

OIL & GAS DEVELOPMENT COMPANY LTD



New Data Center Infrastructure

Scope of Work

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1. OGDCL Objectives

The scope of this RFP is to select a Data Center vendor which will build a new Rated-3/Tier-3 (Electrical&Mechanical) Data Center at Lower Ground Floor of OGDCL Head Office Islamabad.

1.1 OGDCL intends to build a scalable, highly available and energy efficient data center and relocation of all existing workloads and systems from existing Data Center (located at 5th Floor) to new Data Center (LG Floor).

1.2 This RFP aims to procure all the key elements including products and services for this new data center including but not limited to the below:

- i. Data center layout design and associated civil works in accordance with load bearing capacity of floor
- ii. Redundant power system for the data center
- iii. Cooling and containment
- iv. Cabinets and PDU (power distribution units)
- v. Structured cabling
- vi. Fire detection and suppression
- vii. CCTV and access control
- viii. Monitoring system(NOC/SOC) for data centre
- ix. Misc items if required
- x. Professional services
- xi. DC migration services
- xii. Monitoring services
- xiii. Warranty and support services
- xiv. Design audit services

1.3 The bidders to ensure that the design generally meets the DC design and build guidelines like:

- i. Design and construction of DC inline with guidelines laid down by independent bodies like Uptime/EPI.
- ii. ASHRAE cooling standards
- iii. IEEE standards for Electrical
- iv. TIA 942-B for Data Center
- v. ISO27001:2013 standards for processes and procedures

1.4 OGDCL expects the bidders to come up with design on how to achieve this in a modular fashion while using as much as the existing resources as possible.

1.5 OGDCL expect the solutions to show the benefits of the solutions with various factors like PUE (power usage effectiveness), heat flow and pressure management etc.

1.6 The proposed DC solution should be designed with industry best practices around high availability, scalability, redundancy at physical and logical level along with the right level of security.

- 1.7 The proposal for the new data center should include the migration of the complete existing OGDCL data centre to the new data centre including LAN, network, security services, databases, applications and related hardware infrastructure. OGDCL IT infrastructure is running critical applications and services. OGDCL would like to have a minimum downtime/interruption of services during the migration and hence puts a lot of emphasis for the bidder's capabilities and methodology for such migrations in supervision/coordination with respective OEM and Vendor.
- 1.8 One of the main objectives for this project is to improve OGDCL IT operations by creating an enterprise class NOC/SOC to help manage and monitor complete IT infrastructure. OGDCL thus intends to deploy a unified monitoring tool to monitor all its IT assets as part of the scope of this RFP.
- 1.9 The bidder must conduct a site survey before bid submission and do the load bearing analysis for the proposed site. It shall be bidder's responsibility to enhance the load bearing capacity if needed and feasible, before the commencement of other project tasks and deliverables. OGDCL's civil engineering department will provide drawings.

2. OGDCL Existing Environment

This section talks about the existing environment of OGDCL to help bidder put together the best solution.

- 2.1 The table below provides the information about the existing OGDCL environment 5th floor for the bidder information. It shall be upto the bidder to use the existing information for the most optimal solution for the proposed data center.

Sr No	IT Assest	Quantity	Remarks
1	Applications		
1.1	Oracle E-Business Suite – 11E	01	
1.2	MMS (Medical Management System)	01	
1.3	LMS(Leave Management System) on Microsoft share point	01	
1.4	FMS(Fund Management System)	01	
1.5	IBM Maximo for Oil and Gas Ver 7.6.0.6	01	
1.6	Maximo Cognos and Anywhere	01 each	
1.7	Maximo SCHAD Application		
1.8	Microsoft Doman Controller (Active Directory)	01	
1.9	Internet Proxy (03 Instances	
1.10	MS Exchange		

1.11	NMS	01	
1.12	Data Guard	01	
1.13	HelpDesk (In house App)	01	
1.14	Kespresky endpoint security system	01	
1.15	FTP Server	02	
1.16	Production Management System(PDMS)	01	
1.17	Microsoft Share Point	01	
2	Databases		
2.1	Oracle 11 G	5 (Instances)	
2.2	MS SQL	02	
3	Operating System		
3.1	Windows Server 2012 R2	6	
3.2	Sun Solaris 11	5	
3.3	Red Hat Enterprise Linux 6.4 64 bit	1	
4	Systems		
4.1	Compute - Sun Sparc T5-2 (Oracle 11i EBS Production Server)	2	
4.2	Compute - Sun Sparc T4-1 (Oracle 11i EBS Test Server)	1	
4.3	Compute- Sun Sparc E2900 (Production Server Fund Management)	1	
4.4	Compute- Sun Sparc T5220 (Test server Fund Management)	1	
4.5	Storage - IBM SAN v3700	1	
4.6	Storage – EMC	1	
4.7	IBM 3650 M4 for Medical Management System	1	
4.8	IBM 3650 M4 Virtualization – Vmware(DHCP, Kaspersky end Point Security, Domain controlle, share Point, Media Server, Field Allowance system, Nogios XI Network Monitoring system on different VMs)	5 hosts	
4.9	IBM Flex System x compute node for Maximo Application, Cognos and Any where	4	
4.10	HP DL360 Gen 9, 8S FF CTO for SCHAD application	2	
4.11	HP Server for Aruba Air wave		
5	Network and Security		
5.1	WAN Routers-Cisco 2801, 2811, 3845	22	
5.2	LAN Switch - Cisco 3750/Juniper/Alkatel	16	
5.3	Core Switch-Cisco 6506	1	
5.4	Aurba Wireless Conrollar(Aruba7210)	2	
5.5	DHCP	1	

5.6	FTP	2	
5.7	Squid Proxy Server	3	
6	Infrastructure Expected to be installed before the award of the contract		
6.1	Hyper -Converged Infrastructure Hardware	1	
6.2	Core Routers	2	
6.3	Core Switch	2	
6.4	Internet Firewalls	2	
6.5	Hardware Based Reporting Solution For Ngfw	1	
6.6	Access Switches	12	
6.7	Hardware Based NGN Data Center Firewalls	2	

Table 1 Existing OGDCL Data Centre Information

The bidders are encouraged to conduct site survey.

2.2 The connectivity of this DC is shown by the following diagram:

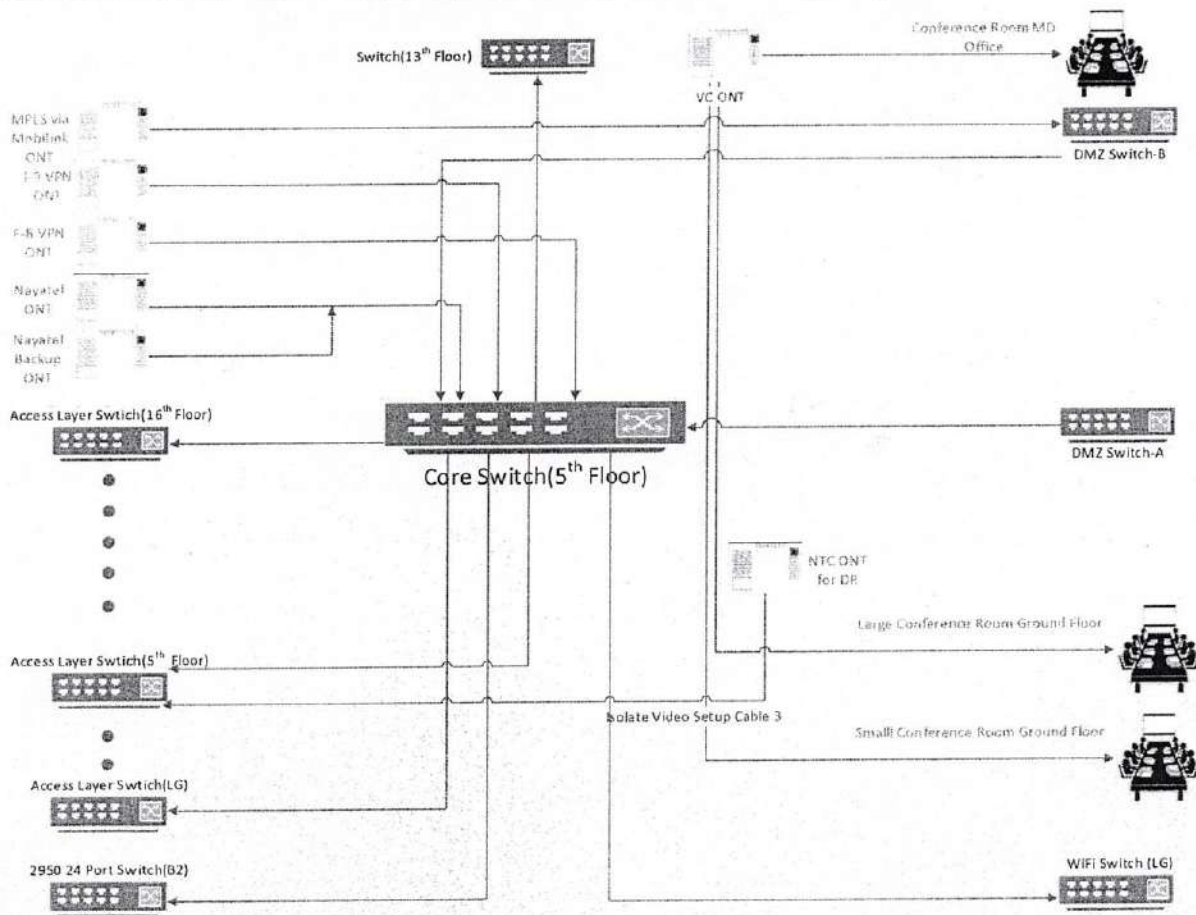


Figure 1 Existing Connectivity Diagram

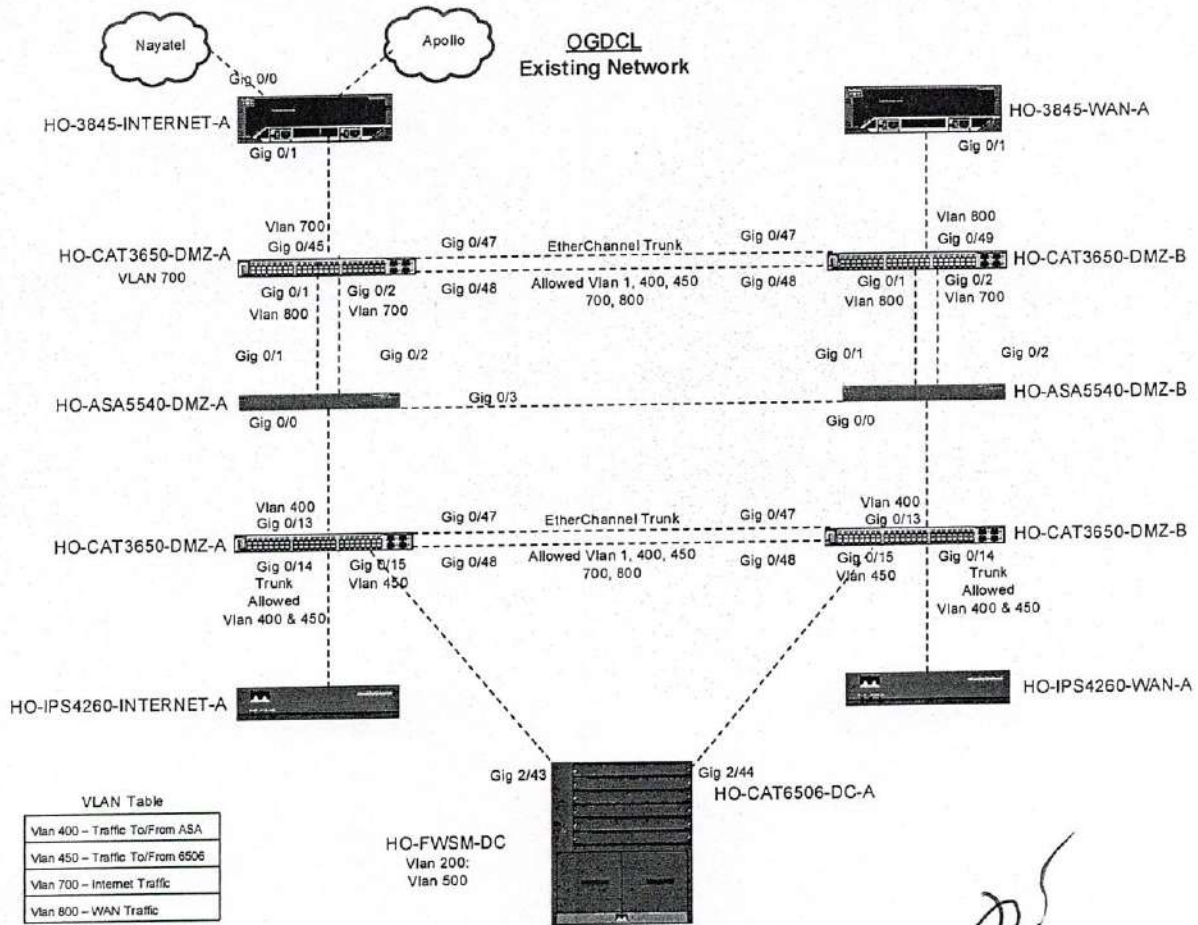


Figure 2 Existing Connectivity Diagram

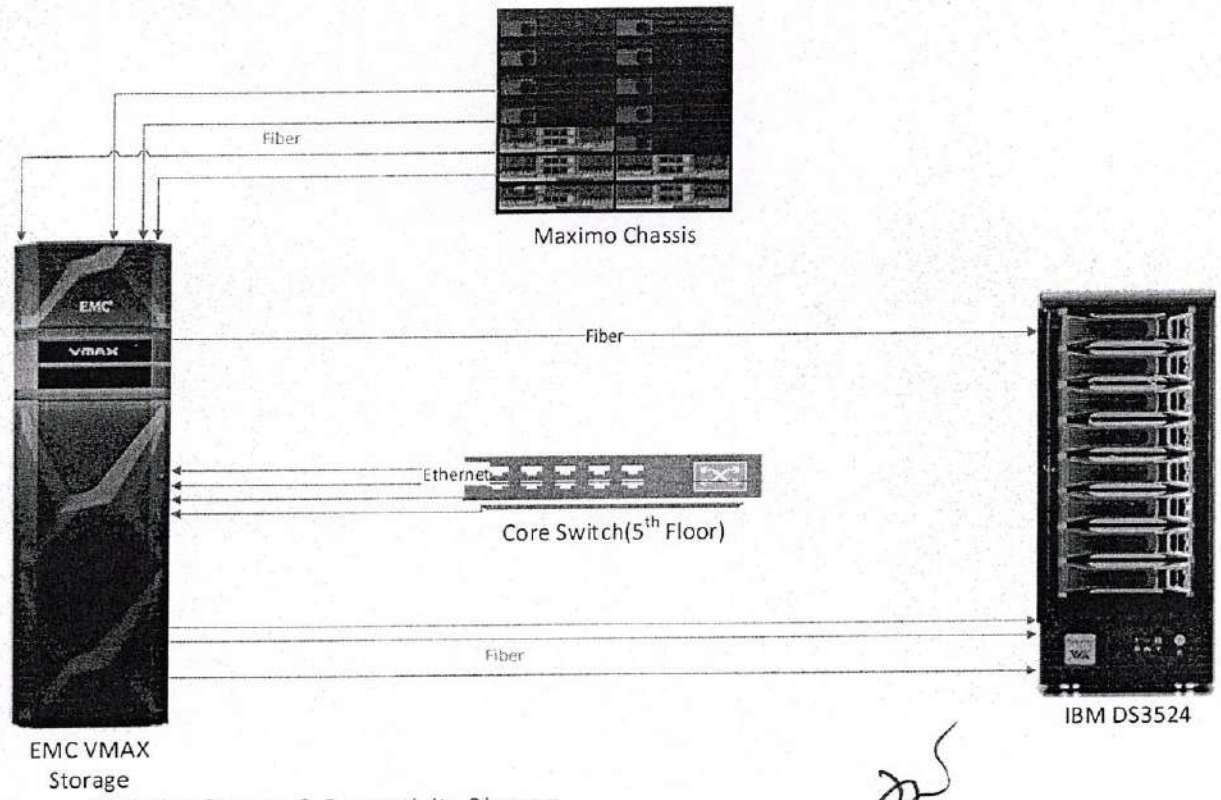


Figure 3 Existing Storage & Connectivity Diagram

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3. Data Centre Layout- General Guidelines

3.1 The new DC will be located in Lower Ground of the main building at the location highlighted in the following diagram.

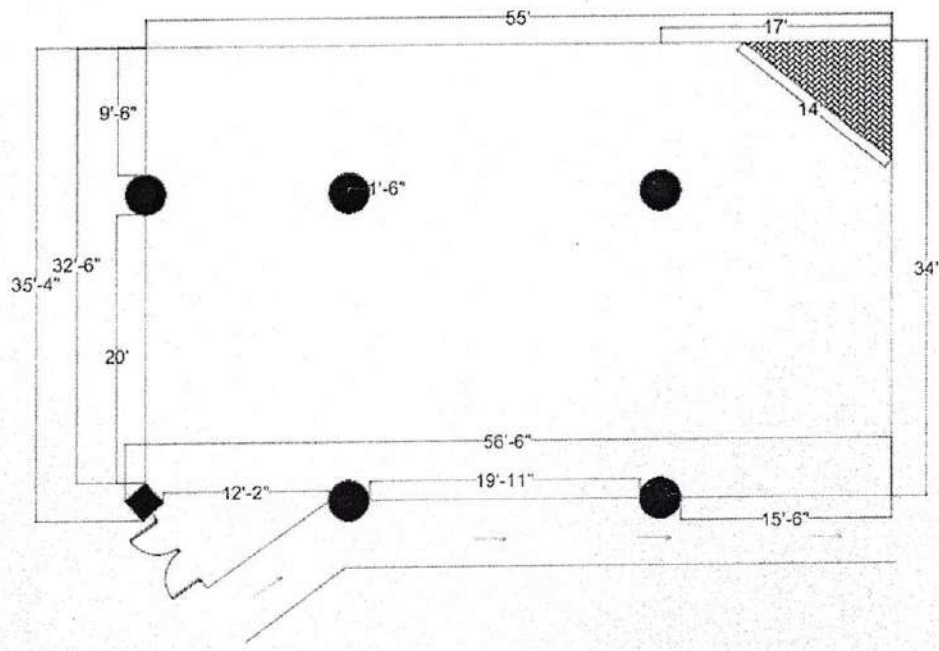


Figure 2 Proposed DC Area

The bidders must plan site surveys for exact dimensions and propose the layout.

3.2 The table below provides the minimum area/space requirements of OGDCL. Bidders are expected to propose the data center layout complied with the below areas/spaces for the name specific utilization.

Sr No	Area/Space Name	Description
1	Entrance Area	
2	NOC/SOC Room	For OGDCL NOC/SOC
3	MMR (Meet Me Room)	for Media Connectivity
4	Server Room	For all the data center equipment
5	Power Room	For electrical panel, UPS and Batteries
6	Storage and Staging Area	For OGDCL utilization

Table 2 Data Centre Layout Requirements

3.2.1 Entrance Area :-

A reasonable entrance area for isolation of dust and unwanted traffic.

3.2.2 NOC/SOC Room:-

A separate NOC/SOC room for 4-6 people with LED screens for physical and environment monitoring. Considerations for this room are:

- A separate Operation Center (NOC/SOC) for physical and environmental monitoring of the whole facility shall be provided.
- Two (2) 55" LED screens shall be provided to support NOC/SOC equipment
- All equipment, cabling and other infrastructure requirements for the NOC/SOC operations..
- Seating Arrangements for 6 staff members.
- Comfort Cooling suitable for the temperature ambient of 25C.

3.2.3 MMR (Meet Me Room):-

MMR shall be proposed for the placement of connectivity hardware including but not limited ODF, DDF and/or layer 2/3 switches, for within data center as well as external connectivity.

3.2.4 Server Room:-

This room will host all the data center active and passive equipment.

- i. The proposed whitespace shall be efficiently designed to meet OGDCL existing and future requirements from the day1.
- ii. As much as possible, OGDCL intends to have minimum human entrance for any deployment, connectivity and other data center operational activities.
- iii. Whitespace shall be designed from maximum fire protection, physical security and safety purposes.
- iv. Bidders should include the design information of the whitespace including racks and other equipment placement details in their proposals.
- v. Bidders shall clearly mention the design parameters of this space.

3.2.5 Power Room:-

Power room shall be proposed for the placement of main electrical panel, batteries and UPS equipment.

3.2.6 Storage and Staging Area:-

Bidders are supposed to propose a storage and staging room.

This is a secured place where deliveries can be stored for a short to medium term time period with the following features:

- i. Tech benches.
- ii. Climate controlled.
- iii. Redundant and protected power & network connections.
- iv. Wide Access door

3.3 Complete electrification, lighting and comfort cooling for the data center shall be the responsibility of the bidder.

3.4 OGDCL expects the bidder to perform a detailed structural suvery to ensure the load bearing capacity of the proposed DC location to ensure safety of the facility. Any re-inforcement needed for this shall be highlighted to OGDCL before the commencement of work.



4. Power System for the Data Centre

This section provides OGDCL power systems requirements

4.1 LT Panel

- 4.1.1 OGDCL have its own Commercial Transformer (WAPDA Connection) with Diesel Genset through ATS to serve OGDCL premises.
- 4.1.2 OGDCL have its own LT panel distribution to serve the building load.
- 4.1.3 Bidder can visit the site to check the complete system and check the availability of spares breaker for new DC load.
- 4.1.4 Bidder shall install their new Electrical distribution Box with SPD for the DC load. There should be two path for each load.

4.2 Power Cable

- 4.2.1 Bidder shall install new redundant power cable from OGDCL LT panel to DC.
- 4.2.2 Bidder shall propose the shortest and safe route for the power cable.
- 4.2.3 Bidder shall provide the complete SLD from LT panel to DC including but not limited to UPS, racks, lighting system and cooling system.
- 4.2.4 Bidder shall provide the new power cable calculation according to DC load.

4.3 UPS (Uninterrupted Power Supply)

Total maximum power draw in the DC is expected to be 80KW (Please refer to cabinets section for number of cabinets and power per cabinet). For phase 1, we expect \pm 54KW (For 12 Cabinets section). Bidder shall propose a solution that caters for this requirement on the UPS with following features:

- 4.3.1 N+1 modular redundant configuration to feed separate power path till the Data Centre. In case of failure of any UPS, the other UPS should take over the full load. The UPS support 1Hr backup time @ full IT Load.
- 4.3.2 02 Modular UPS 60kVA each scalable to 150KVA configured to operate in N+1 Mode with alternate paths having 1 Hr Min backup time for the server Room.
- 4.3.3 The Modular UPS shall comprise of hot swappable/ user replaceable and scalable power modules, which shall operate in parallel. Each power module contains a full rated input rectifier/boost converter, full rated output inverter, and battery charging circuit.
- 4.3.4 The system shall also comprise of a user-replaceable continuous duty hot swappable bypass static switch module, hot swappable, user replaceable, scalable battery modules with advanced battery management, redundant hot swappable control modules, redundant logic power supplies, and LCD interface display. The UPS efficiency should be $>95\%$ at 35 - 100% load (TÜV certified).

- 4.3.5 Modular UPS shall comply to highest performance standards which include CE, EN 50091-1, EN/IEC 62040-1-1, EN/IEC 62040-3, FCC Part 15 Class A, VFI-SS-111. The solution should have modular UPS with modular batteries and internal distribution.
- 4.3.6 OEM Brand Expertise in similar product manufacturing must be 15 years or more. The OEM should have registered office in Pakistan from 5 years or more.
- 4.3.7 The UPS shall be provided with WEB/SNMP for communication, and provides communication cables and various alarm signal output terminal supporting the use of interfaces.

4.4 Batteries

- 4.4.1 OGDCL is looking to purchase 12V valve regulated lead acid (GEL/AGM).
- 4.4.2 Vendor propose for 1 Hr back up.
- 4.4.3 The Warranty of the proposed batteries should be 05 years.
- 4.4.4 The manufacturing date of batteries should not old than 06 month at delivery time.
- 4.4.5 The design life of the proposed batteries should twelve (12) years.
- 4.4.6 The floating voltage of the proposed batteries should be 13.5-13.8 VDC @ 25°C.
- 4.4.7 There should be minmum six (6) cells per unit.
- 4.4.8 The internal resistance should approx. 2.4mΩ.
- 4.4.9 The proposed batteries should support 0.25C Charging current.
- 4.4.10 The pole screw should be composed of corrosion resistant stainless steel.
- 4.4.11 The cell container should be composed of PP (Polypropylene UL 94-HB).
- 4.4.12 The proposed batteries should support Screw type connection (Bolt-in & Bolt-on)
- 4.4.13 Vendor expected to propose battery rack or cabinet.

4.5 Additional Power Items

The solution should include the complete power solution including but not limited to the following items:


- 4.5.1 DB for main/ups/HVAC with SPDs.
- 4.5.2 MOR (Manual Over Ride)
- 4.5.3 LT Panel

5. Cooling and Containment System for the Data Centre

5.1 The cooling solution of DC room should be based on hot/cold aisle containment with DX based In-Row Cooling to meet the peak load of IT equipment in the Server Room.

5.2 Redundancy (N+1) of the design

5.3 The In-Row unit should have:

- i. Airflow of at least 4000 CFM and capability to go up to 42kW,
 - ii. integrated humidifier/de-humidifier,
 - iii. variable speed fans,
 - iv. active flow control (Delta P),
 - v. active air flow management,
 - vi. Color Touchscreen & Network Card w/ TLS support (for communication privacy),
 - vii. VFD Scroll Compressor,
 - viii. easy filter replacement without the need to shutdown equipment,
 - ix. Field replaceable fans,
 - x. high Energy Efficiency Ratio,
 - xi. Meets DOE regulations (SCOP = 3.3).
 - xii. Approvals C-tick, CE, EAC
 - xiii. Support SNMP protocol for management and monitoring.
- 

5.4 The condenser should be able to be placed in vertical arrangement, up to 4.5m/15ft placement below In-Row.

5.5 Reversible inverter based cooling units in office/NOC/SOC areas of ground floor.

5.6 The containment solution should be able to maximize the return air temperature to the cooling units and should be capable to actively control the flow of air.

5.7 All system components shall be certified as suitable for this data center environment supporting UL Listings: UL484, CSA C22.2 No.236 and UL723S.

5.8 The standard filters shall be 30% efficient per ASHRAE Standard 52.1, UL Class 2 (MERV 8 per ASHRAE 52.2).

5.9 Filters shall be EN779 G4 efficient. The 3.75 in. (96 mm) deep, pleated filters shall be replaceable from the rear of the unit

5.10 The cooling units should be proposed with a complete management software for detailed troubleshooting, configuration management and other management functions as per the industry best practices for the cooling equipment.

6. Cabinets & PDUs

The scope of Cabinets includes design, procurement, installation, implementation/grounding, testing and commissioning.

6.1 The table below provides summary for OGDCL cabinets and PDU requirements in phase 2. This information is provided for the bidder information only and not required to be include in the proposal.

Sr No	Power System	Model/Make	Size
1	Network Racks	APC/Vertiv or similar	~800x1200, 42U
2	Server Racks	APC/Vertiv or similar	~800x1200, 42U
3	Storage Racks	APC/Vertiv or similar	~800x1200, 42U
4	Smart PDU's	APC/Vertiv or similar	NA

Table 3 Cabinets and PDU Requirements

6.2 OGDCL expects a design to have minumun 12 racks upto 16 racks. The proposals showing scalable and modular solution will be preferred in the design.

6.3 Each rack may be assumed to consume 4.5 KW of power.

6.4 Each IT Racks should have 2 x Vertically mounted smart PDUs.

6.5 The racks shall support a load of >1,000 kg. The racks shall ship with a perforated front door, perforated split rear doors, two (2) side panels, roof with cable access holes, four (4) adjustable vertical mounting rails, four (4) vertical 0U accessory mounting brackets, four (4) leveling feet and four (4) casters, baying and grounding hardware pre-installed by the manufacturer.

6.6 All weight bearing components shall be constructed from steel with a thickness no less than 1.0mm (19 gauge). All sheet metal parts shall be painted using a powder coat paint process. Plastic materials shall comply with Underwriters Laboratory Specification 94 with HB rating (UL94 V-1) or better. All interior components of the cabinets shall not have electroplated zinc coating to minimize zinc whiskers near active equipment.

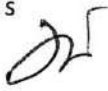
6.7 The smart PDU should have tool-less mounting pegs for easy installation and replacements in racks, there should be local metering display for real-time equipment connectivity and load balancing guidance as well as network management port to access and configure remotely via web, SNMP, and telnet.

6.8 The PDU shall have one external temperature/humidity Sensors.

6.9 There should be vertical and horizontal cable managers in the cabinets.

7. Structured Cabling

The scope of Structured cabling solution includes design, procurement, implementation, testing and commissioning for a structured cabling solution for OGDCL data center.

- 7.1 OGDCL is looking for a high density structured cabling solution for the existing and future requirements of the data center.
- 7.2 The fundamental design for the structured cabling system involves distributed Data cabling from server racks, Horizontal distribution Area Racks in each row, & Main distribution Area Racks (if required) wired with Cat6A Copper Shielded system, OS2 Single mode fibre System & OM4 Multimode fibre System.
- 7.3 The structured cabling should be modular pre-terminated solution for Fibre and is to be designed to allow easy patching from any switch to any device without the need to run additional cabling for copper and fibre.
- 7.4 Primary and Secondary cabling must be installed within the data cabling containment system across separate routes to ensure that diversity is maintained at all times. 
- 7.5 The products used must be compliant with industry standards on fire rating, Low smoke-Zero-halogen, Flame retardant and Non corrosive.
- 7.6 The solution must be based on 3 modular components: trunks, modules and patch panels.
- 7.7 The bidder to propose its highest density patch panels with a drawer management system that enables a easy access to the patching.
- 7.8 Bend-insensitive fibre cables that enable tighter trunk cable bends for slack storage and routing and reduce system downtime.
- 7.9 The data structured cabling solution must be compliant with industry standards EN 50173-5 and TIA 942
- 7.10 The bidder must proposed shuttered modules with no dust caps and allow for one-handed operation.
- 7.11 The patch panels modules should support universal polarity system.
- 7.12 The solution should support tagging mechanism for different type of fibre patch cords identification (Data/management etc.)
- 7.13 The bidder must propose 100% factory-tested solutions and include the test reports as samples in the proposal and produce actual test reports during the product acceptance.

7.14 The copper cable should be compliant to the following

- i. It is tested up to 550 MHz and provides transmission performance meeting Category 6A specifications EN 50288, IEC 61156-5 and "Cat. 6 augmented" in compliance with TIA/EIA 568.
- ii. Diameter of copper conductor AWG 23, wire insulation is halogen free. Sheath material is halogen-free; flame retardant; low smoke; non corrosive; outer sheath colour is blue.
- iii. Temperature range during installation 0°C to +50°C; during operation -20°C to +60°C.
- iv. 24 port and 48 port copper patch panels in 1 or 2RU space
- v. zero RU patch cable guide
- vi. Patch cords should be available in various colours and sizes for different type of copper patch cords identification (Data/management etc.)

7.15 This should also include an efficient cable pathway system for copper, fiber and power cables.

7.16 Bidder to provide details on the density of the proposed solution.

7.17 N+N redundancy with respect to data center network cabling and connectivity.

7.18 Ports / Rack:

- i. 12+12 fiber 10G LC ports to EOR/NW Cabinet
- ii. 12+12 copper ports from each rack to EOR/NW Cabinet
- iii. Backbone Cabling: 40G Upgradable to 100G parallel optics.

7.19 Passive port tapping facility should be available as an option.

7.20 On ground termination for copper Cat6a S/FTP LSZH and Pre-terminated Multimode OM4 / Single Mode OS2 LSZH fibre cabling.

7.21 All nodes and cable bunches should be properly labeled as per international standards. The origin and ending of all nodes should be clear.

7.22 Grounding & Bonding System as per TIA/EIA 607-A

7.23 Extended warranty for the cabling beyond 10 years.

7.24 Standards to follow:

Single Mode	Multi Mode	Copper
TIA/EIA 492AAAc-A	TIA/EIA 492AAAD	ANSI/TIA/EIA 568B.2-10
IEC 60793-2-10 Type B1.3	IEC 60793-2-10 Type A1a.2 Ed. 2.0 and IEC 60793-1-49 Ed. 2.0	IEC 60603-7-51 Ed. 1 and IEC 48B/1977/CDV, 2008-12
ISO/IEC 11801 OS2	ISO/IEC 11801 OM4	ISO/IEC 11801 Class EA
ITU-T G.652 Table D and G.657 Table A.	ITU-T G.651.1	IEEE 802.3af (2003)
		EN 50173



8. Fire Suppression and Detection System

8.1 Fire Alarm / Detection system and Manual Fire extinguishers for ABC Classes of Fire in complete building.

8.2 Automated Fire suppression system (Novec / Inergen) in Server room, UPS Room, Staging Room and MMR Room.

8.3 Calculations for each area (ceiling, room and underneath floor) shall be provided.

8.4 FSD is expected to have the following features:

- i. Programmable temperature sensors should be provided.
- ii. The detection and suppression systems within the premises shall be linked to the electronic monitoring system.
- iii. The control panel should be programmable to allow adjustments to sensitivity and parameters, such as time delays, threshold, passwords and other features.
- iv. Fire alarm monitors, control panels and notification mechanisms should be installed. Automated alerts when thresholds are reached should also be sent to the relevant staff.
- v. Addressable fire alarm panels shall be connected to the EMS.



9. Security, Surveillance and CCTV

9.1 Supply install and commission Access control system with magnetic locks. The Biometric and RFID door readers and controllers should be mounted according to the design.

9.2 The detailed technical specifications of the products will be as follows.

- i. Access control system shall be installed on doors as per design. The Main Access controller units (Door processing units)
- ii. The monitoring of the access control will be done in the security room.
- iii. All doors of Equipment areas will have (3 in 1) RFID + keypad + Biometric readers for Entry and others will have just RFID Reader.
- iv. All doors will have RFID only readers for Exit.
- v. IP based CCTV monitoring system for indoor / outdoor.
- vi. IP Cameras should be HD (High Definition) and have a minimum resolution of 2 megapixel
- vii. NVR for recording (03 Month)
- viii. Entry Control - Integrated with CCTV for monitoring / permitting / denying facility access at critical entry points.
- ix. Multilevel authentication i.e., Password, Biometric / Retina Scan integrated with centralized command and control system for all ground floor rooms & 08 biometric devices for 1st floor.
- x. Motion detectors with LED Motion Sensor Lights for main entrance of the building and corridors.

10. Monitoring System for Data Center

OGDCL Intends to procure a monitoring, ticketing and reporting system which provides detailed physical and logical monitoring of its IT infrastructure and applications to be used by OGDCL NOC/SOC and business teams.

Physical Monitoring & Monitoring Services

- i. Preparation of NOC / SOC.
- ii. Complete CCTV Monitoring with 30 days retention.
- iii. Provision of 03 Resident Engineers for 3 years in Shift Duty to monitor and manage Datacenter 24 x 7 x 367.
- iv. If required all necessary hardware and Operating System etc. for this solution should be quoted with this solution (servers and storage).

NMS Solution

- i. Network Management System should cover management, monitoring and alerting of all SNMP based Assets (Network & Systems).
- ii. If required all necessary and Operating System etc. for this solution should be quoted with this solution (servers and storage).
- iii. NMS Should support SNMP V1, V2c and V3)
- iv. Must support alerting and notifications by email, SMS, pager message, and HTTP request.
- v. Windows and Web-based consoles, workspace views, dashboards.
- vi. Dynamic Device Discovery.
- vii. Visual Network Mapping.
- viii. Network topology, subnets, devices, applications, and systems.
- ix. Must be the newest available version of software.
- x. OEM support should also be available in case of any issue. OEM support is required 24x7. The support/license should be valid for 5 years with year wise breakup.

Infrastructure and Environment Monitoring

- i. Environmental monitoring system to monitor all environmental sensors, access controls, IP Cameras including 3rd Party Devices on following interfaces (SNMP, Modbus485, Dry contacts, Analog Signals).
- ii. UPS and cooling monitoring.
- iii. Records Data and Logs of historical information of alarms and notifications.
- iv. Integration of Fire suppression system and Power Switchgear (DBs) may be quoted in optional.
- v. If applicable OEM support should also be available in case of any issue. OEM support is required 24x7. The support/license should be valid for 5 years with year wise breakup.

11 Miscellaneous Items

OGDCL expects bidders to include all the relevant miscellaneous items for a data center like:

- 11.1 Rodent Repellent System.
- 11.2 Water Leakage Detection System.




12 Professional Services

12.1 Bidders to note that OGDCL requires a proposal based on turn key solution and shall include complete design documentation, installation, commissioning, implementation, configuration testing and integration services in the proposal as needed.

12.2 Civil Works of the complete design, including but not limited to:

- i. Provisioning, Fixing and installation of Anti-Static Vinyl Tiles (Min 3mm) for DC and equipment rooms.
- ii. Complete fire / flame retarded paint coat in the interior of ground floor and insect repellent paint on the exterior.
- iii. Blinds for all windows of Data Center building.
- iv. Fire Rated (60-90 mins) doors.
- v. Wall mounted electrical sockets Ea 5-7 Amp with USB slots and Ea 15 Amp in every room for Ground floor in addition to Air Conditioning sockets.
- vi. Installation / Configuration of overhead cabling pathways, galvanized trays
- vii. Bidder is expected to conduct structural survey and analysis to ensure the load bearing capacity of the proposed DC structure.
- viii. Earthing Pit: Bidder to inspect existing earthing and if needed, propose and build a standalone earthing pit for this DC.

12.3 Installation, commissioning and Testing services for all the elements quoted in this RFP including, not limited to:

- i. Cooling and containment systems,
 - ii. Power systems including UPS, batteries and cabling
 - iii. Fire detection and suppression system
 - iv. Water leakage detection system
 - v. Rodent repellent system
 - vi. Racks and PDUs
- 

All consumable can be evaluated during the site surveys and shall be assumed to be included in the proposal.

12.4 Structured cabling design, implementation and testing services shall be included in the proposal.

12.5 Training and Knowledge Transfer:- OGDCL expects at least 04 persons to be trained on Data Centre Design and Operations (like CDCP/CDFOM) through independent training body i.e. EPI

12.6 Project management services shall be the responsibility of bidder.

12.7 Development of SOPs:

Standard Operating Procedures: Bidder shall provide / develop Standard operating procedures for Datacenter and the solutions /services provided.

12.8 Following documents should be delivered as part of the project.

- i. OGDCL IT Infrastructure Assesemnt document
- ii. DC migration plan and test document
- iii. DC physical layout-as built documents
- iv. SLD (Single Line Diagram) for power systems
- v. UPS design and test documents
- vi. DC cooling design and test documents
- vii. Structured cabling design and test documents
- viii. Monitoring system design and test documents
- ix. Fire suppression system design and test documents
- x. CCTV system design and test documents
- xi. Workflow document for monitoring solution



13 Data Center Migration Services

OGDCL existing data center systems, applications and services needs to be physically migrated to the new data center as part of the scope of this RFP.

- 13.1 The proposal for the new data center should include the migration of the existing OGDCL data centre to the new data centre including LAN, network, security services, databases and applications. OGDCL IT infrastructure is running critical applications and services. OGDCL would like to have a minimum downtime/interruption of services during the migration and hence puts a lot of emphasis for the bidder's capabilities and methodology for such migrations. Relevant OEM and vendor arranged by OGDCL will supervise the activity.
- 13.2 Following should be included in the scope of the DC migration services
- i. Detailed assessment of existing IT infrastructure and applications.
 - ii. Migration strategy with minimum or no downtime.
 - iii. Relocation services.
 - iv. Rack placement in the new data center as per the industry best practices.
 - v. Other necessary services which maybe needed to ensure minimum or no down time.
- 13.3 As part of the migration strategy the bidder should include within their proposal a detailed migration strategy document which provides
- i. Technical approach for the migration.
 - ii. Specific detailed breakdown of the deliverables and approach of the bidder to deliver the services identified in the clause above.
 - iii. Migration Project Timelines
 - iv. Responsibilities assumed by the bidder, OGDCL and any existing OGDCL supplier
 - v. Connectivity of the OGDCL LAN services at different floors of the OGDCL building from the new data center location.
 - vi. Migration for the applications and and network/security services running in OGDCL existing data centre as explained in the section #2 of this document.
 - vii. Provide recommendations based on site survey for any infrastructure requirements.
- 13.4 As part of the relocation services, the bidder should include within their proposal, the complete list of activities for the movement of network, compute and storage infrastructure from the existing data center to the new data center. The bidder should suggest the best possible approach for the insurance of the IT assets during the power shutoff of the equipment, physical lift and shift, re-installation and commissioning period.
- 13.5 Any hardware and/or software required for this migration including but not limited to cabling system, switches, routers etc. shall be the responsibility of the bidder and shall be included in the proposal.
- 13.6 There should be no impact on the existing WAN services due to the DC migration.

- 13.7 There should be no impact on the existing DR (disaster recovery) services due to the DC migration.
- 13.8 The bidder is expected to provide as-built drawings with new connectivity schema for the LAN services.
- 13.9 OGDCL expects a structured cabling approach for extending the new LAN services, compliant to the TIA/EIA-568 standards
- 13.10 OGDCL will ensure that all the third party HW and SW is under service support agreements. Where its not under support, it will be highlighted and vendor to suggest the best approach to do the migration.



14 Monitoring Services

The main objective for this service

- i. shall be to support the OGDCL IT team during peak load conditions or during non-working hours.
- ii. Self monitoring of the proposed monitoring system.

Following are the requirements

- 14.1 The bidder is supposed to provide off-premises Level 1 support services to support OGDCL team from the NOC/SOC built at OGDCL premises.
- 14.2 This service shall utilize the proposed monitoring system by the bidder as part of this RFP.
- 14.3 Only Level 1 support services shall be required. Following services are included in the Level 1 support services
 - iii. Alarm monitoring
 - iv. Trouble ticket creation
 - v. Problem resolution
 - vi. Coordination with the OGDCL vendors on behalf of the vendors
 - vii. Escalation to the OGDCL team for Level 2 services
- 14.4 OGDCL expects atleast one (1) resource available in the bidder NOC/SOC environment, capable to handle minor problems and incidences across the complete IT infrastructure. The bidder is required to propose their staffing plan to support OGDCL objective.
- 14.5 All software and hardware required for this service shall be bidder responsibility and shall be proposed as a service to OGDCL.
- 14.6 Bidder is responsible for secure connectivity between its premises and OGDCL data centre.



15 Warranty and Support Services

All the active elements should have warranty and back to back support of OEM for minimum 3 years with SLA alongwith Spares & Maintenance services.

16 Data Centre Audit/3rd Party Testing and Certification

The vendor is required to arrange TIA 942-B Design Validation and Certification as well as during deployment & post deployment audit of the Data Center from 3rd party like EPI/Uptime. Vendor has to quote for these services separately.

The Consultant should preferably meet the following eligibility requirements. Bids of non-complaint bidders may not be evaluated technically or commercially.

- a) The company should be a Pakistan registered service company in the job of planning, designing, audit and certification of IT Data Centers / NOC / Network Rooms / DR Sites activities for minimum of 5 years as on date of this ToR
- b) The company should be an independent consulting entity and not involved in system integration or product selling. Company should not be directly or indirectly affiliated with any Data Center product supplier.
- c) The company should have registered consultant at TIA website (www.TIA-942.org).
- d) Company should preferably have experience of audit and certification, minimum of two certified data centers on Rated-3 in the past 5 years in Pakistan. (Proof of document required)
- e) Company must have at-least one Certified Data Center Expert / Certified TIA 942 Design Consultant and two Certified Data Center Specialists as full time employee for past three years for the execution of this assignment.



17 BOQ Items and Remarks

As mentioned before, OGDCL expects vendors to do the survey and submit proposal complete from all angles. However, for guidelines, we have included the following BoQ items to be priced.

S No.	BOQ Item	Qty	Remarks
1.	Civil Work of Data Center		
2.	Cabinets and PDU	Min 12 and max 16	Design for maximum of 16 to be included.
3.	In Row Cooling and Hot/Cold Aisle Containment	N+1 for the load	To be offered for phase 1 and price for modular scalable to maximum design
4.	Power (UPS, Batteries and Allied)	N+1 Redundncy for the load	To be offered for phase 1 and price for modular scalable to maximum design
5.	Structured Cabling	12 Racks Min	To be offered for phase 1 and price for modular scalable to maximum design
6.	Fire Detection and Suppression	For complete server room, power room, MMR and staging room	
7.	Misc Items	As per the site surveys and follow up discussions	
8.	Services	As per the RFP Requiremetns	



18 Mandatory Requirement

Note: Bidders are advised to carefully read the Mandatory Requirements, Evaluation Criteria and provide complete information in each category in their Technical Proposal. Incomplete or partial information will not be weighed up.

Mandatory Requirements

1. SECP Registration
2. Registered business in Pakistan with an NTN and GST
3. Presence at Islamabad/ Rawalpindi
4. Manufacturer authorization letter for the active equipment like power, UPS, cooling and infrastructure's element.
5. Rated -3/ Tier-3 Certified Data Center Design(for Electrical and Mechanical) must be submitted before construction of the Data Center / Facility.
6. Agreement for subcontracting, if intends to subcontract the Project.

19 Procurement Mode

Bidders to note that OGDCL requires a proposal based on **turn key solution** and shall include complete design documentation, installation, commissioning, implementation, configuration testing and integration services in the proposal as needed.

Two Stage bidding procedure system will be followed for the selection of firm for award of contract elaborated hereunder:

TWO STAGE BIDDING PROCEDURE:-

FIRST STAGE:-

1. The bidders shall first submit, according to the required specifications, a technical proposal without price;
2. The technical proposal shall be evaluated in accordance with the specified evaluation criteria and may be discussed with the bidders regarding any deficiencies and unsatisfactory and/or additional technical features;
3. After such discussions, all the bidders shall be permitted to revise their respective technical proposals to meet the requirements of OGDCL within stipulated period of time;
4. OGDCL may revise, delete, modify or add any aspect of the technical requirements or evaluation criteria, or it may add new requirements or criteria.

5. The revisions, deletions, modifications or additions shall be communicated to all the bidders equally at the time of invitation to submit final bids, and sufficient time will be allowed to the bidders to prepare their revised bids:

6. Those bidders, not willing to conform their respective bids to OGDCL's technical requirements may be allowed to withdraw from the bidding without forfeiture of their bid security.

SECOND STAGE:-

1. The bidders, whose technical proposals or bids have not been rejected and who are willing to conform their bids to the revised technical requirements of OGDCL, shall be invited to submit a revised technical proposal along with the financial proposal;

2. The revised technical proposal and the financial proposal shall be opened at a time, date and venue announced and communicated to the bidders in advance;


3. The revised technical proposal and the financial proposal shall be evaluated as per technical and commercial parameters.

4. The bids evaluated to be technically responsive and financially lowest shall be accepted.

(This clause will prevail instead of Master Tender document "ITB" clause # 07 'PAYMENT').

20 Technical Evaluation Criteria

Domain	Qualification Criteria	Maximum Marks	Remarks
Company Profile and Capabilities	Company years of experience since inception • 6 marks for minimum of 5 years • 1 mark for each additional year	10	
	Experience in building DC • 9 marks for minimum of 10 cabinet DC • 1 mark for each additional cabinet DC	15	
	Experience in building tier-3 data centers • 6 marks for minimum of 2 DC • 1 mark for each Additional DC	10	
	CDCP and CCIE Certified Professionals • (03 marks for minimum 03 professional(2 professional	5	

	<p>for CDCP and 1 Professional for CCIE/JNCIE))</p> <ul style="list-style-type: none"> • 1marks for each additional professional 		
	<p>NOC/SOC skills available for monitoring, integration, logging and analytics</p> <p>1marks for each professional (minimum of 3 professionals required)</p>	5	
Technical Solution	<p>Vendor proposal describing datacenter design including but not limited to Detailed SLDs, implementation plan, layout plan, methodology, BOQ, project plan, project risks, migration plan, project team structure etc.</p>	30	
Operations and Management of Data Center	<p>Experience of managing, operating and overlaying IT and cloud infrastructure in a NOC/SOC environment (06 marks for minimum of two projects)</p> <p>1 Marks for each additional Project</p>	10	
	<p>Capability to customize the NOC/SOC monitoring solution (POC will be required at the time of technical evaluation)</p>	10	
	<p>Methodology and experience in developing Standard Operating Procedures, Maintenance Operating Procedures and Emergency Operating Procedures</p>	5	

Note : Bid will be rejected, if Bidder will not obtain 60 (Sixty) percent qualifying Marks in each category and 70 (Seventy) Percent Marks overall.

21 Delivery and Installation/Commissioning Time

Delivery and Completion of the Project is 24 Weeks (12+12). Technical Support services shall be required for 03 years starting from handing over of the project after installation/commissioning time.

22 Financial Bid Format

Sr. No.	Item	Quoted Qty	Unit Prices(PKR)	Total Price (PKR)
A	Hardware			
1	Civil Work of Data Center			
2	Cabinets and PDU			
3	Cooling Solution			
4	Power Solution including UPS and allied power accessories			
5	Structured Cabling			
6	Fire Detection and Suppression System			
7	CCTV and Access Control System			
8	Monitoring System NOC/SOC			
9	Misc Items			
B	Services			
10	DC Migration Services at Sr#13 of TOR			
11	Third Party audit, testing and certification at Sr# 16 of TOR			
12	Monitoring Services at Sr#14 of TOR			
13	Professional Services at Sr#12 of TOR			
C				Total A+B = C
D	Technical Support Services for 03 years after completion of Data Center			

Note:

- Lump Sum prices on the above may be quoted, however each entry of hardware/services shall be supported with itemized list of quantities & unit prices.
- The prices shall be inclusive of all taxes, duties, levies etc. except PST/ICT/GST.
- 3rd party audit, testing & certification shall be paid at actual on provision of dully verified invoices.

23 Payment Terms

Payment to the contractor shall be made in equivalent PKR against verified invoices by OGDCL official. 40% of the total amount at Sr#C will be made at time of delivery of equipment and 60% of Sr#C after installation/commissioning of complete solution. Payment of technical support services at Sr#D shall be made annually after delivery of services against duly verified invoices.

(This clause will prevail instead of Master Tender document "ITB" clause # 07 'PAYMENT').

24- AMOUNT OF BID BOND

Bid Bond /Bid Security amounting to PKR 4,530,000/- is to be attached / provided with the technical bid. Please see Master Set of Tender Document for further details.

25-BID PRICE:

- Bid price shall be inclusive of all taxes, duties, levies, charges etc., except Provincial Sales Tax (PST)/ Islamabad Capital Territory Sales Tax (ICT) in Pakistan. The prices should be quoted in PKR otherwise the bid will be rejected.
- The prices quoted by the successful bidder (contractor) for required services shall remain firm and final throughout contract period. The price charged by the successful bidder (contractor) for required services shall not vary from the prices quoted by the service company.

(This clause will be prevail instead of Master Tender document "ITB" clause # 06 'BID PRICE').

Note:

The Master Set of Tender Documents (Services) uploaded on OGDCL's website (www.ogdcl.com) is the integral part of the TOR.

Bidders are requested to read TOR & Master Set to Tender Documents (Services) and provide complete information / documents including tender annexures with the bid.