

Standard Bidding Document

NADRA-HQ-RFB-120/2026: Replacement of Existing Data Center Chiller Cooling Systems in C&IT and NDW Data Centers and Allied Equipments (Goods)

National

Single Stage-Two Envelope



October 08, 2026

*NADRA (HQ) (National Database and Registration Authority (NADRA)), Deputy Director
State Bank of Pakistan Building, Shahrah-i-Jamhuriat, G-5/2., Islamabad Capital Territory
Phone: +92-300-052-0005, Email: saad.abdullah@nadra.gov.pk*

Table of Contents

REQUEST FOR BIDS	1
Instructions to Bidders	3
Bid Data Sheet	24
Bids Data Sheet (BDS)	25
Eligibility Criteria	30
Evaluation Criteria	32
Items/Lots	35
Related Services of Goods:	36
Items/Lot Specification	37
Price Schedule	47
General Conditions of Contract	49
Special Conditions of Contract	60
Bid Securing Declaration	66
Contract Form	68
Integrity Pact	71
Performance Guarantee Form	73
Annexure	76
Annexure A Scope of Work	77
Annexure B Technical Specifications	77
Annexure C Service Level Agreement	77
Annexure D Single Line Diagram	77

Annexure E Letter of Bid Technical	77
Annexure F Letter of Bid Financial	77
Format for Financial Proposal	78
Annexure G Earthing & Ground Works	1
Procurement Forms	79
Additional Forms and Documents	82

REQUEST FOR BIDS

PROCUREMENT OF GOODS

1. The **NADRA (HQ) (National Database and Registration Authority (NADRA))** has reserved Funds for the procurement planned for FY **2026-27**. The **NADRA (HQ) (National Database and Registration Authority (NADRA))** intends to apply part of the proceeds of this Fund to cover eligible payments under the contract for the "**NADRA-HQ-RFB-120/2026: Replacement of Existing Data Center Chiller Cooling Systems in C&IT and NDW Data Centers and Allied Equipments**" with the reference of "**P149532**"
2. The **NADRA (HQ) (National Database and Registration Authority (NADRA))** invites sealed Bids from eligible Bidders for procurement of goods described in the bidding documents on **EPADS v2.0**.
3. **Single Stage-Two Envelope** will be used by adopting **Least Cost Based Selection (LCBS)** Technique for the subject procurement, in line with the Public Procurement Rules, 2026 and any Regulations, Regulatory Guides, Procurement Guidelines or Instructions issued by the Authority from time to time.
4. All Bids must be accompanied by a Bid Security amount described in Bid Security Section in Bidding Document in the form of **Pay Order, Banker's Cheque, Call at Deposit, Bank Guarantee, Demand Draft** or all bids must be accompanied by bid securing declaration in the format specified in the Bidding documents
5. E-Bidding documents, containing detailed terms & conditions, specifications and requirements etc. are available on **e-Pak Acquisition and Disposal System (EPADS)** at **<https://epads.gov.pk/opportunities/federal/procurements/149532>** for all the interested bidders registered on **EPADS v2.0**. Bidders are required to get themselves registered on **EPADS v2.0** to participate in Bidding process.
6. The e-bids, prepared in accordance with the instructions in the e-Bidding Documents, must be submitted through **EPADS v2.0** on or before **Monday,**

October 26, 2026 11:00 AM. E-bids will be opened using **EPADS v2.0** on the same day at **Monday, October 26, 2026 11:30 AM.** Manual submission of Bids shall not be entertained. Those vendors who have not yet registered on the new version of **EPADS v2.0**, may register themselves on <https://vendors.epads.gov.pk/>. A tutorial to explain the registration process is available at <https://www.youtube.com/watch?v=MNW6T38v7tc>

In terms of Rule 65 of Public Procurement Rules, 2026 Grievance Redressal Committee (GRC) is notified for the subject procurement and notification copy is available on the procuring agency's website and on Authority's website at (www.ppra.gov.pk).

NADRA (HQ) (National Database and Registration Authority (NADRA)), Deputy
Director

State Bank of Pakistan Building, Shahrah-i-Jamhuriat, G-5/2., Islamabad Capital
Territory

+92-300-052-0005

saad.abdullah@nadra.gov.pk



Instructions to Bidders

A. Introduction

1.Scope of Bids

1.1 The Procuring Agency (PA), as indicated in the **Bids Data Sheet (BDS)** invites Bids **through EPADS v2.0** for the provision of Goods as specified in the BDS and **in Section V - Evaluation Criteria, Specifications & Schedule of Requirements**. The name, identification, and number of items/deliverables are provided in the **BDS**. The successful Bidders will be expected to provide the goods within the specified period and timeline(s) as stated in the **BDS**.

2. Source of Funds

2.1 Source of funds is referred in Clause-2 I of Invitation for Bids.

3. Eligible Bidders

3.1 A Bidder may be natural person, company or firm or public or semi-public agency of Pakistan or any foreign country, or any combination of them with a formal existing agreement (on Judicial Papers) in the form of a joint venture, consortium, or association. In the case of a joint venture, consortium, or association, all members shall be jointly and severally liable for the execution of the Contract in accordance with the terms and conditions of the Contract. The joint venture, consortium, or association shall nominate a Lead Member as nominated in the BDS, who shall have the authority to conduct all business for and on behalf of any and all the members of the joint venture, consortium, or association during the Bidding process, and in case of award of contract, during the execution of the contract.

Verifiable copy of the agreement that forms a joint venture, consortium or association shall be required to be submitted as part of the Bid.

The appointment of Lead Member in the joint venture, consortium, or association shall be confirmed by submission of a valid Power of Attorney to the Procuring Agency.

Any bid submitted by the joint venture, consortium or association shall indicate the part of proposed contract to be performed by each party and each party shall be evaluated (or post qualified if required) with respect to its contribution only, and the responsibilities of each party shall not be substantially altered without prior written approval of the Procuring Agency and in line with any

instructions issued by the Authority.

(The limit on the number of members of JV or Consortium or Association may be prescribed in BDS, in accordance with the guidelines issued by the PPRA).

3.2 The invitation for Bids is open to all prospective suppliers, manufacturers, or authorized agents / dealers subject to any provisions of incorporation or licensing by the respective national incorporating agency or statutory body established for that particular trade or business. Procuring agencies shall specify the registration/licensing requirements for the foreign bidders keeping in view the requirement of that business.

3.3 A Bidder shall not have a conflict of interest. All Bidders found to have a conflict of interest shall be disqualified. A Bidder may be considered to have a conflict of interest with one or more parties in this Bidding process, if they:

1. are associated or have been associated in the past, directly or indirectly with a firm or any of its affiliates which have been engaged by the Procuring Agency to provide consulting services for the preparation of the design, specifications and other documents to be used for the procurement of the Goods to be purchased under this Invitation for Bids.
2. have controlling shareholders in common; or
3. receive or have received any direct or indirect subsidy from any of them; or
4. have the same legal representative for purposes of this Bid; or
5. have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the Bids of another Bidder, or influence the decisions of the Procuring Agency regarding this Bidding process; or
6. Submit more than one Bid in this Bidding process.

3.4 A Bidder may be ineligible if –

1. he is declared bankrupt or, in the case of company or firm, insolvent;
2. payments in favor of the Bidder is suspended in accordance with the judgment of a court of law other than a judgment declaring bankruptcy and resulting (in accordance with the national laws) in the total or partial loss of the right to administer and dispose of its property;

3. the Bidder is convicted, by a final judgment, of any offence involving professional conduct;

4. the Bidder is blacklisted locally or by international organizations and hence debarred due to involvement in corrupt and fraudulent practices, or submission of false or misleading information or performance failure or involved in disrupting procurement process or due to breach of bid Securing Declaration.

3.5 As and when required, bidders shall provide to the Procuring Agency evidence of their eligibility, proof of compliance with the necessary legal requirements to carry out the contract effectively.

3.6 Bidders shall submit Bids relating to the nature, conditions and modalities of sub-contracting wherever the sub-contracting of any elements of the contract amounting to more than ten (10) percent of the Bid price is envisaged.

4. Eligible Goods and Related Services

4.1 All goods and related services to be supplied under the contract shall have their origin in eligible source countries, and all expenditures made under the contract will be limited to such goods and services. For purpose of this Bid, ineligible countries are the countries declared ineligible by the Federal Government.

5. One Bid per Bidder

5.1 A bidder shall submit only one Bid, in the same bidding process, either individually as a Bidder or as a member in a joint venture or any similar arrangement.

5.2 The Bidder shall not engage a subcontractor for any portion of the contract if the value of such subcontracting exceeds thirty percent (30%) of the total contract amount.

6. Cost of Bidding

6.1 Any cost incurred by the bidder relating to the preparation and submission of its Bid shall be borne by the bidder, and the Procuring Agency shall in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

B. Bidding Documents

7. Contents of Bidding Document

7.1 The Goods required, Bidding procedures, and terms and conditions of the contract are prescribed in the Bidding Documents. In addition to the Invitation for Bids, the Bidding documents which should be read in conjunction with any addenda issued in accordance with **ITB 10.1** include:

Section I -Invitation to Bids

Section II Instructions to Bidders (ITB)

Section III Bid Data Sheet (BDS)

Section IV Evaluation Criteria, Specifications, Schedule of Requirements

Section V Bid Forms

Section VI General Conditions of Contract (GCC)

Section VII Special Conditions of Contract (SCC)

Section VIII Contract Forms

Section IX Integrity Pact

Section X Declaration of Beneficial Ownership Information.

7.2 The Bidder is expected to examine all instructions, forms, terms and specifications in the Bidding documents. Failure to furnish all the information required in the Bidding documents through EPADS v2.0 will be at the Bidder's risk and may result in the rejection of its Bids.

8. Clarification of Bidding documents

8.1 A prospective Bidder requiring any clarification of the Bidding documents may notify the Procuring Agency through EPADS v2.0.

8.2 The Procuring Agency will within two (02) working days after receiving the request for clarification, respond to any request for clarification through EPADS v2.0 provided that such request is received not later than three (03) days, prior to the deadline for the submission of Bids as prescribed in **ITB 22**

8.3 The Procuring Agency's response will be forwarded to all identified Prospective Bidders through EPADS v2.0, including a description of the inquiry,

but without identifying its source.

8.4 Should the Procuring Agency deem it necessary to amend the Bidding document as a result of a clarification, it shall do so following the procedure under **ITB 9**.

8.5 If indicated **in the BDS**, the Bidder's designated representative is invited at the Bidder's cost to attend a pre-Bid meeting at the place, date and time mentioned **in the BDS**. During this pre-Bid meeting, prospective Bidders may request clarification of the schedule of requirement, the Evaluation Criteria or any other aspects of the Bidding document.

8.6 Minutes of the pre-Bid meeting, if applicable, including the text of the questions asked by Bidders, including those during the meeting (without identifying the source) and the responses given, together with any responses prepared after the meeting will be uploaded on EPADS v2.0. Any modification to the Bidding documents that may become necessary as a result of the pre-Bid meeting shall be made by the Procuring Agency exclusively through the use of an Addendum pursuant to ITB 9. Non-attendance at the pre-Bid meeting will not be a cause for disqualification of a Bidder.

9. Amendment of Bidding documents

9.1 Before the deadline for submission of Bids, the Procuring Agency for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder or Pre-Bid meeting may modify the Bidding documents by issuing addenda through EPADS v2.0.

9.2 The Procuring Agency shall promptly publish the addendum through EPADS v2.0.

Any addendum issued including the notice of any extension of the deadline shall also be communicated through EPADS v2.0 to all the bidders who have already submitted their bids. Such bidders shall have the right to withdraw their already submitted bid and re-submit the revised bid prior to the original or extended bid submission deadline.

9.3 To give prospective Bidders reasonable time in which to take an addendum/corrigendum into account in preparing their Bids, the Procuring Agency may, at its discretion, extend the deadline for the submission of Bids through EPADS v2.0:

Provided that the Procuring Agency shall extend the deadline for submission of Bids, if such an addendum is issued within last three (03) days of the Bids submission deadline.

C. Preparation of Bids

10. Language of Bid

10.1 The Bid prepared by the bidder, as well as all correspondence and documents relating to the Bids exchanged by the Bidder and the Procuring Agency shall be written in the English language unless otherwise specified in the BDS. Supporting documents and printed literature furnished by the Bidder may be in another language provided they are accompanied by an accurate translation of the relevant pages in the English language unless otherwise specified in the **BDS**, in which case, for purposes of interpretation of the Bidder, the translation shall govern.

11. Documents and samples Constituting the Bid

11.1 The Bid prepared by the Bidder shall constitute the documents required in the **BDS**.

Details of sample(s) where applicable and requested in the BDS.

Documentary evidence established in accordance with ITB 13 that the Bidder is eligible and/or qualified for the subject bidding process;

Documentary evidence established in accordance with **ITB 03** that the Bidder has been authorized by the manufacturer to deliver the goods into Pakistan, where required and where the supplier is not the manufacturer of those goods;

Documentary evidence established in accordance with ITB 12 that the goods and related services to be supplied by the Bidder are eligible goods and services, and conform to the Bidding Documents;

Bid security or Bid Securing Declaration furnished in accordance with **ITB ---**.

12. Documents Establishing Eligibility of the Goods and Conformity to Bidding documents

12.1 To establish the conformity of the bidder to the Bidding document, the Bidder shall furnish as part of its Bids the documentary evidence that Goods

provided conform to the technical specifications and standards.

13. Documents Establishing Eligibility and Qualification of the Bidder

13.1 Pursuant to **ITB 10**, the Bidder shall furnish, as part of its Bid, all those documents establishing the Bidder's eligibility to participate in the Bidding process and/or its qualification to perform the contract if its Bid is accepted.

14. Form of Bid

14.1 The Bidder shall fill the Form of Bid furnished in the Bidding document. The Bid Form must be completed without any alterations to its format and no substitute shall be accepted.

15. Bid Prices

15.1 The Bid Prices quoted by the Bidder in the Form of Bid and in the Price Schedules shall conform to the requirements specified below or exclusively mentioned hereafter in the Bidding documents.

15.2 All items in the Schedule of Requirement must be listed and priced separately in the Price Schedule(s). If a Price Schedule shows items listed but not priced and neither explicitly denied, their prices shall be construed to be included in the prices of other items.

15.3 In the event that any item(s) in the Price Schedule are not quoted, and such omission is determined by the Procuring Agency not to materially affect the responsiveness of the Bid, the Procuring Agency may, for the sole purpose of bid evaluation and comparison, assign a price to the unquoted item(s) in accordance with the following methodology:

(a) The assigned price shall be the average of the prices quoted for the same item(s) by all substantially responsive bidders; or

(b) In cases where no comparable quotations are available, the Procuring Agency shall apply the corresponding item price from its duly approved cost estimate for evaluation purposes.

The prices so assigned shall be utilized exclusively for bid evaluation and comparison, and shall not, under any circumstances, be incorporated into or form part of the Contract Price.

15.4 The Bid price to be quoted in the Form of Bid in accordance with **ITB 13.1** shall be the total price of the Bid.

15.5 The Bidder shall indicate on the appropriate Price Schedule, the unit prices (where applicable) and total Bid price of the Goods it proposes to provide under the contract.

15.6 Prices quoted by the Bidder shall be fixed during the Bidder's performance of the contract and not subject to variation on any account. A Bid submitted with an adjustable price will be treated as non-responsive and shall be rejected.

16. Bids Currencies

16.1 Prices shall be quoted in Pakistani Rupees unless otherwise specified in the BDS in accordance with Rule 42 (2) of the Public Procurement Rules, 2026.

17. Bids Validity Period

17.1 Such extensions may be more than one time but the total period of such extension shall not exceed the original bid validity period.

17.2 Bids shall remain valid for the period specified in the **BDS** after the Bid submission deadline prescribed by the Procuring Agency. A Bid valid for a shorter period shall be rejected by the Procuring Agency as non-responsive. The period of Bid validity will be determined from the complementary Bid securing instrument, i.e. the expiry period of Bid Security or Bids Securing Declaration as the case may be.

The procuring agency shall ordinarily be under an obligation to process and evaluate the bid and to issue letter of award within the stipulated bid validity period.

17.3 Under exceptional circumstances, prior to the expiration of the initial Bid validity period, the Procuring Agency may request the Bidders' consent to an extension of the period of validity of their Bids through EPADS v2.0. The Bid Security provided under **ITB 17** shall also be suitably extended. A Bidder may refuse the request without forfeiting its Bid security or causing to be executed its Bid Securing Declaration. A Bidder agreeing to the request will not be required nor permitted to modify its Bid, but will be required to extend the validity of its Bid Security or Bid Securing Declaration for the period of the extension.

18. Bid Security or Bid Securing Declaration

18.1 The Bidder shall furnish as part of its Bid, a Bid Security in accordance with Rule 36 of the Public Procurement Rules, 2026.

18.2 The original Bid Security shall be enclosed within the sealed envelope and to be submitted physically before closing time for submission of bids. Whereas, scanned copy of bid security shall be uploaded electronically through EPADS v2.0 before closing hours for submission of bids.

18.3 The Bidder who failed to submit the original Bids security before the submission deadline shall be disqualified straightaway.

18.4 The Bid Security or Bid Securing Declaration is required to protect the Procuring Agency against the risk of Bidder's conduct which would warrant the security's forfeiture, pursuant to **ITB 18.7**.

18.5 The Bid Security shall be denominated in the local currency or in another freely convertible currency, and it shall be in the form specified in the BDS which shall be in any of the following:

- a) a bank guarantee, a bank draft, an irrevocable letter of credit issued by a Scheduled bank in the form provided in the Bidding Documents or another form acceptable to the Procuring Agency;
- b) a cashier's or certified cheque; or
- c) another security if indicated in the BDS.

The Bid Security shall be valid for twenty-eight (28) days beyond the end of the validity of the Bid. This shall also apply if the period for Bid Validity is extended. In either case, the form must include the complete name of the Bidder.

18.6 The Bid Security shall be payable promptly upon written demand by the Procuring Agency in case any of the conditions listed in **ITB 18.7** are invoked.

18.7 Unsuccessful Bidders' Bid Security will be discharged or returned as promptly as possible, however in no case later than thirty (30) days after the expiration of the period of Bid Validity prescribed by the procuring agency pursuant to **ITB 17**. The Procuring Agency shall make no claim to the amount of the Bid Security, and shall promptly return the Bid Security documents, after whichever of the following that occurs earliest:

- a. the expiry of the Bid Security;

- b. the entry into force of a procurement contract and the provision of a Performance Guarantee, for the performance of the contract if such a guarantee, is required by the Bid documents;
- c. the rejection by the Procuring Agency of all Bids;
- d. cancellation of procurement proceedings.
- e. the withdrawal of the Bid prior to the deadline for the submission of Bids, unless the Bid document stipulates that no such withdrawal is permitted.

18.8 The successful Bidder's Bid Security will be discharged upon the Bidder signing the contract, or furnishing the Performance Guarantee.

18.9 The Bid Security may be forfeited or the Bid Securing Declaration executed:

- a. if a Bidder:
- b. withdraws its Bid during the period of Bid Validity as specified by the Procuring Agency, and referred by the Bidder on the Form of Bids except as provided for in **ITB 16.2**; or
- c. does not accept the correction of errors; or
- d. in the case of a successful Bidder, if the Bidder fails:
- e. to sign the contract; or
- f. to furnish Performance Guarantee.

19. Withdrawal, Substitution, and Modification of Bid

19.1 Before Bid submission deadline, any Bidder may withdraw, substitute, or modify its Bid after it has been submitted through EPADS v2.0.

20. Format and Signing of Bid

20.1 The Bidder shall prepare and submit Bids with due diligence after carefully reading all the terms and condition before bid submission deadline through EPADS v2.0.

D. Submission of Bids

21. Submission of Bids through EPADS v2.0 before bid submission deadline.

21.1 The Technical and Financial Bids, shall be submitted electronically through EPADS, before bid submission deadline. The bid submission option shall be automatically disabled once the deadline is over.

22. Deadline for Submission of Bids

22.1 Bids shall be received by the Procuring Agency through EPADS v2.0 before bid submission deadline.

22.2 The Procuring Agency may, under exceptional circumstances, extend the deadline for the submission of Bids, after recording reasons in writing and in an equal opportunity manner.

In such case, all rights and obligations of the Procuring Agency and the Bidders that were previously governed by the original deadline shall thereafter be subject to the revised deadline.

E. Opening and Evaluation of Bids

23. Opening of Bids

23.1 The respective Bid Evaluation Committee of the Procuring Agency shall open all Bids through the EPADS v2.0, on the date and time specified in the Bid Data Sheet (BDS).

23.2 The respective Bid Evaluation Committee **shall generate minutes through EPADS v2.0 containing brief details of bid opening process.** The record of the Bid opening shall include, as a minimum: the name of the Bidder, the Bid price if applicable, and the presence or absence of a Bid Security or Bid Securing Declaration.

23.3 The procuring agency shall live broadcast the opening of bids on national media or on their website or digital channels, if the volume of procurement exceeds five hundred million rupees in case of goods and services and one thousand million rupees in case of works.

23.4 In case the date of opening of bid has been declared as public holiday or the procuring agency fails to open bid due to any EPADS v2.0 related issues, the submission and opening of bids shall be shifted to the next working day at the same time.

23.5 In case of Single Stage One Envelope Procedure, the Bidders names, the Bid prices, the total amount of each Bid and, the presence or absence of Bid Security, Bid Securing Declaration and such other details as the Procuring Agency may consider appropriate, will be announced by the Bid respective Evaluation Committee.

23.6 No bid will be rejected at the time of bid opening except for bids whose original bid security has not been provided to the procuring agency before bid submission deadline.

24. Clarification of Bids

24.1 To assist in the examination, evaluation and comparison of Bids of the Bidders, the respective Bid Evaluation Committee may, ask any Bidder for a clarification of its Bid including breakdown of prices.

24.2 The request for clarification and the response shall be sought through EPADS v2.0 before **three days prior to the deadline for submission of bids.** No change in the prices or substance of the Bids shall be sought, offered, or permitted.

24.3 The alteration or modification in the bids which in any way affect the following parameters will be considered as a change in the substance of a Bid:

1. evaluation & qualification criteria;
2. required scope of work or specifications;
3. all securities requirements;
4. tax requirements;
5. terms and conditions of Bidding documents.
6. change in the ranking of the Bidder

24.4 From the time of bid(s) opening to the time of Contract award if any Bidder wishes to contact the Procuring Agency on any matter related to the Bids it should do so through **EPADS v2.0**.

25. Preliminary Examination of Bids

25.1 Prior to the detailed evaluation of Bids, the respective Bid Evaluation Committee will determine whether each Bid:

1. meets the eligibility criteria defined in **ITB 3**;
2. has been prepared as per the format and contents defined by the Procuring Agency in the Bidding documents;
3. is accompanied by the required securities; and
4. is substantially responsive to the requirements of the Bidding documents.

25.2 The respective Bid Evaluation Committee's determination of a Bid's responsiveness will be based on the contents of the Bid itself.

25.3 A substantially responsive Bid is one which conforms to all the terms, conditions, and specifications of the Bidding documents, without material deviation or reservation. A material deviation or reservation is one that: -

1. affects in any substantial way the scope, quality, or performance of the Goods;
2. limits in any substantial way, inconsistent with the Bidding documents, the Procuring Agency's rights or the Bidders obligations under the Contract; or
3. if rectified, would affect unfairly the competitive position of other Bidders presenting substantially responsive Bids.

25.4 If a Bid is not substantially responsive, it will be rejected by the respective Bid Evaluation Committee and may not subsequently be evaluated for complete technical responsiveness.

26. Examination of Terms and Conditions; Technical Evaluation

26.1 The respective Bid Evaluation Committee shall examine the Bids to confirm that all terms and conditions specified in the **GCC** and the **SCC** have been accepted by the Bidder without any material deviation or reservation.

26.2 The respective Bid Evaluation Committee shall evaluate the technical aspects of the Bids submitted, to confirm that all requirements specified in Schedule of Requirements and Technical Specifications of the Bidding documents have been met without material deviation or reservation.

26.3 If after the examination of the terms and conditions and the technical evaluation, the respective Bid Evaluation Committee determines that the Bid is not substantially responsive in accordance with **ITB**, it shall reject the Bid.

27. Correction of Errors

27.1 Bids determined to be substantially responsive will be checked for any arithmetic errors. Errors will be corrected as follows: -

1. if there is a discrepancy between unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail, and the total price shall be corrected, unless in the opinion of the respective Evaluation Committee there is an obvious misplacement of the decimal point in the unit price, in which the total price as quoted shall govern and the unit price shall be corrected;
2. if there is an error in a total corresponding to the addition or subtraction of sub-totals, the sub-totals shall prevail and the total shall be corrected; and
3. where there is a discrepancy between the amounts in figures and in words, the amount in words will govern.
4. Where there is discrepancy between grand total of price schedule and amount mentioned on the Form of Bid, the amount referred in Price Schedule shall be treated as correct subject to elimination of other errors.

27.2 The amount stated in the Bid will be adjusted by the respective Bid Evaluation Committee in accordance with the above procedure for the correction of errors and, with the concurrence of the Bidder, shall be considered as binding upon the Bidder. If the Bidder does not accept the corrected amount, its Bid will then be rejected, and the Bid Security may be forfeited or the Bids Securing Declaration may be executed.

28. Conversion to Single Currency

28.1 For the purposes of comparison of bids quoted in different currencies, the price shall be converted into a single currency in accordance with Rule 42(2) of Public Procurement Rules, 2026.

29. Evaluation of Bids

29.1 The Bids, quotations, or proposals shall be evaluated by the respective evaluation committees as per evaluation criteria prescribed in the Bidding Documents in accordance with Rule 11, 12 and 13 of the Public Procurement Rules, 2026.

29.2 While evaluating the bids, the procuring agency shall consider the following:

- i. Bids will be evaluated on lump sum bid basis or items wise or Lot wise (contracts), as specified in the BDS; and the Bid Price;
- ii. correction of arithmetic errors in accordance with ITB 27;

30. Domestic Preference

30.1 The respective Bid Evaluation Committee shall evaluate and compare bids, allow for preference to domestic bidders, while competing with the international bidders in accordance with the policies of the Federal Government.

The percentage of preference, to be accorded shall be clearly mentioned in the bidding documents under the bid evaluation criteria.

31. Determination of Successful Bid

31.1 Selection technique will be adopted for determining the Successful Bid in accordance with the criteria referred in the BDS or prescribed in the separate section titled as Evaluation Criteria.

31.2 Least Cost Based Selection (LCBS)

After meeting the requirements of eligibility, qualification and substantial responsiveness, the bid in compliance with all the mandatory (technical) specifications/requirements and/or requisite quality threshold (if any), and having lowest evaluated cost (or financial proposal) shall be considered Successful Bid.

31.3 Quality and Cost Based Selection (QCBS)

In such combination, there shall be some specific weightage of both the technical features and financial aspects of the proposal. The financial marks shall be awarded on the basis of inverse proportion calculations. The successful bid shall be declared, on the basis of combined evaluation.

31.4 Quality Based Selection (QBS)

After meeting the requirements of eligibility, qualification and substantial responsiveness the bid in compliance with all the mandatory (technical) specifications/requirements and attaining highest marks in the Technical Evaluation considering all other qualitative and/or quantitative parameters (or point rated criteria) for technical proposal(s) such as working methodology, implementation plan, resource allocation, additional functionalities, risk

management approach, knowledge transfer techniques, post implementation methodology etc. shall be treated as highest ranked bid. Later on, the financial proposal of highest ranked bidder shall be opened, however, in case of failure to proceed further with such a bidder, the procuring agency may resort to second highest bidder and so on.

31.5 The Procuring Agency may adopt the Quality & Cost Based Selection Technique due to the following two reasons:

1. Where the Procuring Agency knows about the main features, usage and output of the products; however not clear about the complete features, technical specifications and functionalities of the goods to be procured and requires the bidders to submit their proposals defining those features, specifications and functionalities; or
2. Where the Procuring Agency, in addition to the mandatory requirements and mandatory technical specifications, requires parameters specified in Evaluation Criteria to be evaluated while determining the quality of the goods.

31.6 In such cases, the Procuring Agency may allocate certain weightage to these factors as a part of Evaluation Criteria, and may determine the ranking of the bidders on the basis of combined evaluation in accordance with provisions of Rule 2(1)(xxviii) of the Public Procurement Rules, 2026.

32. Abnormally Low Financial Bids

32.1 An abnormally low bid is a bid that, in light of the Procuring Agency's cost estimate, market conditions, or other received bids, appears to be unrealistically low and may not be sustainable for successful contract execution.

32.2 Where the Bid price is considered to be abnormally low, the Procuring Agency shall perform price analysis either during determination of Successful Bids or as a part of the post-qualification process.

32.3 The Procuring Agency may reject an Abnormally low financial bid in accordance with Rule 43 of the Public Procurement Rules, 2026.

32.4 In order to identify the Abnormally Low Bids (ALB) following approaches can be considered to minimize the scope of subjectivity:

1. Comparing the Bid price with the cost estimate;

2. Comparing the Bid price with the Bid(s) offered by other Bidders submitting substantially responsive Bids; and

3. Comparing the Bids price with prices paid in similar contracts in the recent past either government- or development partner-funded.

32.5 The respective Bid Evaluation Committee will determine to its satisfaction whether the Bidder that is selected as having submitted the successful bid is qualified to perform the contract satisfactorily.

32.6 The determination will take into account the Bidder's financial, technical, and production capabilities. It will be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, as well as such other information as the Procuring Agency deems necessary and appropriate. Factors not included in these Bidding documents shall not be used in the evaluation of the Bidders' qualifications.

32.7 Respective Bid Evaluation Committee may seek "Certificate for Independent Price Determination" from the Bidder and the results of reference checks may be used in determining an award of contract.

Explanation: The Certificate shall be furnished by the Bidder. The Bidder shall certify that the price is determined keeping in view of all the essential aspects such as raw material, its processing, value addition, optimization of resources due to economy of scale, transportation, insurance and margin of profit etc.

32.8 An affirmative determination will be a prerequisite for award of the contract to the Bidder. A negative determination will result in rejection of the Bidder's Bid, in which event the respective Bid Evaluation Committee will proceed to the next ranked Bidder to make a similar determination of that Bidder's capabilities to perform satisfactorily.

F. Award of Contract

33. Criteria of Award

33.1 The Procuring Agency will award the Contract to the Bidder whose Bids has been determined to be substantially responsive to the Bidding documents and who has been declared as Successful Bidder.

34. Negotiations

34.1 In accordance with Rule 52A of Public Procurement Rules, 2026, without changing the cost and scope of work or services, the procuring agency may

negotiate with the successful bidder (with a view to streamline the work or task execution, at the time of contract finalization) on methodology, work plan, staffing and special conditions of the contract.

There shall be no limitation on the successful bidder offering voluntary reduction in bid price without affecting the quality or scope of the procurement.

35. Procuring Agency's Right to reject all bids

35.1 The Procuring Agency reserves the right to reject all bids or proposals at any time prior to the issuance of the Letter of Award, without incurring any liability, in accordance with Rule 45 of the Public Procurement Rules, 2026.

36. Cancellation of Procurement

36.1 The procuring agency reserves the right to cancel the procurement proceedings in accordance with Rule 46 of the Public Procurement Rules, 2026.

37. Procuring Agency's Right to Vary Quantities at the Time of Award

37.1 The Procuring Agency reserves the right at the time of contract award to increase or decrease the **quantity of** Goods originally specified in these Bidding documents provided this does not exceed **by** 15%, without any change in unit price or other terms and conditions of the Bids and Bidding documents.

38. Notification of Award

38.1 Prior to the award of contract, the procuring agency shall announce and publish the result of bid evaluation on EPADS v2.0 in accordance with Rule 48 of the Public Procurement Rules, 2026.

The Bidder whose Bids has been accepted will be notified of the award by the Procuring Agency prior to expiration of the Bids/Bid Validity period. The Letter of Award will state the sum that the Procuring Agency will pay the successful Bidder in consideration for the delivery of Goods as prescribed by the Contract (hereinafter and in the Contract called the "Contract Price).

38.2 The Letter of award will constitute the formation of the Contract, subject to the Bidder furnishing the Performance Guarantee and signing of the contract.

39. Signing of Contract

39.1 Promptly after issuance of Letter of award, Procuring Agency shall send the successful Bidder the draft Contract, incorporating all terms and conditions as agreed by the parties to the contract.

39.2 Immediately after the Redressal of grievance by the GRC (if any), and **after fulfillment of all conditions precedent** of the Contract Form, the successful Bidder and the Procuring Agency shall sign the Contract.

40. Corrupt & Fraudulent Practices

40.1 Procuring Agencies (including beneficiaries of Government funded projects and procurement) as well as Bidders/Contractors under Government financed contracts, observe the highest standard of ethics during the procurement and execution of such contracts, and will avoid engaging in any corrupt and fraudulent practices.

F. Grievance Redressal & Complaint Review Mechanism

41. Constitution of Grievance Redressal Committee

41.1 The Grievance Redressal Committee shall address the grievance, if any submitted by any party, including the bidder, in accordance with Rule 65 of the Public Procurement Rules, 2026 read with Redressal of Grievances Regulations, 2021.

In case if any party or the bidder is not satisfied with the decision of the GRC or if it fails to decide within ten days, the bidder or the party may file an appeal before the Appellate Committee of the Authority in accordance with Rule 65(7) of the Public Procurement Rules, 2026 to be read with Redressal of Grievances Regulations, 2021.

G. Mechanism of Blacklisting

42. Mechanism of Blacklisting

42.1 The Procuring Agency shall initiate blacklisting proceedings against any bidder, supplier, or contractor in accordance with the Rule 25 of the Public Procurement Rules, 2026.

42.2 The blacklisted/debarred bidder may file the review petition before the Authority in accordance with Rule 25 (6) of the Public Procurement Rules, 2026 to be read with Procedure of filing and disposal of Review Petitions Regulations, 2021.

43. Contract Management

43.1 For each procurement, the Procuring Agency shall designate a Contract Manager, who shall be duly responsible for the efficient management and administration of the contract in strict compliance with the provisions set forth under Rules 58, 59, and 60 of the Public Procurement Rules, 2026.

44. Inspection of goods and evaluation of services.

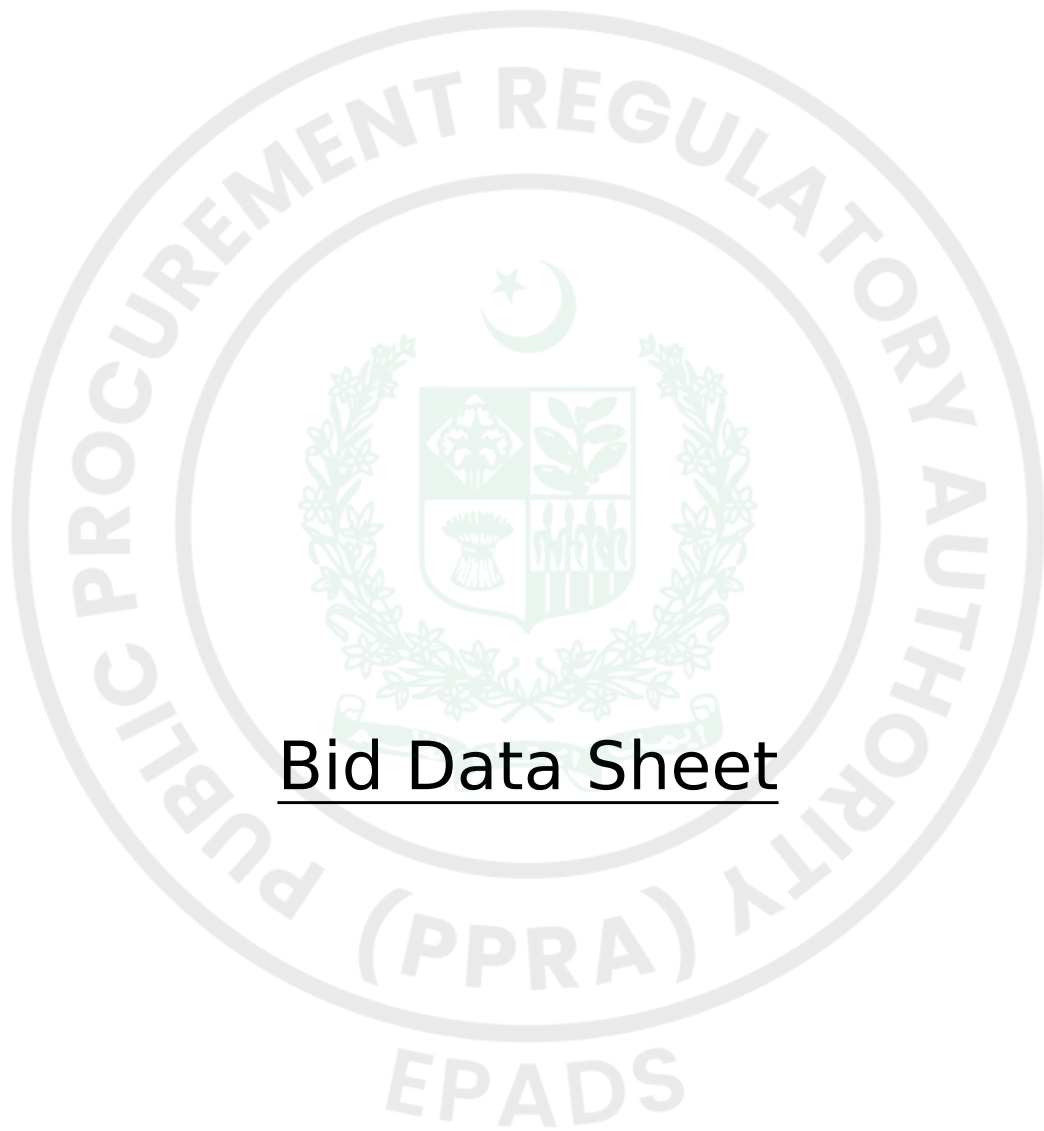
44.1 The Inspection Committee or the Firm shall have the right to conduct inspections of the goods in accordance with Rule 61 of the Public Procurement Rules, 2026.

45. Socio-economic development.

45.1 In accordance with Rule 63 of the Public Procurement Rules, 2026, preference may be granted to small and medium enterprises and marginalized groups in accordance with the policies notified by the Federal Government.

46. Environmental objectives

46.1 As per Rule 64 of the Public Procurement Rules, 2026, the procuring agency may seek to procure goods with a reduced environmental impact throughout their life cycle when compared to goods services with the same primary function that may otherwise be procured.



Bid Data Sheet

Bids Data Sheet (BDS)

The following specific data for the procurement of Goods to be procured shall complement, supplement, or amend the provisions in the Instructions to Bidders (ITB). Whenever there is a conflict, the provisions herein shall prevail over those in ITB.

BDS Clause Number

ITB Number

Amendments of, and Supplements to, Clauses in the Instruction to Bidders

A. Introduction

BDS Clause Number 1

ITB Number 1.1

Name of Procuring Agency: **NADRA (HQ) (National Database and Registration Authority (NADRA))**

The subject of procurement is: **NADRA-HQ-RFB-120/2026: Replacement of Existing Data Center Chiller Cooling Systems in C&IT and NDW Data Centers and Allied Equipments**

Period for Provision of Goods:

Extension Period (if applicable):

Expected commencement date: **Monday, December 7, 2026**

BDS Clause Number 2

ITB Number 2.1

Source of funds [Enter source of funds]

Financial year for the operations of the Procuring Agency: **2026-27**

Name and identification number of the Contract: **P149532**

Identification Number:

BDS Clause Number 3

ITB Clause Number 3.1

Eligible Bidder [Enter eligibility of bidder]

JV/Consortium or Association Allowed: **No**

Number of JV/Consortium Members: **Nil**

see section of eligibility criteria.

B. Bidding Documents

BDS Clause Number 4

ITB Clause Number 4.1

Eligible goods and related services [Enter requirements for eligible goods and related services, if any]

ITB Number 8.1

The Bidders may seek clarifications through **EPADS v2.0** : Clarification Date: Friday, October 23, 2026

Pre-Bid Meeting: Wednesday, October 14, 2026 12:00 PM

Venue: State Bank of Pakistan Building, Shahrah-i-Jamhuriat, G-5/2.

ITB Number 8.2

The Bidders may seek clarifications through **EPADS v2.0** : Clarification Date: Friday, October 23, 2026

Pre-Bid Meeting: Wednesday, October 14, 2026 12:00 PM

Venue: State Bank of Pakistan Building, Shahrah-i-Jamhuriat, G-5/2.

ITB Number 8.3

The Bidders may seek clarifications through **EPADS v2.0** : Clarification Date: Friday, October 23, 2026

Pre-Bid Meeting: Wednesday, October 14, 2026 12:00 PM

Venue: State Bank of Pakistan Building, Shahrah-i-Jamhuriat, G-5/2.

ITB Number 8.5

Pre-bid meeting will be/will not be held [Tick the appropriate] If yes write down the time, and date of the pre-Bid meeting:

[The meeting should take place not later than one weeks before the deadline for Bid submission.]

C. Preparation of Bids

BDS Clause Number 5

ITB Number 10.1

The Language of all correspondences and documents related to the Bids shall be in: **English**

List of documents required along with the bid: No

BDS Clause Number 6

ITB Number 11.1

Documents required / not required with bid submission [enter list of documents] Samples required / not required with the bid [Enter the names and number of samples]

Items/Lots and threere related documents:

See section items and Lots

BDS Clause Number 7

ITB Number 12.1

Items / Lots Specifications:

see section of items specifications.

BDS Clause Number 8

ITB Number 15.6

The price shall be **Fixed**.

BDS Clause Number 9

ITB Number 16.1

Currency of the Bids shall be : **PKR**

BDS Clause Number 10

ITB Number 17.1

The Bids/Bid Validity period shall be: **120 Days**

BDS Clause Number 11

ITB Number 18.1

The amount of Bid Security shall be as defined in Bid Security Section for items and lots given in **BDS 6**

Instrument of Bid Security shall be in the Name of : **NADRA (HQ)**

The Bid Security shall be in the form of: **Pay Order, Banker's Cheque, Call at Deposit, Bank Guarantee, Demand Draft**

ITB Number 18.2

The address for submission of original bid security is [Insert the address for bid security submission]

D. Submission of Bids

BDS Clause Number 12

ITB Number 20.1

Bid shall be submitted online on EPADS v2.0 whereas hard copy of the bid security should be submitted to the following;

State Bank of Pakistan Building, Shahrah-i-Jamhuriat, G-5/2., Islamabad Capital Territory before bid submission deadline.

Bids that are not submitted on EPADS v2.0 shall be disqualified.

The deadline for Bids submission is: **Monday, October 26, 2026 11:00 AM**

Day : **Monday**

Date: **Monday, October 26, 2026**

Time : **11:30 AM**

E. Opening and Evaluation of Bids

BDS Clause Number 13

ITB Number 23.1

The Bids opening shall take place on **EPADS v2.0**.

Day : **Monday**

Date: **Monday, October 26, 2026**

Time : **11:30 AM**

ITB Number 29.2

The procuring agency shall consider the following:

lump sum bid basis; or

items wise; or

Lot wise (contracts),

ITB Number 30.1

BDS Clause Number 14

ITB Number 31.1

Domestic Preference [applicable / not applicable]

ITB Number 31.2

Selection technique adopted will be:

The Procuring Agency shall use any of the following evaluation techniques for determination of successful bid.

Least Cost Base Selection (LCBS)

Quality and Cost Based Selection (QCBS)

Quality Based Selection (QBS)

[Insert the Evaluation Technique]

Selection technique adopted will be: **Least Cost Based Selection (LCBS)**
see Evaluation Criteria

F. Review of Procurement Decisions

BDS Clause Number 15

ITB Number 41.1

Grievance against this procurement shall be submitted online on EPADS v2.0.

Arbitrator shall be appointed by mutual consent of the both parties.

ITB Number 42.2

The Address of PPRA Grievance Redressal Appellate Committee to submit a copy of grievance:

Grievance Redressal Appellate Committee,

Public Procurement Regulatory Authority

1st Floor, G-5/2, Islamabad, Pakistan

Tel: +92-51-9202254

Eligibility Criteria

Bidder's Type	Required Registration
Sole Proprietorship	NADRA CITIZENSHIP (CNIC/NICOP)
Partnership Firm	FBR (NTN)
Company (Private Limited)	FBR (GSTN)
Company (Public Limited)	

Eligibility Criteria	Document
I abide by all the terms and conditions as mentioned in the tender documents. I also comply with all technical specification as stated in this document. Note: Attached confirmation letter on company letter head	Yes
Firm has a Valid NTN Registration	Yes
Firm has a Valid GST Registration	Yes
Firm is active on ATL list of FBR	Yes
Firm is authorized partner of OEM for Cooling system	Yes
Bidder shall provide an OEM letter confirming that the offered cooling systems shall not be scheduled for EOL / EOS within 10 years.	Yes
Letter of Bid Technical	Yes
Original Bid Security must be submitted at Procurement Department on or before Bid Submission deadline.	Yes

Undertaking for Non-Blacklisting Listing of the firm on Company Letter Head

Yes



Evaluation Criteria

Eligible bidder(s) with substantially responsive bid(s) offering **Least Cost Based Selection (LCBS)** shall be consider for the award of contract(s).

Least Cost Based Selection (LCBS)

Weightage

Technical Evaluation %	
100	
Technical Marks	100
Passing Marks	70
Technical Evaluation Criteria	
Company Registration & Existence: Must be a legally registered company in Pakistan with a minimum continuous registration period of 08 years as of the bid submission date. "T1" Copies of valid registration, incorporation, and company registration documents required. (Quantitative)(Doc Required) 15 Years and Above (15) 10 Years (10) 8 Years (5)	15

Relevant project Experience During past seven years, how many successful Data Center projects including precision cooling units were installed in Pakistan. Minimum worth of 20 million PKR. "T2" Purchase Orders, Contracts, Completion Certificates, or Client References (Quantitative)(Doc Required) ≥ 15 Projects (15) 14 to 5 (10) 4 to 1 (5)	15
Government / General / Defense Sector Clients Experience with the following client categories in Data Center projects during the last eight (08) years "T3" Purchase Orders, Contracts, Completion Certificates, or Client References indicating client category. (Quantitative)(Doc Required) GOP + General + Defense Clients (15) Any Two Categories (10) Any One Category (5)	15
Service Level Agreements (SLAs) Must currently be managing SLAs for operation, maintenance, and / or after-sales support of DC and Allied equipment across Pakistan • 3 Marks per Active SLA. "T4" Copies of valid SLA agreements, maintenance contracts, or support agreements. (Quantitative)(Doc Required)	15
Qualified Technical Staff Availability of qualified technical personnel. • 3 Marks per PEC Registered Engineer (Electrical / Mechanical) • 1 Mark per Technician Maximum score capped at 10 Marks. "T5" Documentary proof such as Employment Letters, Payroll Records, Appointment Letters, EOBI records, or equivalent evidence. (Quantitative)(Doc Required)	10

Annual Financial Turnover / Sales Average annual turnover of not less than PKR 250 million during each of the last three (03) financial years. • PKR 250 million in Year 1 = 10 Marks • PKR 250 million in Year 2 = 10 Marks • PKR 250 million in Year 3 = 10 Marks “T6” Audited Financial Statements duly certified by a Chartered Accountant. (Quantitative)(Doc Required)

30



Items/Lots

Items Without Lots :

Item	UNSPSC	Delivery Schedule	Quantity	Bid Security	Manufacturer / Dealer Authorization	Warranty
Replacement of Existing Data Center Chiller Cooling Systems in C&IT and NDW Data centers and allied equipment	Central processing unit coolers	Address: State Bank of Pakistan Building, Shahrah-i-Jamhuriat, G-5/2., Islamabad Capital Territory Schedule: The successful bidder shall complete the supply, delivery, installation, testing, commissioning, and handover of the equipment and services within Eight (08) months from the date of Contract Award. Quantity: 1/Qty	1/Qty	8000000 PKR	--	--

Related Services of Goods:

No



Items/Lot Specification

Items Without Lots :

Item: Replacement of Existing Data Center Chiller Cooling Systems in C&IT and NDW Data centers and allied equipment

UNSPSC: Central processing unit coolers

Specifications / Requirementss:

__EMPTY	List of Equipment/Service Required	__EMPTY_1
	BOQ for C&IT	
Sr No	Equipment	Quantity
1	Supply of the following items as per specifications including all accessories, complete in all respect. Note: Cooling units net sensible capacities are after detection of all tolerance and at 500C ambient Condition. All purposed cooling unit should be compatible with the DCIM.	
a	DX Type InRow Unit (without heater and humidifier) 25 – 30 KW Net Sensible cooling capacity.The equipment shall comply with the technical requirements specified in ANNEX-B (Technical Specification clause vii-a).	3
b	DX Type InRow Unit (with heater and humidifier) 25 – 30 KW Net Sensible cooling capacity.The equipment shall comply with the technical requirements specified in ANNEX-B (Technical Specification clause vii-b).	5

__EMPTY	List of Equipment/Service Required	__EMPTY_1
c	DX Type Inrow Unit (with heater and humidifier) 40 – 45 KW Net Sensible cooling capacity.The equipment shall comply with the technical requirements specified in ANNEX-B (Technical Specification clause vii-c).	3
d	Precision Cooling CRAC Unit – 27 kW (UPS Room):The Contractor shall supply, install, test, and commission a 27 kW Precision Cooling CRAC (Computer Room Air Conditioning) Unit suitable for UPS Room.Piping, plumbing, cabling, drain system and Installation work of Cooling unit, adequate illumination / LED lighting for out door.	2
2	800KVA Transformer and allied works	
a	Transformer 800 KVA: Supply Installation, testing and commissioning of 800 KVA oil type transformers with all allied requirements. Pad / Foundation, Grounding, Labeling, Protections for transformers Services: Design Book, Load Section and Connection Charges, AMI Meter, WAPDA Metering Panel Inspection Charges, HT Cable, HT Cable Test Report Charges. Contractor shall perform complete load study and obtain utility approval. Note: Refer to ANNEX-B (Technical Specification clause ix)	2
b	Supply of M. V panel WAPDA industrial metering & protection panel as per WAPDA Standard P – 44 :2018 One Vacuum circuit breaker having current capacity 630A 25KA (WAPDA APPROVED), voltage rating 11KV, cassette type, 95KV BIL, auto/manual operated, with spring operated mechanism, one tripping coil bearing 110V DC, one breaker closing coil 110V DC. Note: Refer to ANNEX-B (Technical Specification clause x)	2

__EMPTY	List of Equipment/Service Required	__EMPTY_1
c	RCC Room for HT Panel: The Contractor shall provide RCC rooms for housing each HT Panel. The room sizes (02) shall be 15ft x 20ft as per OEM recommendations and shall include required clearances, ventilation, access, and maintenance provisions. The price shall be quoted on a per Sq. ft. basis, including RCC structure, flooring, painting, 1x metal door / Shutter (one for each room) 10ft x 5ft (or as per HT Panel height and width requirements), lighting, ventilation system, cable openings / trenches, and all associated civil works. Note: Measurement and Payment: The rate shall be quoted per square foot, and payment shall be made based on the actual area installed and accepted.	2x 300 ft2
3	The contractor shall supply install test and commission complete Electrical Distribution floor mount with MCB and CB (of Schneider / ABB) as approved SLD including enclosure, copper bus bars, breaker, energy analyzer, indication lamps, internal wiring cable termination and all accessories. The DB shall be 16 AWG MS Sheet degreased and de rusted, zinc phosphate, finished with electro static powder with 15-micron thickness with hinged door, neutral links with necessary holes, earthing of Door with buried Copper links, PVC Gland and with 20% space for future expansion requirement. Dimension and location will be finalized at the time of site survey. Note: Cable Works — Measurement and Payment: The rate shall be quoted per running meter, and payment shall be made based on the actual length of cable laid, tested and accepted.	
a	Input Electrical Distribution Boards (DB): 800A FP MCCB 50kA (Existing - From MOR Panels A & B)	2
b	HVAC Electrical Distribution Boards (DB): 500A FP MCCB 36kA 05 x 80A 3P MCCB 25kA (03 + 02 Spares) 20 x 40A 3P MCB 6kA (15 + 05 Spares) 06 x 20A 2P MCB 6kA (05 + 01 Spares)	2
4	Power Cable: L.T. Power Cables (Pioneer / Fast / Newage) Supply at site, installation, testing and commissioning of PVC insulated nonarmored copper conductor cable 600 / 1000 Volt grade to be installed as per routes including cos to fall necessary materials, connections, identification tags, cables lugs properly crimped at both ends for the following sizes complete in all respects.	

__EMPTY	List of Equipment/Service Required	__EMPTY_1
a	Installation from Existing MOR Panels to HVAC - DBs - 300mm2 1 - Core, Cu / PVC / PVC	1500m
b	Earth cable installation from Existing earthing Panel to HVAC - DBs - 1C - 150mm2 Earth Cable.	375m
c	Power cable installation from 48KVA UPS to sitting area DB 35mm2 4 - Core , Cu / PVC / PVC with 10mm2 Earth Cable	30m
d	Power cable installation from HVAC - DB - Server Room 40 - 45 KW In-row Cooling Units 16mm2 5 - Core (3L+N+E), Cu / PVC / PVC	250m
e	Power cable installation from CNIT HVAC-DB- Server Room 10mm2 5 - Core (3L+N+E), Cu, PVC / PVC	800m
f	Power cable installation from Indoor to outdoor Unit 6mm2 5 - Core (3L+N+E), Cu, PVC / PVC	250 m
g	Power cable installation from Indoor to outdoor Unit 4mm2 5 - Core (3L+N+E), Cu, PVC / PVC	950m
h	Power cable installation from Indoor to outdoor Unit ACRDP-Outdoor Units (5 units) 4mm2 5 - Core (3L+N+E), Cu, PVC / PVC	400m
i	Control cable installation from indoor to outdoor 1.5mm2 2 Core, CU, XLPE	1500m
5	Elevated Design, fabricate and install heavy duty hot-dip galvanized steel structure for outdoor units with stairs The outdoor units will be protected by protective fencing / guardrails, with access door Note: Elevated platforms shall be provided at 2 -3 different location / heights, as required by the existing site conditions and cooling - unit layout. Steel Structure/Platform — Measurement and Payment: The rate shall be quoted per square foot, and payment shall be made based on the actual area installed and accepted.	Approximate 200 ft2

__EMPTY	List of Equipment/Service Required	__EMPTY_1
6	Renovation and Development of HVAC DB Room Complete renovation and development of the room designated for installation of the HVAC electrical distribution boards, including the following works: Room Dimensions: Approximate room dimensions: 13 ft x 17 ft. Final dimensions shall be verified at site. Safety note: Office workstations should not be installed inside an electrical DB room unless a properly separated working area is provided and the arrangement is approved under the applicable electrical and fire-safety requirements.	
a	Dismantling and civil works: Dismantling and removal of unwanted infrastructure, fixtures, fittings and debris, including safe disposal outside the premises. Complete wall and ceiling repairs, surface preparation and application of approved paint. The ceiling shall be finished with approved black paint. Measurement and Payment: The rate shall be quoted per square foot, and payment shall be made based on the actual area installed and accepted.	221ft2
b	False Ceiling Removal, Cable Management & High-Intensity Lighting from Corridor Area: Removal of existing dumpa / false ceiling and black painting in the corridor area; rearrangement and proper dressing of exposed cables using suitable clips and conduits/piping; and supply and installation of suspended high-intensity 20x LED (2x2 ft or as approved) lights, including all necessary supports, Electrical wires, accessories, and connections. The open area will be closed with MS Sheets from the front.	7' x 64' = 448 ft2
c	Fire-Rated Steel Door 7' x 4': Supply and installation of an approved fire-rated steel door, complete with panic bar, door closer, locking arrangement, frame and all necessary hardware.	1
d	Air-Conditioning System: Supply, installation, testing and commissioning of two 1.5 - ton inverter split air-conditioning units, including refrigerant piping, insulation, condensate drainage, power and control cabling, outdoor-unit mounting arrangements and all accessories.	2

__EMPTY	List of Equipment/Service Required	__EMPTY_1
e	Workstation Furniture: Supply and installation of four office workstations, ergonomic chairs, storage credenza and all associated accessories.	4
f	Lighting and Electrical Works: Supply, installation, testing and commissioning of the complete 10x LED 2x2 ft lighting system, including the lighting DB, circuit breakers, conduits, wiring, switches, earthing and associated accessories.	1Job
g	Underground Cable Trenches: Construction of underground cable trenches as required, including excavation, cable protection, backfilling and reinstatement of disturbed surfaces.	
h	Space Availability: The required space for the proposed HVAC DB room shall be provided by the C&IT Directorate.	
i	Heavy-Duty Overhead Cable Ladder — Red / Orange: Supply and install a minimum 600 mm (W) × 100 mm (D), 2 mm thick HDG cable ladder with an approved red / orange finish, suitable for 240–300 mm ² heavy-gauge power cables. Include supports at maximum 1.5 m spacing, cable cleats, bends, couplers, earthing and accessories, with 20% spare capacity. Payment: Per running metre based on actual installed and accepted length. Final size must be confirmed from the cable quantity, outside diameter and approved routing layout.	700m
7	Relocation / Modification of Existing DBs in UPS Room: Note: Refer to ANNEX-A (Scope of work Clause No. 1.a.viii)	1Job

__EMPTY	List of Equipment/Service Required	__EMPTY_1
8	Central Monitoring Workstation: To ensure real-time monitoring of critical power, cooling and environmental parameters, including alarms for early fault detection and prevention of data centre downtime, an All-in-One monitoring workstation shall be provided with the following minimum specifications: Processor: Intel Core Ultra 5 235 vPro (24 MB cache, 14 cores, 14 threads, 3.40 GHz to 5.00 GHz Turbo, 65 W) Operating System: Windows 11 Home Memory: 64 GB: 2 x 32 GB, DDR5,5600 MT/s, SoDIMM, dual-channel Storage: 1 TB, M.2 2280, TLC PCIe Gen4 NVMe, SSD, Class 40 Graphics: Integrated Graphics Display: 23.8"1920x1080 FHD display Wireless keyboard and mouse Genuine licensed Microsoft Office	4
9	The Bidder shall provide hands-on foreign OEM training on the cooling and DCIM system for NADRA technical personnel. The training shall be conducted in OEM's premises or an authorized OEM training center, and all associated traveling, training, material, certification, travel, and accommodation costs shall be included in the Bid.	2
10	Electrical Discrimination Study: The Contractor shall carry out a complete electrical discrimination / coordination study end to end (Transformer to Rack PDU) using ETAP or similar approved software and share the study.	1 Job
11	DCIM: Supply of the central DCIM Server (with Dual Power Supply) items as per specification including all accessories complete in all respect. Including integration of existing installed infrastructure components	150 Nodes/ devices
12	Liebert Intellislot Unity Platform Card: supply, installation and commissioning of IntelliSlot Unity Platform Communication Card compatible to already installed Vertiv STS Part No. 2312186; Model UF - LTS16 - 1P	15 Pcs

__EMPTY	List of Equipment/Service Required	__EMPTY_1
13	SLA / Warranty: The first year from the date of commissioning shall be covered under warranty. The 2nd and 3rd years, up to the end of February 2030, shall be covered under SLA. Note: The SLA rate shall be quoted on a per-month basis. Payment shall be made quarterly, subject to satisfactory completion of services and certification by NADRA. The SLA period shall commence upon expiry of the warranty period and shall remain valid until the end of February 2030. The Contractor shall carry out 12 quarterly Preventive Maintenance (PM) visits, as per the approved maintenance schedule.	Per Month
	BOQ for NDW	
	Supply of the following items as per specifications including all accessories, complete in all respect. Note: Cooling units net sensible capacities are after detection of all tolerance and at 500C ambient Condition. All purposed cooling unit should be compatible with the DCIM.	
1	DX Type InRow Unit (without heater and humidifier) 25 – 30 KW Net Sensible cooling capacity. The equipment shall comply with the technical requirements specified in ANNEX-B (Technical Specification Clause vii-a).	3
2	DX Type InRow Unit (with heater and humidifier) 25 – 30 KW Net Sensible cooling capacity. The equipment shall comply with the technical requirements specified in ANNEX-B (Technical Specification Clause vii-b).	3
3	DX Type Inrow Unit (with heater and humidifier) 40 – 45 KW Net Sensible cooling capacity. The equipment shall comply with the technical requirements specified in ANNEX-B (Technical Specification Clause vii-c).	2

__EMPTY	List of Equipment/Service Required	__EMPTY_1
4	2x 630 KVA Transformers are already installed and in operation for C&IT, C&IT Load will be shifted to 800KVA Transformer and then Load of NDW will be transferred to 630 KVA Transformer. Pad / Foundation, Grounding, Labeling, Protections for transformers, Health Check Report, any maintenance if required. Contractor shall perform complete load shifting	1 Job
5	Electrical DBs for HVAC: The contractor shall supply install test and commission complete Electrical Distribution floor mount with MCCB and CB (of Schneider / ABB) as approved SLD including enclosure, copper bus bars, breaker, energy analyzer, indication lamps, internal wiring cable termination and all accessories. The DB shall be 16 AWG MS Sheet degreased and de rusted, zinc phosphate, finished with electro static powder with 15-micron thickness with hinged door, neutral links with necessary holes, earthing of Door with buried Copper links, PVC Gland and with 20% space for future expansion requirement. Dimension and location will be finalized at the time of site survey. Note: Cable Works — Measurement and Payment: The rate shall be quoted per running meter, and payment shall be made based on the actual length of cable laid, tested and accepted.	1 Job
5a	Input Electrical Distribution Boards (DB): 800A 4P MCCB 50kA (Existing - From MOR Panels A & B)	2
5b	HVAC Electrical Distribution Boards (DB): 400A 4P MCCB 36kA 04 x 80A 3P MCCB 25kA (02 + 02 Spares) 16 x 40A 3P MCB 6kA (12 + 04 Spares) 04 x 32A 3P MCB 6kA (02 + 02 Spares) 04 x 20A 2P MCB 6kA (02 + 02 Spares)	2
6	Power cable installation from Existing MOR Panels to NDW-HVAC-DBs - 240mm ² 1 - Core, Cu / PVC / PVC Make: Fast / Newage / Pakistan	450m
7	Earth cable installation from Existing earthing Panel to NDW-HVAC-DBs -1C-120mm ² Earth Cable. Make: Fast / Newage / Pakistan	120m

__EMPTY	List of Equipment/Service Required	__EMPTY_1
8	Power cable installation from NDW-HVAC-DBs in Power Rooms to 40 - 45 KW In-row Cooling Units 16mm ² 5 - Core, Cu / PVC / (3L+N+E) Make: Fast / Newage / Pakistan	150m
9	Power cable installation from Medium-capacity Units Connection From NDW-HVAC DBs (6 new 25 - 30 KW units) 10mm ² 5 - Core, Cu, PVC / PVC (3L+N+E) Make: Fast / Newage / Pakistan	300m
10	Power cable installation from Indoor to outdoor Unit 6mm ² 5 - Core, Cu, PVC / PVC (3L+N+E) Make: Fast / Newage / Pakistan	150m
11	Power cable installation from Indoor to outdoor Unit 4mm ² 5 - Core, Cu, PVC / PVC Make: Fast / Newage / Pakistan	800m
12	Control cable installation from indoor to outdoor 1.5mm ² 2 Core, CU, XLPE Make: Fast / Newage / Pakistan	1200m
13	The Bidder shall provide hands-on foreign OEM training on the cooling and DCIM system for NADRA technical personnel. The training shall be conducted in OEM's premises or an authorized OEM training center, and all associated traveling, training, material, certification, travel, and accommodation costs shall be included in the Bid.	2
14	SLA / Warranty: The first year from the date of commissioning shall be covered under warranty. The 2nd and 3rd years, up to the end of February 2030, shall be covered under SLA. Note: The SLA rate shall be quoted on a per-month basis. Payment shall be made quarterly, subject to satisfactory completion of services and certification by NADRA. The SLA period shall commence upon expiry of the warranty period and shall remain valid until the end of February 2030. The Contractor shall carry out 12 quarterly Preventive Maintenance (PM) visits, as per the approved maintenance schedule.	Per Month
15	Earthing and Grounding works (as Per ANNEX "G")	

Price Schedule

For Individual Items

#	Item Title	Quantity	Unit Price (PKR)	Total Price (PKR)	Delivery Location	Delivery Period / Year	Country of Origin
1							
2							

For Lots

#	Lot Title	Total Lot Price (PKR)	Country of Origin
1	[Lot 1 Title]		





General Conditions of Contract

A. General

1. Definitions

1.1 Unless the context otherwise requires, the following terms whenever used in this Contract shall have the same meaning and shall be interpreted as indicated

- a. “Applicable Law” means the laws and any other instruments having the force of law in the Government’s Country, or in such other country as may be specified in the Special Conditions of the Contract (SC), as they may be issued and in force from time to time;
- b. The “Arbitrator” is the person appointed with mutual consent of both the parties, to resolve contractual disputes as provided for in the General Conditions of the Contract GCC Clause 35 hereunder.
- c. “Authority” means Public Procurement Regulatory Authority.
- d. The “Commencement Date” is the date when the Supplier shall commence execution of the contract as specified in the SCC.
- e. “Completion date” means the date of completion of the Contract by the Bidder as certified by the Procuring Agency.
- f. “Procuring Agency” means:-
 - a. any Ministry, Division, Department or any Office of the Government;
 - b. any authority, corporation, body or organization established by or under a Law or which is owned or controlled by the Government;
- g. “The Contract” means an agreement enforceable by law;
- h. “The Contract Price” means the price payable to the Bidder under the Contract for the full and proper performance of its contractual obligations;
- i. “Ancillary Services” means those services ancillary to the provision of Goods, such as transportation and insurance, and any other incidental services, such as installation, commissioning, provision of technical assistance, training, and other such obligations of the Bidder covered under the Contract;
- j. “GCC” means the General Conditions of Contract contained in this section;
- k. “SCC” means the Special Conditions of Contract by which the GCC may be amended or supplemented;
- l. “Day” means calendar day unless indicated otherwise.
- m. “Defective Goods” are those goods which are below standards, requirements or specifications stated by the Contract.
- n. “Delivery” means the transfer of the goods from the supplier equipment, machinery, and /or other materials which the Supplier is required to supply to the Procuring Agency under Contract.

o. "Effective Date" means the date on which this Contract comes into force and effect.

p. "Force Majeure" means an unforeseeable event which is beyond reasonable control of either Party and which makes a Party's performance of its obligations under the Contract impossible or so impractical as to be considered impossible under the circumstances.

For the purposes of this Contract, "Force Majeure" means an event which is beyond the reasonable control of a Party, is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of a Party, and which makes a Party's performance of its obligations hereunder impossible or so impractical as reasonably to be considered impossible in the circumstances. and includes, but is not limited to, war, riots, civil disorder, earthquake, fire, explosion, storm, flood, epidemics, or other adverse weather conditions, strikes, lockouts or other industrial action (except where such strikes, lockouts or other industrial action are within the power of the Party invoking Force Majeure to prevent), confiscation or any other action by Government agencies.

q. "The Bidder" means the individual or corporate body whose Bids to provide the Goods has been accepted by the Procuring Agency;

r. "The Project Site," where applicable, means the place or places named in Bids Data Sheet and technical Specifications;

s. "Government" means the Government of Pakistan;

t. "Subcontractor" means any entity to which the Bidder subcontracts any part of the Goods.

u. "The Services" means the work to be performed by the Bidder pursuant to this Contract and as prescribed in the Specifications and Schedule of Activities included in the Bidder's Bids;

v. "Party" means the Procuring Agency or the Bidder, as the case may be, and "Parties" means both of them;

w. "Foreign Currency" means any currency other than the currency of the country of the Procuring Agency;

x. "Completion Date" means the date of completion of the contract by the Bidder as certified by the Procuring Agency;

y. "In Writing" means communicated in written form with proof of receipt;

z. "Local Currency" means the currency of Pakistan;

a. "Origin" means the place where the Goods were mined, grown, or produced or from which the Services are supplied. Goods are produced when, through manufacturing, processing, or substantial and major assembly of components, a commercially recognized new produce results that is substantially different in basic characteristics or in purpose or utility from its components.

b. "Specification" means the Specification of the Goods and performance of incidental services in accordance with the relevant standards included in the Contract and any modification or addition made or approved by the Procuring Agency.

c. "Procuring Agency" means: -

any Ministry, Division, Department or any Office of the Federal Government;

any authority, corporation, body or organization established by or under a Federal Law or which is owned or controlled by the Federal Government;

2. Application and Interpretation

2.1 These General Conditions shall apply to the extent that they are not superseded by provisions of other parts of the Contract.

2.2 In interpreting these Conditions of Contract headings and marginal notes are used for convenience only and shall not affect their interpretations unless specifically stated; references to singular include the plural and vice versa; and masculine include the feminine. Words have their ordinary meaning under the language of the Contract unless specifically defined.

3. Applicable Law

3.1 The contract shall be governed and interpreted in accordance with the laws of Pakistan, unless otherwise specified in SCC.

4. Governing Language

4.1 The Contract as well as all correspondence and documents relating to the Contract exchanged between the Bidder and the Procuring Agency, shall be written in the **English language** unless otherwise stated in the **SCC**. Supporting documents and printed literature that are part of the Contract may be in another language provided these are accompanied by an accurate translation of the relevant passages in English, in which case, for purposes of interpretation of the Contract, this translation shall govern.

5. Notices

5.1 Any notice, request, or consent made pursuant to this Contract shall be in writing and shall be deemed to have been made when delivered in person to an authorized representative of the Party to whom the communication is addressed, or when sent by registered mail, telex, telegram, or facsimile to such Party at the address specified in the **SCC**.

6. Standard

6.1 The Goods supplied under this Contract shall conform to the standards mentioned in the Technical Specifications, and, when no applicable standard is mentioned, the American Standards (such as ACI, IEEE, ASME, etc.) or the Pakistani standards such as PSQCA Such standards shall be the latest issued by the concerned institution.

7. Delivery/Location

7.1 The Goods shall be delivered to such locations as the Procuring Agency may approve and as specified in SCC.

8. Authorized Representatives / Authority of Member in charge

8.1 Any action required or permitted to be taken, and any document required or permitted to be executed, under this Contract by the Procuring Agency or the Bidder may be taken or executed by the officials specified in the **SCC**.

B. Commencement, Completion, Modification, and Termination of Contract

8. Effectiveness of Contract

8.1 This Contract shall come into effect on the date the Contract is signed by both parties and such other later date as may be stated in the SCC.

9. Commencement of the Contract

9.1 The Bidder shall confirm availability of Key Experts and begin carrying out the Services not later than the number of days after the Effective Date specified in the SCC.

10. Program

10.1 Before commencement of the Contract, the Bidder shall submit to the Procuring Agency for approval a Program showing the general methods, arrangements, order and timing for all activities. The Services shall be carried out in accordance with the approved Program as updated.

11. Starting Date/Expiration Date

11.1 The Bidder shall start carrying out the Services Five (05) days after the date the Contract becomes effective, or at such other date as may be specified in the SCC.

11.2 Unless terminated earlier pursuant to Clause **GCC 16** hereof, this Contract shall expire at the end of such time period after the Effective Date as specified in the SCC.

12. Entire Agreement

12.1 This Contract contains all covenants, stipulations and provisions agreed by the Parties. No agent or representative of either Party has authority to make, and the Parties shall not be bound by or be liable for, any statement, representation, promise or agreement not set forth herein.

13. Modification

13.1 Any modification or variation of the terms and conditions of this Contract, including any modification or variation of the scope, may only be made by written agreement between the Parties. However, each Party shall give due consideration to any Bids for modification or variation made by the other Party.

13.2 In cases of any modifications or variations, the prior written consent of the Procuring Agency is required.

14. Force Majeure

14.1 Definition

For the purposes of this Contract, “Force Majeure” means an event which is beyond the reasonable control of a Party and which makes a Party’s performance of its obligations under the Contract impossible or so impractical as to be considered impossible under the circumstances.

14.2 No Breach of Contract

The failure of a Party to fulfill any of its obligations under the contract shall not be considered to be a breach of, or default under, this Contract in so far as such inability arises from an event of Force Majeure, provided that the Party affected by such an event (a) has taken all reasonable precautions, due care and reasonable alternative measures in order to carry out the terms and conditions of this Contract, and (b) has informed the other Party as soon as possible about the occurrence of such an event.

14.3 Extension of Time

Any period within which a Party shall, pursuant to this Contract, complete any action or task, shall be extended for a period equal to the time during which such Party was unable to perform such action as a result of Force Majeure. However, such period shall not exceed sixty (60) days.

14.4 Payments

During the period of their inability to perform the Services as a result of an event of Force Majeure, the Bidder shall be entitled to continue to be paid under the terms of this Contract, as well as to be reimbursed for additional costs reasonably and necessarily incurred by them during such period for the purposes of the Services and in reactivating the Service after the end of such period.

15. Termination

15.1 By the Procuring Agency

The Procuring Agency may terminate this Contract in case of the occurrence of any of the events specified in paragraphs (a) through (e) of this Clause. In such an occurrence the Procuring Agency shall give at least thirty (30) calendar days' written notice of termination to the Bidder in case of the events referred to in (a) through (d); at least sixty (60) calendar days' written notice in case of the event referred to in (e);

- a. If the Bidder fails to remedy a failure in the performance of its obligations hereunder, as specified in a notice of suspension;
- b. If the Bidder becomes (or, if the Bidder consists of more than one entity, if any of its members becomes) insolvent or bankrupt or enter into any agreements with their creditors for relief of debt or take advantage of any law for the benefit of debtors or go into liquidation or receivership whether compulsory or voluntary;
- c. If the Bidder fails to comply with any final decision reached as a result of arbitration proceedings;
- d. If, as the result of Force Majeure, the Bidder is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days;
- e. If the Procuring Agency, in its sole discretion and for any reason whatsoever, decides to terminate this Contract;

15.2 By the Bidder

The Bidder may terminate this Contract, by not less than thirty (30) calendar days' written notice to the Procuring Agency, in case of the occurrence of any of the events specified in paragraphs (a) through (d) of this Clause.

- a. If the Procuring Agency fails to pay any money due to the Bidder pursuant to this Contract and not subject to dispute within forty-five (45) calendar days after receiving written notice from the Bidder that such payment is overdue.
- b. If, as the result of Force Majeure, the Bidder is unable to perform a material portion of the Services for a period of not less than sixty (60) calendar days.
- c. If the Procuring Agency fails to comply with any final decision reached as a result of arbitration.
- d. If the Procuring Agency is in material breach of its obligations pursuant to this Contract and has not remedied the same within forty-five (45) days (or such longer period as the Bidder may have subsequently approved in writing) following the receipt by the Procuring Agency of the Bidder's notice specifying such breach.

C. Obligations of the Bidder

16. General

16.1 Standard of Performance

1. The Bidder shall deliver the product and carry out the Services with all due diligence, efficiency and economy, in accordance with generally accepted professional standards and practices, and shall observe sound management practices, and employ appropriate technology and safe and effective equipment, machinery, materials and methods. The Bidder shall always act, in respect of any matter relating to this Contract or to the Services, as a faithful adviser to the Procuring Agency, and shall at all times support and safeguard the Procuring Agency's legitimate interests in any dealings with the third parties.

16.2 Law Applicable to Goods

The Bidder shall deliver the goods in accordance with the Contract and in accordance with the Law of Pakistan and shall take all practicable steps to ensure that any of its Experts and Sub-Bidders, comply with the Applicable Law.

17. Conflict of Interests

17.1 Bidder Not to Benefit from Commissions and Discounts.

The remuneration of the Bidder shall constitute the Bidder's sole remuneration in connection with this Contract or the Services, and the Bidder shall not accept for their own benefit any trade commission, discount, or similar payment in connection with activities pursuant to this Contract or to the Services or in the discharge of their obligations under the Contract, and the Bidder shall use their best efforts to ensure that the Personnel, any Subcontractors, and agents of either of them similarly shall not receive any such additional remuneration.

17.2 Bidder and Affiliates Not to be Otherwise Interested in Project

The Bidder agree that, during the term of this Contract and after its termination, the Bidder and its affiliates, as well as any Subcontractor and any of its affiliates, shall be disqualified from providing Goods for any project resulting from or closely related to the Services.

17.3 Prohibition of Conflicting Activities

Neither the Bidder nor its Subcontractors nor the Personnel shall engage, either directly or indirectly, in any of the following activities:

- a. during the term of this Contract, any business or professional activities in the Government's country which would conflict with the activities assigned to them under this Contract;
- b. during the term of this Contract, neither the Bidder nor their Subcontractors shall hire public employees in active duty or on any type of leave, to perform any activity under this Contract;

18. Confidentiality

18.1 Except with the prior written consent of the Procuring Agency, the Bidder and the Experts shall not at any time communicate to any person or entity any confidential information acquired in the course of the contract.

19. Insurance to be Taken Out by the Bidder

19.1 The Bidder(a) shall take out and maintain, and shall cause any Subcontractors to take out and maintain, at its (or the Subcontractors', as the case may be) own cost but on terms and conditions approved by the Procuring Agency, insurance against the risks, loss or damage, and for the coverage, as shall be specified in the SCC; and (b) at the Procuring Agency's request, shall provide evidence to the Procuring Agency showing

that such insurance has been taken out and maintained and that the current premiums have been paid.

20. Bidder's Actions Requiring Procuring Agency's Prior Approval

20.1 The Bidder shall obtain the Procuring Agency's prior approval in writing before taking any of the following actions:

- (a) appointing such members of the Personnel not provided by the Bidder;
- (b) changing the Program of activities; and
- (c) any other action that may be specified in the SCC.

21. Reporting Obligations

21.1 The Bidder shall submit to the Procuring Agency the reports and documents in the numbers, and within the periods as prescribed by the Procuring Agency.

22. Liquidated Damages

22.1 If the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the Contract, the Procuring Agency shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage specified in **SCC** of the delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the performance security (or guarantee) specified in **SCC**. Once the said maximum is reached, the Procuring Agency may consider termination of the Contract pursuant to **GCC Clause 16**.

22.2 Correction for Over-payment

If the Intended Completion Date is extended after liquidated damages have been paid, the Procuring Agency shall correct any overpayment of liquidated damages by the Bidder by adjusting the next payment certificate. The Bidder shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in SCC.

22.3 Lack of performance penalty

If the Bidder has not corrected a Defect within the time specified in the Procuring Agency's notice, a penalty for Lack of performance will be paid by the Bidder. The amount to be paid will be calculated as a percentage of the cost of having the Defect corrected, assessed as specified in the SCC.

23. Performance Guarantee

23.1 The Performance Security (or Guarantee) shall be provided to the Procuring Agency no later than the date specified in the Letter of Acceptance and shall be issued in an amount and form acceptable to the Procuring Agency as specified in SCC, and denominated in the types and proportions of the currencies in which the Contract Price is payable as specified in the SCC.

23.2 Within Seven (07) days from the issuance of acceptance letter from the Procuring Agency, the successful Bidder shall furnish the Performance Guarantee in shape of ----- at the discretion of the PA in the amount **specified in SCC**. In case the amount of Bids security is equal or greater than

23.3 The proceeds of the Performance Guarantee shall be payable to the Procuring agency as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.

23.4 The Performance Guarantee shall be denominated in the currency of the Contract, or in a freely convertible currency acceptable to the Procuring agency and shall be in the acceptable form as specified in SCC.

23.5 The Performance Guarantee will be discharged by the Procuring agency and returned to the Supplier not later than thirty (30) days following the date of completion of the Supplier's performance obligations under the Contract, including any warranty obligations, unless otherwise **specified in SCC**.

23.6 The bid security of the successful bidder shall not be substituted with the Performance Guarantee.

24. Fraud and Corruption

24.1 The Procuring Agency requires the Supplier to disclose any commissions or fees that may have been paid or are to be paid to agents or any other party with respect to the Bidding process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity or fee.

25. Sustainable Procurement

25.1 The Bidder shall conform to the sustainable procurement contractual provisions, if and as specified in the SCC.

D. Bidder's Personnel

26. Description of Personnel

26.1 The titles, agreed job descriptions, minimum qualifications, and estimated periods of engagement in the carrying out of the Services of the Bidder's Key Personnel. The Key Personnel listed by title as well as by name are hereby approved by the Procuring Agency.

27. Removal and/or Replacement of Personnel

27.1 Except as the Procuring Agency may otherwise agree, no changes shall be made in the Key Personnel. If, for any reason beyond the reasonable control of the Bidder, it becomes necessary to replace any of the Key Personnel, the Bidder shall provide as a replacement a person of equivalent or better qualifications.

27.2 If the Procuring Agency finds that any of the Personnel have (i) committed serious misconduct or have been charged with having committed a criminal action, or (ii) have reasonable cause to be dissatisfied with the performance of any of the Personnel, then the Bidder shall, at the Procuring Agency's written request specifying the grounds thereof, provide as a replacement a person with qualifications and experience acceptable to the Procuring Agency.

27.3 The Bidder shall have no claim for additional costs arising out of or incidental to any removal and/or replacement of Personnel.

E. Obligations of the Procuring Agency

28. Assistance and Exemptions

28.1 The Procuring Agency shall use its best efforts to ensure that the Government shall provide the Bidder such assistance and exemptions as specified in the SCC.

29. Change in the Applicable Law

29.1 If, after the date of this Contract, there is any change in the Applicable Law with respect to taxes and duties which increases or decreases the cost of the related Services rendered by the Bidder, then the remuneration and reimbursable expenses otherwise payable to the Bidder under this Contract shall be increased or decreased accordingly by agreement between the Parties, and corresponding adjustments shall be made to the amounts referred in the SCC.

30. Services and Facilities

30.1 The Procuring Agency shall make available to the Bidder and the Experts, for the purposes of the Services and free of any charge, the services, facilities and property described , at the times and in the manner specified in the SCC or terms of reference.

30.2 In case that such services, facilities and property shall not be made available to the Bidder, the Parties shall agree on (i) any time extension that it may be appropriate to grant to the Bidder for the performance of the Services, (ii) the manner in which the Bidder shall procure any such services, facilities and property from other sources, and (iii) the additional payments, if any, to be made to the Bidder as a result thereof.

F. Payments to the Bidder

31. Contract Price

31.1 The price payable shall be in Pakistani Rupees unless otherwise specified in the SCC. Prices charged by the Supplier for Goods delivered under the Contract shall not vary from the prices quoted by the Supplier in its Bid.

32. Terms and Conditions of Payment

32.1 Payments will be made to the Bidder according to the payment schedule stated in the SCC and as per actual invoice submitted by the Bidder.

32.2 Unless otherwise stated in the SCC, the advance payment shall be made against the provision by the Bidder of a bank guarantee for the same amount, and shall be valid for the period stated in the SCC. Any other payment shall be made after the conditions listed in the SCC for such payment have been met, and the Bidder have submitted an invoice to the Procuring Agency specifying the amount due.

33. Currency of Payment

33.1 Any payment under this Contract shall be made in the currency(ies) specified in the SCC.

G. Quality Control

34. Identifying Defects

34.1 The principle and modalities of Inspection of the Goods by the Procuring Agency shall be as indicated in the SCC. The Procuring Agency shall check the Bidder's performance and notify him of any Defects that are found. Such checking shall not affect the Bidder's responsibilities. The Procuring Agency may instruct the Bidder to search for a Defect and to uncover and test any service that the Procuring Agency considers may have a Defect. Defect Liability Period is as defined in the SCC.

35. Correction of Defects, and

Lack of Performance Penalty

35.1 The Procuring Agency shall give notice to the Bidder of any Defects before the end of the Contract. The Defects liability period shall be extended for as long as Defects remain to be corrected.

35.2 Every time notice a Defect is given, the Bidder shall correct the notified Defect within the length of time specified by the Procuring Agency's notice.

35.3 If the Bidder has not corrected a Defect within the time specified in the Procuring Agency's notice, the Procuring Agency will assess the cost of having the Defect corrected, the Bidder will pay this amount, and a Penalty for Lack of Performance.

36. Taxes and Duties

36.1 A Supplier shall be entirely responsible for all taxes, duties, fees, etc., incurred until delivery of the contracted Goods to the Procuring Agency.

H. Settlement of Disputes

37. Alternate Dispute Resolution

37.1 Upon the commencement of the Procurement Contract, any disputes arising between the contracting parties shall be resolved in accordance with Rule 66 of the Public Procurement Rules, 2026.

37.2 The procuring agency may refer the matter to the Chief Justice Islamabad High Court or Managing Director PPRA or the Secretary Ministry of Law & Justice for appointment of Arbitrator.

37.3 The fee for the Arbitrator shall be specified in Pak Rupees as determined by the appointing authority which shall be borne and shared equally by the contracting parties.

38. Change Orders

The Procuring Agency may at any time, by a written order given to the Supplier, make changes within the general scope of the Contract in any one or more of the following:

- a) Drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Procuring Agency;
- b) The method of shipment or packing;
- c) The place of delivery; and/or
- d) The Services to be provided by the Supplier.

39. Contract Amendments

39.1 Subject to GCC Clause 32, no variation in or modification of the terms of the Contract shall be made except by written amendment signed by the parties.

40. Sub-Contracts

40.1 The Supplier shall consult the Procuring Agency in the event of subcontracting under this contract if not already specified in the Bid. Subcontracting shall not alter the Supplier's obligations.



Special Conditions of Contract

SECTION VIII. SPECIAL CONDITIONS OF CONTRACT

The following Special Conditions of Contract shall supplement the General Conditions of Contract. Whenever there is a conflict, the provisions herein shall prevail over those in the Conditions of Contract. The corresponding clause number of the GCC is indicated in parentheses.

Number of GC Clause

Amendments of, and Supplements to, Clauses in the General Conditions of Contract

Number of GC Clause 1

Definitions

The Procuring Agency is: **NADRA (HQ) (National Database and Registration Authority (NADRA)), Deputy Director State Bank of Pakistan Building, Shahrah-i-Jamhuriat, G-5/2., Islamabad Capital Territory**

The Supplier is:

The title of the subject procurement is: **NADRA-HQ-RFB-120/2026: Replacement of Existing Data Center Chiller Cooling Systems in C&IT and NDW Data Centers and Allied Equipments**

Number of GC Clause 3

Applicable/Governing Law:

The Contract shall be interpreted in accordance with the laws of Islamic Republic of Pakistan

Number of GC Clause 4

Language:

The language of the Contract, all correspondence and communications to be given, and all other documentation to be prepared and supplied under the Contract shall be in **English**.

Number of GC Clause 5

Notices:

The addresses for the notices are:

The Authority:

**NADRA (HQ) (National Database and Registration Authority (NADRA)), Deputy Director State Bank of Pakistan Building, Shahrah-i-Jamhuriat, G-5/2., Islamabad Capital Territory
+92-300-052-0005
saad.abdullah@nadra.gov.pk**

Contractor/ Bidder:

[Name, address and telephone number].

The Contractor/ Bidder's Representative(s)

[Name, address, telephone number and e-mail address]

Number of GC Clause 7.1

The Authorized Representatives are:

For the Procuring Agency:

**NADRA (HQ) (National Database and Registration Authority (NADRA)), Deputy Director
State Bank of Pakistan Building, Shahrah-i-Jamhuriat, G-5/2., Islamabad Capital Territory
+92-300-052-0005
saad.abdullah@nadra.gov.pk**

For the Bidder:

Name:

Designation:

Address:

Number of GC Clause 8

Effectiveness of the contract

Number of GC Clause 9

Commencement of Contract:

Number of GC Clause 11.2

Expiration of Contract:

Number of GC Clause 15

Termination

In the event of termination of the contract due to any reason as already defined in the General Conditions of Contract, the Bidder shall be responsible for providing to the Authority the Goods till the time of alternate arrangements.

Number of GC Clause 17

Conflict of Interest:

The Procuring Agency reserves the right to determine on a case-by-case basis whether the Bidder should be disqualified from providing goods or services due to a conflict of a nature described in Clause GCC 17.

Number of GC Clause 22

Liquidated Damages

If the Bidder fails to provide services as required under the contract or in case of any data loss/data breach or any incident compromising the data security or other such failures related to any services, the Bidder shall pay to the Procuring Agency as Liquidated Damages at a rate of **0.10%** to **10.00%** of the Contract value, in accordance with the extent of performance failure & the cost of investigating such incidents as judged by the

Authority.

Number of GC Clause 23

Performance Guarantee:

Instrument of Performance Guarantee shall be in the Name of : **NADRA (HQ)**

The amount of performance guarantee shall be **5.00%** of the contract price in acceptable form of **Bank Guarantee**

Number of GC Clause 32

Payment terms:

Payment will be made to the Bidder against the procured Goods and services according to the actual invoice or running bills submitted by the Bidder against the services provided within the time given in the conditions of the contract.

Number of GC Clause 33

Currency of Payment:

All the payment to be released to the contractor/Bidder shall be in Pakistani Rupees.

Number of GC Clause 34

Identifying Defects:

The Authority reserves the right at any time to inspect the premises of the provider to inspect the goods and monitor the goods being provided.

Inspections & Tests Requirements

For being Brand New, bearing relevant reference numbers of the equipment (Certificate from supplier)

For Physical Fitness having No Damages (Certificate from supplier)

For the Country of Origin as quoted by the Supplier (Certificate from manufacturer)

For conformance to specifications and performance parameters, through Prior to delivery inspection (Inspection Report by Procurement Committee / Inspection Team)

For successful operation at site after complete installation, testing and commissioning of the equipment (Installation, Testing and Commissioning Report by Procurement Committee / Inspection Team)

Delivery & Documents

Copies of the Supplier's invoice showing Goods' description, quantity, unit price, and total amount;

Original and two copies of the usual transport document (for example, a negotiable bill of lading, a non-negotiable sea waybill, an inland waterway document, an air waybill, a railway consignment note, a road consignment note, or a multimodal transport document) which the buyer may require to take the goods;

Copies of the packing list identifying contents of each package;

Insurance Certificate;

Manufacturer's or Supplier's Valid Warranty Certificate;

Inspection Certificate issued by the Nominated Inspection Agency (if any), and the Supplier's Factory Inspection Report;

Certificate of Origin.

The above documents would be required even if the equipment has already been imported and is available with the supplier ex-stock

Fifty Percent (50%) of the invoice amount will be paid after delivery of equipment and user acceptance. Partial delivery payments shall be allowed against the value of the equipment / items delivered. The remaining Fifty Percent (50%) of the respective invoice Price shall be paid after successful installation, testing, commissioning (where applicable), Quality Control (QC) examination, and issuance of the Acceptance Certificate by NADRA.

Payment shall be processed upon submission of the required documents and fulfillment of all contractual obligations applicable to the respective contract.

The supplier shall submit the following documents for processing of payment: Delivery Challan (in duplicate). ii. Firm Invoice/Bill (in duplicate) iii. Sales Tax Invoice (in duplicate). iv. Warranty/Guarantee Certificate (in duplicate) for each equipment/item, where applicable. v. Valid Professional Tax Clearance Certificate and Income Tax

Number of GC Clause 37

Following is the guidance for Dispute Resolution

(a) For Contracts to be entered with foreign Contractor/ Service Provider:

All disputes arising in connection with the present Contract shall be finally settled under the Rules of Conciliation and Arbitration of the International Chamber of Commerce by one or more arbitrators appointed in accordance with said Rules.

(b) For Contracts to be entered with nationals of Pakistan:

i. If any dispute of any kind whatsoever shall arise between the Authority and the Bidder in connection with or arising out of the Contract, including without prejudice to the generality of foregoing, any question regarding its existence, validity, termination and the execution of the Contract – whether during developing phase or after their completion and whether before or after the termination, abandonment or breach of the Contract – the parties shall seek to resolve any such dispute or difference by mutual diligent negotiations in good faith within 14 (fourteen) days following a notice sent by one Party to the other Party in this regard.

ii. At future of negotiation the dispute shall be resolved through mediation and mediator shall be appointed with the mutual consent of the both parties.

iii. At the event of failure of mediation to resolve the dispute relating to this contract such dispute shall finally be resolved through binding Arbitration in accordance with GCC clause 38.

iv. The cost of the mediation and arbitration shall be shared by the parties in equal proportion however the both parties shall bear their own costs and lawyer's fees regarding their own participation in the mediation and arbitration. However, the Arbitrator may make an award of costs upon the conclusion of the arbitration making any party to the dispute liable to pay the costs of another party to the dispute.

v. Arbitration proceedings as mentioned in the above clause regarding resolution of disputes may be commenced prior to, during or after completion of the contract.

Notwithstanding any reference to the arbitration herein, the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree that the Authority shall pay the Bidder any monies due to the Bidder.

Rules of procedure for arbitration proceedings:

Any dispute between the Authority and a Bidder who is a national of the Islamic Republic of Pakistan arising in connection with the present Contract shall be referred to adjudication or arbitration in accordance with the laws of the Islamic Republic of Pakistan including Arbitration Act 1940, however above provision shall prevail in referring the case to the Arbitrator.

Place of Arbitration and Award:

The arbitration shall be conducted in English language and place of arbitration shall be at Islamabad. The award of the arbitrator shall be final and shall be binding on the parties.



Bid Securing Declaration

Form 9: Bid Securing Declaration

Date: *[insert date (as day, month and year)]*

Bid No.: **P149532**

Alternative No.: **[insert identification No if this is a Bid for an alternative]**

To: **NADRA (HQ) (National Database and Registration Authority (NADRA)), Deputy Director State Bank of Pakistan Building, Shahrah-i-Jamhuriat, G-5/2., Islamabad Capital Territory**

We, the undersigned, declare that:

We understand that, according to your conditions, Bids must be supported by a Bid Securing Declaration.

We accept that we will be blacklisted and henceforth cross debarred for participating in respective category of public procurement proceedings for a period of (not more than) six months, if fail to abide with a bid securing declaration, however without indulging in corrupt and fraudulent practices, if we are in breach of our obligation(s) under the Bid conditions, because we:

1. have withdrawn or modified our Bid during the period of Bid Validity specified in the Form of Bid;
2. Disagreement to arithmetical correction made to the Bid price; or
3. having been notified of the acceptance of our Bid by the Procuring Agency during the period of Bid Validity, (i) failure to sign the contract if required by Procuring Agency to do so or (ii) fail or refuse to furnish the Performance Security or to comply with any other condition precedent to signing the contract specified in the Bidding Documents.

We understand this Bid Securing Declaration shall expire if we are not the successful

Bidder, upon the earlier of (i) our receipt of your notification to us of the name of the successful Bidder; or (ii) twenty-eight (28) days after the expiration of our Bid.

Signed: *[insert signature of person whose name and capacity are shown]* In the capacity of *[insert legal capacity of person signing the Bid Securing Declaration]*

Name: *[insert complete name of person signing the Bid Securing Declaration]*

Duly authorized to sign the Bid for and on behalf of: *[insert complete name of Bidder]*

Dated on day of , *[insert date of signing]*

Corporate Seal (where appropriate)



Contract Form

SECTION IX: CONTRACT FORMS

THIS AGREEMENT made the ____ day of _____ 20____ between **NADRA (HQ) (National Database and Registration Authority (NADRA)), Deputy Director State Bank of Pakistan Building, Shahrah-i-Jamhuriat, G-5/2., Islamabad Capital Territory**

(hereinafter called “the Procuring Agency”) of the one part and [name of Bidder] of [city and country of Bidder] (hereinafter called “the Bidder”) of the other part:

WHEREAS the Procuring Agency invited Bids for provision of goods, viz., **NADRA-HQ-RFB-120/2026: Replacement of Existing Data Center Chiller Cooling Systems in C&IT and NDW Data Centers and Allied Equipments (P149532)** and has accepted a Bids by the Bidder for the provision of Goods in the sum of [contract price in words and figures] (hereinafter called “the Contract Price”).

NOW THIS CONTRACT WITNESSETH AS FOLLOWS:

1. In this Contract words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.

2. The following documents shall be deemed to form and be read and construed as part of this Contract, In the event of any ambiguity or conflict between the Contract Documents listed below, the order of precedence shall be the order in which the Contract Documents are listed below:-

1. This form of Contract;
2. the Form of Bids and the Price Schedule submitted by the Bidder;
3. the Schedule of Requirements;
4. the Technical Specifications;
5. the Special Conditions of Contract;
6. the General Conditions of the Contract;
7. the Procuring Agency’s Letter of Acceptance; and
8. [add here: any other documents]

3. In consideration of the payments to be made by the Procuring Agency to the Bidder as hereinafter mentioned, the Bidder hereby covenants with the Procuring Agency to provide the Goods related services and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Procuring Agency hereby covenants to pay the Bidder in consideration of the provision of Goods and the remedying of defects therein, the Contract Price or such other sum as may become payable under the

provisions of the contract at the times and in the manner prescribed by the contract.

IN WITNESS whereof the parties hereto have caused this Contract to be executed in accordance with their respective laws the day and year first above written.

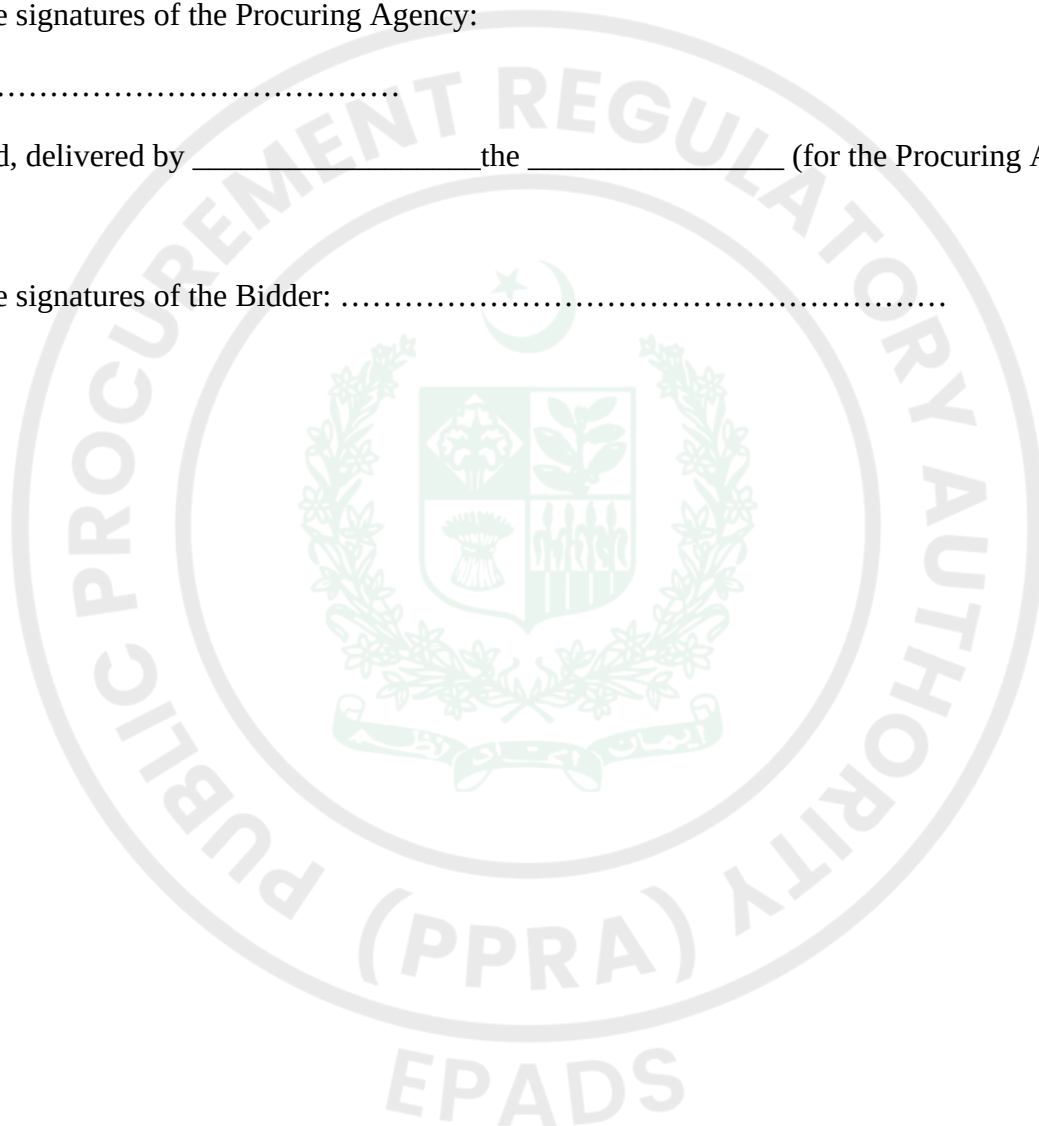
Signed, sealed, delivered by _____ the _____ (for the Procuring Agency)

Witness to the signatures of the Procuring Agency:

.....

Signed, sealed, delivered by _____ the _____ (for the Procuring Agency)

Witness to the signatures of the Bidder:





Integrity Pact

Integrity Pact

DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC. PAYABLE BY THE SUPPLIERS OF GOODS, SERVICES & WORKS IN CONTRACTS WORTH RS.10.00 MILLION OR MORE

Contract

Number: Contract

Value: Contract Title:

Dated:

[Name of Supplier] hereby declares that it has not obtained or induced the procurement of any contract, right, interest, privilege or other obligation or benefit from Government of Pakistan or any administrative subdivision or agency thereof or any other entity owned or controlled by it (GoP) through any corrupt business practice.

Without limiting the generality of the foregoing [Name of Supplier] represents and warrants that it has fully declared the brokerage, commission, fee etc. paid or payable to anyone and not given or agreed to give and shall not give or agree to give to anyone within or outside Pakistan either directly or indirectly through any natural or juridical person, including its affiliate, agent, associate, broker, consultant, director, promoter, shareholder, sponsor or subsidiary, any commission, gratification, bribe, finder's fee or kickback, whether described as consultations fee or otherwise, with the object of obtaining or inducing the procurement of a contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP, except that which has been expressly declared pursuant hereto.

[Name of Supplier] certifies that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with GoP and has not taken any action or will not take any action to circumvent the above declaration, representative or warranty.

[Name of Supplier] accepts full responsibility and strict liability for making and false declaration, not making full disclosure, misrepresenting fact or taking any action likely to defeat the purpose of this declaration, representation and warranty. It agrees that any contract, right interest, privilege or other obligation or benefit obtained or procured as aforesaid shall, without prejudice to any other right and remedies available to GoP under any law, contract or other instrument, be voidable at the option of GoP.

Notwithstanding any rights and remedies exercised by GoP in this regard, [Name of Supplier] agrees to indemnify GoP for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to GoP in an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by [Name of Supplier] as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit in whatsoever form from GoP.



Performance Guarantee Form

Performance Guarantee Form

To: **NADRA (HQ) (National Database and Registration Authority (NADRA)), Deputy Director State Bank of Pakistan Building, Shahrah-i-Jamhuriat, G-5/2., Islamabad Capital Territory**

WHEREAS *[name of Bidder]* (hereinafter called “the Bidder”) has undertaken, in pursuance of Contract No. *[reference number of the contract]* dated *[insert date]* for provision of Goods(hereinafter called “the Contract”).

AND WHEREAS it has been stipulated by you in the said Contract that the Bidder shall furnish you with a Bank Guarantee by a reputable bank for the sum specified therein as security for compliance with the Bidder’s performance obligations in accordance with the Contract.

AND WHEREAS we have agreed to give the Bidders guarantee:

THEREFORE, WE hereby affirm that we are Guarantors and responsible to you, on behalf of the Bidder, up to a total of *[amount of the guarantee in words and figures]*, and we undertake to pay you, upon your first written demand declaring the Bidder to be in default under the Contract and without cavil or argument, any sum or sums within the limits of *[amount of guarantee]* as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until the: *[insert date]*

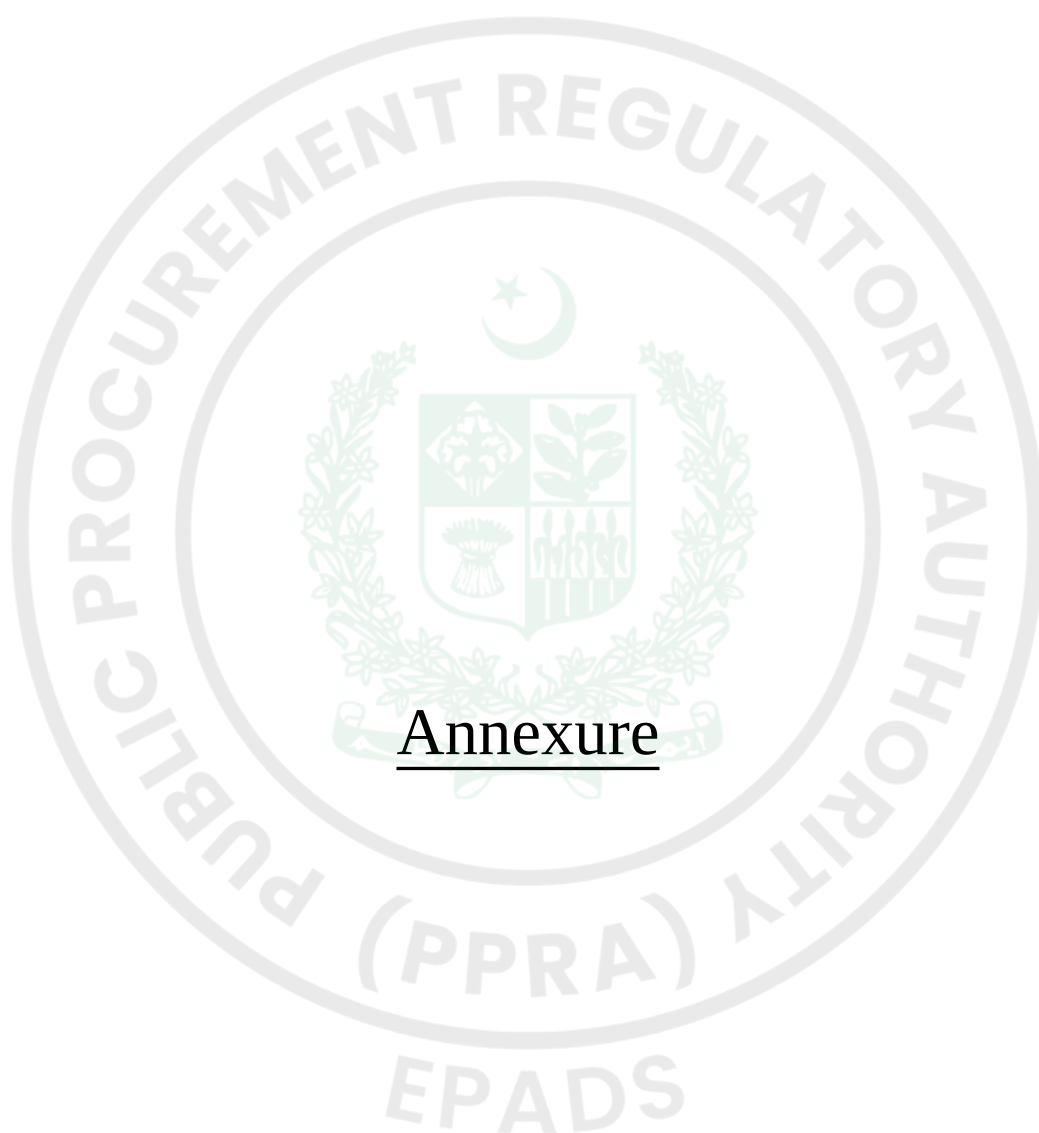
Signature and seal of the Guarantors

[name of bank or financial institution]

[address]

[date]





Annexure

Annexure A Scope of Work

Information (Read-Only)

See Form Under Additional Forms and Documents: **Annexure A Scope of Work** (page number: 83)

Annexure B Technical Specifications

Information (Read-Only)

See Form Under Additional Forms and Documents: **Annexure B Technical Specifications** (page number: 94)

Annexure C Service Level Agreement

Information (Read-Only)

See Form Under Additional Forms and Documents: **Annexure C Service Level Agreement** (page number: 110)

Annexure D Single Line Diagram

Information (Read-Only)

See Form Under Additional Forms and Documents: **Annexure D Single Line Diagram** (page number: 112)

Annexure E Letter of Bid Technical

Information (Read-Only)

See Form Under Additional Forms and Documents: **Annexure E Letter of Bid Technical** (page number: 114)

Annexure F Letter of Bid Financial

Financial Submission (Vendor)

Document Required

See Form Under Additional Forms and Documents: **Annexure F Letter of Bid Financial** (page number: 116)

Format for Financial Proposal

Financial Submission (Vendor)

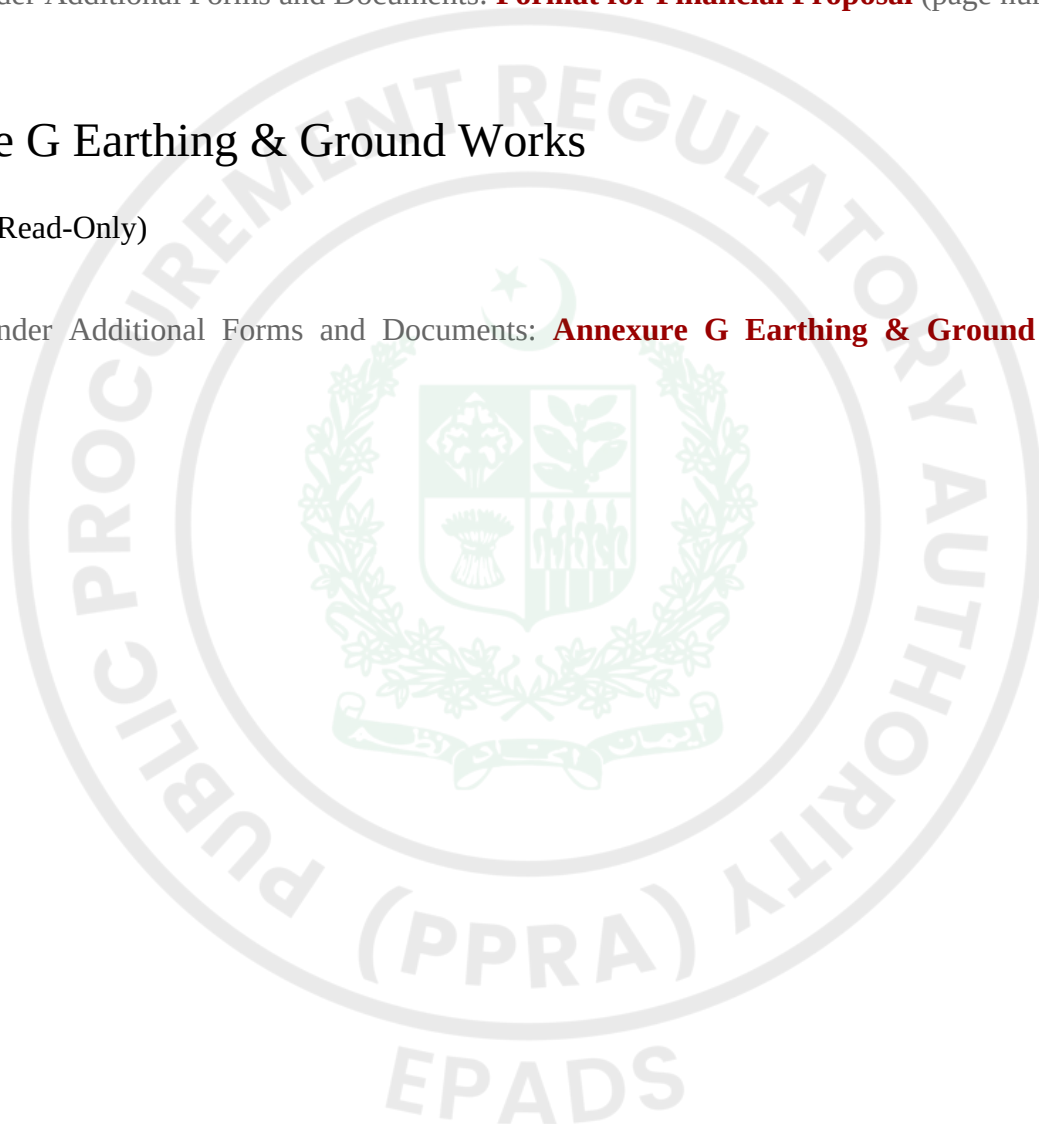
Document Required

See Form Under Additional Forms and Documents: **Format for Financial Proposal** (page number: 118)

Annexure G Earthing & Ground Works

Information (Read-Only)

See Form Under Additional Forms and Documents: **Annexure G Earthing & Ground Works** (page number: 133)





Procurement Forms







Additional Forms and Documents

SCOPE OF WORK

1. Scope of Work

The National Database and Registration Authority (NADRA) intends to dismantle the existing operational Chiller Cooling Systems, procure and install new Cooling Systems for Critical Data Centers in C&IT and NDW.

The **primary scope** is the supply and installation of new direct-expansion (DX) cooling units — Medium-capacity units rated at 25 – 30 kW net sensible and High-capacity units rated at 40 – 45 kW net sensible, with several of each type installed at both the C&IT and NDW datacenters — together with the associated electrical, monitoring, and civil works, decommissioning of the existing central chiller/CDU and in-row systems, relocation, and site restoration, as summarized below.

a. Statement of Work for C&IT Datacenter

i. Existing Installation in C&IT DC

- As per the current setup, the existing chiller is the main source of cooling in the Datacenter.
- DX units act as backup in the Datacenter to chiller-based cooling.
- 08 No's of 300 mm indoor units are rated at 18 kW and are fed via the CDU, while 03 No's of 600 mm indoor units are rated at 43 kW and are fed directly via the header.
- Chillers are currently located on the roof of the 3rd floor.
- 5x In Row DX Cooling System, make: APC Model: ACRD602P already installed in Server Room Powered from Existing Panel in UPS room. The **existing power cable will be removed** and new cable will be laid and connected to the New HVAC – DB as mentioned in this RFP.
- All racks and cooling units are located within the hot aisle containment; therefore, their positions cannot be changed or modified. Cooling units may only be replaced with units of identical dimensions, either on a one-for-one basis or as mutually agreed with NADRA.
- New 2x 800 KVA Transformers will be installed for C&IT Load.

- **load-transfer sequence:** 2x 630 KVA Transformers are installed and in operation for C&IT, C&IT Load will be shifted to 800KVA Transformer and then Load of NDW will be connected to 630 KVA Transformer.

ii. Requirements in C&IT DC

- Dual supply for DX cooling units.
- CFD analysis to be carried out and shared with NADRA.
- Electrical power shall be sourced from tap-off points located in the power rooms.
- Power route to be defined and marked for redundant paths.
- Existing outdoor units or chillers can only be removed after installation of new units to ensure that Datacenter cooling is not affected.
- Any dismantling work or relocation of existing outdoor cooling units and associated existing infrastructure shall be the Contractor's responsibility.
- All dismantled products and materials shall be transported to Nadra designated location within Islamabad
- The scope also includes provision and installation of energy analyzers for the outdoor Electrical Power DB, along with SNMP cards for DCIM monitoring of the cooling units.

iii. Supply & Installation of DX Cooling Units in C&IT

Supply, delivery, installation, interconnection, testing, and commissioning of new direct-expansion (DX) in-row cooling units and their matched outdoor condensing units (ODUs) (compact size, V Shape due to space constraint) at the C&IT Datacenter. Two-unit types are to be provided:

- a) Medium-capacity in-row units (300 mm width, **25 – 30 kW net sensible cooling capacity**)
- b) high-capacity in-row units (600 mm width, **40-45 kW net sensible cooling capacity**)

The Contractor's scope includes:

- Supply and deliver new DX in-row cooling units of the capacities described above, complete with matched outdoor condensing units (ODUs) and all standard accessories.
- Install the in-row units within the existing containment while maintaining current rack and unit positions; replacement shall be on a one-for-one basis, or as mutually agreed with NADRA, using units of compatible dimensions.
- Supply and install interconnecting refrigerant piping, condensate drainage, insulation, supports, hangers, and associated accessories between the in-row units and the ODU's.
- Provide and connect electrical power from the designated distribution boards to each unit, including control and signal cabling.
- Carry out site testing, commissioning, and performance verification of each unit at its rated net sensible capacity and confirm redundancy operation.
- Sequence the works so that existing cooling remains operational until the new units are installed and commissioned, ensuring Datacenter cooling continuity is not affected.
- Provide manufacturer warranty (Back – to – Back), as – built drawings, O&M manuals, and handover documentation.

iv. Civil Scope of Work in C&IT

a. Civil works for DX Units Placement

- Earthworks & Underground Infrastructure: Trenching, Conduit & Trench Profiling, Handhole Construction, Surface Restoration, Handholes to be lockable/bolted type; internal cable racking/supports inside holes; frame set flush with finished grade.
- Structural Concrete Works (Civil): Equipment Pads, Cast-in anchor bolts / inserts for anti-vibration isolation pads at each ODU location.
- Interior Remediation (Where applicable) will include Ceiling Remediation Painting Wall Penetrations LT Room Modifications Ceiling cutouts / trimming and any relocated diffusers, detectors, sprinklers, or light fixtures disturbed by the works.

b. RCC Rooms for HT Panels:

- RCC room shall be provided only for HT Panels. Transformers shall be installed outdoors with OEM recommended enclosure.
- The Contractor shall design, construct, and provide RCC rooms for housing each HT (High Tension) Panel. The size and layout of each room shall be finalized based on the OEM (Original Equipment Manufacturer) recommendations, required electrical clearances, ventilation requirements, maintenance access, cable entry arrangements, and safety provisions.
- The Contractor shall **quote** the cost of the RCC room on a **per square feet** basis, including all civil works such as RCC structure, foundation, flooring, walls, roof slab, plastering, painting, cable trenches/openings, ventilation provisions, access doors, and all associated works required for complete and safe installation of HT panels.
- The Contractor shall ensure compliance with applicable electrical safety standards, utility requirements, and OEM installation guidelines.
- Provision of **containment** for 10 existing installed racks in the Telecom Room, including sliding doors and all necessary accessories.

v. Decommissioning – Chiller System of C&IT

- Decommissioning of two (2) chillers and one (1) Chiller Distribution Unit at the C&IT Datacenter, including all associated chilled water piping, headers, pumps, valves, DBs, electrical cabling, controls, insulation, supports, hangers, instrumentation, DCIM interfaces, and similar associated infrastructure.
- Dewatering of Existing Chilled Water Pipes: The Contractor shall carefully dewater the existing operational chilled water piping system using suitable pumps before dismantling/modification works. Special care shall be taken as the piping is connected to InRow cooling units inside the Data Center. All required pumps, accessories, and safety arrangements shall be included on a turnkey basis to avoid any impact on Data Center operations.

- Pre-Decommissioning / Safety Carry out graceful shutdown of chillers, InROW after confirmation that replacement / new cooling infrastructure is operational and Datacenter cooling continuity is not affected.
- Physically remove and uninstall existing indoor in-row cooling units from racks/rows and remove existing outdoor condensing units where these are being replaced.
- Remove piping from chillers/CDU to racks, including headers, branch piping, main valves, flexible connections, supports, hangers, insulation, and similar associated items.
- Remove pumps and associated accessories connected with the decommissioned chilled water system.
- Carry out **site restoration** by Cleaning all affected areas after equipment, piping, DB, carry out plaster, paint, masonry, floor, ceiling, and surface repair works wherever disturbed by the decommissioning activity
- Pack, load, unload, safely transport, and hand over all decommissioned units to the designated NADRA location within Islamabad, including condition documentation at handover.
- Removal and reconnection of Cables of the existing 5x In Row DX Cooling System Power Cables and allied works.
- Removal and dismantling of existing 2*5.5 ton and 1*3.5 ton ceiling mount complete cooling units installed in UPS room and telecom will be removed along with outdoor units and all accessories and transported to other location within Islamabad.

vi. Preparation and Relocation of Existing Outdoor Units on 3rd floor for Installation of In-Row DX Outdoor Condensers

- In order to execute the proposed works and facilitate the installation of the outdoor condenser units for the In-Row DX units at the designated location on the 3rd Floor rooftop (Building Side, Just above the Data Center), the area shall first be cleared and properly prepared.
- Approximately 30 existing split AC outdoor units serving the existing offices are currently installed within the designated area. These units

shall be carefully dismantled, relocated to suitable locations, and reinstalled in a safe, organized, and professional manner.

- All associated refrigerant piping, electrical connections, drainage arrangements, supports, and accessories shall be modified or extended as required to ensure proper functionality. After relocation, all existing split AC units shall be tested, commissioned, and restored to full operational condition to ensure uninterrupted cooling services for the existing offices.
- The relocated outdoor units shall be arranged systematically (Rack Iron Structure) with adequate spacing, proper ventilation, accessibility for maintenance, and compliance with safety requirements, ensuring a neat and professional installation environment while allowing sufficient space for the new In-Row DX outdoor condenser units.

vii. Precision Cooling CRAC Unit – 25 – 30 kW (UPS Room): The Contractor shall supply, install, test, and commission a 25 – 30 kW Precision Cooling CRAC (Computer Room Air Conditioning) Unit suitable for UPS Room / Critical Equipment Room applications. The unit shall be designed for 24×7×365 continuous operation and shall provide accurate temperature and humidity control for critical electrical equipment.

viii. Relocation / Modification of Existing DBs in UPS Room:

- Existing Distribution Boards (DBs) installed inside the UPS Room shall be dismantled, relocated, and reinstalled in the designated corridor area to eliminate the requirement of entering the UPS Room for operation and isolation of facility circuit breakers.
- The existing circuit breakers shall be reused and reinstalled in the relocated DBs, subject to inspection, testing, and suitability confirmation by the Contractor.
- The Contractor shall provide and install **three (03) wall-mounted Distribution Boards** complete with required enclosures, mounting arrangements, labeling, internal wiring, and accessories.
- Existing electrical power cables/wiring shall be reused wherever technically feasible. In case any additional cables, extensions,

accessories, or replacement materials are required, the same shall be supplied and installed by the Contractor.

- The Contractor shall be responsible for complete dismantling, shifting, modification, reconnection, testing, and commissioning of the relocated DBs on a turnkey basis, ensuring safe and uninterrupted operation of the facility electrical system.
- All works shall be carried out in coordination with NADRA Facility/Technical team to ensure minimum disruption to ongoing Data Center operations.

b. Statement of Work for National Datawarehouse (NDW) Datacenter

i. Existing Installation in NDW

- The chiller is installed outside the building near the roadside and, if required, can be dismantled.

ii. Site Conditions of NDW

- Space for the installation of outdoor condenser units will be provided on the rooftop of the 3rd Floor. The Contractor shall verify and confirm the adequacy of the available space based on the proposed equipment dimensions, structural loading requirements, clearance, ventilation, accessibility, and maintenance requirements. The Contractor shall be responsible for the design, supply, and installation of any required supporting structure, including platforms, frames, and foundations, for safe placement of the outdoor units. A steel structure staircase shall also be provided and installed by the Contractor to ensure safe access to the rooftop condenser units for operation and maintenance activities. Power rooms are available for redundant power for cooling units.
- Tap off points will be available in both power rooms for redundant power

iii. Requirements in NDW

- CFD analysis to be carried out and shared with NADRA.
- New HVAC / AC panels need to be built for the new cooling units and should be placed in the same Power Rooms where Tap-off points are present

- The scope also includes provision and installation of energy analyzers for the Electrical Power DB, along with DCIM monitoring for the proposed cooling equipment.
- Electrical power shall be sourced from tap-off points located in Power Room-A and Power Room-B.

iv. Supply & Installation of DX Cooling Units in NDW

This section covers the supply, delivery, installation, interconnection, testing, and commissioning of new direct-expansion (DX) in-row cooling units and their matched outdoor condensing units (ODUs) at the NDW Datacenter. Two-unit types are to be provided: medium-capacity in-row units (300 mm width, 25 – 30 kW net sensible cooling capacity) and high-capacity in-row units (600 mm width, 40 – 45 kW net sensible cooling capacity), with the quantity of each type as scheduled in the BOQ. The Contractor's scope includes:

- Supply and deliver new DX in-row cooling units of the capacities described above, complete with matched outdoor condensing units (ODUs) and all standard accessories.
- Install the in-row units in accordance with the approved layout.
- Mount the outdoor condensing units on the outdoor platform, and supply and install interconnecting refrigerant piping, condensate drainage, insulation, supports, and hangers between the in-row units and the ODU's.
- Provide and connect electrical power from the new HVAC/AC panels to each unit, including control and signal cabling.
- Carry out site testing, commissioning, and performance verification of each unit at its rated net sensible capacity, and confirm redundancy operation.
- Provide manufacturer warranty (Back-to-Back), as-built drawings, O&M manuals, and handover documentation.

v. Civil Scope of Work in NDW

- Platform Foundations: Cast reinforced concrete foundations to support the outdoor equipment platforms. Cast-in anti-vibration mount provisions at each condenser location.
- The Contractor shall be responsible for ensuring that the structural design, load-bearing capacity, member sizing, footing details, platform dimensions, and erection methodology are reviewed, certified, and approved by a professional registered structural engineer prior to fabrication and installation.
- Provide permanent access staircase with handrails and safety cage, including all required safety provisions for operation and maintenance access.
- Interior Remediation (Where applicable) will include Ceiling Remediation Painting Wall Penetrations LT Room Modifications Ceiling cutouts / trimming and any relocated diffusers, detectors, sprinklers, or light fixtures disturbed by the works.

vi. Decommissioning Scope – Chiller / CDU System in NDW

- The decommissioning of two (2) chillers and one (1) Chiller Distribution Unit / Coolant Distribution Unit (CDU) at the National Datawarehouse (NDW) Datacenter, including all associated chilled water piping, headers, pumps, valves, DBs, electrical cabling, controls, insulation, supports, hangers, instrumentation, BMS/DCIM interfaces, and similar associated infrastructure.
- Pre-Decommissioning / Safety Carry out graceful shutdown of chillers, InROW after confirmation that replacement / new cooling infrastructure is operational and Datacenter cooling continuity is not affected.
- Physically remove and uninstall existing indoor in-row cooling units from racks/rows and remove existing outdoor condensing units where these are being replaced.
- Remove piping from chillers/CDU to racks, including headers, branch piping, main valves, flexible connections, supports, hangers, insulation, and similar associated items.
- Remove pumps and associated accessories connected with the decommissioned chilled water system.

- Carry out **site restoration** by Cleaning all affected areas after equipment, piping, DB, carry out plaster, paint, masonry, floor, ceiling, and surface repair works wherever disturbed by the decommissioning activity
- Pack, load, unload, safely transport, and hand over all decommissioned units to the designated NADRA location within Islamabad, including condition documentation at handover.

c. General terms and conditions

i. Summary of New Unit Requirements and installation locations:

	25 – 30 KW With Humidifier / Reheating	25 – 30KW Without Humidifier / Reheating	40 – 45 KW With Humidifier / Reheating	Total
C&IT Server Room	03	03	03	09
C&IT Telecom Room	02	NA	NA	02
C&IT UPS Room CRAC 27KW	02	NA	NA	02
NDW Server Room	03	03	02	08
Total	10	06	05	21

- ii. This Request for Proposal (RFP) covers the supply, delivery, installation, commissioning and handover of a turnkey cooling refresh solution for the identified NADRA Islamabad data centre sites. The scope includes cooling equipment, power supply, cables, trays, civil works, trenches, switchgear, and removal/swap of existing systems.
- iii. All equipment shall be brand new, genuine, and sourced through authorized channels.
- iv. The bidder shall provide manufacturer datasheets, technical literature, and warranty documentation for all supplied items.
- v. The bidder shall provide **product warranty for one year from the date of commissioning.**
- vi. Supply, installation, testing, and commissioning complete in all respects.
- vii. Delivery shall include inspection, acceptance, and handover to NADRA's designated technical representatives.

- viii. The bidder shall submit a detailed execution schedule upon award of the contract. The supply time line, documentation, testing, training, and handover activities shall be completed within the stipulated timelines.
- ix. The replacement shall be carried out at the phased manner, with only one chiller taken out of the service at a time while the other remains fully operational to ensure uninterrupted Data Center cooling.
- x. The Bidder shall provide **Accredited Operations Specialist (AOS)** classroom-based training from the **Uptime Institute**, or equivalent, for four (04) NADRA technical personnel. The training shall be conducted in **two (02) groups** by an authorized training provider, and all associated costs, including travelling, training materials, examination fees (if applicable), and certification, shall be included in the Bid.
- xi. The **Bidder** shall procure and install OEM-approved consumables for all electrical, mechanical, allied systems, and auxiliary infrastructure. Consumables shall be replaced according to the OEM-recommended schedule, as well as during emergencies or unforeseen operational requirements. The **Bidder** shall promptly perform all replacements in accordance with OEM guidelines and submit a detailed consumables replacement schedule.

ANNEXURE "B"

Technical Specifications

i. Design Conditions & Heat Loads In-Row Cooling

The specifications described in this section give requirements of an environmental control unit. The unit shall be a precision row-cooling system designed to maintain temperature and relative humidity conditions within the row(s) of racks. The unit shall comply with the cooling-related TIA-942-C redundancy and ASHRAE thermal class requirements.

ii. Design Requirements

The cooling unit shall be a factory-assembled environmental control unit, floor-mounted, designed to provide maximum cooling capacity in minimum footprint, specifically suited to rack cooling from the front and rear of the unit. The cooling system shall ensure even air distribution to the entire face area of the coil. The unit shall be installable between the racks or at the end of the row with optional adjustable air supply diffusers, and shall modulate cooling capacity and airflow based on requirements of the environment.

iii. Precision Row Cooling Unit — DX Configuration

- a. Medium-Capacity Unit — the unit shall be capable of handling up to 3600 CFM with a horizontal airflow pattern and shall be rated at 3500 CFM. The rated net sensible cooling capacity of the unit shall be not less than 25 kW, based on the return-air condition of 35°C dry-bulb temperature, 50-55 % relative humidity, and 50°C ambient temperature. Bidder shall offer units within the specified range. Final selection shall be based on OEM selection software considering 50°C ambient condition and actual site heat load.
- b. High-Capacity Unit — The unit shall be capable of handling up to 7000 CFM with a horizontal airflow pattern and shall be rated at 6500 CFM. The rated net sensible cooling capacity of the unit shall be not less than 40 kW based on the return-air condition of 35 °C dry-bulb temperature, 50-55 % relative humidity, and 50 °C ambient temperature. The unit is supplied with 380 V to 415 V, 3 Phase, 50

Hz power supply. Reheat capacity is 3 kW for the Standard-Capacity Unit and 6 kW for the High-Capacity Unit. For achieving these rating loading on compressor should not exceed beyond 85%. Capacity to be verified from system generated OEM Selection Sheet. Bidder shall offer units within the specified range. Final selection shall be based on OEM selection software considering 50°C ambient condition and actual site heat load.

iv. In-Row Cooling – Medium Capacity Unit (25 – 30KW)

- a. Cooling Circuit: The refrigeration circuit of the unit incorporates a high efficiency DC brushless compressor with a crankcase heater, filter dryer, moisture indicating sight glass, and an electronic expansion valve. The compressor is equipped with an environment-friendly refrigerant (R410A or latest environmentally approved refrigerant equivalent recommended by OEM.), and a DC brushless type arrangement with variable capacity operation of 30% to 100%. The compressor also has a suction gas cooled motor, vibration isolators, internal thermal overloads, automatic reset high-pressure switch, and low-pressure & high-pressure transducers.

The unit has a copper-tube evaporator coil with hydrophilic painted aluminum fins, followed by a condensate drain pan. The diameter of the evaporator coil tubes is 7 mm and the coil face area is 0.69 m². The unit shall have 3 rows of coil. The hydrophilic coating provides superior water carryover resistance.

The electronic expansion valve (EEV) controls the mass flow rate of the refrigerant within the refrigerant circuits at high speed with greater precision. EEV is suitable for DC brushless compressor as an expansion device, with green refrigerants (R410A or latest environmentally approved refrigerant equivalent recommended by OEM). EEV provides a better control over superheating at the outlet of the evaporator, thereby ensures that compressor shall never be filled by liquid.

- b. Fan Section: The unit is equipped with 7 EC fans. The fan speed is variable and can be automatically regulated by the highly intelligent controller through all modes of operation. The fans pull air through

the coil and is located on the front side of the unit. The EC fan has the characteristics of high efficiency, energy saving, space saving and hot swappable.

- c. Air Filtration: The unit is equipped with two G4-rated air filters (EN 779) followed by EU4, located within the cabinet, and accessible from the rear side of the unit. A filter clog alarm is also available as an option to alert clogging of the filter.
- d. Refrigerant: The unit is designed for R410A or latest environmentally approved refrigerant equivalent recommended by OEM.
- e. Unit Controls — Microprocessor Controller: The unit shall be controlled by a microprocessor-based controller. The air-conditioning unit shall be configured with a 7-inch HMI color screen or LCD screen with simple user-interface operation. The multi-level password protection feature shall effectively prevent unauthorized operation. The controller shall also have features such as power-failure auto-restoration and high/low voltage protection. The operational status of components shall be available on the respective menu screens; the fault-diagnosis system shall automatically display current fault information, facilitating easy maintenance. The controller shall store up to 1000 historical event records.

The controller allows monitoring and setting of the room parameters. The unit receives inputs from multiple temperature sensors placed at the rack inlet to ensure temperature management and control against the setpoint; each unit can be connected to up to 6 remote temperature sensors.

The controller allows setting and/or monitoring of the following space parameters:

- Air inlet temperature
- Air supply temperature (remote sensors at rack inlet)
- Return temperature setpoint
- Supply temperature setpoint
- Humidity (inlet)
- Humidity setpoint

- Suction pressure
- Discharge pressure
- Compressor output
- Fan output
- Heating status
- Humidifier status
- Supply voltage

Available warnings/alarms include:

- High supply temperature
- Low supply temperature
- High return humidity
- Low return humidity
- Loss of airflow
- Compressor low pressure
- Compressor high pressure
- Electrical heater high temperature (when applicable)
- Clogged filter
- Supply sensor failure
- Humidifier problem
- Rack sensor failure

Following features are incorporated in the controller:

- Status Report of the latest 1000 alarm history of the unit
- Input for remote on/off and voltage-free contacts for simple remote monitoring of low and high priority alarms such as: high/low temperature, high/low refrigerant pressure, fan/control failure, compressor/control failure, and others

- f. Rack Temperature Sensors: Each rack temperature sensor consists of a vented case with a temperature probe — up to 6 housings (6 temperature probes) can be connected to a row-cooling unit. If one housing and sensor probe is attached to a rack and the unit is conditioning, the sensor shall provide real-time direct feedback to the cooling unit, helping to optimize the amount of cooling and airflow required. This improves energy efficiency and ensures proper rack inlet air temperatures. The sensor data can also be reported to remote BMS or other monitoring systems. The sensor network consists of one CAN wiring connection to the first T-sensor; each

subsequent T-sensor can be connected to another T-sensor in a daisy-chain configuration.

- g. Remote Shutdown Terminal: The remote shutdown terminal shall provide access for the customer to remotely shut down the unit.
- h. Common Alarm Contact: This provides the customer with a set of normally open (n/o) contacts for remote indication of unit alarms. When a critical alarm occurs, the contact will be closed and outputs a signal to trigger external alarm devices.
- i. Monitoring: The control board shall be provided with an RS-485 port, with MODBUS as the standard protocol; an OEM-supplied SNMP/MODBUS monitoring card shall be used to monitor the unit through serial-port communication (an RJ45 port and a USB port shall also be available). One monitoring card shall be configured per unit.

Features of the monitoring card:

- Web-browser-based monitoring of the unit and the environment through the card's Web-server function
- Network Management System (NMS) monitoring of the unit and environment through the SNMP-agent function
- Integration with an OEM-supplied machine-room management software via TCP/IP
- Integration with an OEM-supplied centralised management software for multi-site monitoring

- j. Condensate Pump: The unit is provided with a factory installed condensate pump with a head capacity up to 10 m-head or up to 6 ±1 m-head.
- k. Electrical Re-heating: The unit is equipped with a Positive Temperature Coefficient (PTC) ceramic type electrical heater.

v. In-Row Cooling — (High-Capacity Unit) – (40 – 45KW)

- a. Cooling Circuit: The refrigeration circuit of the unit incorporates a high efficiency DC brushless compressor with a crankcase heater, filter dryer, moisture indicating sight glass, and an electronic expansion valve. The compressor is equipped with an environment-friendly refrigerant (R410A or latest environmentally approved refrigerant equivalent recommended by OEM), and a DC brushless

type arrangement with variable capacity operation of 30% to 100%. The compressor also has a suction gas cooled motor, vibration isolators, internal thermal overloads, automatic reset high-pressure switch, and low-pressure & high-pressure transducers.

The unit has a copper-tube evaporator coil with hydrophilic painted aluminum fins, followed by a condensate drain pan. The diameter of the evaporator coil tubes is 7 mm and the coil face area is 1.34 m². The unit shall have 3 rows of coil. The hydrophilic coating provides superior water carryover resistance.

The electronic expansion valve (EEV) controls the mass flow rate of the refrigerant within the refrigerant circuits at high speed with greater precision. EEV is suitable for DC brushless compressor as an expansion device, with green refrigerants (R410A or latest environmentally approved refrigerant equivalent recommended by OEM). EEV provides a better control over superheating at the outlet of the evaporator, thereby ensures that compressor shall never be filled by liquid.

- b. Fan Section: The unit is equipped with 12 EC fans. The fan speed is variable and can be automatically regulated by the highly intelligent controller through all modes of operation. The fans pull air through the coil and is located on the front side of the unit. The EC fan has the characteristics of high efficiency, energy saving, space saving and hot swappable.
- c. Air Filtration: The unit is equipped with two G4-rated air filters (EN 779) followed by EU4, located within the cabinet, and accessible from the rear side of the unit. A filter clog alarm is also available as an option to alert clogging of the filter.
- d. Refrigerant: The unit is designed for R410A or latest environmentally approved refrigerant equivalent recommended by OEM.
- e. Unit Controls — Microprocessor Controller: The unit shall be controlled by a microprocessor-based controller. The air-conditioning unit shall be configured with a 7-inch HMI color screen or LCD screen with simple user-interface operation. The multi-level password protection feature shall effectively prevent unauthorized

operation. The controller shall also have features such as power-failure auto-restoration and high/low voltage protection. The operational status of components shall be available on the respective menu screens; the fault-diagnosis system shall automatically display current fault information, facilitating easy maintenance. The controller shall store up to 1000 historical event records.

The controller allows monitoring and setting of the room parameters. The unit receives inputs from multiple temperature sensors placed at the rack inlet to ensure temperature management and control against the setpoint; each unit can be connected to up to 6 remote temperature sensors.

The controller allows setting and / or monitoring of the following space parameters:

- Air inlet temperature
- Air supply temperature (remote sensors at rack inlet)
- Return temperature setpoint
- Supply temperature setpoint
- Humidity (inlet)
- Humidity setpoint
- Suction pressure
- Discharge pressure
- Compressor output
- Fan output
- Heating status
- Humidifier status
- Supply voltage

Available warnings/alarms include:

- High supply temperature
- Low supply temperature
- High return humidity
- Low return humidity
- Loss of airflow
- Compressor low pressure
- Compressor high pressure
- Electrical heater high temperature (when applicable)
- Clogged filter
- Supply sensor failure
- Humidifier problem
- Rack sensor failure

Following features are incorporated in the controller:

- Status Report of the latest 1000 alarm history of the unit
 - Input for remote on/off and voltage-free contacts for simple remote monitoring of low and high priority alarms such as: high/low temperature, high/low refrigerant pressure, fan/control failure, compressor/control failure, and others
- f. Rack Temperature Sensors: Each rack temperature sensor consists of a vented case with a temperature probe — up to 6 housings (6 temperature probes) can be connected to a row-cooling unit. If one housing and sensor probe is attached to a rack and the unit is conditioning, the sensor shall provide real-time direct feedback to the cooling unit, helping to optimise the amount of cooling and airflow required. This improves energy efficiency and ensures proper rack inlet air temperatures. The sensor data can also be reported to remote BMS or other monitoring systems. The sensor network consists of one CAN wiring connection to the first T-sensor; each subsequent T-sensor can be connected to another T-sensor in a daisy-chain configuration.
- g. Remote Shutdown Terminal: The remote shutdown terminal shall provide access for the customer to remotely shut down the unit.
- h. Common Alarm Contact: This provides the customer with a set of normally open (n/o) contacts for remote indication of unit alarms. When a critical alarm occurs, the contact will be closed and outputs a signal to trigger external alarm devices.
- i. Monitoring: The control board shall be provided with an RS-485 port, with MODBUS as the standard protocol; an OEM-supplied SNMP/MODBUS monitoring card shall be used to monitor the unit through serial-port communication (an RJ45 port and a USB port shall also be available). One monitoring card shall be configured per unit.

Features of the monitoring card:

- Web-browser-based monitoring of the unit and the environment through the card's Web-server function
- Network Management System (NMS) monitoring of the unit and environment through the SNMP-agent function
- Integration with an OEM-supplied machine-room management software via TCP/IP

- Integration with an OEM-supplied centralized management software for multi-site monitoring
 - j. Condensate Pump: The unit is provided with a factory installed condensate pump with a head capacity up to 10 m-head or up to 6 ±1 m-head.
 - k. Electrical Re-heating: The unit should be equipped with a Positive Temperature Coefficient (PTC) ceramic type electrical heater.
- vi. **Outdoor Unit — Air – Cooled Condenser**: Furnish and install low-noise air-cooled condenser(s) with V-shaped coil arrangement (due to constraint of Site Space) and EC fans, matched to the indoor precision row-cooling units and arranged for vertical airflow. Condenser(s) shall be draw-through design and shall perform in accordance with the equipment schedule at low sound levels.
- a. Product: Each condenser shall consist of a casing and two independently controlled systems, each consisting of a condenser coil, EC fans driven by individual fan motors, fan guards, electrical controls and a mounting base. Fan motors shall be furnished for operation on a 380 volt, 3-phase, 50 Hz power supply.
 - b. Coil (Coil Fins Anti Corrosion Class C5): The condenser coil shall be constructed with copper tubes in a staggered tube pattern. Tubes shall be expanded into continuous, rippled aluminum plate or enhanced-type hydrophilic fins. The fins shall have full-depth fin collars completely covering the copper tube. Coil tubes shall be connected to heavy-wall copper headers. Inlet coil connector tubes shall pass through relieved holes in the tube sheet, for maximum resistance to piping strain and vibration. Coils shall be factory leak-tested at 300 PSIG (2065 kPa) minimum, dehydrated, and sealed with a positive, dry-air charge.
 - c. Casing: The condenser casing shall be constructed of Stainless Steel + Anodized Aluminum. Structural support members, including the coil support frame and motor and drive supports, shall be galvanized steel for strength and corrosion resistance. Galvanized legs with rigging holes shall be provided for hoisting the unit into position.

- d. Fans (Low Sound): Fans shall have sheet aluminum (800mm) / aluminum (910mm) blades secured to corrosion-protected steel hubs. Fans shall be secured to the fan shaft by means of a heavy-duty keyed hub and dual set screws. Fans shall be factory balanced and test-run before shipment. Fan guards shall be heavy-gauge, close-meshed steel wire with a corrosion-resistant finish. Fans shall have IP54 degree of protection.
- e. Fan Motors: Motors shall include built-in overload protection with thermostatic switch and permanently lubricated ball bearings. Motors shall be rigidly mounted on die-formed galvanized steel supports. The rotor material shall be aluminum.
- f. Electrical Control: Each unit shall have two independent controllers for fan speed modulation of each system. Failure of one system shall not affect the normal operation of the other system; when the faulty system is disconnected during maintenance, the other system shall continue to operate normally.

All electrical connections shall be provided in a weatherproof enclosure. The enclosure shall be mounted on the condenser for functional protection and neat appearance. A door-mounted and internally wired electrical disconnect switch shall be included on all models.

Fan speed control shall have four modes: normal, noise reduction, energy saving and pressure reduction. The controller shall adjust fan speed according to preset parameters and curves to avoid frequency resonance.

The cooling systems shall be fed by a three-phase input to the indoor and outdoor units.

Each unit shall be supplied with two electrical feeds (A-feed and B-feed) sourced from independent distribution paths, in line with TIA-942-C Rated 3 requirements.

vii. Summary of Technical Requirements for Precision Cooling Systems

- a. 25–30 kW Precision In-Row Cooling System Without Humidifier
Native Dual input (400V / 3 Phase / 50 Hz)
Variable Speed Compressor and Fans

Air Volume $\geq 3300 - 3600$ CFM

Cabinet Width 300mm

High return Air temperature capability

The standard Filters shall be 30% efficient per ASHRA Standard 52.1 or 52.2

Digital Scroll / Brushless VFD Scroll / DC Inverter Compressor; Refrigerant system should contain a master controller for greater efficiency and accuracy.

Fans: Variable Speed DC Fan with build in N+1 Redundancy

The precision cooling unit should be configured with build in temperature sensor and build in Temperature and Humidity sensor.

Leak Detection Cable shall be Shipped Loose with the Unit.

Alarm's control shall be active a visible and audible alarm in the occurrence of multiple events

The cooling unit must be equipped with surge protection device.

The Unit shall include a Network management card, embedded inside the user interface to provide management through a computer network through Modbus or BACNET or TCP/IP / SNMP

Management through the network should include the ability to change set points as well as view and clear alarms

Group control shall automatically rotate units into standby mode based of run hours when IT load is not high enough to require all units to be active.

Auto sequencing of the Unit in equivalent time.

Startup and Installation services of all components

Piping, plumbing, cabling, drain system and Installation work of Cooling unit, adequate illumination / LED lighting for out door.

b. 25–30 kW Precision In-Row Cooling System with Integrated Humidifier

Native Dual input (400V / 3 Phase / 50 Hz)

Variable Speed Compressor and Fans

Air Volume $\geq 3300 - 3600$ CFM

Cabinet Width 300mm

Humidifier Capacity: 1.5 – 2 Kg / hr.

Reheat Capacity: 3KW

The humidifier shall be self – contained, steam generating type / infra-red factory piped and wired, automatic solid state controller circuit

High return Air temperature capability

The standard Filters shall be 30% efficient per ASHRA Standard 52.1 or 52.2

Digital Scroll / Brushless VFD Scroll / DC Inverter Compressor; Refrigerant system should contain a master controller for greater efficiency and accuracy.

Fans: Variable Speed DC Fan with build in N+1 Redundancy

The precision cooling unit should be configured with build in temperature sensor and build in Temperature and Humidity sensor.

Leak Detection Cable shall be Shipped Loose with the Unit.

Alarm's control shall be active a visible and audible alarm in the occurrence of multiple events

The cooling unit must be equipped with surge protection device.

The Unit shall include a Network management card, embedded inside the user interface to provide management through a computer network through Modbus or BACNET or TCP/IP / SNMP

Management through the network should include the ability to change set points as well as view and clear alarms

Group control shall automatically rotate units into standby mode based of run hours when IT load is not high enough to require all units to be active.

Auto sequencing of the Unit in equivalent time

Startup and Installation services of all components

Piping, plumbing, cabling, drain system and Installation work of Cooling unit, adequate illumination / LED lighting for out door.

c. 40–45 kW Precision In-Row Cooling System With Integrated Humidifier

Native Dual input (400V / 3 Phase / 50 Hz)

Variable Speed Compressor and Fans

Air Volume $\geq$ 6500 – 7000 CFM

Cabinet Width 600mm

Humidifier Capacity: 1.5 – 2 Kg / hr.

Reheat Capacity: 6KW

The humidifier shall be self – contained, steam generating type / infra-red factory piped and wired, automatic solid state controller circuit

High return Air temperature capability

The standard Filters shall be 30% efficient per ASHRA Standard 52.1 or 52.2

Digital Scroll / Brushless VFD Scroll / DC Inverter Compressor; Refrigerant system should contain a master controller for greater efficiency and accuracy.

Fans: Variable Speed DC Fan with build in N+1 Redundancy

The precision cooling unit should be configured with build in temperature sensor and build in Temperature and Humidity sensor.

Leak Detection Cable shall be Shipped Loose with the Unit.

Alarm's control shall be active a visible and audible alarm in the occurrence of multiple events

The cooling unit must be equipped with surge protection device.

The Unit shall include a Network management card, embedded inside the user interface to provide management through a computer network through Modbus or BACNET or TCP/IP / SNMP

Management through the network should include the ability to change set points as well as view and clear alarms

Group control shall automatically rotate units into standby mode based of run hours when IT load is not high enough to require all units to be active.

Auto sequencing of the Unit in equivalent time

Startup and Installation services of all components

Piping, plumbing, cabling, drain system and Installation work of Cooling unit, adequate illumination / LED lighting for out door.

viii. **Precision Cooling CRAC Unit – 27 kW (UPS Room):** The CRAC Unit shall comply with the following minimum requirements:

- **Cooling Capacity:** Minimum 27 kW nominal cooling capacity.
- **Net Sensible Cooling Capacity:** Minimum 25 kW at rated operating conditions.
- **Cooling Type:** Air-cooled DX type precision cooling system with indoor unit and matching outdoor condenser.
- **Airflow:** Minimum 7,300 m³/hr.
- **Installation Type:** Floor-mounted precision cooling unit suitable for UPS/Electrical Equipment Rooms.
- **Footprint Size (Indoor Unit):** Approx. 850 mm (W) × 835 mm (D) × 1975 mm (H) or equivalent, subject to OEM-approved design.
- **Compressor:** High-efficiency scroll compressor suitable for continuous operation.
- **Fan:** High-efficiency centrifugal/EC fan for precision cooling applications.
- **Refrigerant:** R410A or OEM-approved environmentally compliant refrigerant.
- **Temperature Control Accuracy:** ±1°C.
- **Humidity Control:** ±5% RH (where humidification facility is provided).
- **Controller:** Microprocessor-based intelligent controller with color display, alarm indication, temperature and humidity monitoring.
- **Monitoring:** Built-in communication capability through SNMP / Modbus / TCP-IP or equivalent protocol for BMS/DCIM integration.
- **Filtration:** Washable/reusable air filtration system suitable for critical equipment rooms.
- **Outdoor Condenser:** Suitable for operation up to 45°C ambient temperature with corrosion-resistant construction.
- The unit shall include all required safety protections, alarms, condensate management, and standard OEM accessories.

- Complete supply, installation, refrigerant piping, electrical connections, testing, commissioning, and integration with existing monitoring systems shall be included in the Contractor's turnkey scope.
- The Contractor shall provide OEM datasheets, compliance documents, warranty certificates, and back-to-back OEM support for the offered equipment.

ix. **Transformer 800 KVA:** Supply Installation, testing and commissioning of 800 kVA oil type transformers with enclosure as per following specs:

- Rating : 800 KVA
- Winding type : Copper
- Applicable Standard : IEC 60076
- Primary Voltage : 11KV
- Secondary Voltage : 415 V phase to phase.
- Frequency : 50 Hertz
- Impedance : 5%
- No Load Losses : 2200 watts
- Load Losses : 10,000 watts
- Temp Rise Oil / Winding : 50 / 60°C
- HT Tapping range : ±5%
- Impulse Voltage : 75KV. (RMS Peak)
- Vector Group : Dyn - 11
- Room for HT Panels
- The transformer shall be supplied with outdoor enclosure of IP65 rating.
- The applicable standard for oil type transformers is IEC 60076 or equivalent (The standard include transformer design, testing, installation and maintenance)
- Contractor shall perform complete load study and obtain utility approval before relocation of transformers.

x. **Industrial metering & protection panel as per WAPDA specification P. 44 : 2018**

- One Vacuum circuit breaker having current capacity 630A 25KA (WAPDA APPROVED), voltage rating 11KV, cassette type, 95KV BIL, auto/manual operated, with spring operated mechanism, one tripping coil bearing 110V DC, one breaker closing coil 110V DC.
- THREE Potential Transformer (METELX/FICO) single pole 11000/1.732 / 110 / 1.732 VAC having 100VA burden, accuracy class 0.5, insulation level 12/36/95, for indication of WAPDA / generator incoming supply and to activate panel protection.
- THREE Current Transformer (METELX/FICO) for protection having current ratio (as per demand), burden 15VA, accuracy class 5P20, insulation level 12 / 36 / 95 KV, for indication of WAPDA / generator load on bus bar.
- THREE Current Transformer (METELX/FICO) for metering having current ratio (as per demand), burden 10VA, accuracy class 0.5 insulation level 12/36/95 KV, for indication of WAPDA / generator metering.
- ONE digital Relay protection relay (WAPDA APPROVED) for the healthy tripping system in case of earth fault, short circuit and over load with led indicator to show Relay is operated and also having adjustable time delay and no time delay.

- Two trip circuit and DC super vision Relay (E-Lab) for super vision and monitoring of trip coils and trip circuits of power circuit breakers with indication flag LED and trip output contacts IEC 255-5.
- One test block for provides protection from electrical short hazard access to internal circuit for testing purpose can be going by removing the front cover. (ARTECHE)
- One Analogue Power factor meter (Lumel)
- Two Aux contactor (Siemens) 220VAC 12A WITH NO & NC POINT.
- One timer (Fuji)110v AC/DC for delay on time
- One temperature meter along with thermostat sensor (E-Logic)
- One electric hooter for fault indication (E-Logics)
- ONE Analogue type volt meter (Lumel/Frer) having max-scale 0-15KV AC, controlled by volt selector switch for showing voltage rating incoming supply in panel.
- ONE volt selector switch (GGT), current capacity 25A, voltage rating 110/220 VAC, having four position to display red, yellow and blue phase voltage on volt meter.
- Three Analogue type Ampere meter (Lumel /Frer) having max-scale (as per demand) AC, switch for showing load on busbar.
- ONE Green indication lamp (GGT) 110/220V AC /DC, 2.4W, round shape dia 22mm for panel Off indication.
- ONE Red indication lamp (GGT) 110/220V AC /DC, 2.4W, round shape dia 22mm for panel ON indication.
- One Yellow indication lamp (GGT) 110/220V DC, 2.4W, round shape dia 22mm for DC healthy indication.
- One white indication lamp (GGT) 110/220V DC, 2.4W, round shape dia 22mm for relay tripping indication.
- One Blue indication lamp (GGT) 110/220V DC, 2.4W, round shape dia 22mm for P.T Supply Failure indication.
- One Purple indication lamp (GGT) 110/220V DC, 2.4W, round shape dia 22mm for 220VAC Supply Failure indication.
- ONE Green Push button (GGT) 110/220V AC /DC, 2.4W, round shape dia 25mm for panel OFF.
- ONE Red Push button (GGT) 110/220V AC /DC, 2.4W, round shape dia 25mm for panel ON.
- Two T/P Miniature circuit breaker (SEZ/SCHNEIDERR/ABB) 6/10A, 110/220V AC/DC for the protection of complete control wiring and potential transformers in case of any disturbance in control wiring.
- Five D/P Miniature circuit breaker (SEZ/SCHNEIDER) 10A, 110/220V AC/DC for the protection of complete DC supply control wiring and potential transformers in case of any disturbance in control wiring.
- Two capacitor trip unit 110V DC, three phase, to give strongest tripping in case of lack of voltages.
- Cable duct 40 x 60 of different size to cover all wiring cables.
- Terminal blocks 4mm, voltage rating 800V, Current rating 16/25A, JXR, IEC 47-7-1 & 6mm terminal block for CT. (Kabur)

- 2.5mm cable for complete control wiring & 4mm wire for CT's wiring.
- Nine APG epoxy risen casting insulator CG2 type, 12KV to provide healthy support to male copper contact points.
- Copper bus bar, current capacity 630A having 99.7% purity, with complete insulation of heat shrilling tube.
- Sets of automatic safety shutters, equipped with locking devices – one marked “Bus-bar” and the other “cable”.
- One Name Plate
- One tagging Plate
- Switchgear Cubical will be fabricated with metal clad sheet and will be fully welded, pad mounted and their dimension will be in standard size.
- All MV metering panels shall be approved by IESCO before manufacturing.



ANNEXURE “C”

Service Level Agreement (SLA)

The successful Bidder shall enter into a Service Level Agreement (SLA) for a period of three (03) years, commencing from the date of system commissioning and formal handover to NADRA.

- a. Preventive maintenance (PM) services shall be performed on a quarterly basis, comprising four (04) quarters during the first year under warranty, four (04) quarters during the second year, and four (04) quarters during the third year. Accordingly, the complete SLA period shall cover twelve (12) quarterly preventive maintenance visits.
- b. Conduct immediate resolution of any faults or failures in the covered systems.
- c. Conduct corrective maintenance include running diagnostics, troubleshooting, testing, cleaning, adjustment and replacement of all the maintenance parts / consumables where necessary.
- d. Maintain an adequate stock of OEM-approved consumables for the cooling system and allied equipment at NADRA premises, as per the following list, to ensure immediate replacement during emergencies, as and when required.

Sr No.	Component	Qty
01	Compressors (03 for 25 – 30KW + 02 for 40 – 45 KW + 01x for 27KW for UPS room)	06
02	Evaporator	01
03	Fan Indoor Unit (10 for 25 – 30KW + 08 for 40 – 45 KW + 02x for 27KW for UPS room)	20
04	Fans Outdoor	06
05	Display Screens on the In ROW units	04
06	Water Condenser pump of In ROW Units	06

- e. In order to keep the Data Center up and live for 24 x 7 x 365 a full time Resident Engineer round the clock shall be provided by the Contractor to monitor live reporting / alerts and performance of all the equipment installed at the Data Center.
- f. **PRIORITY LEVELS / CRITICALITY LEVELS:** Failures of equipment or components may affect system availability, operational performance, business continuity, and organizational reputation. Each reported failure shall therefore be assessed

according to its operational and business impact, and the corresponding priority level shall determine the required response and resolution time.

Priority	Attention	Description	Resolution Time	Penalty
CRITICAL	IMMEDIATE	Complete failure of the cooling system, loss of redundancy, or operation on backup unit requiring immediate repair, replacement	Immediate	Rs. 100,000 per hour
MEDIUM	SCHEDULED	Cooling system performance is reduced, but the required cooling and redundancy remain available. The fault shall be repaired or the affected component replaced within the specified resolution time.	Within 48 hours	Rs. 1,000 per hour after the resolution time
LOW	PLANNED	A minor cooling system fault that does not affect cooling availability or performance but requires planned inspection, repair, or replacement.	Within 120 hours	Rs. 100 per hour after the resolution time

g. Penalty shall apply until the equipment or an acceptable backup arrangement becomes functional. The successful Bidder shall provide 24 / 7 support through telephone, email, and web.

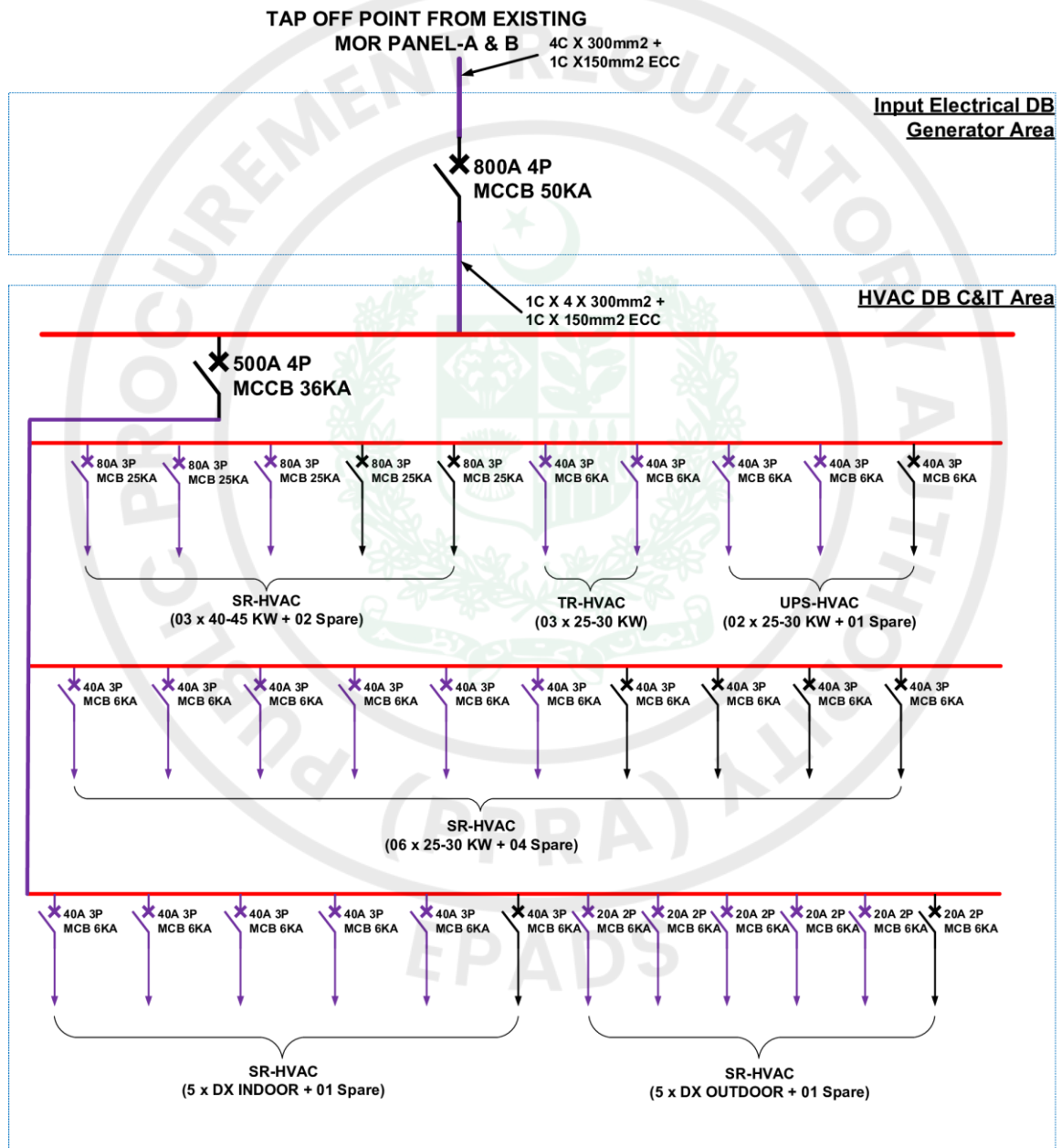
ANNEXURE ‘D’

Single – Line Diagram (SLD)

A tentative Single – Line Diagram (SLD) has been formulated to provide a preliminary overview of the proposed system in:

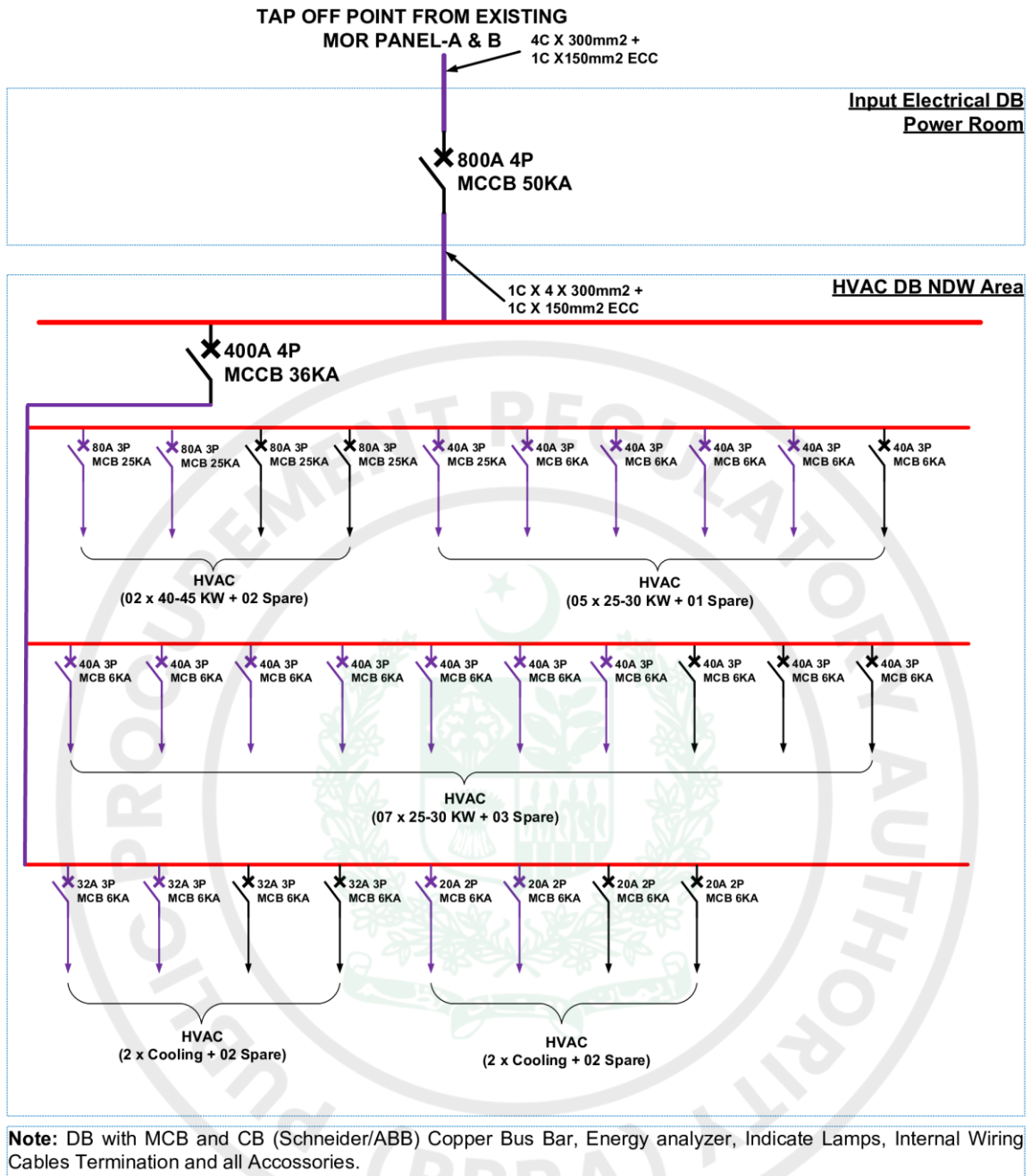
- BOQ for C&IT
- BOQ for NDW

SLD FOR C&IT Data Center /Cooling Infrastructure A & B



Note: DB with MCB and CB (Schneider/ABB) Copper Bus Bar, Energy analyzer, Indicate Lamps, Internal Wiring Cables Termination and all Accosories.

SLD FOR NDW Data Center /Cooling Infrastructure A & B



ANNEXURE "E"

Letter of Bid – Technical Proposal

INSTRUCTIONS TO BIDDERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE DOCUMENT

Place this Letter of Bid in the first envelope "TECHNICAL PROPOSAL".

The Bidder must prepare the Letter of Bid on stationery with its letterhead clearly showing the Bidder's complete name and business address.

Note: All italicized text in black font is to help Bidders in preparing this form and Bidders shall delete it from the final document.

Date of this Bid submission: [insert date (as day, month and year) of Bid submission]

RFB No.: [insert number of Bidding process]

Request for Bid No.: [insert identification]

Alternative No.: [insert identification No if this is a Bid for an alternative]

To: [insert complete name of Procuring Agency]

We, the undersigned Bidder, hereby submit our Bid, in two parts, namely:

- (a) the Technical Proposal, and
- (b) the Financial Proposal.



In submitting our Bid we make the following declarations:

- (a) **No reservations:** We have examined and have no reservations to the bidding document, including addenda issued in accordance with Instructions to Bidders (ITB 9);
- (b) **Eligibility:** We meet the eligibility requirements and have no conflict of interest in accordance with ITB 3;
- (c) **Bid/Proposal-Securing Declaration:** We have not been suspended nor declared ineligible by the Procuring Agency based on execution of a Bid Securing Declaration or Proposal Securing Declaration in the Procuring Agency's country in accordance with ITB 4;
- (d) **Conformity:** We offer to supply in conformity with the bidding document and in accordance with the Delivery Schedules specified in the Schedule of Requirements the following Goods: [insert a brief description of the Goods and Related Services];
- (e) **Bid Validity Period:** Our Bid shall be valid for the period specified in BDS 17.1 (as amended, if applicable) from the date fixed for the Bid submission deadline specified in BDS 23.1 (as amended, if applicable), and it shall remain binding upon us, and may be accepted at any time before the expiration of that period;
- (f) **Performance Security:** If our Bid is accepted, we commit to obtain a performance security in accordance with the bidding document;
- (g) **One Bid per Bidder:** We are not submitting any other Bid(s) as an individual Bidder, and we are not participating in any other bid(s) as a Joint Venture member or as a subcontractor, and meet the requirements, other than Alternative Bids submitted in accordance with ITB 19;
- (h) **Suspension and Debarment:** We, along with any of our subcontractors, suppliers, consultants, manufacturers, or service providers for any part of the

contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by the Procuring Agency. Further, we are not ineligible under Pakistan laws;

- (i) **State-owned enterprise or institution:** *[select the appropriate option and delete the other] [We are not a state-owned enterprise or institution] / [We are a state-owned enterprise or institution but meet the requirements of];*
- (j) **Binding Contract:** We understand that this Bid, together with your written acceptance thereof included in your Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed;
- (k) **Not Bound to Accept:** We understand that you are not bound to accept the Most Advantageous Bid or any other Bid that you may receive; and
- (l) **Fraud and Corruption:** We hereby certify that we have taken steps to ensure that no person acting for us, or on our behalf, engages in any type of Fraud and Corruption.

Name of the Bidder: **[insert complete name of Bidder]*

Name of the person duly authorized to sign the Bid on behalf of the Bidder: ******
[insert complete name of person duly authorized to sign the Bid]

Title of the person signing the Bid: *[insert complete title of the person signing the Bid]*

Signature of the person named above: *[insert signature of person whose name and capacity are shown above]*

Date signed *[insert date of signing]* **day of** *[insert month]*, *[insert year]*

*: In the case of the Bid submitted by a Joint Venture specify the name of the Joint Venture as Bidder.

**: Person signing the Bid shall have the power of attorney given by the Bidder. The power of attorney shall be attached with the Bid Schedules.



ANNEXURE "F"

Letter of Bid - Financial Proposal

INSTRUCTIONS TO BIDDERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE DOCUMENT

Place this Letter of Bid - Financial Proposal in the second envelope marked "FINANCIAL PROPOSAL".

The Bidder must prepare the Letter of Bid - Financial Proposal on stationery with its letterhead clearly showing the Bidder's complete name and business address.

Note: All italicized text is to help Bidders in preparing this form.



Date of this Bid submission: [insert date (as day, month and year) of Bid submission]

No.: [insert number of bidding process]

Name of Project. [Insert identification]

Alternative No.: [insert identification No if this is a Bid for an alternative]

To: [insert complete name of Procuring Agency]

We, the undersigned Bidder, hereby submit the second part of our Bid, the Financial Proposal

In submitting our Financial Proposal we make the following additional declarations:

- (a) **Bid Validity Period:** Our Bid shall be valid for the period specified in BDS 17.1 (as amended, if applicable) from the date fixed for the bid submission deadline specified in BDS 23.1 (as amended, if applicable), and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (b) **Total Price:** The total price of our Bid, excluding any discounts offered in item (c) below is:

In case of only one lot, the total price of the Bid is [insert the total price of the bid in words and figures, indicating the various amounts and the respective currencies];

In case of multiple lots, the total price of each lot is [insert the total price of each lot in words and figures, indicating the various amounts and the respective currencies];

In case of multiple lots, total price of all lots (sum of all lots) [insert the total price of all lots in words and figures, indicating the various amounts and the respective currencies];

- (c) **Discounts:** The discounts offered and the methodology for their application are:

- i. The discounts offered are: [Specify in detail each discount offered]
- ii. The exact method of calculations to determine the net price after application of discounts is shown below: [Specify in detail the method that shall be used to apply the discounts];

- (d) **Commissions, gratuities and fees:** We have paid, or will pay the following

commissions, gratuities, or fees with respect to the bidding process or execution of the Contract: *[insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity]*.

Name of Recipient	Address	Reason	Amount

(If none has been paid or is to be paid, indicate “none.”)

- (e) **Binding Contract:** We understand that this Bid, together with your written acceptance thereof included in your Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed.

Name of the Bidder:**[insert complete name of the Bidder]*

Name of the person duly authorized to sign the Bid on behalf of the Bidder: **
[insert complete name of person duly authorized to sign the Bid]

Title of the person signing the Bid: *[insert complete title of the person signing the Bid]*

Signature of the person named above: *[insert signature of person whose name and capacity are shown above]*

Date signed *[insert date of signing]* **day of** *[insert month]*, *[insert year]*

*: In the case of the Bid submitted by a Joint Venture specify the name of the Joint Venture as Bidder.

**: Person signing the Bid shall have the power of attorney given by the Bidder. The power of attorney shall be attached with the Bid Schedules.

BOQ for C&IT

Sr. No.	Equipment	Quantity	Unit Price without GST	GST	Total Price with GST
1	Supply of the following items as per specifications including all accessories, complete in all respect. Note: Cooling units net sensible capacities are after detection of all tolerance and at 50°C ambient Condition. All purposed cooling unit should be compatible with the DCIM.				
a	DX Type InRow Unit (<u>without heater and humidifier</u>) 25 – 30 KW Net Sensible cooling capacity. The equipment shall comply with the technical requirements specified in Clause 3 (b) (vii) (a).	03			
b	DX Type InRow Unit (<u>with heater and humidifier</u>) 25 – 30 KW Net Sensible cooling capacity. The equipment shall comply with the technical requirements specified in Clause 3 (b) (vii) (b).	05			
c	DX Type Inrow Unit (<u>with heater and humidifier</u>) 40 – 45 KW Net Sensible cooling capacity. The equipment shall comply with the technical requirements specified in Clause 3 (b) (vii) (c).	03			
d	Precision Cooling CRAC Unit – 27 kW (UPS Room): The Contractor shall supply, install, test, and commission a 27 kW Precision Cooling CRAC (Computer Room Air Conditioning) Unit suitable for UPS Room. Piping, plumbing, cabling, drain system and Installation work of Cooling unit, adequate illumination / LED lighting for out door.	02			
2	800KVA Transformer and allied works				

BOQ for C&IT

Sr. No.	Equipment	Quantity	Unit Price without GST	GST	Total Price with GST
a	Transformer 800 KVA: Supply Installation, testing and commissioning of 800 KVA oil type transformers with all allied requirements. Pad / Foundation, Grounding, Labeling, Protections for transformers <u>Services:</u> Design Book, Load Section and Connection Charges, AMI Meter, WAPDA Metering Panel Inspection Charges, HT Cable, HT Cable Test Report Charges. <u>Contractor shall perform complete load study and obtain utility approval.</u> <u>Note:</u> Refer to Technical Specification 3.b.ix	02			
b	<u>Supply of M. V panel WAPDA industrial metering & protection panel as per WAPDA Standard P – 44 :2018</u> One Vacuum circuit breaker having current capacity 630A 25KA (WAPDA APPROVED), voltage rating 11KV, cassette type, 95KV BIL, auto/manual operated, with spring operated mechanism, one tripping coil bearing 110V DC, one breaker closing coil 110V DC. <u>Note:</u> Refer to Technical Specification 3.b.x	02			

BOQ for C&IT

Sr. No.	Equipment	Quantity	Unit Price without GST	GST	Total Price with GST
c	<u>RCC Room for HT Panel:</u> The Contractor shall provide RCC rooms for housing each HT Panel. The room sizes (02) shall be 15ft x 20ft as per OEM recommendations and shall include required clearances, ventilation, access, and maintenance provisions. The price shall be quoted on a per Sq. ft. basis, including RCC structure, flooring, painting, 1x metal door / Shutter (one for each room) 10ft x 5ft (or as per HT Panel height and width requirements), lighting, ventilation system, cable openings / trenches, and all associated civil works. <u>Note: Measurement and Payment:</u> The rate shall be quoted per square foot, and payment shall be made based on the actual area installed and accepted.	2x 300 ft ²			
3	The contractor shall supply install test and commission complete Electrical Distribution floor mount with MCB and CB (of Schneider / ABB) as approved SLD including enclosure, copper bus bars, breaker, energy analyzer, indication lamps, internal wiring cable termination and all accessories. The DB shall be 16 AWG MS Sheet degreased and de rusted, zinc phosphate, finished with electro static powder with 15-micron thickness with hinged door, neutral links with necessary holes, earthing of Door with buried Copper links, PVC Gland and with 20% space for future expansion requirement. Dimension and location will be finalized at the time of site survey. <u>Note: Cable Works — Measurement and Payment:</u> The rate shall be quoted per running meter, and payment shall be made based on the actual length of cable laid, tested and accepted.				

BOQ for C&IT					
Sr. No.	Equipment	Quantity	Unit Price without GST	GST	Total Price with GST
a	<u>Input Electrical Distribution Boards (DB):</u> 800A FP MCCB 50kA (Existing - From MOR Panels A & B)	02			
b	<u>HVAC Electrical Distribution Boards (DB):</u> 500A FP MCCB 36kA 05 x 80A 3P MCCB 25kA (03 + 02 Spares) 20 x 40A 3P MCB 6kA (15 + 05 Spares) 06 x 20A 2P MCB 6kA (05 + 01 Spares)	02			
4	Power Cable: L.T. Power Cables (Pioneer / Fast / Newage) Supply at site, installation, testing and commissioning of PVC insulated nonarmored copper conductor cable 600 / 1000 Volt grade to be installed as per routes including cos to fall necessary materials, connections, identification tags, cables lugs properly crimped at both ends for the following sizes complete in all respects.				
a	Installation from Existing MOR Panels to HVAC – DBs – <u>300mm² 1 – Core, Cu / PVC / PVC</u>	1500 m			
b	Earth cable installation from Existing earthing Panel to HVAC – DBs – 1C – <u>150mm² Earth Cable</u> .	375 m			
c	Power cable installation from 48KVA UPS to sitting area DB <u>35mm² 4 – Core , Cu / PVC / PVC</u> with <u>10mm² Earth Cable</u>	30m			
d	Power cable installation from HVAC – DB – Server Room 40 – 45 KW In-row Cooling Units <u>16mm² 5 – Core (3L+N+E), Cu / PVC / PVC</u>	250 m			

BOQ for C&IT					
Sr. No.	Equipment	Quantity	Unit Price without GST	GST	Total Price with GST
e	Power cable installation from CNIT HVAC-DB- Server Room <u>10mm² 5 – Core (3L+N+E), Cu, PVC / PVC</u>	800 m			
f	Power cable installation from Indoor to outdoor Unit <u>6mm² 5 – Core (3L+N+E), Cu, PVC / PVC</u>	250 m			
g	Power cable installation from Indoor to outdoor Unit <u>4mm² 5 – Core (3L+N+E), Cu, PVC / PVC</u>	950 m			
h	Power cable installation from Indoor to outdoor Unit ACRDP-Outdoor Units (5 units) <u>4mm² 5 – Core (3L+N+E), Cu, PVC / PVC</u>	400 m			
i	Control cable installation from indoor to outdoor <u>1.5mm² 2 Core, CU, XLPE</u>	1500 m			
5	Elevated Design, fabricate and install heavy duty hot-dip galvanized steel structure for outdoor units with stairs The outdoor units will be protected by protective fencing / guardrails, with access door Note: Elevated platforms shall be provided at 2 -3 different location / heights, as required by the existing site conditions and cooling – unit layout. <u>Steel Structure/Platform — Measurement and Payment:</u> The rate shall be quoted per square foot, and payment shall be made based on the actual area installed and accepted.	Approximate 200 ft ²			

BOQ for C&IT

Sr. No.	Equipment	Quantity	Unit Price without GST	GST	Total Price with GST
6	<u>Renovation and Development of HVAC DB Room</u> Complete renovation and development of the room designated for installation of the HVAC electrical distribution boards, including the following works: <u>Room Dimensions</u>: Approximate room dimensions: 13 ft × 17 ft. Final dimensions shall be verified at site. <u>Safety note</u>: Office workstations should not be installed inside an electrical DB room unless a properly separated working area is provided and the arrangement is approved under the applicable electrical and fire-safety requirements.				
a	<u>Dismantling and civil works</u>: Dismantling and removal of unwanted infrastructure, fixtures, fittings and debris, including safe disposal outside the premises. Complete wall and ceiling repairs, surface preparation and application of approved paint. The ceiling shall be finished with approved black paint. <u>Measurement and Payment</u>: The rate shall be quoted per square foot, and payment shall be made based on the actual area installed and accepted.	221 ft ²			

BOQ for C&IT					
Sr. No.	Equipment	Quantity	Unit Price without GST	GST	Total Price with GST
b	<u>False Ceiling Removal, Cable Management & High-Intensity Lighting from Corridor Area:</u> Removal of existing dumpa / false ceiling and black painting in the corridor area; rearrangement and proper dressing of exposed cables using suitable clips and conduits/piping; and supply and installation of suspended high-intensity 20x LED (2x2 ft or as approved) lights, including all necessary supports, Electrical wires, accessories, and connections. The open area will be closed with MS Sheets from the front.	7' x 64' = 448 ft ²			
d	<u>Fire-Rated Steel Door 7' x 4':</u> Supply and installation of an approved fire-rated steel door, complete with panic bar, door closer, locking arrangement, frame and all necessary hardware.	01			
e	<u>Air-Conditioning System:</u> Supply, installation, testing and commissioning of two 1.5 – ton inverter split air-conditioning units, including refrigerant piping, insulation, condensate drainage, power and control cabling, outdoor-unit mounting arrangements and all accessories.	02			
f	<u>Workstation Furniture:</u> Supply and installation of four office workstations, ergonomic chairs, storage credenza and all associated accessories.	04			

BOQ for C&IT					
Sr. No.	Equipment	Quantity	Unit Price without GST	GST	Total Price with GST
g	<u>Lighting and Electrical Works:</u> Supply, installation, testing and commissioning of the complete 10x LED 2x2 ft lighting system, including the lighting DB, circuit breakers, conduits, wiring, switches, earthing and associated accessories.	01 Job			
h	<u>Underground Cable Trenches:</u> Construction of underground cable trenches as required, including excavation, cable protection, backfilling and reinstatement of disturbed surfaces.				
i	<u>Space Availability:</u> The required space for the proposed HVAC DB room shall be provided by the C&IT Directorate.				
j	<u>Heavy-Duty Overhead Cable Ladder — Red / Orange:</u> Supply and install a minimum 600 mm (W) × 100 mm (D), 2 mm thick HDG cable ladder with an approved red / orange finish, suitable for 240–300 mm² heavy-gauge power cables. Include supports at maximum 1.5 m spacing, cable cleats, bends, couplers, earthing and accessories, with 20% spare capacity. Payment: Per running metre based on actual installed and accepted length. Final size must be confirmed from the cable quantity, outside diameter and approved routing layout.	700m			

BOQ for C&IT					
Sr. No.	Equipment	Quantity	Unit Price without GST	GST	Total Price with GST
7	Relocation / Modification of Existing DBs in UPS Room: <u>Note:</u> Refer to Scope of work Clause No. 1.a.viii	01 Job			
8	<u>Central Monitoring Workstation:</u> To ensure real-time monitoring of critical power, cooling and environmental parameters, including alarms for early fault detection and prevention of data centre downtime, an All-in-One monitoring workstation shall be provided with the following minimum specifications: ○ <u>Processor:</u> Intel Core Ultra 5 235 vPro (24 MB cache, 14 cores, 14 threads, 3.40 GHz to 5.00 GHz Turbo, 65 W) ○ <u>Operating System:</u> Windows 11 Home ○ <u>Memory:</u> 64 GB: 2 x 32 GB, DDR5,5600 MT/s, SoDIMM, dual-channel ○ <u>Storage:</u> 1 TB, M.2 2280, TLC PCIe Gen4 NVMe, SSD, Class 40 ○ <u>Graphics:</u> Integrated Graphics ○ Display: 23.8"1920x1080 FHD display ○ Wireless keyboard and mouse ○ Genuine licensed Microsoft Office	04			

BOQ for C&IT

Sr. No.	Equipment	Quantity	Unit Price without GST	GST	Total Price with GST
9	The Bidder shall provide hands-on foreign OEM training on the cooling and DCIM system for NADRA technical personnel. The training shall be conducted in OEM's premises or an authorized OEM training center, and all associated traveling, training, material, certification, travel, and accommodation costs shall be included in the Bid.	02			
10	Electrical Discrimination Study: The Contractor shall carry out a complete electrical discrimination / coordination study end to end (Transformer to Rack PDU) using ETAP or similar approved software and share the study.	01 Job			
11	DCIM: Supply of the central DCIM Server (with Dual Power Supply) items as per specification including all accessories complete in all respect. Including integration of existing installed infrastructure components	150 Nodes/devices			
12	Liebert Intellislot Unity Platform Card: supply, installation and commissioning of IntelliSlot Unity Platform Communication Card compatible to already installed Vertiv STS Part No. 2312186; Model UF – LTS16 – 1P	15 Pcs			

BOQ for C&IT					
Sr. No.	Equipment	Quantity	Unit Price without GST	GST	Total Price with GST
13	SLA / Warranty: The first year from the date of commissioning shall be covered under warranty. The 2nd and 3rd years, up to the end of February 2030, shall be covered under SLA. Note: The SLA rate shall be quoted on a per-month basis. Payment shall be made quarterly, subject to satisfactory completion of services and certification by NADRA. The SLA period shall commence upon expiry of the warranty period and shall remain valid until the end of February 2030. The Contractor shall carry out 12 quarterly Preventive Maintenance (PM) visits, as per the approved maintenance schedule.	Per month			

BOQ for NDW					
Sr. No.	Equipment	Quantity	Unit Price without GST	GST	Total Price with GST
Supply of the following items as per specifications including all accessories, complete in all respect.					
Note: Cooling units net sensible capacities are after detection of all tolerance and at 50°C ambient Condition. All purposed cooling unit should be compatible with the DCIM.					
1	DX Type InRow Unit (<u>without heater and humidifier</u>) 25 – 30 KW Net Sensible cooling capacity. The equipment shall comply with the technical requirements specified in Clause 3 (b) (vii) (a).	03			
2	DX Type InRow Unit (<u>with heater and humidifier</u>) 25 – 30 KW Net Sensible cooling capacity.	03			

BOQ for NDW					
Sr. No.	Equipment	Quantity	Unit Price without GST	GST	Total Price with GST
	The equipment shall comply with the technical requirements specified in Clause 3 (b) (vii) (b).				
3	DX Type Inrow Unit (with heater and humidifier) 40 – 45 KW Net Sensible cooling capacity. The equipment shall comply with the technical requirements specified in Clause 3 (b) (vii) (c).	02			
4	2x 630 KVA Transformers are already installed and in operation for C&IT, C&IT Load will be shifted to 800KVA Transformer and then Load of NDW will be transferred to 630 KVA Transformer. Pad / Foundation, Grounding, Labeling, Protections for transformers, Health Check Report, any maintenance if required. <u>Contractor shall perform complete load shifting</u>	01 Job			
5	<u>Electrical DBs for HVAC:</u> The contractor shall supply install test and commission complete Electrical Distribution floor mount with MCCB and CB (of Schneider / ABB) as approved SLD including enclosure, copper bus bars, breaker, energy analyzer, indication lamps, internal wiring cable termination and all accessories. The DB shall be 16 AWG MS Sheet degreased and de rusted, zinc phosphate, finished with electro static powder with 15-micron thickness with hinged door, neutral links with necessary holes, earthing of Door with buried Copper links, PVC Gland and with 20% space for future expansion requirement. Dimension and location will be finalized at the time of site survey. <u>Note: Cable Works — Measurement and Payment:</u> The rate shall be quoted per running meter, and payment shall be made based on the actual length of cable laid, tested and accepted.				
5 a	<u>Input Electrical Distribution Boards (DB):</u>	02			

BOQ for NDW					
Sr. No.	Equipment	Quantity	Unit Price without GST	GST	Total Price with GST
	800A 4P MCCB 50kA (Existing - From MOR Panels A & B)				
5 b	<u>HVAC Electrical Distribution Boards (DB):</u> 400A 4P MCCB 36kA 04 x 80A 3P MCCB 25kA (02 + 02 Spares) 16 x 40A 3P MCB 6kA (12 + 04 Spares) 04 x 32A 3P MCB 6kA (02 + 02 Spares) 04 x 20A 2P MCB 6kA (02 + 02 Spares)	02			
06	Power cable installation from Existing MOR Panels to NDW-HVAC-DBs - <u>240mm² 1 – Core, Cu / PVC / PVC</u> Make: Fast / Newage / Pakistan	450 m			
07	Earth cable installation from Existing earthing Panel to NDW-HVAC-DBs - <u>1C–120mm² Earth Cable.</u> Make: Fast / Newage / Pakistan	120 m			
08	Power cable installation from NDW-HVAC-DBs in Power Rooms to 40 – 45 KW In-row Cooling Units <u>16mm² 5 – Core, Cu / PVC / (3L+N+E)</u> Make: Fast / Newage / Pakistan	150 m			
09	Power cable installation from Medium-capacity Units Connection From NDW-HVAC DBs (6 new 25 – 30 KW units) <u>10mm² 5 – Core, Cu, PVC / PVC (3L+N+E)</u> Make: Fast / Newage / Pakistan	300 m			
10	Power cable installation from Indoor to outdoor Unit <u>6mm² 5 – Core, Cu, PVC / PVC (3L+N+E)</u>	150 m			

BOQ for NDW					
Sr. No.	Equipment	Quantity	Unit Price without GST	GST	Total Price with GST
	Make: Fast / Newage / Pakistan				
11	Power cable installation from Indoor to outdoor Unit <u>4mm² 5 – Core, Cu, PVC / PVC</u> Make: Fast / Newage / Pakistan	800 m			
12	Control cable installation from indoor to outdoor <u>1.5mm² 2 Core, CU, XLPE</u> Make: Fast / Newage / Pakistan	1200 m			
13	The Bidder shall provide hands-on foreign OEM training on the cooling and DCIM system for NADRA technical personnel. The training shall be conducted in OEM's premises or an authorized OEM training center, and all associated traveling, training, material, certification, travel, and accommodation costs shall be included in the Bid.	02			
14	SLA / Warranty: The first year from the date of commissioning shall be covered under warranty. The 2 nd and 3 rd years, up to the end of February 2030, shall be covered under SLA. Note: The SLA rate shall be quoted on a per-month basis. Payment shall be made quarterly, subject to satisfactory completion of services and certification by NADRA. The SLA period shall commence upon expiry of the warranty period and shall remain valid until the end of February 2030. The Contractor shall carry out 12 quarterly Preventive Maintenance (PM) visits, as per the approved maintenance schedule.	Per month			

INDICATIVE BOQ FOR EARTHING & GROUND WORKS

Sr.	Description	Unit	Qty / Basis	Unit Price without GST	GST	Total Price with GST
1	Existing Earthing & Electrical Protection Assessment	No.	4			
2	Earth Pit complete with electrode, chamber, cover & test link	No.	15 Min.			
3	Earth Grid/Ring & interconnection for 4 sites as required	No.	4			
4	PBB / Main Earthing Bar for 4 sites as required	Set	4			
5	TBC / TBB for 4 sites as required	Set	4			
6	SBB / SBC / BBC for 4 sites as required	Set	4			
7	Equipment & Rack Bonding for 4 sites as required	Set	4			
8	Cable Tray / Raised Floor / Metallic Infrastructure Bonding for 4 sites as required	Set	4			
9	SPD Type 1, 2 or 3 for 4 sites as required	Set	4			
10	Testing & Commissioning 4 sites	No.	4			
11	Independent Audit & Certification 4 sites	No.	4			
12	As-built Drawings & Test Reports 4 sites	No.	4			
13	Earth tester Fluke 1625 or equivalent	No.	4			

ANNEX 'G'

Technical Requirements: The vendor shall execute the complete scope on a turnkey basis, including assessment, engineering/design, supply of all materials, installation, integration with the existing electrical/Data Center infrastructure, testing, commissioning, rectification, independent certification and final handover. The vendor shall deliver a complete, tested and certified TN-S earthing, grounding, bonding and surge protection system for four sites DR Sargodha, DR Lahore, C&IT Data Center and NDW Data Center

Scope of Work:

Item	Specification
Assessment	Detailed site assessment, engineering/design and identification of deficiencies in existing earthing, grounding, bonding and electrical protection systems.
TN-S System	Verify and rectify the system to ensure a proper TN-S arrangement, with separate Neutral (N) and Protective Earth (PE) conductors and no unauthorized downstream N-PE bonding.
Earth Pits	Provide minimum 15 complete earth pits per site, including electrode, chamber, cover, test link and connections. Final quantity shall be based on approved design.
Earth Grid/Ring	Interconnect all earth electrodes through a properly designed earth grid/ring and connect to the Main Earthing Terminal/Main Earth Bar.
Bonding System	Provide PBB, TBC, TBB, SBB, SBC and BBC as required by the approved design and TIA-607-D.
Equipment & Rack Bonding	Bond UPS, generators, transformers, ATS, MDB/DBs, PDUs/RPPs, cable trays, raised floor, ICT racks and other metallic infrastructure.
Materials	Use high-conductivity copper/tinned copper bonding conductors; tin-plated electrolytic copper for bonding bars; copper-bonded steel or solid copper electrodes; tinned copper compression lugs/connectors; approved permanent/exothermic or irreversible compression connections.
Earth Pit Construction	Heavy-duty corrosion-resistant chamber/cover, approximately 24 × 24 inches or approved equivalent, with accessible test link and permanent identification.
SPD	Assess and provide coordinated SPD Type 1, Type 2 and Type 3 where required, compliant with IEC 61643.
Testing	Perform earth resistance, earth continuity, PE continuity, bonding continuity, N-PE separation and other required tests using calibrated instruments.
Standards	Comply with TIA-607-D, TIA-942, IEC 60364, IEC 61643 and applicable electrical safety standards.
Certification	Complete system shall be independently inspected/audited and certified against the approved design and applicable standards.

2. Indicative BOQ

Sr.	Description	Unit	Qty / Basis
1	Existing Earthing & Electrical Protection Assessment	No.	4
2	Earth Pit complete with electrode, chamber, cover & test link	No.	15 Min.

3	Earth Grid/Ring & interconnection for 4 sites as required	No.	4
4	PBB / Main Earthing Bar for 4 sites as required	Set	4
5	TBC / TBB for 4 sites as required	Set	4
6	SBB / SBC / BBC for 4 sites as required	Set	4
7	Equipment & Rack Bonding for 4 sites as required	Set	4
8	Cable Tray / Raised Floor / Metallic Infrastructure Bonding for 4 sites as required	Set	4
9	SPD Type 1, 2 or 3 for 4 sites as required	Set	4
10	Testing & Commissioning 4 sites	No.	4
11	Independent Audit & Certification 4 sites	No.	4
12	As-built Drawings & Test Reports 4 sites	No.	4
13	Earth tester Fluke 1625 or equivalent	No.	4

BOQ Note: Quantities are indicative. The vendor shall conduct a detailed site assessment and submit final quantities and complete material specifications required to achieve a compliant and fully functional TN-S earthing and bonding system. The complete scope shall be executed on a turnkey basis, including assessment, design, supply, installation, integration, testing, commissioning, certification and handover.