IRENA
International Renewable Energy Agency

Invitation to Bid
ITB/2017/033

Date: 26 November 2017

Dear Sir/Madam,

Subject: **Procurement of the supply, delivery, installation, configuration, commissioning and testing of computing and storage components.**

1. We hereby solicit your bid for the supply of following goods:

   Supply, delivery, installation, configuration, commissioning and testing of computing and storage components.

2. To enable you to submit a bid, please find enclosed:

Annex I. Instructions to Bidders	Annex V. Bid Submission Form
Annex II. Bid Data Sheet	Annex VI. Price Schedule
Annex III. General Terms and Conditions	Annex VII. Price Schedule Form
Annex IV. Technical Specifications	

3. Interested Bidders may obtain further information at the following address:

Contact Person:	Mina Vajsakovic, Associate Procurement Professional
Name of Office:	International Renewable Energy Agency ("IRENA" or "the Agency"))
Telephone:	+971 02 414 7143
E-Mail:	MVajsakovic@irena.org or procurement@irena.org

4. Bids must be delivered to bids@irena.org (this is a secure email and will be opened by a Committee) on or before **12 December 2017 by 15:00 United Arab Emirates time**. Late bids shall be rejected.

5. Bids will be opened in the presence of Bidders' Representatives, who chose to attend at the address, date and time indicated in the Bid Documents.

6. This letter is not to be construed in any way as an offer to contract with your firm.

Sincerely,

David Iyamah
Director of Administration and Management

IRENA
International Renewable Energy Agency

Annex I

INSTRUCTIONS TO BIDDERS

A. Introduction

1. **General**: IRENA invites Sealed Bids for the supply of goods to the Agency.

2. **Eligible Bidders**: Bidders must not be associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by IRENA to provide consulting services for the preparation of the design specifications, and other documents to be used for the procurement of goods to be purchased under this Invitation to Bid.

3. **Cost of Bid**: The Bidder shall bear all costs associated with the preparation and submission of the Bid, and IRENA will not be responsible or liable for those costs, regardless of the conduct or outcome of the solicitation.

B. Solicitation Documents

4. **Examination of Solicitation Documents**: The Bidder is expected to examine all instructions, forms, terms and specifications contained in the Solicitation Documents. Failure to comply with these documents will be at the Bidder's risk and may affect the evaluation of the Bid.

5. **Clarification of Solicitation Documents**: A prospective Bidder requiring any clarification of the Solicitation Documents may notify IRENA in writing. The response will be made in writing to any request for clarification of the Solicitation Documents that it receives earlier than two weeks prior to the Deadline for the Submission of Bids. Written copies of the response (including an explanation of the query but without identifying the source of inquiry) will be sent to all prospective Bidders that received the Solicitation Documents.

6. **Amendments of Solicitation Documents**: No later than two weeks prior to the Deadline for Submission of Bids, IRENA may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, amend the Solicitation Documents. All prospective Bidders that have received the Solicitation Documents will be notified in writing of any amendments. In order to afford prospective Bidders reasonable time in which to take the amendments into account in preparing their offers, IRENA may, at its discretion, extend the Deadline for the Submission of Bids.

C. Preparation of Bids

7. **Language of the Bid**: The Bid prepared by the Bidder and all correspondence and documents relating to the Bid exchanged by the Bidder and IRENA shall be written in the language indicated on the Bid Data Sheet.

8. Documents Comprising the Bid:

The Bid must comprise the following documents:

(a) a Bid Submission form;
(b) a Price Schedule completed in accordance with the Annexes IV, VI and VII and clause 11 of Instructions to Bidders;
(c) documentary evidence established in accordance with clause 9 of Instructions to Bidders that the Bidder is eligible to and is qualified to perform the contract if its Bid is accepted,
(d) documentary evidence established in accordance with clause 10 of Instructions to Bidders that the goods and ancillary services to be supplied by the Bidder are eligible goods and services and conform to the Bidding Documents;

9. Documents Establishing Bidder's Eligibility and Qualifications:

The Bidder shall furnish evidence of its status as qualified Supplier. The documentary evidence of the Bidder's qualifications to perform the contract if its Bid is accepted shall be established to IRENA's satisfaction:

(a) that, in the case of a Bidder offering to supply goods under the contract which the Bidder did not manufacture or otherwise produce, the Bidder has been duly authorised by the goods' manufacturer or producer to supply the goods in the country of final destination.
(b) that the Bidder has the financial, technical, and production capability necessary to perform the contract.

10. Documents Establishing Goods' Conformity to Bidding Documents:

The Bidder shall also furnish as part of its Bid, documents establishing the conformity to the Bidding Documents of all goods and related services which the Bidder proposes to supply under the contract.

The documentary evidence of conformity to the Bidding Documents may be in the form of literature, drawings, and data, and shall consist of:

(a) A detailed description of the essential technical and performance characteristics of the goods;

(b) A list giving full particulars, including available sources and current prices of spare parts, special tools, etc, necessary for the proper and continuing functioning of the goods for a period to be specified in the Bid Data Sheet, following commencement of the use of the goods.

11. **Bid Currencies/Bid Prices**: All prices shall be quoted in US dollars or any freely convertible currency. The Bidder shall indicate on the appropriate Price Schedule the unit prices (where applicable) and total Bid Price of the goods it proposes to supply under the contract.

12. **Period of Validity of Bids**: Bids shall remain valid for 120 days after the date of Bid Submission prescribed by IRENA pursuant to clause 16 of Instructions to Bidders. A Bid valid for a shorter period may be rejected as non-responsive pursuant to clause 20 of Instructions to Bidders. In exceptional circumstances, IRENA may solicit the Bidder's consent to an extension of the period of validity. The

request and the responses thereto shall be made in writing. Bidders granting the request will not be required nor permitted to modify their Bids.

13. **Bid Security**:

(a) If required the Bidder shall furnish as part of its Bid a Bid Security to IRENA in the amount of 5 % of the Offer Value.

(b) The Bid Security is to protect IRENA against the risk of the Bidder's conduct which would warrant the security's forfeiture, pursuant to Clause 13(g) below.

(c) The Bid Security shall be denominated in the currency of the Purchase Order or in a freely convertible currency and shall be in one of the following forms:

i. bank guarantee or irrevocable letter of credit, that is acceptable to IRENA.
ii. Cashier's cheque, or certified cheque.

(d) Any Bid not secured in accordance with Clauses 13 a) and 13 c) above will be rejected by IRENA as non-responsive pursuant to clause 20 of Instructions to Bidders.

(e) Unsuccessful Bidder Bid Security will be discharged or returned as promptly as possible but not later than thirty (30) days after the expiration of the period of Bid Validity prescribed by IRENA pursuant to clause 12 of Instructions to Bidders.

(f) The successful Bidder's Bid Security will be discharged or returned upon the Bidder signing the Purchase Order, pursuant to clause 26 of Instructions to Bidders, and furnishing the Performance Security, pursuant to clause 27 of Instructions to Bidders.

(g) The Bid Security may be forfeited:

1) If a Bidder withdraws its offer during the period of the Bid Validity specified by the Bidder on the Bid Submission Form, or,

2) In the case of a successful Bidder, if the Bidder fails:

i. to sign the Purchase Order in accordance with Clause 26 of Instructions to Bidders, or

ii. to furnish Performance Security in accordance with Clause 27 of Instructions to Bidders.

D. Submission of Bids

14. **Format and Signing of Bid**: The Bidder shall prepare two copies of the Bid, clearly marking each "Original Bid" and "Copy of Bid" as appropriate. In the event of any discrepancy between them, the original shall govern. The two copies of the Bid shall be typed or written in indelible ink and shall be signed by the Bidder or a person or persons duly authorised to bind the Bidder to the contract. A Bid shall contain no interlineations, erasures, or overwriting except, as necessary to correct errors made by the Bidder, in which case such corrections shall be initialed by the person or persons signing the bid.

15. **Sealing and Marking of Bids**:

15.1 The Bidder shall seal the original and each copy of the Bid in separate envelopes, duly marking the envelopes as "ORIGINAL" and "COPY". The envelopes shall then be sealed in an outer envelope.

15.2 The inner and outer envelopes shall:

(a) be addressed to IRENA at the address given in section I of these Solicitation Documents; and
(b) make reference to the "subject" indicated in section I of these Solicitation Documents, and a statement: "DO NOT OPEN BEFORE", to be completed with the time and the date specified in section I of these Solicitation Documents for Bid Opening pursuant to clause 16 of Instructions to Bidders.

15.3 The inner and outer envelopes shall also indicate the name and address of the Bidder to enable the Bid to be returned unopened in case it is declared "late".

15.4 If the outer envelope is not sealed and marked as required by clause 15.2 of Instructions to Bidders, IRENA will assume no responsibility for the Bid's misplacement or premature opening.

16. **Deadline for Submission of Bids/Late Bids**:

16.1 Bids must be delivered to the office on or before the date and time specified in section I of these Solicitation Documents.

16.2 IRENA may, at its discretion, extend this deadline for the submission of the bids by amending the Bidding Documents in accordance with clause 6 of Instructions to Bidders, in which case all rights and obligations of IRENA and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

16 3 Any Bid received by IRENA after the Deadline for Submission of Bids will be rejected and returned unopened to the Bidder.

17. **Modification and Withdrawal of Bids**: The Bidder may withdraw its Bid after submission, provided that written notice of the withdrawal is received by IRENA prior to the deadline for submission. No Bid may be modified after passing of the Deadline for Submission of Bids. No Bid may be withdrawn in the interval between the Deadline for Submission of Bids and the expiration of the Period of Bid Validity.

E. Opening and Evaluation of Bids

18. **Opening of Bids**:

18.1 IRENA will open all Bids in the presence of Bidders' Representatives who choose to attend, at the time, on the date, and at the place specified in section I of this Solicitation Document. The Bidders' Representatives who are present shall sign a register evidencing their attendance.

18.2 The bidders' names, Bid Modifications timely made in accordance with Clause 17 or withdrawals, bid Prices, discounts, and the presence or absence of requisite Bid Security and such other details as

IRENA, at its discretion, may consider appropriate, will be announced at the opening. No Bid shall be rejected at Bid Opening, except for Late Bids, which shall be returned unopened to the Bidder pursuant to clause 20 of Instructions to Bidders.

18.3 Bids (and modifications sent pursuant to clause 17 of Instructions to Bidders) that are not opened and read out at Bid Opening shall not be considered further for evaluation, irrespective of the circumstances. Withdrawn Bids will be returned unopened to the Bidders.

18.4 IRENA will prepare minutes of the Bid Opening.

19. **Clarification of Bids**: To assist in the examination, evaluation and comparison of Bids IRENA may at its discretion ask the Bidder for clarification of its Bid. The request for clarification and the response shall be in writing and no change in price or substance of the Bid shall be sought, offered or permitted.

20. **Preliminary Examination**:

20.1 Prior to the detailed evaluation, IRENA will determine the substantial responsiveness of each Bid to the Invitation to Bid (ITB). A substantially responsive Bid is one which conforms to all the terms and conditions of the ITB without material deviations.

20.2 IRENA will examine the bids to determine whether they are complete, whether any computational errors have been made, whether the documents have been properly signed, and whether the bids are generally in order.

20.3 Arithmetical errors will be rectified on the following basis: If there is a discrepancy between the 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. If the Bidder does not accept the correction of errors, its Bid will be rejected. If there is a discrepancy between words and figures the amount in words will prevail.

20.4 A Bid determined as not substantially responsive will be rejected by IRENA and may not subsequently be made responsive by the Bidder by correction of the non-conformity.

21. **Conversion to Single Currency**: To facilitate evaluation and comparison, IRENA will convert all Bid Prices expressed in the amounts in various currencies in which the Bid Prices are payable to US dollars at the official IRENA exchange rate on the last day for Submission of Bids.

22. **Evaluation of Bids**: Determination of compliance with the Solicitation Documents is based on the content of the Bid itself without recourse to extrinsic evidence.

Evaluation Criteria	
1.1	Compliance with pricing conditions set in the ITB.
1.2	Compliance with requirements and specifications relating to technical design features or the product's ability to satisfy functional requirements, including the supply, delivery, installations, configuration, commissioning, testing and post-warranty.
1.3	Compliance with General Conditions specified by these Solicitation Documents.

1.4	Compliance with delivery locations (Abu Dhabi, UAE or Bonn, Germany).
1.5	Demonstrated ability to comply with critical provisions such as execution of the Purchase Order by honoring the tax-free status of IRENA in Germany and the UAE.
1.6	Demonstrated ability to honor important responsibilities and liabilities allocated to Supplier in this ITB (e.g. performance guarantees, warranties, or insurance coverage, etc).
1.7	Proof of after-sales service capacity and appropriateness of service network.
1.8	The partner shall provide detailed project plan in MS project aligned with IRENA ICT Team high-level project plan.
1.9	The vendor shall provide a testing project plan to be aligned with IRENA's ICT Team's specifications and requirements outlined in this document.
1.10	Delivery Note should have serial number of all delivered items (not the part number).
1.11	Hardware installation including racking, cabling and tagging of the servers and switches covering FC, power.
1.12	Initial setup for the installed systems covering basic configuration for Storage system, SAN switches and servers. FW upgrades, time zoning, power on self-test for the servers.
1.13	Creating disk arrays, pools, hosts and host groups. Create host mapping and SAN zoning.
1.14	SAN zoning: New zones will be created between new storage system and new hosts based on best practice. To expedite migration process from existing storage we will connect the new storage on the existing switches also and do the storage migration.
1.15	Installing SQL servers on and "as and when required" basis.
1.16	Migration of servers along with the services such as File Server, Active Directory, Skype for Business, existing Hyper-V VMs and shall be installed to the new infrastructure
1.17	Full documentation & handover shall be provided after implementation.
1.18	The vendor shall provide CVs of all personnel and IT technicians proposed to work on the project.
1.19	The submitted companies shall have partnership with the vendors (HPE, Dell, EMC, Lenovo, Brocade and IBM) , partner level should be as follows: a) Silver or Gold partner or Higher (equivalent) partnership are also accepted), the vendor should submit the Partnership Certification with the vendor

F. Award of Contract

23. **Award Criteria**: IRENA will Issue the Purchase Order to the lowest priced technically qualified Bidder. IRENA reserves the right to accept or reject any Bid, to annul the solicitation process and reject all Bids at any time prior to award of purchase order, without thereby incurring any liability to the affected Bidder(s) or any obligation to provide information on the grounds for IRENA's action.

24. **IRENA's Right to Vary Requirements at Time of Award**: IRENA reserves the right at the time of making the award of contract to increase or decrease by up to 15 % the quantity of goods specified in the Schedule of Requirements without any change in unit price or other terms and conditions.

25. **Notification of Award**: Prior to the expiration of the period of Bid Validity, IRENA will send the successful Bidder the Purchase Order. The Purchase Order may only be accepted by the Supplier's signing and returning an acknowledgement copy of it or by timely delivery of the goods in accordance with the terms of this purchase order, as herein specified. Acceptance of this Purchase Order shall effect a contract between the parties under which the rights and obligations of the parties shall be governed solely by the terms and conditions of this purchase order.

26. **Signing of the Purchase Order**: Within 7 days of receipt of the Purchase Order the successful Bidder shall sign, date and return it to IRENA.
27. **Performance Security**: The successful Bidder shall provide the Performance Security as Cashier's cheque, or certified cheque.

28. Failure of the successful Bidder to comply with the requirement of clause 26 or clause 27 of Instructions to Bidders shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security, in which event IRENA may make the award to the next lowest evaluated Bidder or call for new Bids.

Annex II

BID DATA SHEET

The following specific data for the goods to be procured shall complement, supplement, or amend the provisions in the Instruction to Bidders. Whenever there is a conflict, the provisions herein shall prevail over those in the Instructions to Bidders.

Relevant clause(s) of Instruction to Bidders	Specific data complementing, supplementing, or amending instructions to Bidders		
Language of the Bid	x English ☐ French ☐ Spanish ☐ If others, specify.....		
Bid Price	The prices quoted shall be as per following INCOTERMS 2000 and place: ☐ FOB ☐ FCA ☐ CPT x DDU ☐ Other..... Place: Bonn, Federal republic of Germany **OR** Abu Dhabi, United Arab Emirates		
Documents Establishing Bidder's Eligibility & Qualifications	x Required. ☐ Not required.		
Bid Validity Period.	x 120 days ☐ If different, please specify.....		
Bid Security	☐ Required. x Not required.		
Preliminary Examination – completeness of bid.	☐ Partial bids permitted. x Partial bids not permitted.		
IRENA's Right to Vary Requirements at Time of Award	x 15 percent increase or decrease remain unchanged.	☐ Condition waived	☐ Condition applies but change limit to ..... percent.
Compliance with any other clause required?	☐ No. ☐ If yes, specify:		
	(When required this space may also be used to enter a modified version of any of the above data.)		

Annex III

General Terms and Conditions - Goods

THIS PURCHASE ORDER MAY ONLY BE ACCEPTED BY THE SUPPLIER'S SIGNING AND RETURNING AN ACKNOWLEDGEMENT COPY OF IT OR BY TIMELY DELIVERY OF THE GOODS IN ACCORDANCE WITH THE TERMS OF THIS PURCHASE ORDER, AS SPECIFIED HEREIN. ACCEPTANCE OF THIS PURCHASE ORDER SHALL CONSTITUTE A CONTRACT BETWEEN THE SUPPLIER AND THE AGENCY UNDER WHICH THE RIGHTS AND OBLIGATIONS OF BOTH PARTIES SHALL BE GOVERNED SOLELY BY THE TERMS AND CONDITIONS OF THIS PURCHASE ORDER, INCLUDING THESE GENERAL CONDITIONS. NO ADDITIONAL PROVISION PROPOSED BY THE SUPPLIER SHALL BIND THE AGENCY UNLESS AGREED TO IN WRITING BY A DULY AUTHORIZED OFFICIAL OF THE AGENCY.

GENERAL CONDITIONS

1. PAYMENT

(a) The Agency shall make payment within 30 days of receipt of (i) the goods and (ii) the invoice for the goods and other documents, as specified in this Purchase Order, whichever, (a) or (b) arrives later.

(b) Unless authorized by the Agency, the Supplier shall submit one invoice in respect of this Purchase Order, and such invoice must indicate the Purchase Order identification number.

(c) The prices shown in this Purchase Order may not be increased except by express written agreement of the Agency. The Agency will not pay any charge for late payment unless expressly agreed to in writing.

(d) The Agency shall have a reasonable time after delivery of the goods to inspect them and to reject and refuse acceptance of goods not conforming to this Purchase Order; payment for goods pursuant to this Purchase Order shall not be deemed an acceptance of the goods.

2. RISK OF LOSS

Risk of loss, injury or destruction to the goods shall be borne by the supplier until physical delivery of the goods has been completed in accordance with this Purchase Order.

3. EXPORT LICENSE

If required, the Supplier shall obtain any export license or licenses for the goods.

4. WARRANTIES

(a) The Supplier warrants that the goods, including packaging, conform to the specifications for the goods ordered under this Purchase Order and are fit for the purposes for which such goods are ordinarily used and for purposes expressly made known to the Supplier by the Agency, and are free

from defects in workmanship and materials. The Supplier also warrants that the goods are contained or packaged adequately to protect the goods.

(b) If the Supplier is not the original manufacturer of the goods, the Supplier shall provide the Agency with the benefit of all manufacturer's warranties.

4. INTELLECTUAL PROPERTY INFRINGEMENT

The Supplier warrants that the use or supply by the Agency of the goods sold under this Purchase Order does not infringe any patent, design, trade-name or trade-mark. In addition, the Supplier shall, pursuant to this warranty indemnify, defend and hold the Agency harmless from any action or claim brought against the Agency pertaining to the alleged infringement of a patent, design, trade-name or trade-mark arising in connection with the goods sold under this Purchase Order.

5. LATE DELIVERY

Without limiting any other rights or obligations of the parties hereunder, if the Supplier will be unable to deliver the goods by the delivery date(s) stipulated in this Purchase Order, the Supplier shall (i) immediately consult with the Agency to determine the most expeditious means for delivering the goods and (ii) use an expedited means of delivery, at the Supplier's cost, if reasonably so requested by the Agency.

7. RIGHTS OF THE AGENCY

In case of failure by the Supplier to fulfil its obligations under this Purchase Order, the Agency may, after giving the Supplier reasonable notice to perform and without prejudice to any other rights or remedies, exercise one or more of the following rights:

(a) Procure all or part of the goods from other sources, in which event the Agency may hold the Supplier responsible for any excess cost occasioned thereby;

(b) Refuse to accept the delivery of all or parts of the goods;

(c) Cancel this Purchase Order without any liability for termination charges or any other liability of any kind of the Agency.

6. ASSIGNMENT AND INSOLVENCY

(a) The Supplier shall not assign, transfer, pledge or make other disposition of this Purchase Order or any part thereof, or any of the Supplier's rights, claims or obligations under this Purchase Order except with the prior written consent of the Agency.

(b) Should the Supplier become insolvent or should control of the Supplier change by virtue of insolvency, the Agency may, without prejudice to any other rights or remedies, immediately terminate this Purchase Order by giving the Supplier written notice of termination.

7. OFFICIALS NOT TO BENEFIT

The Supplier warrants that it has not and shall not offer any direct or indirect benefit arising from or related to this Purchase Order or the award thereof to any official or employee of the Agency.

8. USE OF NAME, EMBLEM, OR OFFICIAL SEAL OF THE AGENCY

The Supplier shall not advertise or otherwise make public for purposes of commercial advantage that it is a Supplier of the Agency, nor shall the Supplier, in any manner whatsoever, use the name, emblem or official seal of the Agency or any abbreviation of the name of the International Renewable Energy Agency in connection with its business or otherwise, without the prior written permission by the Agency.

9. SETTLEMENT OF DISPUTES

Any controversy or claim arising out of this Purchase Order, or any breach thereof, shall unless it is settled amicably by direct negotiations, be referred to arbitration in accordance with the UNCITRAL Arbitration Rules as at present in force. The arbitral tribunal shall take into account the internationally recognized general principles of commercial transactions and shall have no authority to award punitive damages. The Parties shall be bound by any arbitration award rendered as a result of such arbitration as the final adjudication of any such controversy or claim.

10. PRIVILEGES AND IMMUNITIES

Nothing in or relating to this Purchase Order shall be deemed a waiver, express or implied, of any of the privileges and immunities of the Agency.

Annex IV

TECHNICAL SPECIFICATIONS

Full specifications are attached as a separate Annex to this document. Please refer to the document for a detailed narrative on requirements.

IRENA
International Renewable Energy Agency

ANNEX IV

Revamping of Bonn infrastructure: Computing & Storage Detailed Specification Document

Background

The International Renewable Energy Agency (IRENA) is in the process of revamping its current IT infrastructure in Bonn Office (Germany). In being able to facilitate the increasing number of staff members and volume of work generated from year to year and in line with its continual efforts to modernize its tools and systems, restructuring the internal IT hardware / software resources has become a priority. This document is related to the computing and storage component. Work to be carried out in IRENA's office in Bonn, Germany.

This document divided into three Sections as follows:

1) Summary of scenarios for quoting
2) Technical Specifications for different items
3) SOW & Project deliveries

1. N.B. Please note that sections in this document are inter-related and to be read in reference of each other in being able to provide an accurate quote.

IRENA
International Renewable Energy Agency

2. Summary of scenarios for quoting:

IRENA IT has identified four (4) different scenarios in Table 1 below. Each of the four scenarios shall be treated as a separate proposals and independent of each other. IRENA IT shall review all proposals and choose a scenario which is most in line with IRENA needs and requirements.

Please quote separately for each scenario of Hyper-V Servers as mentioned in section (a.1) or (a.2). Rack Mount Server Standalone (skype for business and domain controller are available in section (d) and (e)) are required for all scenarios. Detailed technical specification of computing and External Shared Storage Vault and SAN Switch are available in section (b) and (c), Please note the total number of Hyper-V nodes required for each scenario is mentioned in each line. This is the case for SAN switch and storage ports which varie according to the scenario.

Table 1 – Independent implementation scenarios

Scenarios	Total number of Nodes	Rack Mount Servers with a role of Hyper-V	Storage SAN switch	External Shared Storage	External Shared Storage Ports	Rack Mount Server Standalone *Skype for Business*	Rack Mount Server Standalone Domain Controller
1	2	Nodes [Rack Mount Servers with a role of Hyper-V Environment]	N/A	YES	Including 4 Ports or Above	YES	YES
2	3	Nodes [Rack Mount Servers with a role of Hyper-V Environment]	N/A	YES	Including 8 Ports	YES	YES
3	3	Nodes [Rack Mount Servers with a role of Hyper-V Environment]	YES	YES	Including 4 Ports or above	YES	YES
4	3	Nodes Internal [Rack Mount Medium Aspect Nutanix Servers with a role of Hyper-V]	N/A	N/A	With Internal Shared Storage	YES	YES

3. Technical Specifications for specific items identified in Table 1

N.B. Numbers specified in this section shall correspond to the individual sections to follow

a.1) Rack Mount Servers with a role of Hyper-V (required for Scenario 1, Scenario 2 and Scenario 3) – ***please refer to full specifications below***

a.2) Rack Mount Medium Aspect Nutanix Servers with a role of Hyper-V (only required for Scenario 4) – ***please refer to full specifications below.***

b) Storage SAN switch (only required for Scenario 3) to provide a quote based on the number of Hyper-V nodes specified – ***please refer to full specifications below***

c) External Shared Storage (required for Scenario 1, Scenario 2 and Scenario 3) "optional to quote based on the no. of Hyper-V nodes, ***please refer to above scenarios"***

d) Rack Mount Server Standalone of Skype for Business (required for all four scenarios)

e) Rack Mount Server Standalone of Domain Controller (required for all four scenarios)

a.1) Rack Mount Servers with a role of Hyper-V (required for Scenario 1, Scenario 2 and Scenario 3)

- ✓ RAM: 128GB
- ✓ Processor
  - Core: 16 Quad
  - 64-bit processor with second-level address translation (SLAT)
  - Frequency: 2.4 (GHz) or higher.
  - Version: V5 or optionally quote V4
  - Brand: Intel
  - Cash: 25 MB
- ✓ Internal disk
  - Size: 300 GB
  - Number:2
  - RPM:10000 RPM or higher
  - Type: SAS
  - smart array controller with cache
- ✓ Network
  - 4-port 1GB embedded
  - Min 2x10 Gbps (External fiber) or Max 4x10 Gbps (External fiber)
- ✓ Storage
  - 16GB FC HBA to be connected to SAN Storage
- ✓ Rack Space
  - 1-2 Rack Units

- o Contract Support for all servers: 3 Years
- o To include: Power Cord – C13 C14 for all servers
- o Scalability: Provided solution should be scalable for future needs
- o Operating Systems: Servers should support Windows server 2008, 2012 & 2016
- o Please refer to SOW & Project Deliveries for more details about project

a.2) Rack Mount Medium Aspect Nutanix Servers with a role of Hyper-(only required for Scenario 4)

Nutanix Hardware Platform
Based on 3 x NX-1365-G5 - 3 nodes
PRO licenses Valid for life of device
3 years 24x7 production support

Nutanix Hardware Platform

1. **NX-1365-G5, 3 Node**

Nutanix Software

1. **Foundation - Hypervisor Agnostic Installer**
2. **Controller VM**
3. **Prism Starter Management**
4. **Acropolis Starter License Entitlement**

Resources:

- ✓ **2x Intel Xeon Processor 2.1GHz 8-core Broadwell E5-2620 v4 20M Cache**
- ✓ **8x 16GB DDR4 Memory Module**
- ✓ **2x 4TB 3.5" HDD**
- ✓ **1x 960GB 3.5" SSD**
- ✓ **1x 10GbE Dual SFP+ Network Adapter**
- ✓ **3YR Production System support for NutanixNX-1065-G5**
- ✓ **License, 3YR PRO entitlement for NX-1065-G5**
- ✓ **2x Cable 5m SFP+ to SFP+**

- Contract Support for all servers: 3 Years
- To include: Power Cord – C13 C14 for all servers
- Scalability: Provided solution should be scalable for future needs
- Operating Systems: Servers should support Windows server 2008, 2012 & 2016
- Please refer to SOW & Project Deliveries for more details about project

b) Storage SAN switch (only required for *Scenario 3*) to provide a quote based on the number of Hyper-V nodes specified

Hyper-v Servers shall be connected to Storage pool through Storage SAN switches for high availability

Item	Descriptiom	Quantity
DS- 6505-B with 12 ports active FC SAN, 16G		
SYSTEM	CONNECTRIX B-SERIES SOLUTION	
DS-6505R-B	DS-6505R-B 12P/24P 16GB RTF BASE SWITCH To include: Power Cord – C13 C14	2
DS6510-RCKMNT	DS-6510-B RACK MOUNT KIT	2
C13-PWR-5	2 C13 PWRCORDS W/ BSI 1363 250V 10A	2
W-ENHHW-001	ENHANCED HARDWARE WARRANTY	1
WU-PREHW-001	PREMIUM HARDWARE SUPPORT - WARR UPG	1
PSINST-ESRS	ESRS INSTALL	1

- ✓ Training: Two seats for SAN Switches technology
- ✓ SOW: implementation, configuration and Documentation of SAN switches
- ✓ Contract Support for Storage SAN Switches: 3 Years
- ✓ Please refer to SOW & Project Deliveries for more details about project

c) External Shared Storage "optional to quote based on the no. of Hyper-V nodes, please refer to above scenarios"

I. Availability

- Must be designed to deliver Proven Five 9s availability (99.999%)
- Must deliver consistent predictable steady state performance
- Must keep write cache persistent during controller failure to prevent performance degradation

II. Functionality

- Providing native Block storage capabilities with support for FC, iSCSI
- System must be able to dynamically optimize data placement across not less than 3 tiers of data storage (e.g. Flash, SAS, and NL-SAS) based on user policy and on a Sub-LUN level (Auto-Tiering)
- System must be able to provision Flash SSD capacity as a storage tier inside storage pools
- Auto-tiering functionality must allow for customizable monitoring cycles
- Must have continuous auto-tiering functionality with no specific scheduled time to operate. 24 hours interval of Data movement is not acceptable
- Auto-Tiering capability must be able to dynamically prioritize workloads for QoS
- Must provide QoS Management on an application-level
- Must provide end-to-end virtualization support that provides VMware/MS Hyper-V administrators a view into storage resources and allows storage administrators to see the virtual server infrastructure
- Must provide all-inclusive Software Licenses for Local/Remote File/Block replication, Auto-Tiering and extended SSD caching for open capacity

III. Scalability

- Must be able to scale up to 5 Petabyte RAW in a single dual-controller system with up to 1000 disk drives after Data-in-Place upgrade
- Must support upgrade of hardware resources as capacity of the system grows. Which means port count, CPU speed, and cache size must be able to be upgraded as storage capacity increases
- The solution must support 3rd generation SAS 12Gb/s drive connectivity and must be able to support all on-line data storage tiers in order to maximize both system performance and capacity scalability.
- Must be able to provide additional connectivity to meet existing or future needs for front end port counts and future technologies through hot-pluggable IO modules
- Must allow capacity upgrade without any additional Software Licenses

IV. Performance

- Must be based on Dual Active/Active Storage Controllers architecture
- Must implement a full 64-bit Operating System using advanced multi-core Intel and multi-lane SAS-3 12Gb/s Backend Bus Technology (Ethernet protocol is not accepted for backend data traffic)
- Must have the ability to absorb spikes in both read and write workloads by providing an extended global cache solution over SSDs that must also avoid re-warming the cache on failover.
- Must support extended SSD caching that allows Online Expand/Shrink of SSD cache capacity
- Must be built on Multi-Core Optimization Technology that effectively stripes array-tasks across ALL available CPU cores in the system and vastly improves performance scaling and platform efficiency
- Must provide native replication capability that should be performed by both storage controllers for better replication performance
- Must support SSD caching that is read & write enabled

V. Data Integrity

- The system must ensure data integrity is maintained at all times end-to-end
- The platform should implement a no single point of failure (SPOF) architecture model
- Must include cache de-stage, dedicated cache mirroring channels, proactive sparing and automatic high-speed failover to ensure zero data loss
- Array must have the optimal quantity of global hot spare disks as recommended by the manufacturer (in addition to the usable capacity)

VI. Flexibility

- Must be future connectivity ready
- The system should support the following drives:
- 200GB, 400GB, 800GB, 1.6TB and 3.2TB Flash SSD
- 600GB SAS 15K rpm HDD
- 600GB, 1.2TB and 1.8TB SAS 10K rpm HDD
- 2TB, 4TB and 6TB NL-SAS 7.2K rpm HDD
- The solution should provide flexible RAID configuration options like RAID 0/1, 5, 6
- Must support a virtual appliance model with limited capabilities that is able to replicate Block Data to full physical storage model

VII. Security

- Must provide multiple levels of access control including role-based security and auditing capability.
- Must support Data at Rest Encryption at Storage Controller Level for Block storage

VIII. Management

- Must provide active system management and user-directed control of system resources.
- Provide management control of SNMP, email, and phone home notification.
- Must be able to discover and monitor virtual machines.

IX. Replication and Snapshot Support (from same storage vendor)

- Must support Replication Technology that provides dynamic adaptive Sync-Asynch replication based on latency and throughput policies leading to enhanced DR functionality and flexibility

Configuration Specifications: Storage to be configured as follows

Dual Controller
Dual Power Supplies
CPU per Array: 2 x Intel 6-core, 1.6GHz
Memory per Array: 48 GB
supports 25 disk trays (2U) and 15 disk trays (3U)

Storage ports: HBA 8 or 4 ports (2 or 4 ports per controller)

4 x 600GB 10K as Vault
15 x 1.8TB10K based on RAID5(4+1) providing 19.34TB usable + 1 Hot Spare
2 x 200GB SSD Disks for SSD Caching (Read & Write) + 1 Hot Spare
16GB FC redundant connectivity modules
Total Rack Space: 2U

- ✓ Training: Two seats for storage technology
- ✓ SOW: implementation, configuration and Documentation of the storage
- ✓ Contract Support for Storage Vault: 3 Years
- ✓ Please refer to SOW & Project Deliveries for more details about project

d) Rack Mount Server Standalone of Skype for Business (required for all four scenarios)

- ✓ RAM: 32 GB

- ✓ Processor
  - Core: 4
  - Frequency: 2.4 (GHz) or higher.
  - Version: V5 or optionally quote V4
  - Brand: Intel
  - Cash: 25 MB

- ✓ Internal disk
  - Size: 500GB
  - Number:2
  - Type: SSD
  - Smart array controller with cache

- ✓ Network
  - 4-port 1GB embedded
  - 2x1 Gbps (copper)

- ✓ Rack Space
  - 1 Rack Unit

- Contract Support for all servers: 3 Years
- To include: Power Cord – C13 C14 for all servers
- Operating Systems: Servers should support Windows server 2008, 2012 & 2016
- Please refer to SOW & Project Deliveries for more details about project

e) Rack Mount Server Standalone of Domain Controller (required for all four scenarios)

- ✓ RAM: 32 GB
- ✓ Processor
  - Core: 4
  - Frequency: 2.4 (GHz) or higher.
  - Version: V5 or optionally quote V4
  - Brand: Intel
  - Cash: 25 MB
- ✓ Internal disk
  - Size: 500GB
  - Number:2
  - Type: SSD
  - Smart array controller with cache
- ✓ Network
  - 4-port 1GB embedded
  - 2x1 Gbps (copper)
- ✓ Rack Space
  - 1 Rack Unit

- Contract Support for all servers: 3 Years
- To include: Power Cord – C13 C14 for all servers
- Operating Systems: Servers should support Windows server 2008, 2012 & 2016
- Please refer to SOW & Project Deliveries for more details about project

3) SOW & Project deliveries to be confirmed as part of mandatory requirements

1. Following the bid award, the partner shall provide detailed project plan in MS project aligned with IRENA high-level project plan.

2. The vendor shall provide a testing project plan to be alighed with IRENA's ICT Team's specifications and requirements outlined in this document

3. Hardware BOQ validation.
    a. Delivery Note shall have a serial number of all delivered items (not the part number)

4. Installation, configuration, migration and testing services shall include:

    a. Hardware installation including racking, cabling and tagging of the servers and switches covering FC, power.

    b. Initial setup for the installed systems covering basic configuration for Storage system, SAN switches and servers. FW upgrades, time zoning, power on self-test for the servers.

    c. Creating disk arrays, pools, hosts and host groups. Create host mapping and SAN zoning.

    d. **SAN zoning:** New zones will be created between new storage system and new hosts based on best practice. To expedite migration process from existing storage we will connect the new storage on the existing switches also and do the storage migration.

    e. Installing SQL servers on and "as and when required" basis

    f. Migration of servers along with the services such as File Server, Active Directory, Skype for Business, existing Hyper-V VMs and shall be installed to the new infrastructure

5. Full documentation & handover shall be provided after implementation, including updated Visio diagrams

6. The vendor shall provide CVs of all personnel and IT technicians proposed to work on the project.

7. The submitted companies shall have partnership with the vendors (HPE, Dell, EMC, Lenovo, Brocade and IBM) , partner level should be as follows:

    a) Silver or Gold partner or Higher (equivalent) partnership are also accepted), the vendor should submit the Partnership Certification with the vendor

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<u>**Annex V**</u>

BID SUBMISSION FORM – Must be completed and returned as part of the submission

To: The procuring entity

Dear Sir / Madam,

Having examined the Bidding Documents, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to supply, deliver, install, configure, commission and test network and security components in conformity with the said bidding documents for the sum of :

A) Option 1 – Delivery to Abu Dhabi, UAE – USD $ ……………..

B) Option 2 – Delivery to Bonn, Germany – USD $ ……………

as may be ascertained in accordance with the Price Schedule attached herewith and made part of this Bid.

We undertake, if our Bid is accepted, to deliver the goods in accordance with the delivery schedule specified in the Schedule of Requirements.

We agree to abide by this Bid for a period of 120 days from the date fixed for opening of Bids in the Invitation to Bid, and it shall remain binding upon us and may be accepted at any time before the expiration of that period. We hereby accept the General Terms and Conditions for goods as attached as Annex III.

We understand that you are not bound to accept any Bid you may receive.

Dated this . . . . .day of . . . . .[*year*].

. . . .
Signature [*in the capacity of*]

Duly authorised to sign the Bid for and on behalf of . . . .

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Annex VI

PRICE SCHEDULE

1. The Price Schedule must provide a detailed cost breakdown for each item. Please refer to a separate document (Annex VII) in enabling you to complete the financial component of the tender.

2. Technical descriptions for each proposed item must provide sufficient detail to allow IRENA to determine compliance of Bid with specifications as per Schedule of Requirements and Technical Specifications of this ITB.

3. Estimated weight/volume of the consignment must be part of the documentation submitted.

4. All prices/rates quoted must be inclusive of all taxes.

5. The format shown on the following pages should be used in preparing the Price Schedule. The format uses a specific structure which may or may not be applicable but are indicated to serve as examples.

6. In addition IRENA may request a signed hard copy of your bid.

Note: In case of discrepancy between unit price and total, the unit price shall prevail.