gmail.com</b> है।</p> <p>15. निविदा दस्तावेज में यदि कोई भी विसंगतियाँ, चूक, अस्पष्टता पाई जाती है, अथवा उसके अर्थ के बारे में संदेह उत्पन्न होता है, तो कृपया 'मुख्य महाप्रबंधक, राष्ट्रीय कृषि और ग्रामीण विकास बैंक, म्युनिसिपल गार्डन के सामने, उस्मानपुरा, अहमदाबाद' को लिखित रूप से या फिर <b>dpsp.ahmedabad@nabard.org</b> पर ईमेल द्वारा अवगत करें जो उसकी और मांगी गई जानकारी की समीक्षा करेंगे और यदि निविदा दस्तावेज में उसे स्पष्ट रूप से उल्लेखित या विनिर्दिष्ट नहीं किया गया है तो, नाबार्ड द्वारा सभी निविदाकर्ताओं को स्पष्टीकरण जारी किया जाएगा जो निविदा दस्तावेज का हिस्सा होगी। निविदा प्रस्तुत करने के तीन कार्य दिवस पूर्व, निविदा दस्तावेज में कोई भी विसंगतियाँ,</p>	<p>the transaction). EMD may be exempted as per prevailing laws.</p> <p>10. The bid shall remain valid and open for acceptance for 90 days from the date of opening of the bid.</p> <p>11. All documents that comprise the offer and all pages of tender, should be signed and sealed by the bidder, as a token of acceptance to the terms and conditions specified in tender.</p> <p>12. NABARD reserves the right to accept or reject any/all tender(s) in part or whole of any bidder/bidders without assigning any reasons for doing so.</p> <p>13. The successful bidder shall execute an agreement with NABARD in accordance with the standard format enclosed within 07 days from the date of acceptance of the offer, failing which the bidder's EMD may stand forfeited.</p> <p>14. Only bidders who are willing to execute <b>Pre Contract Integrity Pact</b> with the Bank, in accordance with the standard format enclosed, will be eligible to participate in the tender. The Independent External Monitor (IEM) assigned for Gujarat would be Shri Jagdeep Kumar Ghai, PTA &amp; FE (Retd), Flat No 1032 A Wing, Vanashree Society, Sector 58 A &amp; B, Palm Beach Road, Nerul, Navi Mumbai, 400706, email <b>jkghai@gmail.com</b>.</p> <p>15. Any discrepancies, omissions, ambiguities in the Tender Documents, if any, or any doubt as to their meaning should be reported in writing to the "The Chief General Manager, National Bank for Agriculture and Rural Development, Gujarat Regional Office, Opp. Municipal Garden, Usmanpura, Ahmedabad" or by email to <b>dpsp.ahmedabad@nabard.org</b>, who will review the same and information sought if not clearly indicated or specified, NABARD will issue clarifications to all the tenderers which will become part of the Contract Document. NABARD will not be responsible if the discrepancies, omissions, ambiguities in the Tender Documents or any doubts as to their meaning are not brought to the notice of NABARD before or at Pre-bid meeting. Any amendments or clarifications to the</p>
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<p>चूक,अस्पष्टता अथवा उसके अर्थ के बारे में संदेह को यदि नाबार्ड की जानकारी में नहीं लाया जाता है तो, नाबार्ड इसके लिए जिम्मेदार नहीं होगा।</p> <p><b>16. यदि किसी भी कारण से, यह पाया जाता है कि तकनीकी बोली में किसी भी तरह से वित्तीय बोली से संबंधित विवरण का उल्लेख है अथवा "तकनीकी बोली" के लिए निर्दिष्ट स्थान पर वित्तीय बोली प्रस्तुत की गई है, तो ऐसी स्थिति में बोली दस्तावेज को तुरंत ही निरस्त कर दिया जाएगा।</b></p>	<p>tender documents will be published on the NABARD website. No separate communication will be sent to individual bidders.</p> <p><b>16. If for any reason, it is found that the Technical bid reveals the Financial Bid related details in any manner whatsoever, or, the Financial Bid is swapped in the section marked "Technical Bid", the Bid document will be summarily rejected in the first instance itself.</b></p>
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भवदीय

हस्ता/-

**(अशोक कुमार)**  
उप महाप्रबंधक



**SCHEDULE OF EVENTS**

Date of issue of Tender	<b>22 December 2025</b>
Earnest Money Deposit (EMD)	The Bidder shall deposit Earnest Money Deposit for an amount of <b>₹ 1,12,000/- (Rupees One Lakh Twelve Hundred only)</b> which can be remitted by NEFT/RTGS into NABARD's bank account as per details given below.
Account Details of National Bank for payment of Earnest Money Deposit	Payee Name : <b>NABARD</b> Current Account No : <b>NABADMN02</b> Name of the Bank: <b>NABARD, Mumbai</b> IFSC Code : <b>NBRD00000002</b>
Pre-Bid meeting	<b>15.00 hrs. on 29 December 2025</b>
Last Date of Submission of Bids	<b>Up to 15.00 hrs. on 12 January 2026</b>
Opening of Bids	<b>15.30 hrs. on 12 January 2026</b>
<b>Contact Details:</b> Address for Communication And submission of bid.	NABARD, Gujarat Regional Office, Department of Premises, Security and Procurement, 2nd Floor, NABARD Towers, Opposite Municipal Garden, Usmanpura, Ahmedabad 380013 079-2755-4041/4024





**FORM OF TENDER****(on the letter head of the bidder)****Tender for Supply, Installation, Testing, and Commissioning of HVAC (Heating, ventilation, and air conditioning) System with associated Pipelines and Cooling Tower and Buyback of Old Units, Pipelines at NABARD Tower, Usmanpura, Ahmedabad**

Place: Ahmedabad

Date: \_\_\_\_\_

The Chief General Manager  
National Bank for Agriculture  
and Rural Development  
Usmanpura  
Ahmedabad.

Dear Sir,

1. Having examined the schedule of quantities relating to the works specified in the memorandum hereinafter set out and having visited and examined the site of works specified in the said memorandum and having acquired the requisite information relating thereto as affecting the quotation / tender, I/We hereby offer to execute the work specified in memorandum at the rates mentioned in the attached schedule of quantities and in accordance with the specification and instructions in writing and with such materials as are provided for and in all other respects in accordance with such conditions so far as they are applicable.

**M E M O R A N D U M**

a)	Description of work	<b>Tender for Supply, Installation, Testing, and Commissioning of HVAC (Heating, Ventilation, and Air Conditioning) System with associated Pipelines and Cooling Tower and Buyback of Old Units, Pipelines at NABARD Tower, Usmanpura, Ahmedabad</b>	
b)	Contract Period	<b>45 days</b> (from 7 <sup>th</sup> day of issuance of the work order)	
c)	Earnest money Deposit	<b>₹1,12,000 (Rupees One Lakh Twelve Thousand only)</b>	
		Payee Name	NABARD
		Current Account No	NABADMN02
		Name of the Bank	NABARD Head Office, Mumbai
		IFSC Code:	NBRD0000002

2. Should this quotation/tender be accepted, I/We hereby agree to abide by and fulfil the terms and condition of contract annexed hereto so far as they may be applicable or vide fault thereof to forfeit any pay to NABARD, Ahmedabad the amount mentioned in the said conditions.

3. Our Bankers are



a. Bank Name & Branch \_\_\_\_\_  
 Account No. \_\_\_\_\_  
 IFS code \_\_\_\_\_

b. Bank Name & Branch \_\_\_\_\_  
 Account No. \_\_\_\_\_  
 IFS code \_\_\_\_\_

4. The Names of the proprietor/partners of our firm are:

a. \_\_\_\_\_  
 b. \_\_\_\_\_

5. Names of the proprietor/partner of the firm authorized to sign:

a. \_\_\_\_\_  
 b. \_\_\_\_\_

6. Names of the person hereby given the power of Attorney to sign the contract:

a. \_\_\_\_\_  
 b. \_\_\_\_\_

7. Our PAN No. is \_\_\_\_\_. (Copy of PAN to be attached)

8. I / We have examined the Scope of Works, Specifications and Schedule of Quantities and Terms and Conditions relating to the Tender for the said works after having obtained/received the Tender invited by you.

9. I / We have visited the site, examined the site of works specified in the Tender Document and acquired the requisite information relating thereto as affecting the Tender.

10. I / We hereby offer to execute and complete the works in strict accordance with the Tender Document at the rates quoted by me / us in the attached Bill of Quantities in all respects as per the Specifications and Scope of Works described in the Tender Document and the Annexures containing Terms and Conditions.

11. I / We have paid interest-free Earnest Money Deposit (EMD) of **₹1,12,000 (Rupees One Lakh Twelve Thousand only)** by RTGS/NEFT to NABARD' Current Account No: NABADMN02, Name of the Bank: NABARD, Head Office, Mumbai, IFSC Code NBRD0000002 and the sum shall be forfeited in the event of our withdrawal of Tender before expiry of the validity period of offer and / or in the event of our failure to execute the Contract when called upon to do so by accepting our Tender.

12. **I / We agree to pay all Government (Central and State) Taxes such as GST and other taxes prevailing from time to time and the rates quoted by us are inclusive of the same.**

13. The rates quoted by me / us are firm and shall not be subjected to variations on account of fluctuation in the market rates or any other reasons whatsoever.

Yours faithfully

(Seal & Signature of Contractor)

Date:

Place:





**NATIONAL BANK FOR AGRICULTURE AND RURAL  
DEVELOPMENT  
GUJARAT REGIONAL OFFICE  
AHMEDABAD**



**Part-I**  
**(Technical Bid)**

**INSTRUCTIONS TO THE TENDERERS FOR FURNISHING INFORMATION AS  
A PART OF PRE-TENDER QUALIFICATIONS ELIGIBILITY CRITERIA**

1. The bidder shall be an **OEM-authorized** vendor and shall possess a **valid OEM authorization certificate**. The Bidder shall be a body incorporated in India under the Companies Act, 1956 or 2013 including any amendment there to. A copy of certificate of incorporation shall be furnished along with the Bid in support of above. Proprietorship, Partnership firms having valid registration of the firm with the concerned Government authorities, shall also be eligible to participate in the Tender subject to their fulfilling all the terms and conditions given in the document.

**2. Experience**

The Bidder shall have minimum 07 years' experience (as on 30/09/2025) in design, supply, installation and commissioning of HVAC (Heating, ventilation, and air conditioning) System with associated Pipelines and Cooling Tower project carried out for Public Sector Undertakings (PSUs) /Banks/Govt. Office.

SN.	Experience Criteria	Value of Work Completed
1	1 similar work during last 7 years (ending 30.09.2025) with annual contract value (costing individually) not less than >>>>	₹44.80 Lakhs
	OR	OR
2	2 similar works during last 7 years (ending 30.09.2025) with annual contract value (costing individually) not less than >>>>	₹28.00 Lakhs
	OR	OR
3	3 similar works during last 7 years (ending 30.09.2025) with annual contract value (costing individually) not less than >>>>	₹22.40 Lakhs

3. Ongoing contracts more than 40% of estimated cost.

**4. Average Annual Turnover**

The bidders should have **average Annual Turn Over of at least ₹16.80 lakhs** during the **last three years ending 31 March 2025** supported with audited balance sheet / profit & loss statement / registered Chartered Accountant certified statement of accounts.

5. The bidder should have their own office within the municipal areas of **Ahmedabad or Gandhinagar**.

6. Tender shall be accompanied by a copy of each of the documents like,

- Articles of Association/Memorandum of Association/ partnership deed/ any other relevant document showing composition of the firm,
- List of eligible work executed during last seven years,



- c) PAN,
  - d) GSTN, TAN Registration
  - e) Employee State Insurance Act registration,
  - f) PF registration,
  - g) Particulars of bankers & Bank account details.
  - h) Details of work experience shall be supported by work orders and corresponding completion certificates.
  - i) The client-wise names of similar work(s), year(s) of execution of work (s) awarded, and actual value of executed work(s), reasons for delay (if any), names and full contact details of the officers/ authorities/ departments under whom the work(s) was/were executed should be furnished in the prescribed format.
  - j) Details of works on hand.
  - k) Latest audited final accounts of the business of the contractor duly certified by a Chartered Accountant/certificate of turnover issued by a Chartered Accountant should be enclosed in proof of their credit worthiness and turnover for the last three years (FY 2022-23, FY 2023-24, FY 2024-25).
  - l) Income Tax Returns for last three years (FY 2022-23, FY 2023-24, FY 2024-25)
  - m) Authorization letter from respective make original equipment manufacturer, which should be valid upto date.
  - n) Undertaking for supply of genuine spare parts.
  - o) The OEM should be an Indian company.
  - p) OEM should possess valid ISO 9001/ ISO 14001 Certification.
  - q) The OEM should have its own manufacturing and full fledged service centre(s) in India, with adequate stock of inventory/ spares.
  - r) OEM should have valid license from competent authority to install.
  - s) Presence of full-fledged service centre and technical manpower at Ahmedabad. (including availability of inventory and spares)
7. If required, original certificates shall be produced for verification by the bidder and will be returned after verification.
8. NABARD reserves the right to verify any or all the documents furnished by the Bidders with any authorities. NABARD also reserves the right to cancel any or all the applications without assigning any reason thereof.
9. Intending applicants are required to furnish details about their firm/organization, experience, competence, etc.
10. The application form should be signed by a person on behalf of the Firm/Organization, who is duly authorized to do so.
11. If the space in the application form is insufficient for furnishing full details, such information may be supplemented on a separate sheet of paper duly signed.
12. Applications containing false or inadequate information are liable for rejection and Bank reserves the right to blacklist those agencies.



13. The firms which do not fulfil prequalification criteria shall not be considered for selection and award of work.
14. The staff deployed by the firm at site should have adequate experience and knowledge in their respective works.

(Signature & seal of Authorized person on behalf of the Firm / Agency / Bidder)



### **Checklist for Technical Evaluation**

**The bidders will be technically evaluated based on the parameters as follows:**

<b>Sr. No.</b>	<b>Description of Enclosure</b>	<b>Please tick or write</b>
1.	Name of the firm and Composition of the Firm (Full particulars (whether the Bidder is an individual / partnership firm / company etc.) of the composition of the firm of Bidders in detail should be submitted along with the name(s) and address(es) of the partners, copy of the Articles of Association / Power of Attorney / any other relevant document.) (a.1) Registered Head Office Address (a.2) Local Office Address (a.3) Year of establishment	
2.	Address in Ahmedabad or Gandhinagar Municipality area (please submit address proof)	
3.	Registration (Please submit copies of requisite documents)	<div style="text-align: center;">GST</div> <hr/> <div style="text-align: center;">PAN</div>
4.	Work Experience (Details of work experience design, supply, installation and commissioning of Rooftop or Ground Mounted grid connected Solar PV Power Plants project and per the requirements in the Technical Evaluation criteria supported by work orders indicating the value & general specification of work) (Bidder should have at least 07 years of experience as on 30/09/2025)	3 Works of ₹22.40 Lakh each  Or  02 Works of ₹28.00 Lakh each  Or  01 Work of ₹44.80 Lakh
5.	Credit worthiness of the Bidder (Please submit Audit Reports for 03 years)  (The bidder should submit attested copy of the audited balance sheet and certified by CA for completed three financial years i.e. 2022-23, 2023-24, 2024-25 shall only be acceptable.	



6.	Average Annual Turn Over : Should be more than, ₹16.80 Lakh during the last three years ending 31 March 2025 (Please submit CA Certificate)		
7.	Earnest Money Deposit through NEFT: please submit requisite documents. In case of any exemption sought, please upload relevant and currently valid documents		
8.	Whether registered in the panel of other banks and other financial institutions and if yes, furnish the details of registration viz. names, category, and date of registration, etc.		
9.	<b>OEM Authorisation Certificate (Issued by OEM)</b> <b>*(Compulsory)</b>		
10.	<b>Presence of full-fledged service centre and technical manpower at Ahmedabad.</b> <b>*(mandatory)</b>		

(Signature of the Bidder / Tenderer)





## Section-I -Previous Experience

a) List of important works **EXECUTED** by the bidder during last **seven years individually costing ₹22.40 Lakh each and above** with experience in executing design, supply, installation and commissioning of HVAC (Heating, ventilation, and air conditioning) System with associated Pipelines and Cooling Tower project carried out for Public Sector Undertakings (PSUs) /Banks/Govt. Office etc. (Please attach extra sheets if required). (Indicate only 03 works)

S. No	Name of the work And Location	No of HVAC unit Installed	Name & full postal address. Also indicate whether Government or Semi-Govt or PSU's	Work Order Amount (Rs)	Details of order And Commissioning Certificate issued by SNA and user	Any other relevant information
(1)	(2)	(3)	(4)	(5)	(6)	(7)

b) List of important **ON HAND** works costing **₹22.40 Lakh each and above** in the field of executing design, supply, installation and commissioning of HVAC (Heating, ventilation, and air conditioning) System with associated Pipelines and Cooling Tower project carried out for Public Sector Undertakings (PSUs) /Banks/Govt. Office etc. (Please attach extra sheets if required). (Indicate only 03 works)

S. No	Name of the work And Location	No of HVAC unit installed.	Name & full postal address. Also indicate whether Government or Semi-Govt or PSU's	Work Order Amount (Rs)	Whether work was left incomplete or contract was terminated from either side? Give full details.	Any other relevant information
(1)	(2)	(3)	(4)	(5)	(6)	(7)

**Details of Key Technical & Administrative Personnel:****Details of Technical personnel**

SN	Name	Designation	Qualification / Certification	Professional Experience	No. of years associated with the firm

**Details of Administrative personnel**

SN		Name	Designation	Qualification	Professional Experience	No. of years associated with the firm

**DETAILS OF THE BANK'S ACCOUNT**

<b>1.</b>	Name of the Vendor / Firm / Contractor	
<b>2.</b>	Name of the Account Holder	
<b>3.</b>	Name of the Bank's branch and Address	
<b>4.</b>	Bank's Code and Branch's Code	
<b>5.</b>	IFSC Code of the Bank's Branch	
<b>6.</b>	Type of Account (Current/Saving/Cash credit)	
<b>7.</b>	Account Number	

Note: A copy of cancelled cheque in respect of the above account which is operated by the vendor must be enclosed

**Place:**

**Date:**

**(Signature and Full Name of the authorized person with seal on behalf of Firm/Agency/Contractor)**



## GENERAL INSTRUCTIONS

### **Supply, Installation, Testing and Commissioning of HVAC (Heating, ventilation, and air conditioning) System with associated Pipelines and Cooling Tower and Buyback of Old Units, Pipelines at NABARD Tower, Usmanpura, Ahmedabad**

1. Before submission of the Offer, Bidders are required to make themselves fully conversant with the scope of the work, technical requirements and specifications, etc., so that no ambiguity arises on a later date in this respect.
2. If any information provided by the Bidders is found to be concealed, suppressed or incorrect at later date or during finalization of the Tenders or the Bidders withdraws their offer during finalization of the Tender, the Tender shall be liable to be rejected. EMD of such bidders shall be forfeited.
3. If the Bidders finds discrepancies in, or omissions from the specifications or other documents or if he is in doubt as to their meaning, he shall at once intimate NABARD before pre-bid meeting and obtain clarification.
4. Any approach from the Bidders, his representative or his agent to influence the decision on the Offer, officially or otherwise, shall render the Offer liable to be summarily rejected.
5. EMD to be deposited through NEFT only. All the documents to be submitted.
6. Each page of the Offer document shall be signed and stamped by the Bidders as a token of acceptance to terms and conditions mentioned herein.
7. Offers from only those firms or individuals, who are themselves technically capable and sound for providing such services and who give satisfactory evidence of such experience shall only be considered.
8. In the event, the successful Bidders fails to accept the work order within specified time or withdraws his offer within the validity period or fails to accept the order for any reason whatsoever, then the earnest money deposited by the Bidders shall be forfeited by NABARD.
9. NABARD reserves the right to accept any offer based on its merits and NABARD is not bound to place the order with party having submitted the lowest offer. Thus party merely on the ground that their financial offer is lowest, does not necessarily qualify them for receiving the order.
10. Self certified copies of documents will be submitted in support of claims made by the party and party shall bring the original copies of documents for verification by NABARD officials. Details of similar work done in last seven years along with copies of the orders and certificates from the customers to be attached with the Tender.
11. Selection will involve following stages i) Upload of e-Tender ii) Receipt of e-bids/e-tender iii) Opening of technical bids iv) Opening of financial bids v) Award of contract. Bid will consist of two parts i.e. Technical Bid and Financial Bid.
12. If for any reason, it is found that the Technical bid reveals the Financial Bid related details in any manner whatsoever, or, the Financial Bid is swapped in the section marked “Technical Bid”, the Bid document will be summarily rejected in the first instance itself.



13. Earnest Money Deposit (EMD): The tender must be accompanied by an Earnest Money Deposit receipt in the form of Direct Deposit in the Bank only through online transfer of funds, before the submission of the tender, to the account number given below. EMD submitted through any other mode of payment shall not be accepted.

Name of the Account: NATIONAL BANK FOR AGRICULTURE AND RURAL DEVELOPMENT

Payee Name:	<b>NABARD</b>
Current Account No:	<b>NABADMNo2</b>
Name of the Bank:	<b>NABARD, Mumbai</b>
IFSC Code:	<b>NBRD0000002</b>

14. No interest shall be paid on the EMD submitted by the bidders. EMD of unsuccessful bidders would be refunded after the award of work to the successful bidders.

15. Tender for which the EMD amount has not been received in our bank account will not be accepted by NABARD except in case of MSEs as defined in MSE Procurement Policy issued by GoI. Such exemption shall be given only on submission of proof.

16. RMD shall be **5% of the contract amount**. Apart from the initial security deposit to be made by the contractor as aforesaid, the retention money shall be deducted from running account bills 5% of the gross value of the bill amount claimed and approved in each running account bill. However, the total security deposit, the initial security deposit amount plus the retention amount shall be put together not exceeding 5% of the contract price as determined after considering all variations as approved. The Security Deposit shall be refunded after the defect liability period (DLP) of 1 year from the date of completion of the work. The amount of security deposit shall be released after completion of defects liability period subject to removal of all defects during the DLP. All repair costs during the aforesaid DLP and performance warranty period shall be borne by the Contractor. If the contractors do not carry out the rectification work during the DLP and Performance Warranty period, then the Bank shall have the right to get such defective work rectified after giving due notice in writing to the Contractor and recover the cost of such repair from the amount so retained.

17. Bidders are advised to visit the site(s) and thoroughly understand the nature and scope of the works and be familiar with the site conditions before quoting.

18. It may be noted that Price Bid shall be opened only in respect of those bidders who have complied with the requirements as laid down in technical bid. The decision of the Bank in this regard shall be final. In the event of intending bidder's failure to satisfy the Bank, the Bank reserves the right to reject the tender and not to open the price bid. In case of multiple L1 bids, the process usually involves mandatory Reverse Auctions (RA)

19. The bidders should quote their rates strictly adhering to Terms and Conditions stipulated in the Tender Document. Unsolicited correspondence after opening of the Tender shall not be entertained. Conditional / Deviational Tenders may be rejected without making any reference to the bidders.

20. No advance shall be paid towards mobilization and cost of materials.

21. NABARD will not be liable for any loss, damage, theft, burglary or robbery of any personal belongings, equipment or vehicles of the personnel of the contractor. No compensation shall be admissible for any loss suffered by the Contractor during the execution



of the work. It shall be the Contractor's sole responsibility to protect NABARD's staff and his employees against accidents from any cause and he shall indemnify NABARD against any claims for damage on account of injury to person or property, resulting from any such accidents with necessary Insurance cover.

22. NABARD will not be under any liability to pay any compensation to the persons deployed by the contractor if they sustain any injury etc., while discharging the duties in the said premises. The bidder shall get them insured against any liability under the Employee Compensation Act or any accident at its own cost. The Contractor should take necessary Insurance cover at his cost for his persons employed at site. The contractor should arrange to obtain necessary insurance cover (Workmen compensation policy and Contractors All Risk Policy) for the work at his cost and should be responsible for the safety of persons, employed by him. The Contractor shall be fully responsible and shall compensate NABARD with suitable Insurance cover in the event of any damage to men or material, injury/damage or death as the case may be, caused directly or indirectly due to the negligence of the Contractor or his agents and/or his employees or workmen. The insurance policy may be obtained in the joint name of NABARD (to be appeared first) and the contractors respectively for the insured amount to the amount of at least 1.25 times of the tender amount and the original Insurance policy may be deposited in NABARD. In case, no insurance policy furnished before commencement of the work, NABARD will take the policy on behalf of the contractor and recover the amount of premium, interest on premium etc. from them. The decision of NABARD in this regard shall be final and binding. The insurance policy shall be work and site specific.

23. Any damages caused to the building / premises during the execution of the work shall be made good by the Contractor and if necessary, through suitable Insurance cover at his cost.

24. The Contractor shall use necessary safety equipment and maintain all safety measures during the execution of works and ensure compliance of Safety Code as per Rules and Regulations in force. The contractor undertakes from the date of allotment of tender, at all times and from time to time to remain solely responsible to defend NABARD and to hold and keep NABARD and its officers harmless and indemnified against all actions, costs, expenses, damages, claims, suits or demands, or any loss or liabilities of whatsoever nature arising directly or indirectly and also for and against all or any action whether by way of labour or legal proceedings or otherwise which may be brought against the NABARD by any of the person employed by contractor or any other authority, arising out of execution of the contract including claims for all damages, costs, charges, expenses which NABARD may incur in respect thereof.

25. The Contractor shall monitor the on-going works or satisfactory completion of works or redressal of complaints through his staff.

26. Notwithstanding anything stated above, NABARD reserves the right to assess the bidder's capability and capacity to perform the contract, should the circumstances warrant such assessment in the overall interest of NABARD.

27. The decision of NABARD in awarding the work shall be final.

28. NABARD reserves the right to accept / reject any Tender either in whole or in part without assigning any reasons thereof, whatsoever and without entering into any further correspondence and hence, NABARD shall be under no obligation to accept the lowest or any other Tenders received in response to this Tender. The decision of NABARD in this regard shall be final and undisputable.





29. NABARD also reserves the right of supersession of any of the conditions stipulated in the Tender Document.

**DECLARATION BY THE CONTRACTOR**

We / I have read and understood all the instructions / conditions made above and we / I have taken into account the above Instructions / Terms and Conditions while quoting the rates. We / I accept all the above Terms and Conditions without any reservation, in all respects.

Date:                      Sign. And Stamp of the Bidders



## ANNEXURE - A

### GENERAL TERMS AND CONDITIONS

#### **Supply, Installation, Testing and Commissioning of HVAC (Heating, ventilation, and air conditioning) System with associated Pipelines and Cooling Tower and Buyback of Old Units, Pipelines at NABARD Tower, Usmanpura, Ahmedabad**

1. The Bidders shall mean the Bidders/ Associate who's Offer shall be accepted by NABARD and shall include such Bidders/ Associate theirs, legal representatives, successors and assignees. Associate shall mean the business associate authorized and having valid agreement with Private/Public Sector Enterprise having two years experience in solar energy field with office in the State of Gujarat. The offer shall be considered on behalf of the Public Sector Enterprise and authority letter for submitting the Tender shall be furnished. If the Public Sector Enterprise directly participates in the Tender, Associate's offer shall not be considered. Consortium or Joint Venture is not allowed in this Tender.
2. The Bidders shall be deemed to have carefully examined all the papers, attached in the contract. If he has any doubt as to the meaning of any portion of any condition/ specification, etc. he shall before signing the contract submit the particulars thereof to NABARD in order that such doubts are removed.
3. The work, shall be completed within the completion period as mentioned in the work order, failing which penalty at the rate of 0.1 % per day or part of a day, subject to maximum of 10 % of order value shall be imposed as time is the essence of the contract. If the Bidders fails to complete the work within **45 days** after scheduled date mentioned in order, NABARD reserves the right to cancel the order. This excludes delay in the completion of the work due to unforeseen reasons beyond the control and without fault and negligence of the Bidders including (but not restricted to) act of God or public anomie action of Government in its sovereign capacity, floods, epidemics, strikes, lockouts, fires and accidents. In the event of any of the aforesaid contingencies, the NABARD may be promptly kept informed by the Bidders with documentary proof within fifteen days of commencement and cessation of Force Majeure circumstances. Under such circumstances reasonable extension of time shall be granted by the NABARD.
4. Application for such extension must be made before the due date of completion of work as per work order. In the event of termination of the work order, NABARD shall be at liberty to get the remaining part of the work done through any other agency/Bidders in the manner and on the terms it thinks proper. If the cost of executing the work as aforesaid shall exceed the balance due to the Bidders, and the Bidders fails to make good the deficiency, NABARD may recover it from the Bidders in any lawful manner.
5. The Bidders shall not transfer, assign or sublet the work under this contract or any substantial part thereof to any other party.
6. NABARD shall have at all reasonable time access to the works being carried out by the Bidders under this contract. the works shall be carried out by the Bidders to the satisfaction of the NABARD.
7. Any question, dispute or difference whatsoever arises between NABARD and Bidders, in connection with the work order, except as to matters, the decision for which has been specifically provided, either party may forthwith give to the other notice in writing of



existence of such questions, dispute, difference and the same shall be referred to the sole arbitration of a person nominated by the Chief General Manager of NABARD. This reference shall be governed by Indian Arbitration Act prevailing at the time of dispute and the rules made there under. The award in such arbitration shall be final and binding on all the parties. Work under the agreement shall continue during the arbitration proceedings unless the NABARD or the Arbitrator directs otherwise.

8. NABARD may at any time by notice in writing to the Bidders either stop the work altogether or reduce or cut it down. If the work is stopped altogether, the Bidders shall only be paid for work done and expenses legitimately incurred by him as on preparation of the execution of the work upto the date on which such notice is received by him. Such expenses shall be assessed by NABARD whose decision shall be final and binding on the Bidders. If the work is cut down the Bidders shall not be paid for the work as so cut down, but in neither case shall be paid any compensation what so ever for the loss or profit which he might have made if he had been allowed to complete all the work included in the contract.

9. Prior to dispatch, the materials may be inspected and tested by NABARD or its authorized representative at the Bidder's works. Bidders shall inform NABARD for such inspection at least 7 days in advance before the probable date of dispatch. If the bidder himself is not the manufacturer of components, the pre-dispatch inspection can be offered at manufacturer's facilities/ premises.

10. The system supplied or installed shall be guaranteed by the Bidders for a minimum period of **01 years** in regard to quality of material, workmanship, performance, efficiency, installation, etc. Defects developed in the system within guarantee period, shall be rectified by the Bidders at his own expense promptly. In case the defects are not rectified within 2 days of the receipt of the complaint by the Bidders, NABARD shall have full liberty to remove such defect or undertake such repairs as may be necessary to restore the system in working condition. The expenditure so incurred by NABARD shall be deducted from Bidder's pending claims, security, etc. and if necessary may be recovered in other mode provided under the law. In the event of

11. Failure of the complete system, if necessary, the whole system shall be replaced by the Bidders promptly.

12. Notices, Statements and other communications sent by the NABARD through registered post to the Bidders at his specified address shall be deemed to have been delivered to the Bidders.

13. The work shall be carried out by the Bidders with prior approval of NABARD. Work carried out without NABARD's approval shall not be accepted and the NABARD shall have right to reject it and to recover the cost as so incurred, from the Bidders.

14. All equipment/material shall be suitably packed for transport/carriage at site and outdoor storage during transit as per best industrial practices and appropriate standards. The Bidders shall be responsible for any damage to the equipment during transit due to improper or inadequate packing. The cases containing easily damageable material shall be very carefully packed and marked with appropriate caution symbols i.e. 'FRAGILE, HANDLE WITH CARE' etc. The contents of each package shall bear marking that can be readily identified from the package list and packing shall provide complete protection from moisture, termites and mechanical shocks during shipment/transportation to site. Adequate protection must be provided for outdoor storage at site in tropical humid climate, wherever necessary proper arrangement for attaching signs for lifting shall be provided and all packages clearly marked with gross weight, signs showing 'UP' and 'DOWN' sides of boxes, contents of each



package, order no. And date, name of the plant/equipment's to which the material in the package forms the part of, and any handling and unpacking instructions considered necessary. The Bidders without any extra cost shall supply any material found short inside intact packing case. The Bidders shall ascertain prior to shipment, from concerned authorities, the transport limitations like weight and maximum allowable package size for transportation. All packing cases and packing material shall become the property of the purchaser.

15. The Bidders shall provide one copy of the instruction manual and routine maintenance manual in Gujarati with each item supplied or installed. These manuals shall contain all the relevant details and drawings required for proper maintenance of the system supplied or installed.

16. The Bidders shall not display the photograph of the work and shall not take advantage through publicity of the work without written permission of NABARD.

17. The Bidders should obtain approvals, if any, necessary for the work from the statutory bodies on behalf of NABARD. The Bidders shall assist NABARD fully in respect of any liaison with the Municipal or any other authority for necessary approval / permission with regard to the works. The fees and other statutory charges, if any, will be reimbursed to the Contractor based on the original receipts produced to NABARD.

18. The Bidders shall not directly or indirectly transfer, assign or sublet the Contract or any part of it, without written permission of NABARD.

19. The Bidders should quote their rates strictly adhering to Terms and Conditions stipulated in the Tender Document. Unsolicited correspondence after opening of the Tender shall not be entertained. Conditional / Deviational Tenders may be rejected without making any reference to the Tenderers.

20. No advance shall be paid towards mobilization and cost of materials.

21. The decision of NABARD in awarding the work shall be final and cannot be subjected to arbitration.

22. NABARD also reserves the right of supersession of any of the conditions stipulated in the Tender Document.

23. EMD shall be forfeited if the successful bidder refuses or neglects to execute the Contract within the 07 days from the date of awarding of contract.

24. The tender shall remain valid and open for acceptance for a period of 03 months from the last date of submission of tender.

25. **The bidder/contractor shall be responsible for obtaining all necessary certificates, permits, and approvals from the relevant government authorities and regulatory bodies in accordance with applicable laws and standards.** These certifications and approvals must be secured prior to the completion and commissioning of the HVAC package unit installation.



26. The Bank shall provide adequate space within its premises for storing equipment, materials, and related items. Such storage shall be entirely at the contractor's risk and cost. The Bank shall not be held liable for any loss, theft, or damage to the stored items under any circumstances.

27. The Bank shall provide Water & Electricity at one point. All the necessary arrangements for taking water and electricity from the defined points shall be made by the contractor at its expense. In case of non-availability of the water, the contractor shall make the arrangement at his own cost.

#### **DECLARATION BY THE CONTRACTOR**

We / I have read and understood all the instructions / conditions made above and we / I have taken into account the above Instructions / Terms and Conditions while quoting the rates. We / I accept all the above Terms and Conditions without any reservation, in all respects.

Date:                      Sign. And Stamp of the Bidders



## ANNEXURE B

### WORK SCHEDULE, PAYMENT TERMS AND PENALTY

**TIME SCHEDULE:** It is very critical to complete the work as per the order given by the NABARD; so as to complete the work within **45 days** from the date of order. In the event of failure to supply of systems as per order, will lead to forfeiter of the Security Deposit up to 100% and will lead to disqualification of the Bidders for transacting business with NABARD for at least three years or the time duration as may be decided by the NABARD.

The Bidders shall arrange to provide to NABARD a instruction manual. The Bidders shall also arrange to impart training about routine maintenance procedure. Copy of the same be submitted to Division of NABARD with the physical documents.

**INSPECTION OF MATERIAL:** The Bidders will offer complete systems for inspection at their works by NABARD before dispatch of material to site. Inspection can also be offered at one place in Gujarat (main distributor's place), where equivalent inspection facilities are available. The call for Pre-Dispatch Inspection for complete material shall include providing IV curves countersigned by manufacturer of panels. NABARD may carry out random testing of the HVAC units at Bidder's factory for various parameters as per the specifications laid by NABARD. Visual inspection shall be carried for 100% of the units. Bidders will intimate to NABARD in writing in advance for such inspections. If during the inspection the percentage of rejections exceeds 10% then the whole lot would be rejected. The rejected material is to be replaced with new material as per the specifications. The systems shall be offered for inspection again after necessary rectification. Expenses for such re-inspection shall be borne by the Bidders. NABARD reserves the right to inspect any number of HVAC units, any number of times at the site.

### PAYMENT TERMS

a) The payment terms shall be as follows:

- i. 30% payment upon completion of pipeline and cooling tower installation.
- ii. 30% payment upon installation of at least five (05) HVAC units.
- iii. 40% payment upon successful testing, commissioning of the entire unit, and submission of the completion certificate.

b) **Mobilization Advance:**

**No mobilization advance shall be paid for the work**, unless otherwise stipulated in tender papers for any individual works/ composite work.

c) Rates quoted by the Bidders will be inclusive of taxes, levies, duties, packing, forwarding, freight, insurance, loading unloading, supply, installation, commissioning, Scaffolding, transportation, supervision, warranties and any/ all charges for successful Supply and Installation of the system at site locations and all expenses of marketing, commissions etc, insurance of the supplies upto Commissioning of the system and shall be borne by the bidder. Any damages to the supplies before commissioning of the system, irrespective of the reason for such damage, shall be to the account of the supplier.

d) The rates quoted by the Bidders will be inclusive of all taxes but exclusive of GST or any other taxes applicable for such work. Any escalation in such taxes/ levies during the tenure of the offer/ order will not be paid by NABARD and Bidders are advised to take in to consideration any such escalations in the prevailing taxes/levies/duties.





- e) **Payment of Bills:** The contractor shall produce his bills in duplicate addressed to the Chief General Manager, NABARD, Gujarat Regional Office, Ahmedabad. The bill shall be paid by the bank after it has been verified by the bank's Caretaker / Technical Officer, Consultant and found to be in order.
- f) **Penalty:** The work shall be completed within the completion period as mentioned in the work order, failing which penalty at the rate of 0.1 % per day or part of a day, subject to maximum of 10 % of order value shall be imposed as time is the essence of the contract. If the Bidders fails to complete the work within 3-month after scheduled date mentioned in order, NABARD reserves the right to cancel the order. This excludes delay in the completion of the work due to unforeseen reasons beyond the control and without fault and negligence of the Bidders including (but not restricted to) act of God or public anomie action of Government in its sovereign capacity, floods, epidemics, strikes, lockouts, fires and accidents. In the event of any of the aforesaid contingencies, the NABARD may be promptly kept informed by the Bidders in writing with documentary proof within fifteen days of commencement and cessation of Force Majeure circumstances. Under such circumstances reasonable extension of time shall be granted by the NABARD.
- g) Application for such extension must be made before the due date of completion of work as per work order. In the event of termination of the work order, NABARD shall be at liberty to get the remaining part of the work done through any other agency/Bidders in the manner and on the terms it thinks proper. If the cost of executing the work as aforesaid shall exceed the balance due to the Bidders, and the Bidders fails to make good the deficiency, NABARD may recover it from the Bidders in any lawful manner.



**ANNEXURE - C****Scope of Work****Design, Supply, Installation, Testing and Commissioning of HVAC (Heating, ventilation, and air conditioning) System with associated Pipelines and Cooling Tower and Buyback of Old Units, Pipelines at NABARD Tower, Usmanpura, Ahmedabad**

The scope of work covers Design, Supply, Installation, Testing and Commissioning of HVAC (Heating, ventilation, and air conditioning) System with associated Pipelines and Cooling Tower and Buyback of Old Units, Pipelines at NABARD Tower, Usmanpura, Ahmedabad at the following site.

**1. Site address:**

NABARD Gujarat Regional Office  
NABARD Tower  
Opp. Municipal Garden  
Usmanpura  
Ahmedabad – 380013  
Gujarat

**2. Salient details of the work for which bids are invited are as under:**

<b>Sr. No</b>	<b>Name of Work</b>	<b>Estimated Cost</b>	<b>Period of Completion</b>
<b>1</b>	Design, Supply, Installation, Testing and Commissioning of HVAC (Heating, ventilation, and air conditioning) System with associated Pipelines and Cooling Tower and Buyback of Old Units, Pipelines	<b>₹56.00</b> (including GST)	<b>45 days</b> from the date of work award

3. Work shall be executed according to General Conditions of Contract 2020 available separately at printer's outlets and online including amendments issued there in upto last date of bid. The General Conditions of Contract for Central Public Works Department is also available on website [www.cpwd.gov.in](http://www.cpwd.gov.in).
4. The scope of work in this contract shall include all Civil, Electrical/HVAC works including services.
5. General features & major components of the scope of this work to be executed by the contractor are as under:

**i) Electrical/HVAC Works :**

- a) Complete Internal and External Electrical and Mechanical works in the buildings.
- b) All E&M works including water supplies, external electric supplies, plumbing, insulation, piping, ducting, etc.
- c) DSITC of HVAC/ Air Cooled Chiller Air Conditioning Plants as per BOQ.



**ii) Civil Works :**

- a) Scope of work also includes masonry work, plaster work, all external and internal finishing works, internal and external water supply, drainage, false ceiling work as per BOQ etc.
- b) Any other work as detailed in BOQ, specified elsewhere in tender documents and even incidental works not defined in this document but essential for completion of work.
- c) The work shall be executed according to BOQ items, specifications and conditions specified in tender document, approved architectural, structural and service drawings and directions of Engineer-in-charge or his authorized representative.
- d) The above-mentioned scope of work of the contractor which is only indicative and not exhaustive. The contractor shall be responsible for executing all items required for completing the buildings and allied works in all respects to make it habitable and ready for occupation, as per direction of Engineer-in-charge.
- e) The scope of work includes cost of all materials, manpower, equipment's, T&P, fixtures, accessories, royalties, taxes, watch & ward and all other essential elements for completion and maintenance of works whatsoever, under the scope of this contract. Any changes, modifications, revisions etc. required to be done by University, client, local bodies, design consultants etc. in accordance with applicable standards will have to be executed by the contractor as per provisions of the contract specified elsewhere in this bid document.

**Works to be done by the contractor:**

Unless and otherwise mentioned in the tender documents, the following works shall be done by the contractor, and therefore their cost shall be deemed to be included in their tendered cost:-

- (i) Foundations for equipment and components where required, including foundations bolts.
- (ii) Cutting and making good all damages caused during installation and restoring the same to their original finish.
- (iii) Sealing of all floor openings provided by him for pipes and cables, from fire safety point of view, after laying of the same.
- (iv) Painting at site of all exposed metal surfaces of the installation other than pre-painted items like fittings, fans, switchgear/distribution gear items, cubical switchboard etc. Damages to finished surfaces of these items while handling and erection, shall however be rectified to the satisfaction of the Engineer-in-Charge.
- (v) Testing and commissioning of completed installation.
- (vi) Storage space for all equipment components and materials for the work.
- (vii) Cutting/removing of existing gypsum type false ceiling of suitable size for the work of fixing of armored cables on wall above false ceiling & repairing & painting of same.



### **Storage and Custody of Materials:**

The contractor has to make his own arrangement for the storage of the material at site & necessary watch and ward of the electrical installation during the execution of work till the same is handed over to the department. No extra payment will be made on this account. The storage space shall however be arranged by the department at site, if available.

The main contractor shall arrange for proper storage of the electrical fans and fittings at site and that double lock system shall be arranged for the fans and fittings after receipt at site until the time they are taken for installation. The contractor shall however be responsible for proper storage and safe custody of the same till their installation and handing over to the department.

### **Electric Power Supply and Water Supply:**

The Bank shall provide Water & Electricity at one point. All the necessary arrangements for taking water and electricity from the defined points shall be made by the contractor at its expense. In case of non-availability of the water, the contractor shall make the arrangement at his own cost. Contractor shall take due care to ensure safety of electrical installation during execution of work.

### **Tools & Machinery For Handling & Erection**

- (i) All tools and tackles required for unloading/handling of equipments and materials at site, their assembling, erection, testing and commissioning shall be the responsibility of the contractor.
- (ii) No T & P including special T&P etc. shall be issued by the Department and nothing extra shall be paid on account of this. The contractor will have to make his own arrangements at his expenses.
- (iii) All tools, plant and machinery provided by the contractor shall, when brought at the site, be deemed to be exclusively intended for the construction and completion of this work and the contractor shall not remove the same or any part thereof (save for the purpose of moving it from one part of the site to another) without the consent of the Engineer-in-charge.

### **Care of the building and other structures / installations**

Care shall be taken by the contractor while handling and installing the various equipments and components of the work to avoid damage to the building and its surrounding roads, pavements, horticulture work, boundary wall, sewer and water lines etc. He shall be responsible for repairing all damages and restoring the same to their original finish at his cost. He shall also remove at his cost all unwanted and waste materials arising out of the installation from the site of work.

### **Structural Alterations to Buildings:**

- (i) No structural member in the building shall be damaged/altered, without prior approval from the competent authority through the Engineer-In-charge.
- (ii) Structural provisions like openings, cutouts, if any, provided by the department for the work, shall be used. Where these required modifications or fresh provisions



are required to be made, such contingent works shall be carried out by the contract at his cost.

(iii) All such openings in floors provided by the department shall be closed by the contractor after installing the cables/conduits/rising mains/GI&MS Pipe etc. as the case may be, by any suitable means as approved by the Engineer-In-charge without any extra payment.

(iv) All chases required in connection with the electrical works shall be provided and filled by the contractor at his own cost to the original architectural finish of the buildings.

#### **Work in occupied buildings:**

- (i) When work is executed in occupied buildings, there would be minimum of inconvenience to the occupants. The work shall be programmed in consultation with the Engineer-in-charge and the occupying department. If so required, the work may have to be done even before and after the office hours.
- (ii) The contractor shall be responsible to abide by the regulations or restrictions set in regard to entry into, and movement within the premises.
- (iii) The contractor shall not tamper with any of the existing installations including their switching operations or connections there to without specific approval from the Engineer-in-charge.

#### **Drawings:**

(i) The work shall be carried out in accordance with the building drawings issued by Engineer-in-charge. The electrical drawings for above work shall be prepared by the contractor and will be got approved by the Engineer-in-charge before execution of work.

(ii) All wiring diagrams shall be deemed to be 'Drawings' within the meaning of the term as used in Clause 11 of the conditions of contract (PWD 7 or PWD 8). They shall indicate the main switch board, the distribution boards (with circuit numbers controlled by them), the runs of various mains and sub mains and the position of all points with their controls.

(iii) All circuits shall be indicated and numbered in the wiring diagram and the points shall be given the same number as the circuit to which they are electrically connected.

(iv) After award of the work, the firm will be required to submit the drawings for the proposed work including layout plan, conduit routes etc. Work will be carried out as per the approved drawings.

#### **Quality of material:**

All materials and equipment supplied by the contractor shall be new. They shall be of such design, size and materials as to satisfactorily function under the rated conditions of operation and to withstand the environmental conditions at site.

#### **Compliance With Regulations And Indian Standards**

All works shall be carried out in accordance with relevant regulation, both statutory and those specified by the Indian Standards related to the works covered by this specification. In particular, the equipment and installation will comply with the following:

- a) Factories Act.



- b) Indian Electricity Rules.
  - c) B.I.S. & other standards as applicable.
  - d) Workmen's Compensation Act.
  - e) Statutory norms prescribed by local bodies like CEA, Power Supply Co., etc
- Nothing in this specification shall be construed to relieve the successful tenderer of his responsibility for the design, manufacture and installation of the equipment with all accessories in accordance with currently applicable statutory regulations and safety codes.
  - Successful tenderer shall arrange for compliance with statutory provisions of safety regulations and departmental requirements of safety codes in respect of labour employed on the work by the tenderer. Failure to provide such safety requirement would make the tenderer liable for penalty as decided by the University authority. In addition, the department will be at liberty to make arrangement for the safety requirements at the cost of tenderer and recover the cost thereof from him.
  - All components shall conform to relevant Indian Standard Specifications wherever existing. Materials with ISI certification mark shall be preferred.
  - Relevant Indian Standards including amendments or revisions thereof up to the date of tender acceptance shall be applicable in the respective contracts for respective items, firm to ensure its compliance

### **Safety Code & Labour Regulations**

- A. In respect of all labour employed directly or indirectly on the work for the performance of the contractor's part of work, the contractor at his own expense, will arrange for the safety provisions as per the statutory provisions, B.I.S. Recommendations, Factory Act, workmen's compensation act, CPWD code and instructions issued from time to time. Failure to provide such safety requirements would make the tenderer liable for penalty for Rs. 200/- for each violation. In addition the Engineer-In-Charge, shall be at liberty to make arrangements and provide facilities as aforesaid and recover the cost from the contractor.
- B. The contractor shall provide necessary barriers, warning signals and other safety measures wherever necessary so as to avoid accident. He shall also indemnify CPWD against claims for compensation arising out of negligence in this respect. Contractor shall be liable, in accordance with the Indian Law and Regulations for any accident occurring due to any cause. The department shall not be responsible for any accident occurred or damage incurred or claims arising there from during the execution of work. The contractor shall also provide all insurance including third party insurance as may be necessary to cover the risk. No extra payment would be made to the contractor due to the above provisions thereof.





## Completion Period

The completion period of **45 days** indicated in the tender documents is for the entire work of planning, designing, arrangement of materials & equipment's, delivery at site including transportation, installation, testing, commissioning and handing over of the entire system to the satisfaction of the Engineer-In-Charge.

## SPECIFICATIONS AND CONDITIONS FOR HVAC WORK

1. The work is to be carried out in accordance with the CPWD GENERAL SPECIFICATIONS for HEATING, VENTILATION & AIR-CONDITIONING (HVAC) WORKS (2017) with latest amendments upto date of submission of bid.
2. In case of any ambiguity, the Specifications mentioned in following order will prevail:
  - a) Schedule of Work of NIT document
  - b) CPWD Manuals and Specifications with latest amendments
  - c) Manufacturer's Manuals and Specifications
  - d) As decided by Engineer-In-Charge.
3. The tentative Heat Load Calculation and drawing is enclosed with NIT document. The detailed mentioned in the drawings are tentative and shall vary as per the site requirement. The work shall be carried out as per the site and decision of the Engineer-In-Charge shall be final and binding.
4. The contractor has to execute the Operation of HVAC Plant installed in the said contract during the defect liability period of one year. The conditions of operation part of contract shall be as under:
  - a) The operation part shall be commenced from the date of commissioning of plant and shall remain valid for period of one year.
  - b) The operator shall have adequate knowledge and able to attend minor breakdown calls and undue noise in equipment / vibrations / leakages in pumps & valves/ malfunctioning of machinery or plant etc.
  - c) Preventive Maintenance/ Servicing of AC System during DLP period on quarterly basis.
  - d) All the required consumable materials like cotton waste, Dhoti and petroleum jelly for cleaning of various installations shall be in the scope of contractor for which nothing etc. shall be paid extra.
  - e) The history sheet of routine inspection/ servicing/breakdown repairing of each and every unit shall be maintained. The copy of report shall be submitted along with the bill subsequent to the servicing activity.
  - f) **Break-down Call:**
    - Any breakdown call under this contract, the agency shall address the issue on site immediately within maximum 24 Hours of the email/message through any medium. In case of failure due to any unavoidable reasons/circumstances, the contractor has to address the issue with in next 24 hrs with consent of the Engineer-in-Charge. Failing to which, penalty of Rs. 500/- per day shall be imposed against the agency & recovered from the bill.



- A record of such call should be duly acknowledged by the person in charge/user of the location and copy of the same has to be submitted along with estimate to the Engineer-InCharge.
- g) The contractor shall be responsible for the good conduct and behavior of his employees. If any employee of the contractor is found misbehaving with the supervisory staff or any other staff member of the University, the contractor shall terminate the services of such employees at their own risk and responsibility, on the recommendation of the Officer-In-Charge of the University.
- h) In off season there is during the lien period of winter the contractor shall carrying out all the preventive maintenance works in order to keep the equipment ready for use for the next summer. It shall be the responsibility of contractor to intimate the department regarding any major repair/replacement required to keep the equipment functional beyond the scope of contractor.
- i) The contractor shall be liable for payment of deputed operator and compliance of all labor law and other GoI statutory compliances.
- j) Payment for operation part shall be released on quarterly basis duly verified by the concern Officer-In-Charge.
- k) In case any item is to be taken to the Service Station/Workshop for repairs etc. the prior permission is to be taken from the Engineer In Charge. CURAJ will not pay any charges for transportation or any other kind of charges. The agency shall be responsible for any damage occurred /loss of any government property owing to negligence on his or his representative's part while repairing or taken for repair at workshop.
- l) Any damage or loss caused to connected equipment or their parts due to negligence, mishandling shall be made good by the contractor either by payment in cash as per prevailing market rate of that item or by a new replacement of the same/higher make and specifications.
- m) Any damage resulting to the system on account of the negligence or mall-operation shall be made good by the contractor. Care shall also be taken not to damage installation by improper handling. Nothing extra will be paid for such work.
- n) The contractor or his representative should not remove, disturb, and dislocate the existing equipment and its parts from its positions until and unless it is authorized by the Engineer-in – Charge.
- o) The Contractor shall maintain the log books which include number of services provided during contract period with dates and part of equipment got repaired or replaced, with its proper model number and necessary details.
- p) The Contractor shall maintain register indicating details of equipment being maintained and details of rooms/ offices/ department/ locations where they are installed with proper model number, make, capacity and necessary details.
- q) All the workers and engineers of the agency visiting the University Campus for service and repair work shall be well dressed and hold a valid Id-Card of the agency/firm. All the safety measures like rubber gloves, safety shoes, helmet etc. shall be taken care by the firm while working.
- r) The contractor shall take all precaution for safety of the workmen. If any accident/mishap occurs, the department shall not be responsible for the same. Consequently any compensation payable shall be at the contractor cost.
- s) All T & P as and when required by the operator for repairs or checking shall be arranged by the contractor and nothing extra shall be paid on this account. Water & Electricity shall be provided at one point free of cost.



## **ANNEXURE - D**

### **Safety - Precautions**

As a part of the Contract, the Contractor must satisfy the under mentioned safety requirements and must ensure at all times that these are followed without any deviations:

1. Smoking, Tobacco and alcohol is prohibited on the premises.
2. Any hot job (welding, soldering etc.) however small it may be or any job which involves open flame or using a hot source or temporary electrical connections shall not be done without prior permission from the Bank's Technical Officer. No jobs involving heating are permitted to be carried out after office hours, holidays and Sundays without prior permission.
3. It is entirely the responsibility of the Contractor to see that safety appliances such as safety belts, lift lines, helmets, rubber gloves, etc. depending on the job are made available to his staff at Contractor's cost. A first aid box should be maintained by the contractor at the premises for his workers. If the contractor needs any suggestion on the matter, he can approach the Bank's Officer-in-charge but any lapse on safety will be viewed seriously.
4. The Contractor shall ensure that the persons posted for the work are well conversant with the operation of fire extinguisher.
5. The Contractor shall take all precautions to avoid accident and causes of accident. He must be careful regarding safety during working of his staff and NABARD's Staff and others in the premises.
6. The bank shall not carry any responsibility in case of any accident to his worker in the premise due to no fault of Bank's working but merely due to negligence of his workers or lack of safety provided to them by and the Contractor.



**ANNEXURE – E**

**(ON THE LETTER HEAD OF THE BIDDER)**

**DECLARATION**

To

The Chief General Manager  
NABARD  
Gujarat Regional Office  
Ahmedabad

Name of the firm/Agency\_\_\_\_\_

Sir,

1. I / We hereby declare that I/We have read and understood the General Instructions. General Conditions of Contract, detailed specifications and the conditions of work, etc. and hereby agree to abide by them.
2. This is to certify that I/We before signing this bid have read and fully understood all the terms and conditions and instructions contained therein and undertake myself/ourselves abide by the said terms and conditions.
3. I/We abide by the provisions of Minimum Wages Act, Contract Labour (Regulation and Abolition) Act, 1976 and other statutory provisions like Provident Fund Act, ESI Bonus, Gratuity, Leave, Relieving Charges, Uniform and Allowance thereof and any other charges applicable from time to time. I/We will pay the wages to the personnel deployed as per Minimum Wages Act as amended by the Government from time to time and shall be fully responsible for any violation.
4. I/We hereby confirm that the quotations shall remain in force and valid for acceptance for a period of not less than 90 (Ninety) days from the date of opening of price bid.

Date :

Place :

Seal & Signature of the Contractor



## ANNEXURE – F

### PRE CONTRACT INTEGRITY PACT

(To be submitted on Rs.300 Stamp Paper only on first page and remaining document on normal A4 size pages duly signed by the bidder)

Between

**National Bank for Agriculture and Rural Development (NABARD)** hereinafter referred to as “**The Principal**”

And

..... hereinafter referred to as “**The Bidder**”

### **Preamble**

The Principal intends to award, under laid down organizational procedures, Tender for Supply, Installation, Testing, and Commissioning of HVAC (Heating, ventilation, and air conditioning) System with associated Pipelines and Cooling Tower and Buyback of Old Units, Pipelines at NABARD Tower, Usmanpura, Ahmedabad. The Principal values full compliance with all relevant laws of the land, rules, regulation and economic use of resources and of fairness /transparency in its relations with its Bidder(s).

In order to achieve these goals, the Principal will appoint Independent External Monitors (IEMs) who will monitor the tender process and the execution of the contract for compliance with the principles mentioned below:

#### **Section 1 – Commitments of the Principal**

(1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:-

- a. No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
- b. The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will, in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
- c. The Principal will exclude from the process all known prejudiced persons.

(2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the IPC/PC Act, or if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary actions.

#### **Section2 – Commitments of the Bidder(s)**

(1) The Bidder(s) commit themselves to take all measures necessary to prevent corruption. The Bidder(s) commit themselves to observe the following principles during participation in the tender process and during the contract execution:

- a. The Bidder(s) will not, directly or through any other person or firm, offer, promise or give



to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

b. The Bidder(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.

c. The Bidder(s) will not commit any offence under the relevant IPC/PC Act; further the Bidder(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.

d. The Bidder(s) of foreign origin shall disclose the name and address of the Agents/representatives in India, if any. Similarly the Bidder(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any.

e. The Bidder(s) will, when presenting their bid, disclose any and all payments made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.

f. Bidder(s) who have signed the Integrity Pact shall not approach the Courts while representing the matter to IEMs and shall wait for their decision in the matter.

(2) The Bidder(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

### **Section 3 – Disqualification from tender process and exclusion from future contracts**

If the Bidder(s), before award or during execution has committed a transgression through a violation of Section 2, above or in any other form which put their reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s) from the tender process.

### **Section 4 – Compensation for Damages**

(1) If the Principal has disqualified the Bidder(s) from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit/Bid Security.

(2) If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to Section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages of the Contract value or the amount equivalent to Performance Bank Guarantee.

### **Section 5 – Previous transgression**

(1) The Bidder declares that no previous transgressions occurred in the last three years with any other Company in any country conforming to the anti-corruption approach or with any Public Sector Enterprise in India that could justify his exclusion from the tender process.

(2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the



tender process.

## **Section 6 – Equal treatment of all Bidders**

- (1) In case of Sub-contracting, the Principal Contractor shall take the responsibility of the adoption of Integrity Pact by the Sub-contractor.
- (2) The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors
- (3) The Principal will disqualify from the tender process all bidders who do not sign the Pact or violate its provisions.

## **Section 7 – Criminal charges against violating Bidders(s)**

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or are representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the same to the Chief Vigilance Officer.

## **Section 8 – Independent External Monitor**

(1) The Principal appoints competent and credible Independent External Monitor for this Pact after approval by the Central Vigilance Commission. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement. The Independent External Monitor appointed for NABARD is : **Shri Jagdeep Kumar Ghai, PTA & FE (Retd), Flat No 1032 A Wing, Vanashree Society, Sector 58 A & B, Palm Beach Road, Nerul, Navi Mumbai, 400706, email jkghai@gmail.com.**

(2) The Monitor is not subject to instructions by the representatives of the parties and performs his/her functions neutrally and independently. The Monitor would have access to all Contract documents, whenever required. It will be obligatory for him / her to treat the information and documents of the Bidders as confidential. He / she reports to the Chairman, NABARD.

(3) The Bidder(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the Principal including that provided by the Contractor. The Contractor will also grant the Monitor, upon his/her request and demonstration of a valid interest, unrestricted and unconditional access to their project documentation. The same is applicable to Subcontractors.

(4) The monitor is under contractual obligation to treat the information and documents of the Bidder(s)/ Contractor(s)/ Sub-Contractor(s) with confidentiality. The Monitor has also signed declarations on 'Non- disclosure of Confidential Information and of 'Absence of Conflict of Interest'. In case of any conflict of interest arising at a later date, the IEM shall inform Chairman, NABARD and recuse himself/herself from that case.

(5) The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project, provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.





(6) As soon as the Monitor notices, or believes to notice, a violation of this agreement, he/she will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The monitor can in this regard submit nonbinding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.

(7) The monitor will submit a written report to the Chairman, NABARD within 8 to 10 weeks from the date of reference or intimation to him by the Principal and, should the occasion arise, submit proposal for correcting problematic situations.

(8) If the Monitor has reported to the Chairman, NABARD, a substantiated suspicion of an offence under the relevant IPC/PC Act, and the Chairman NABARD has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.

(9) The word 'Monitor' would include both singular and plural.

### **Section 9 – Pact Duration**

This Pact begins when both parties have legally signed it. It expires for the Contract or 12 months after the last payment under the contract, and for all other Bidders 6 months after the contract has been awarded. Any violation of the same would entail disqualification of the bidders and exclusion from future business dealings. If any claim is made/lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharge/determined by the Chairman of NABARD.

### **Section 10 – Other provisions**

(1) This agreement is subject of Indian Law, Place of performance and jurisdiction is the Regional Office of the Principal, i.e. Ahmedabad.

(2) Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.

(3) If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.

(4) Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

(5) Issues like Warranty/Guarantee etc. shall be outside the purview of IEMs.

(6) In the event of any contradiction between the Integrity Pact and its Annexure, if any, the Clause in the Integrity Pact will prevail.

\_\_\_\_\_  
(For & On behalf of the Principal)

(Office Seal)

Place \_\_\_\_\_

Date \_\_\_\_\_

\_\_\_\_\_  
(For & on behalf of the Bidder)

(Office Seal)





Witness 1:  
(Name &Address)

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Witness2:  
(Name &Address)

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**NATIONAL BANK FOR AGRICULTURE AND RURAL DEVELOPMENT**  
**GUJARAT REGIONAL OFFICE, AHMEDABAD**



**Part-II**  
**(Financial Bid)**

### FINANCIAL BID GUIDELINES

Price bid: Item wise quantity requirement for the Tender for Supply, Installation, Testing, and Commissioning of HVAC (Heating, ventilation, and air conditioning) System with associated Pipelines and Cooling Tower and Buyback of Old Units, Pipelines at NABARD Tower, Usmanpura, Ahmedabad has indicated below:

Sr. No	Item Description	Qty	Unit	Rate
1	Dismantling & Removing Old Package units along with all the accessories.	9	Ea.	
2	Providing installing, commissioning, testing approved make water cooled package units of following capacity complete with hermetically sealed scroll compressor Of following TR @ 400 CFM(minimum) per TR capacity with maximum noise level 60 dB from 1 mtr from indoor unit comprising of following The unit complete with Scroll compressor, Shell & Tube type condenser, DX coil evaporator, centrifugal blower, blower motor, micro processor based controller, complete with first charge of Eco Friendly Green gas and oil with refrigerant piping, drain connection, canvass connection etc. (Make: Voltas/ Bluestar / Panasonic/ Hitachi/ Daikin/ Carrier)			
	<b>For 8.5 TR</b>	<b>4</b>	<b>Ea.</b>	
	<b>For 11 TR</b>	<b>5</b>	<b>Ea.</b>	
3	Supplying and Fixing - M.S.Structure for installing units duly Painted with synthetic enamel paints	900	Kg.	
4	Supplying and Fixing - Rigid UPVC drain pipe of 10 Kg/cm <sup>2</sup> . rating with 9 mm thick.nitrile rubber insulation.A) 32 MM DIA.	150	Rmt	
5	Supply, installation, balancing and commissioning of Duct Damper and Duct modification to install the Dampers			
	Supply of Duct Damper	9	Nos.	
	Installation of Duct Damper and Duct Modification 20 Gauge	1 Job	Sq.Ft	
6	Supplying and fixing of following thickness duly laminated aluminum foil of mat finish closed cell Nitrile rubber (Class "O") insulation on existing duct after applying suitable adhesive for Nitrile rubber. The joints shall be sealed with 50 mm wide and 3 mm thick self adhesive nitrile rubber tape insulation complete as per specifications and as required.( 19MM)	1 Job	Sq.Ft	
7	Supply and fixing of acoustic lining of supply air duct and plenum with 25 mm thick resin bonded glass wool having density of 32 kg/m <sup>3</sup> , with 25 mm X 25 mm GI section of 1.25 mm thick, at 600 mm centre to centre covered with Reinforced Plastic tissue paper and 0.5 mm thick perforated aluminum sheet fixed to inside surface of ducts with cadmium	50	Sq.mtr	

	plated nuts, bolts, stick pins, CPRX compound etc. complete as required and as per specifications			
8	Supplying and Fixing - Flexible canvass connection for Package Unit	9	Nos.	
9	Supplying, laying/ fixing, testing and commissioning of following nominal sizes of chilled water piping plumbing inside the building (with necessary clamps, vibration isolators and fittings but excluding valves, strainers, gauges etc.) duly insulated with fire retardant quality expanded polystyrene moulded pipe section of density 20 kg/cu.m after a thick coat of cold setting adhesive (CPRX compound) wrapping with 500g polythene faced hessian and finally applying 0.63mm aluminium sheet cladding complete with type3 , grade 1 roofing felt strip(as per IS:1322 as amended up to date ) at joints repairing of damage to building etc. as per specifications and as required complete in all respect.			
	Note:- The Pipes of sizes 150mm & below shall be M.S. 'C' class as per IS : 1239 and pipes size above 150mm shall be welded black steel pipe heavy class as per IS: 3589, from minimum 6.35mm thick M.S. Sheet			
	for pipes upto 350 mm dia. and from minimum 7mm thick MS sheet for			
	(C) 100 mm dia.	20	Mtr.	
	(E.) 65 mm dia.	10	Mtr.	
	(F.) 50 mm dia.	20	Mtr.	
10	Supplying and Fixing - providing and erecting BUTTERFLY VALVE (MANUAL) with C I body SS disc nitrile sheet & O - ring & PN 16 pressure rating as specified. (G) 50mm dia	18	Ea.	
11	Supplying and Fixing - SITC of Pressure Gauge	9	Nos	
	<b>Total (A)</b>			₹
<b>PART B : Cooling Tower Piping with Accessories</b>				
12	Supplying and Fixing - MS Pipe 200MM	40	RMT	
13	Supplying and Fixing - MS Pipe 150 mm	100	RMT	
14	Supplying and Fixing - MS Pipe 50mm	5	RMT	
15	Supplying and Fixing - B/F valve 50mm	4	Nos.	
16	Supplying and Fixing - Boll valve 50mm	4	Nos.	
17	Supplying and Fixing - B/F valve 150 mm	15	Nos.	
18	Supplying and Fixing - B/F valve 200mm	3	Nos.	
19	Supplying and Fixing - Pressure gauge 100mm	6	Nos.	
20	Supplying and Fixing - Strainer (Wheel Valve) 150 mm	3	Nos.	
21	Supplying and Fixing - Strainer ( Wheel Valve) 200mm	3	Nos.	
22	Supplying and Fixing - R.tee 200mm	6	Nos.	
23	Supplying and Fixing - Tee 150mm	1	Nos.	
24	Supplying and Fixing - Elbow MS Bend 150mm	24	Nos.	
25	Supplying and Fixing - Elbow MS Bend 200mm	6	Nos.	
26	Supplying and Fixing - Coupler 150mm	4	Nos.	
27	Supplying and Fixing - Stub end 150mm	4	Nos.	

28	Supplying and Fixing - Stub end 200mm	4	Nos.	
29	Supplying and Fixing - GI Flange 150mm	4	Nos.	
30	Supplying and Fixing - GI Flange 200mm	4	Nos.	
31	Supplying and Fixing - Tee 200mm	4	Nos.	
32	Supplying and Fixing - Blind flange 150mm	4	Nos.	
33	Supplying and Fixing - Blind flange 200mm	4	Nos.	
34	Supplying and Fixing - Non return Valve 200mm	2	Nos.	
35	Supplying and Fixing - MS Flush 200mm	18	Nos.	
36	Supplying and Fixing - MS Flush 150mm	36	Nos.	
37	Supplying and Fixing - MS Socket 150mm	6	Nos.	
38	Supplying and Fixing - MS Flush 100mm	6	Nos.	
39	Supplying and Fixing - Elbow Socket MS Bend 50mm	6	Nos.	
40	Supplying and Fixing - strainer ( Wheel Valve) 50mm	2	Nos.	
41	Supplying and Fixing - UPVC Drain Pipe 32mm	36	Nos.	
42	Supplying and Fixing - UPVC Elbow 32mm	10	Nos.	
43	Supplying and Fixing - UPVCL Valve 32mm	6	Nos.	
44	Supplying and Fixing - UPVC Coupler 32mm	6	Nos.	
45	Supplying and Fixing - UPVC Pipe 25mm	12	Nos.	
46	Supplying and Fixing - UPVC Valve 25mm	6	Nos.	
47	Supplying and Fixing - UPVC Elbow 25mm	12	Nos.	
48	Supplying and Fixing - UPVC T Joint 25x25x25	3	Nos.	
49	Supplying and Fixing - Ball Clock Valve 25mm	3	Nos.	
50	Supplying and Fixing - MS Angle 50x50	12	Nos.	
51	Loading & unloading of machine at each floor level and Terrence	1	Job	
52	Supplying and Fixing - Arrangement of Scaffolding and ladder charges	1	Job	
53	Supply and Fixing of Water Circulation Pump for Cooling	2	Nos.	
54	Supply and Installation of Cooling tower Nominal Capacity 150TR	2	Nos.	
	<b>Total (B)</b>			₹
	<b>Total (A) + (B)</b>			₹
	<b>Total price with GST</b>			₹

**Total price with GST (in words):**

**The Rates quoted to be up to 02 decimal points only.**

**Place:**

**Date:**



**Buyback of Old HVAC units**

<b>Description</b>	<b>Brand</b>	<b>No. of Units</b>	<b>Minimum buyback value (₹)</b>	<b>Bidder's Rate (₹) Per unit</b>	<b>Bidder's Rate (₹) Total</b>
Buyback of Old Package of Air Conditioning units	Voltas	9	₹16,500 per unit or ₹1,48,500 for 9 units		

**The Rates quoted to be up to 02 decimal points only.**

**Place:**

**Date:**



## Design Data & Technical Specification

### 1. Site Parameters

<b>Geographical Location :</b>	NABARD Tower, Usmanpura, Opp. Municipal garden, Ahmedabad, Gujarat – 380013
<b>Latitude :</b>	23.047031° N, 72.567915° E
<b>Daily Temperature Range :</b>	Average daily highs of about 30 degrees Celsius in winter and 43 degrees Celsius in summer.

2. NABARD Gujarat Regional Office (NABARD Tower) comprises seven floors, excluding the basement. Each floor is equipped with two HVAC units positioned on the left and right sides of the building interior. The details of the existing HVAC units, organized floor-wise, are as follows:

<b>Floor</b>	<b>Inside Area (Right side)</b>	<b>Outside (Left side)</b>
1 <sup>st</sup>	<b>7.5 TR Old Unit *</b>	<b>10 TR Old Unit *</b>
2 <sup>nd</sup>	11 TR New Unit	17 TR New Unit
3 <sup>rd</sup>	<b>7.5 TR Old Unit *</b>	<b>10 TR Old Unit *</b>
4 <sup>th</sup>	<b>7.5 TR Old Unit *</b>	<b>10 TR Old Unit *</b>
5 <sup>th</sup>	8.5 TR New Unit	<b>10 TR Old Unit *</b>
6 <sup>th</sup>	<b>7.5 TR Old Unit *</b>	11 TR New Unit
7 <sup>th</sup>	<b>10 TR Old Unit *</b>	17 TR New Unit

\*09 units indicated as old HVAC unit which requires replacement.

The project scope includes the replacement of the existing 7.5 TR unit with an **8.5 TR** unit, and the 10 TR unit with an **11 TR** unit. Therefore, total of four nos. of 8.5 TR units and total of five nos. of 11 TR units are required for the premises.

3. In view of the requirement of installation of 11 TR and 8.5 TR package systems with M.S Piping and Installation of Cooling Tower, tenderes are invited from the reputed and experienced vendors for Supply, Installation, Testing, and Commissioning of HVAC (Heating, ventilation, and air conditioning) System with associated Pipelines and Cooling Tower and Buyback of Old Units, Pipelines at NABARD Tower, Usmanpura, Ahmedabad.
4. The agency shall provide detailed project drawings covering minor civil works, pipeline layouts, and the installation of the cooling tower.



5. The bidder shall submit a self-declaration from the HVAC OEM confirming that all modules and product components supplied under this contract are “Made in India,” prior to project commissioning. Any shortlisted bidder found violating this requirement for Indian-made HVAC equipment and components shall be liable for blacklisting and/or inclusion in NABARD’s stop-deal list, as determined by NABARD.

## **6. Detailed Technical Specification**

### **i) HVAC Package Air Conditioning Units (11 TR and 8.5 TR):**

The package units shall be **floor-mounted/roof-mounted type** suitable for the specified capacity.

The units shall be factory assembled, tested, and charged with refrigerant before dispatch.

The system shall include:

- Scroll or reciprocating compressor,
- Condenser coil with fan (air-cooled type) or water-cooled condenser as per system design,
- Evaporator coil with blower fan,
- Control panel with starter, relays, overload protection, and necessary control wiring,
- Thermostat and safety devices.

### **ii) Cooling Tower (If water-cooled system):**

- Induced draft type FRP cooling tower with PVC fills, drift eliminators, fan, and motor assembly.
- Cooling tower basin with float valve and make-up water line connection.
- Support structure as per manufacturer’s recommendation.
- Necessary piping connections between the condenser and cooling tower shall be provided

### **iii) MS Piping Installation:**

- Supply, fabrication, and installation of MS (Mild Steel) pipes of required diameters for chilled/condenser water lines.
- The Pipes of sizes 150mm & below shall be M.S. 'C' class as per IS : 1239.
- All piping shall be properly supported with GI/steel clamps and hangers.
- Joints shall be welded type, cleaned, and painted with two coats of anti-corrosive paint followed by two coats of synthetic enamel paint.
- All valves, strainers, thermometers, gauges, flexible connectors, and insulation (where required) shall be included.

### **iv) Electrical Work:**





- Power and control cabling from the main panel to the package units and cooling tower motors.
- Proper earthing of all equipment as per electrical safety standards.
- Cable trays and conduits to be neatly routed and labeled.

#### **V) Insulation Work:**

- Chilled water piping to be insulated with nitrile rubber insulation of adequate thickness to prevent condensation.
- All joints shall be sealed with suitable adhesive to ensure vapour barrier integrity.

#### **vi) Testing and Commissioning:**

- Pressure testing of piping for leakage and strength as per standard procedures.
- Trial run of package units and cooling tower with complete system balancing.
- Checking of temperature, pressure, current, and performance parameters.
- Submission of commissioning report and handing over of operation manuals.

#### **vii) Documentation:**

- Submission of layout drawings, GA drawings of equipment, and as-built drawings.
- Equipment data sheets, test certificates, and warranty documents to be provided.

#### **Inclusions**

- Supply and installation of all equipment and materials.
- Painting, labelling, and identification of pipelines.
- All consumables, fasteners, gaskets, and supports.

#### **Exclusions (if any)**

- Power supply is beyond the main panel.
- Civil foundation beyond the indicated scope.
- Electrical cable.
- Electrical panels.
- Electrical switches.
- Any types of Civil work.

### **7. WARRANTY & MAINTENANCE**

#### **i. Equipment Warranty:**



- HVAC Package Units and all associated components shall carry a comprehensive warranty of **12 months** from the date of successful commissioning or **18 months** from the date of supply, whichever is earlier.
  - The warranty shall cover any manufacturing defect, faulty workmanship, component failure, refrigerant leakage, or performance degradation during the warranty period.
  - ii. Compressor Warranty:**
    - The scroll compressors shall carry an extended **warranty of 5 years** from the date of commissioning, as per manufacturer's standard policy.
  - iii. Piping, Valves, and Insulation:**
    - All mechanical installations (piping, insulation, supports, valves, and dampers) shall be warranted for **12 months** from the date of commissioning against any leakage, corrosion, or workmanship defect.
  - iv. Defect Liability:**
    - During the defect liability period, the contractor shall attend to any defect, malfunction, or breakdown within 24 hours of notice at no extra cost to the client.
  - v. Maintenance During Warranty:**
    - The contractor shall provide quarterly preventive maintenance service during the warranty period, including cleaning of filters, checking refrigerant levels, electrical terminals, and system performance.
  - vi. Post-Warranty AMC (Optional):**
    - After completion of the warranty period, an Annual Maintenance Contract (AMC) may be offered by the contractor at mutually agreed terms, covering preventive maintenance and breakdown service
  - vii. SAFETY MEASURES**
    - The bidder shall take entire responsibility for electrical safety of the installation(s) including connectivity with the grid and follow all the safety rules & regulations applicable as per Electricity Act, 2003 and CEA guidelines etc.
    - General Conditions: applicable to all the systems.
8. The Air-conditioning equipments and installations shall conform to Indian Standards whenever applicable. The applicable Indian Standards are :
- a) IS 3615 : Glossary of terms used in Refrigeration and Air-conditioning.
  - b) IS 325 : Three phase induction motor.
  - c) IS 1239 : Mild steel tubes, tubular and other wrought steel fittings.
  - d) IS 639 : Steel pipe flanges.
  - e) IS 277 : Galvanised sheet steel.



- f) IS 737 : Wrought aluminum and aluminum alloy sheet and strip for general engineering purpose.
  - g) IS 655 : Metal air ducts.
  - h) IS 732 : Code of practice for electrical wiring and fittings for buildings.
  - i) IS 900 : Code of practice for installation and maintenance of induction motors.
  - j) IS 1248 : Direct acting electrical indicating instruments.
  - k) IS 6392 : Steel pipe flanges.
  - l) IS 1367 : Technical supply conditions for threaded steel fasteners.
  - m) IS 3588 : Axial flow fans electric.
  - n) IS 4894 : Centrifugal fan.
  - o) IS 2074 : Ready mixed paint.
  - p) IS 2208 : HRC cartridge fuse links upto 650 V.
  - q) IS 1554 : PVC insulated (heavy duty) electrical cables for working voltages upto and including 1100 V.
  - r) IS 659 : Air-conditioning safety code.
  - s) IS 616 : Mechanical refrigeration safety code
- 
- 9. The contractor shall provide a warranty and guarantee period of 2 to 3 years for the executed work, ensuring quality, durability, and performance as per tender specifications.
  - 10. The contractor shall provide free maintenance and service for a period of 3 to 4 years after completion of warranty and guarantee period, ensuring proper functioning of the installed system as per tender specifications.
  - 11. During HVAC work on site, any damage caused to the civil structure of the premises shall be the sole responsibility of the agency/contractor, and such damage must be repaired at their own cost.
  - 12. It shall be mandatory for the vendor to visit the system installation site every 3 months and submit a report to NABARD duly signed by the authority of NABARD office for the system working satisfactorily, in prescribed format, including the electricity generation record of reading.
  - 13. NABARD reserves right to reject any or all offers.
  - 14. Conditional Tender or Tender with deviations shall be out right rejected at discretion of NABARD.



## **CHILLER SPECIFICATIONS**

### **1.0 GENERAL**

#### **1.1 General Information**

1.1.1 Each unit will be completely factory-packaged including evaporator, condenser, subcooler, oil separator, compressor, motor, lubrication system, micro-computer control center, and all interconnecting unit piping and wiring. The chiller shall also give Lon works / Bacnet protocol card / outlet to enable its connection to the BMS System

1.1.2 Water side shall be designed for 150 psig working pressure. Power shall be supplied to the compressor motor at 400 volts – 3 phase - 50 Hertz and controls at 215 volts – 1-phase - 50 Hertz. The chiller shall use R-134A./R407C refrigerant gas. The power shall be provided at at one point only. The further distribution for multi compressors / condensers fan and any other devise shall be taken care by the supplier.

1.1.3 Each unit will be completely factory packaged including evaporator, condenser, compressor, motor, lubrication system, Microprocessor Control centre and all interconnecting unit piping and wiring. The chiller will be painted prior to shipment.

The supplier shall submit the computer software generated test parameters sheets of the testing before the despatch of the chillers at the points and conditions specified in tender agreement. The testing will be done in presence of clients representative at the test facility location at tender specified ambient temperature. The test parameters achieved during the witness testing at the testing facility at the specified ambient and at specified points ,in the presence of clients representative shall comply with the technical specification submitted by supplier without any negative tolerance in capacity of the chiller and positive tolerance in Power Consumption Values.

1.1.4 The initial charge of refrigerant and oil will be supplied for each unit including anti vibration mounts for base frame & flexible bellows for chiller inlet & outlet connections.

### **2.0 COMPRESSORS**

2.1.1 The compressor will be a rotary screw type. The compressor housing will be of cast iron, precision machined to provide minimal clearance for the rotors. The rotors will be manufactured from forged steel and use asymmetric profiles. The compressor will incorporate a complete anti-friction bearing design to reduce power and increase reliability.

2.1.2 Capacity control will be achieved by use of a slide Valve to provide fully modulating control from 100% to 10% of full load. The slide valve will be actuated by oil pressure, controlled by external solenoid valves through the micro-computer control centre.

### **3.0 MOTOR DRIVELINE**

3.1.1 The motor shall be, continuous duty, squirrel cage induction type, and will have an open drip-proof enclosure.

3.1.2 Motor full-load amperes at design conditions will not exceed motor nameplate (FLA). Motor will be designed for use with the type starter specified. Motor will be factory - mounted and directly connected to the compressor to provide compressor/motor alignment.

### **4.0 LUBRICATION SYSTEM**



4.1.1 An adequate supply of oil will be available to the compressor at all times. During operation, oil will be delivered by positive system pressure differential or full-time operation of an oil pump.

## **5.0 EVAPORATOR**

5.1.1 Evaporator will be of the shell-and-tube, flooded or DX type designed for 300 psig working pressure on the refrigerant side, and will be tested in accordance with ASME code or equivalent. The shell will be fabricated from rolled carbon steel plate with fusion welded seams; have carbon steel tube sheets, drilled and reamed to accommodate the tubes; and intermediate tube supports spaced no more than four feet apart. The refrigerant side will be designed, tested and stamped in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII - Division 1 or equivalent. Tubes shall be high-efficiency, internally and externally enhanced type having plain copper lands at all intermediate tube supports to provide maximum tube wall thickness at the support area. Each tube will be roller expanded into the tube sheets providing a leak - proof seal, and be individually replaceable. Water velocity through the tubes will not exceed 12 fps. A liquid level sight glass will be located on the side of the shell to aid in determining proper refrigerant charge. The evaporator will have a refrigerant relief device to meet the requirements of the ASHRAE 15 Safety Code for Mechanical Refrigeration or equivalent. The evaporator tubes shall be internally coated with anti corrosive coat.

## **6.0 CONDENSER**

6.1.1 Condenser will be of the air cooled type complete with finned tube design, designed for 300 psig working pressure on the refrigerant side, and be tested in accordance with ASME code or equivalent. The tube material shall be copper & aluminium fins. A refrigerant sub cooler will be provided for improved cycle efficiency. The refrigerant side will be designed, tested and stamped in accordance with the ASME Boiler and Pressure Vessel Code, Section VIII - Division 1 or equivalent. The condenser fans shall be silent design with motor capable of outdoor application (IP-55). The condenser will have refrigerant relief devices to meet the requirements of the ASHRAE 15 Safety Code for Mechanical Refrigeration or equivalent.

## **7.0 REFRIGERANT SYSTEM**

7.1.1 Refrigerant flow to the evaporator will be metered by a single fixed orifice with a solenoid bypass to accommodate varying head conditions.

7.1.2 The condenser tubes will be capable of storing the entire system refrigerant charge during servicing. Isolation from the rest of the system will be by manually operated isolation valves located at the inlet and outlet of the condenser. Additional valves will be provided to facilitate removal of refrigerant charge from the system.

## **8.0 GRAPHICAL CONTROL PANEL**

### **8.1 General**

8.1.1 The chiller shall be controlled by a stand-alone microprocessor based control centre. the chiller control panel shall provide control of chiller operation and monitoring of chiller sensors, actuators, relays and switches.

### **8.2 Control panel**

8.2.1 the control panel shall include a 10.4 in. diagonal colour liquid crystal display (LCD) surrounded by “soft “ keys which are redefined based on the screen displayed at that time. This



shall be mounted in the middle of a keypad interface and installed in a locked enclosure. The screen shall detail all operations and parameters, using a graphical representation of the chiller and its major components. Panel verbiage shall be available in other languages as an option with English always available. Data shall be displayed in either English or Metric units. Smart Freeze Point Protection shall run the chiller at 36.00 °F leaving chilled water temperature, and not have nuisance trips on low water temperature. The sophisticated program and sensor shall monitor the chiller water temperature to prevent freeze up. When needed Hot Gas Bypass is available as an option. The panel shall display countdown timer messages so the operator knows when functions are starting and stopping. Every programmable point shall have a pop-up screen with the allowable ranges, so that the chiller can not be programmed to operate outside of its design limits.

The chiller control panel shall also provide System operating information including:

- i. Return and leaving chilled water temperature
- ii. Entering and leaving condenser air temperature
- iii. Evaporator and condenser saturation temperature
- iv. Oil pressure at compressor and oil filter differential
- v. Percent motor current
- vi. Compressor discharge temperature
- vii. Oil temperature
- viii. Percent slide valve position
- ix. Operating hours
- x. Number of unit starts

8.2.2 Digital programming of set points through the universal keypad including:

- i. Leaving chilled water temperature
- ii. Percent current limit
- iii. Pull-down demand limiting
- iv. Six-week schedule for starting and stopping the chiller, pumps etc.,
- v. Remote reset temperature range

8.2.3 Status messages indicating:

- i. System ready to start
- ii. System running
- iii. System coast down
- iv. System safety shutdown-manual restart
- v. System cycling shutdown-auto restart
- vi. System prelube
- viii. Start inhibit

8.2.4 The text displayed within the system status and system details field shall be displayed as a color coded message to indicate severity: red for safety fault, orange for cycling faults, yellow for warnings, and green for normal messages.



8.2.5 Safety shutdowns enunciated through the display and the status bar, and consist of system status, system details, day, time, cause of shutdown, and type of restart required. Safety shutdowns with a fixed speed drive shall include:

- i. Evaporator – low pressure
- ii. evaporator – low pressure – smart freeze
- iii. evaporator – transducer or leaving liquid probe
- iv. evaporator – transducer or temperature sensor
- v. condenser – high pressure contacts open
- vi. Condenser – high pressure
- vii. Condenser – pressure transducer out of range
- viii. Auxiliary safety – contacts closed
- ix. Discharge – high temperature
- x. Discharge – low temperature
- xi. Oil – high temperature
- xii. Oil – low differential pressure
- xiii. Oil – low differential seal pressure
- xiv. Oil or condenser transducer error
- xv. Oil – clogged filter
- xvi. Oil – high pressure
- xvii. Oil – separator – low level
- xviii. Control panel – power failure
- xix. Watchdog – software reboot

8.2.6 Cycling shutdowns enunciated through the display and the status bar, and consists of system status, system details, day, time, cause of shutdown, and type of restart required. Cycling shutdowns with a fixed speed drive shall include:

- i. Multiunit cycling – contacts open
- ii. System cycling - contacts open
- iii. Control panel - power failure
- iv. Leaving chilled liquid - low temperature
- v. Leaving chilled liquid - flow switch open
- vi. Condenser – flow switch open
- vii. Motor controller – contacts open



viii. Motor controller – loss of current

ix. Power fault

x. Control panel - schedule

8.2.7 Security access to prevent unauthorized change of set points, to allow local or remote control of the chiller, and to allow manual operation of the prerotation vanes and oil pump. Access shall be through ID and password recognition, which is defined by three different levels of user competence: view, operator, and service.

8.2.8 Trending data with the ability to customize points of once every second to once every hour. The panel shall trend up to 6 different parameters from a list of over 140, without the need of an external monitoring system.

8.2.9 The operating program stored in non-volatile memory (EPROM) to eliminate reprogramming the chiller due to AC power failure or battery discharge. Programmed set points shall be retained in lithium battery-backed RTC memory for a minimum of 1 years with power removed from the system.

8.2.10 A fused connection through a transformer in the compressor motor starter to provide individual over-current protected power for all controls.

8.2.11 A numbered terminal strip for all required field interlock wiring.

8.2.12 An RS-232 port to output all system operating data, shutdown / cycling message, and a record of the last 10 cycling or safety shutdowns to a field-supplied printer. Data logs to a printer at a set programmable interval. This data can be preprogrammed to print from 1minute to 1day.

8.2.13 The capability to interface with a building automation system to provide:

- i. Remote chiller start and stop
- ii. Remote leaving chiller liquid temperature adjust
- iii. Remote current limit set point adjust
- iv. Remote ready to start contacts
- v. Safety shutdown contacts
- vi. Cycling shutdown contacts
- vii. Run contacts

## **9.0 COMPRESSOR MOTOR STARTER**

9.1.1 Star Delta Closed starter with NEMA 1 enclosure suitable for pad mounting. A 14-guage (minimum) steel terminal box with gasketed front access cover will be provided for field connected conduit. The chiller graphic control panel shall provide Overload/over current protection. Jumpers shall be furnished for three lead types of starting. Motor terminal lugs shall be not furnished.





## **10.0 MISCELLANEOUS ITEMS**

10.1.1 Ant vibration mounts, steel & spring loaded with serrated rubber pads for field mounting under unit feet for vibration isolation shall be supplied by the contractor.

10.1.2 The Screw liquid Chillers shall be complete with Compressors, Air Cooled Condensers, Shell & Tube or DX type Evaporators (Chillers), electrical control panel with starters, interconnecting cabling etc. The machine shall be capable of delivering 75 TR (Actual Capacity for City of Pune ambient condition) for the following conditions chilled water outlet temperature - 07 Deg.C, chilled water inlet temperature - 12 Deg.C, Ambient Temperature – For the City Of Pune. The Chiller shall be capable of Operation on 415 V, 50 Hz, 3 Phase, complete with electrical Panel, having a microprocessor control, having following features, Single Phasing Prevention, Under & Over Voltage Protection, Phase Reversal Protection, Independent Set Points for each refrigeration Circuit, HP/LP Trip signal indication & interlocking, Condenser Fan Motor Over Load Protection, Interlocking for chilled water flow switch, Runtime equalization for multiple compressors. (The equipment shall have high efficiency lowest IKW / TR). The chillers shall have stepless capacity control 10% to 100% (Vanes / slide valve). The Chiller shall be complete with Lon Works / Bacnet protocol output card, to enable BMS integration.

## **11.0 INSTALLATION**

11.1.1 The installation of the machine shall be carried out with proper foundation and proper supporting. The contractor shall prepare all the necessary drawings with norms, design, specification given by consultants and shall be approved by the consultant before carrying out the installation work.



## **CENTRIFUGAL PUMPS**

### **12.0 GENERAL**

#### **12.1 Scope**

12.1.1 This specification covers the supply, installation, testing & commissioning of Horizontal Centrifugal Pumps of Mono block type.

#### **12.2 Codes and Standards**

12.2.1 The design, materials, construction, manufacture, inspection and performance testing of horizontal centrifugal pumps shall comply with all currently applicable statutes, regulations and safety codes in the locality where the equipment is to be installed. Nothing in this specification shall be construed to relieve the CONTRACTOR of this responsibility. The equipment supplied shall comply with the latest applicable Indian, American, British or equivalent standards.

#### **12.3 Design Requirements**

12.3.1 The total head capacity curve shall preferably be continuously rising towards the shut off. In case of unstable (drooping) characteristic the duty point shall be well away from the unstable region. The shut off head shall be at least 110% of the total head.

12.3.2 The required NPSH at duty point shall be at least 1.0 M less than the available NPSH.

12.3.3 Pumps shall run smooth without undue noise and vibration. The noise level shall be limited to 75 dBA at a distance of 1.8 M. Vibration shall limited to class IIC of BS 4675 Part –I. The power rating of the pump motor shall be the larger of the following: i. The maximum power required by the pump from zero discharge to zero head. ii. 110% of the power required at the duty point.

12.3.4 Pumps of a particular category shall be identical and shall be suitable for parallel operation with equal load division. Components of identical pumps shall be interchangeable.

### **13.0 FEATURES OF CONSTRUCTION**

#### **13.1 Casing**

13.1.1 The casing shall be of heavy close grained cast iron, to withstand high tensile strength with smooth waterways and fitted with bronze wear ring. It shall be of vertically split design with streamlined volute and integral suction vertical position to facilitate piping. Casing shall have tapped openings for priming, vent. drain and gauge connections.

#### **13.2 Impellers**

13.2.1 The impellers on end suction pumps shall be semi-open type carefully balanced for smooth operation. The impeller is hydraulically as well as dynamically balanced. Balancing openings shall be provided near hub of the impeller to reduce pressure on the stuffing box to approximately suction pressure. The impeller shall be secured to the shaft by feather and nut.

#### **13.3 Wearing Rings**

13.3.1 Wearing rings are provided to maintain close running clearance and to minimize pressure leakage between suction and discharge chambers of the casing. The casing bearing rings shall protect the casing against wear and shall be locked in pump casing to prevent rotation.



13.3.2 Pump shall be provided with renewable type casing ring. Pump having capacity 2,000 cu.m/hr and above shall be provided with impeller ring in addition to casing ring. The hardness of impeller ring shall be 50 BHN higher than that of casing ring.

### **13.4 Shaft**

13.4.1 The shaft shall be of high strength steel with optimum diameter to provide maximum strength with minimum shaft deflection. Replaceable shaft sleeves shall be provided to protect the shaft where it passes through stuffing box.

13.4.2 Stuffing box shall be of such design that it can be repacked without removing any part other than the gland and lantern ring.

### **13.5 Shaft Seal**

13.5.1 The pump shall have mechanical shaft seals of extra hard carbon ceramic type

### **13.6 Bearings**

13.6.1 The bearings shall be precision ball bearings. The bearings shall be located and positioned on to shaft by means of lock nut.

13.6.2 The outdoor bearing shall be double row bearings, to take the radial and thrust loads. The inboard bearing shall be single row bearing taking the shaft radial load and shall be free to move axially in the bearing housing to compensate for shaft expansion due to temperature changes. Labyrinth deflectors shall be provided to exclude dirt and moisture from the bearing housing. Facilities shall be provided for grease lubrication. Grease reliefs shall be provided to prevent over-lubrication.

13.6.3 Bearing shall be grease lubricated and shall have a minimum life of 40,000 hours of working.

### **13.7 Coupling**

13.7.1 Pump shall be furnished complete with flexible coupling. Back-pull out pump shall be provided with spacer type coupling.

13.7.2 Coupling guard made of expanded metal and bolted to the base plate shall be furnished for all coupled pumps.

13.7.3 All accessories required for proper and safe operation shall be furnished with pumps.

13.7.4 All incidental piping (including valves) required for sealing, lubrication and cooling for stuffing box packing and / or bearing of pump shall be furnished by the Contractor.

### **13.8 Alignment**

13.8.1 The pump and motor shall be aligned by the pump manufacturer.

13.8.2 The pump manufacturer shall provide certification to the effect that the pump and motor coupling has been carried out by them and checked by them.

13.8.3 On completion of the installation, grouting and connection of all piping, the pump and motor shall be rechecked for alignment by means of accepted methods, by the pump manufacturer/sole agent.



## **14.0 TESTS AND INSPECTION**

14.1.1 A standard hydrostatic test shall be conducted on the pump casing with water at 1.5 times the maximum discharge head or twice the rated discharge head., whichever is higher. While arriving at the above pressure, the maximum suction head shall be taken into account.

14.1.2 The hydrostatic tests on the casing shall be conducted for a minimum duration of 30 minutes.

## **15.0 PERFORMANCE TEST**

### **15.1 Standard Running Test**

15.1.1 The pumps shall be tested as per IS 5120, at rated speed at SUB-CONTRACTOR's works to measure capacity, total head, efficiency and power. The negative tolerance on efficiency shall be limited to 2.5% (not 5 % as indicated in IS 5120. These tests shall form the basis for acceptance of pumps except for vibration and noise. The pumps shall be tested over the range covering from shut-off head to the maximum flow. The duration of the test shall be minimum one hour. Minimum five readings approximately equidistant shall be taken for plotting the performance curves. 15.2 NPSH Tests

15.2.1 NPSH tests shall be conducted with water as the medium.

### **15.3 Mechanical Balancing**

15.3.1 In addition to static balancing, impeller and balancing drum shall be balanced dynamically at or near the operating speed.

### **15.4 Field Testing**

15.4.1 After installation, the pumps shall be subjected to testing at site also. If the field performance is found not to meet the requirements regarding vibration and noise as specified, the equipment shall be rectified or replaced by the CONTRACTOR, at no extra cost to the CLIENT.

## **16.0 TENDER DRAWINGS**

16.1.1 The following drawings shall be submitted by the CONTRACTOR along with their Bids.

- i. Preliminary outline dimensional drawing of pump and motor (Suction and discharge connections and foundation details shall also be indicated).
- ii. Performance curves (capacity Vs total head, efficiency, NPSH and KW requirement) ranging from zero to maximum capacity.
- iii. Pump Catalogues.

## **17.0 PAINTING**

17.1.1 All ferrous surfaces shall be painted with one coat of red oxide primer paint followed by finish paint. However the components of the pumps shall not be painted before inspection.

## **18.0 PUMP HEAD CALCULATION**

18.1.1 It is very important that contractor shall submit actual pump head calculation based on site installation conditions taking into account pressure drop in installed (to be installed) chillers, piping and fitting. This actual pump head calculation shall be submitted for engineers approval



before ordering equipment and motor. Required pump motor capacity will be provided based on actual head calculation without any extra cost.

## **Data Sheet**

### **To Be Furnished By The Contractor After Award Of Contract And `Before` Installation**

- i. Quality Assurance Plan (QAP)
- ii. Detailed dimensioned general arrangement drawing of pump and driver.
- iii. Foundation drawing of pump and driver with static and dynamic loads, details of fixing, grouting and all relevant data required for design of foundation
- iv. Cross-section drawing of the pump with complete part list, materials of construction and relevant standards for each part
- v. Pump performance curves flow rate Vs head, BkW, efficiency, NPSHR from zero flow to maximum flow and torque-speed curve
- vi. Scheme for pump sealing, lubrication and cooling
- vii. Driver dimensional drawing
- viii. Surface preparation and painting procedures
- ix. Catalogues, data sheets and drawings for instruments
- x. Installation, operation and maintenance manual
- xi. Isolation pads and SS or Hot dip galvanised foundation bolts provided by the Contractor.
- xii. Corc-rubber make metallic bellows shall be provided at suction and discharge.
- xiii. Pressure gauges with needle valve provided at suction and discharge lines.
- xiv. All accessories provided to complete the pump installation.



## **STATUTORY OBLIGATIONS**

The Contractor shall observe that the working as intended in the document is adhered to or conforming to and NOT NECESSARILY BE LIMITED to the following standard regulations :

- i) FACTORIES ACT as amended (latest)
- ii) Explosive Act.
- iii) Safety regulations laid down by Central Government and state Authorities and the Owner.
- iv) Indian Electricity Rules and Regulations.
- v) Standard Codes for Pressure Piping (ASA B31.3.1973)
- vi) Statutory requirements for inspection and test of all lifting appliances and auxiliary lifting gear.
- vii) Labour Act.
- viii) Local-By-Laws.
- ix) Regulations laid by the Fire Safety Committee, Insurance Association of India.

1.2 In case of conflict between these specifications and the standards which come into force shall be considered as included and applicable to the work covered here and elsewhere in this documents.





## ANNEXURE

### PREFERRED MAKES OF EQUIPMENT & MATERIALS

S. No	Details of Materials / Equipments	Manufacturer's Name / Make
	<b>ELECTRICAL – HT, LT &amp; Substation Equipments</b>	
1.	MCB, Isolator, Industrial Plug Socket, RCCB, RCBO's	Schneider Electric ACTI-9 (N) / Legrand (DX <sup>3</sup> ) / Hager / L&T (Exora) / C&S (Win Trip 1/2) / ABB (S200M) / Siemens (Betaguard)/MK (Honeywell)/ Panasonic (Europa) or equivalent
2.	MCBDB & Loose Wire Box	Legrand (EKINOX-3) / L&T (EXORA) / C&S (Win Class)/ Hager (Novello) / Schneider (ACTI-9) / ABB (Elegance) / Siemens/MK (Honeywell)/ Panasonic (Europa) or equivalent
3.	Change Over Switches	L&T / Havells / HPL / Hager / C&S / Socomac / ABB or equivalent
4.	Automatic Transfer Switch (ATS)	Asco (Schneider) / Russel / Socomac / Hager / ABB / Legrand / L&T / Havells or equivalent
5.	FRLS PVC insulated copper conductor single core cable for wiring. (ISI marked)	Finolex / RR Kabel / KEI / Havells / Polycab / Gloster/ Batra Henley or equivalent
6.	Armoured/Unarmoured telephone cable, Coaxial Cable / LAN Cable	Delton / Finolex / RR Kabel / Polycab/Havells / Bonton / Grandlay / KEI/ Gloster/ RPG cables or equivalent
7.	MS Conduit (ISI Marked) with heavy duty MS conduit pipe accessories	BEC / NIC / AKG or equivalent
8.	PVC Conduit (ISI Marked) with heavy duty PVC conduit pipe accessories	AKG / Norpack / BEC / Polycab / Precision / Astral / Finolex or equivalent
9.	Modular Switch, Socket/Telephone Socket/ Cable TV Socket/ Data outlet Socket / Fan Regulator/ G.I. Boxes Etc./Modular MCB	Legrand (Arteor) / Schneider Electric (Zencelo) / Honeywell- MK (Orna)/Panasonic (Vision) or equivalent
10.	Selector Switch & Toggle switch	Salzer (Larsen & Toubro) / Siemens / Kaycee / C&S / Schneider or equivalent
11.	PVC Trunking	MK (Honeywell)/ Legrand / Schneider/ Hager/C&S or equivalent
12.	GI pipe (ISI Marked)	Tata / Jindal (Hissar) / SAIL /Prakash Surya or equivalent
13.	Paints	Asian / Berger /Dulux or equivalent



14.	Terminal Blocks and Connectors	Elmax / Wago / Hensel / Connectwell or equivalent
15.	Phenolic Laminated Sheet / Bakelite Sheet	Hylam / Formica (P-I Grade) / Mylam / Greenlam or equivalent
16.	Cat-6 /Cat-6A Cable, Wires & Fiber Optic Cable	Amp / Beldon / Legrand / Krone Communication/ Molex/ Avaya or equivalent or equivalent
17.	Indoor and Outdoor LED fittings /LED Lamp/ LED Tube	Wipro / Philips / Trilux / Crompton/ Havells/ Panasonic Halonix/ Bajaj/ Surya or equivalent
18.	Exhaust Fan	Havells /Crompton Greaves / USHA / Almonard / Alstom or equivalent
19.	BLDC Ceiling Fan	Havells / Crompton Greaves / Atomberg Gorilla / Usha/Anchor/ Orient/Almonard or equivalent
20.	Wall Bracket Fitting	Havells / Decon / Jaquar / Philips / Bajaj / Tisva (Usha)/Crompton or equivalent

21.	Geysers	Racold / CG / Havells / Jaquar / AOSmith / Usha or equivalent
22.	Air circulator / Wall Fan	Havells / Usha / Almonard / Crompton / Orient or equivalent
23.	Ornamental Pole (Factory Finish)	Valmont/ Philips / Crompton/ Wipro / Bajaj/ Keselecshreder / Halonix or equivalent
24.	Hot Dipped Galvanized Octagonal Pole /High Mast	Valmont / Philips / Crompton / Wipro / Bajaj / Kesele / Utkarsh /Halonix or equivalent
25.	Polycarbonate Junction Box / Enclosure / Pole box	Hensel / Spelsberg / Naptune-Bals / Syntex/ Standard or equivalent
26.	LT Panel / Meter Panel Board/Outdoor Feeder Pillar / APFC Panels	Tricolite Electrical Industries / Control & Switchgears Electrical Ltd. / Sterling & Wilson / Milestone / Adlec Control System Pvt. Ltd. / Advance Panels & Switchgear Pvt. Ltd. Haridwar / BSPL (Bhopal)/ Engineers & Engineers (Electricals) Pvt. Ltd. / Peaton Electrical Co. Ltd. / ASPL (Associated Switchgears & Projects Ltd.)/SHALABH/ Neptune /R.P. Control /Allied engineers/ Pyrotech India Electronic Pvt. Ltd. Udaipur /Johns electric co.pvt Ltd Jaipur or equivalent
27.	XLPE insulated PVC sheathed Alum. / Copper Conductor Armored cable of 1.1 KV grade (ISI Marked)	Finolex / Polycab/ KEI / Havells / RR Kabel /Grandlay/ LAPP/ RPG/AKG/Plaza Cables or equivalent
28.	Rising main / Bus Trunking	C&S / L&T / Schneider / Legrand / Godrej or equivalent
29.	Moulded Case Circuit Breaker (MCCB) Thermal Release / Microprocessor based (Ics=Icu=100%)	Schneider Electric (CVS Series) / Siemens (VL Series) / L&T (D-Sine) / Legrand (DPX3) / C&S (Winbreak 1/2) / ABB (TMax) / Hager or equivalent
30.	Contact/Relay /Timer	Schneider Electric / L&T / BCH / Siemens / Legrand / ABB / C&S / Hager/ or equivalent



31.	Potential Transformers / Current Transformer	Automatic Electric / Matrix / Precise / L&T / Kappa / Procom or equivalent
32.	LED type indicating lamps / Push Button	Schneider Electric / L&T / Siemens / Vaishno or equivalent
33.	Digital Meters (A/V/PF/Hz/KW/KWH)	Conzerv / Larsen & Toubro / Secure / AE / Socomac / Neptune / Hager or equivalent
34.	Fasteners / GI Clamps	Hilti / Fisher / Chilli / OBO or equivalent
35.	D.W. Corrugated HDPE Pipe (ISI marked)	REX / Dura plast / Zenduct / Gemini(Tripuri) / Duraline / Keshav Kripa Polyplast (LLP) or equivalent
36.	Transformer (Oil / Dry type) Upto 250 KVA	Crompton / ABB / Raychem / Schneider / Voltamp / Uttam Bharat / United / Bharat Bijlee/RTS-Jaipur or equivalent
37.	Transformer (Oil / Dry type) Above 250 KVA	Crompton / ABB / Schneider / Sterling & Wilson / Raychem / Bharat Bijlee /Voltamp or equivalent
38.	HT Panel / Ring Main Unit	Siemens / ABB / L&T / Schneider / C&S or equivalent
39.	HT End Termination /Cable Jointing Kit	Reychem / Denson / Cap Seal / Safekei / 3M or equivalent
40.	ACBs	Siemens (3WL–ETU45B) / L&T (U-Power-OMEGA MTX 4.0) / ABB (Emax)PR122 / Legrand (DMX <sup>3</sup> MP4) / Schneider (MVS Series) / C&S (Winmaster 2/3) or equivalent
41.	Rubber Mat (MV / HT)	Jyoti / Deep Jyoti / Premier (duly ISI marked) or equivalent
42.	Capacitors & Reactors / APFC Relay	EPCOS/ L&T / DUCATI / ABB / Siemens / Schneider / Neptune or equivalent
43.	Cable Glands /lugs	Baliga lighting / Comet / Cosmos / Dowells / Lapp / Gripwell or equivalent
44.	Perforated Cable Tray	Pilco / Slotco /RMCON/ BEC / Steelways / OBO/ Jindal/ Tata/ Arcellar Mittal or equivalent
45.	SS Wire mesh cable Tray/Raceways	Legrand / OBO / MK or equivalent

	<b>Water Supply Pump Sets (General Purpose)</b>	
46.	Mono Submersible/ Submersible pump Set	KSB / CG / Kirloskar / Grundfos / Mather & Platt (Wilo) or equivalent
47.	DOL / Star Delta Starter	L&T / BCH / Havells / C&S / Siemens / Schneider or equivalent
48.	Submersible Cable	Finolex / RR kabel / Polycab / Havells / KEI/ Bonton or equivalent
	<b>False Ceiling</b>	
49.	Mineral Fibre	Armstrong or equivalent
50.	Gypsum Board	Indian Gypsum/ USG Bord or equivalent

	<b>Air Conditioning System</b>	
51.	Precision Air-conditioner	Vertiv/ Schneider/Gutoor/Uniflair or equivalent
52.	Split Air Conditioner	Voltas/ Panasonic/ Hitachi/ Daikin/ O-General/ Mitshubshi / Carrier/ Bluestar or equivalent
53.	Window Type Air Conditioner	Voltas/ Panasonic/ Hitachi/ Daikin/ O-General/ Mitshubshi / Carrier/ Bluestar or equivalent
54.	VRV/VRF	Voltas/ Panasonic/ Hitachi/ Daikin/ O-General/ Mitshubshi / Carrier/ Bluestar/ or equivalent
55.	Refrigerant Pipe	OEM or RR/ Rajco/ Maxflow/ Mandev/ Indigo/ Papriwal or equivalent
56.	CPVC pipe / Drain Pipe	Ashirwad/ Supreme/ Astral/ Prayag/ Duraline/ Finolex/ Rex/ Kisan or equivalent
57.	Y or T Joints	OEM Make of IDU/ ODU. or equivalent
	<b>Insulation, Ducting, Grills and Diffusers</b>	
58.	GSS Sheet (For site fabricated duct)	SAIL/ Jindal/ Tata or equivalent
59.	Aluminum Sheet	Hindalco/ Balco/ Nalco/ Tata/ Aditya Birla or equivalent
60.	Flexible duct/Company Fabricated Duct	Waves/ Zeco/ Ductofab/ Airflow/ Caryaire/ Atco/ Pioneer or equivalent
61.	Duct Insulation	Supreme/A- Flex / Armoflex/ K- Flex or equivalent
62.	Acoustic	Supreme/A- Flex / Armoflex/ K- Flex or equivalent
63.	Grill	Carryaire/ Air flow/ System Air/ Air Max/ Greenair LLP or equivalent
64.	Diffuser	Carryaire/ Air flow/ System Air/ Air Max/ Greenair LLP or equivalent
65.	Louver	Carryaire/ Air flow/ System Air/ Air Max/ Greenair LLP or equivalent
66.	Fire Damper	Carryaire/ Air flow/ System Air/ Air Max/ Greenair LLP or equivalent
67.	Actuator	Honeywell/ Belimo or equivalent
68.	Nitrile Rubber	Armacell/ K-Flex/ Aerocell or equivalent
69.	Expanded Polystyrene	SHI/ Beardshell/ Styrene Packing or equivalent
	<b>Central Air Conditioning Plant</b>	
70.	Chiller	Voltas/ Panasonic/ Hitachi/ Daikin/ Carrier/ Bluestar
71.	Air Handling Unit	Zeco / Edgtech / Crystal/ System air/ Wayes or equivalent
72.	Primary Water Pump	Armstrong/ Grundfos/ Kirloskar/ Beacon/ Xylem or equivalent
73.	AHU/ FCU Motor	ABB/ Havells/ Seimens/ Marathon or equivalent
74.	VFD	Siemens/ Danfoss/ABB or equivalent
75.	Scrubber	Zeco /Edgetech / Crystal/ System air or equivalent
76.	Exhaust Fan	Air Flow/ Kruger/ Nicotra/ Greenheck or equivalent
77.	AHU Blower	Kruger/ Nicotra/ Greenheck/ Glowtech or equivalent

78.	Inline Fan	Ostberg/ Greenhack/ Sphere/ Caryaire/ Airflow or equivalent
79.	Air Washer	Zeco /Edgetech / Crystal/ System air or equivalent
80.	MS Pipe/ GI Pipe	Jindal (Hissar ) / Tata / Sail or equivalent
81.	Butterfly Valve	Castle / Advance / Zoloto / Belimo / Honeywell or equivalent
82.	Balancing Valve	Castle / Advance / Zoloto / Belimo / Honeywell or equivalent
83.	NRV	Castle / Advance / Zoloto / Belimo / Honeywell or equivalent
84.	Ball Valve	Castle / Advance / Zoloto / Belimo / Honeywell or equivalent
85.	Pibcv	Belimo/Honeywell/Jhonsons Control /Danfoss or equivalent
86.	Y / Pot Strainer	Anergy / Sant / Advance / Zoloto / Rapidcool/ Emerald or equivalent
87.	Bellow	Easyflex or equivalent
88.	Flow Switch	H Guru / Honeywell / Danfoss/ L&T/ Emerald or equivalent
89.	Pressure Gauge	H Guru / Honeywell / Danfoss/ L&T/ Emerald or equivalent
90.	Temperature Gauge	H Guru / Honeywell / Danfoss/ L&T/ Emerald or equivalent
91.	Expansion Tank	Anergy/ Emerald/ Rapidcool/KD or equivalent
92.	Paint	Nerolac/ Asian/ Burger or equivalent

Note-

- Any item of make other than above said will be got approved by Engineer-in-charge before brought at site.
- The list above is indicative and all items /samples shall be approved by Engineer-InCharge before installation at site.