



NEPAL ELECTRICITY AUTHORITY
(Government of Nepal Undertaking)
Project Management Directorate
Project Management Department
Distribution System Control and Data Centre Project
Kharipati, Bhaktapur

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Phone No. : 977-01-6614873



Letter Ref. No.077/78 /Ch:-118

Date:-22th October, 2020



To
All prospective bidders;

Subject:- Issuance of Amendment – 2


Ref:- Design, Supply, Installation and Commissioning of Distribution Command and Control Centre (OCB:- PMD/EGMP/DCC -077/78 -01)

Dear Sirs/Madams;

In reference to the bid published on date 10th Aug 2020, We would like to inform all the prospective bidders with Admendment -II according to the ITB clause 8 of the bidding document.

We also would like to request you to acknowledge the receipt in project office.

With Warm Regards



Rabindra Shrestha
(Project Manager)

Amendment to Bid

OCB No. and Title: PMD/EGMP/DCC-077/78-01 "Design, Supply, Installation and Commissioning of Distribution Command and Control Centre"

Pursuant to ITB Clause number 8 addendum-II has been issued. All the bidders are requested to collect the hard copy of addendum -II from Project office. This addendum-II shall be a part of bidding document and failure to collect the same shall be at the risk of the bidder. Addendum-II consists of

- i) Extension of bid submission deadline till 26th Nov 2020 till 12:00 noon.
- ii) Amendment in RFP, Section 6.3 (9.2) Availability computation for SCADA-DMS System Pg. 273/413 and
- iii) Amendment in Item No. 15, Price Schedule, Schedule No. 1 and 4, Communication equipment, switches etc.
- iv) Amendment in RFP, Vol II, Section V, and Communication Network added.

Addendum-II

- a) Replace ITB 24.2 and ITB 27.1 Bidder's Data Sheet Section-II, Vol-I of the bidding document by the following.

SN	Clause Reference	Existing	Amendment
1	Section 2: BDS: ITB 24.2	The Deadline for bid submission is Date: 29 th October 2020 Time: 12:00 Noon (Local Time)	The Deadline for bid submission is Date: 26 th November 2020 Time: 12:00 Noon (Local Time)
2	Section 2: BDS: ITB 27.1	The Deadline for bid Opening is Date: 29 th October 2020 Time: 12:30 Noon (Local Time)	The Deadline for bid Opening is Date: 26 th November 2020 Time: 12:30 Noon (Local Time)

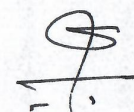
- b) Replace RFP Section 6.3(9.2) Availability computation for SCADA-DMS System Pg. 273/413 by the following.

SN	Clause Reference	Existing	Amendment
3	RFP Section 6.3(9.2) Availability computation for SCADA-DMS System Pg. 273/413	Existing:- For overall system availability Deduction of 2% of the apporportioned price of the apporportioned quarterly FMS for every 1% or part there of decrease in availability under 99% For individual hardware & non- critical functions Deduction of 2% of the apporportioned price of the apporportioned quarterly FMS for every 1% or part there of decrease in availability under 98%	Amendment:- For overall system availability Deduction of 2% of the apporportioned price of the apporportioned quarterly FMS, O&M, ATS, AMC costs for every 1% or part there of decrease in availability under 99% For individual hardware & non- critical functions Deduction of 2% of the apporportioned price of the apporportioned quarterly FMS for every 1% or part there of decrease in availability under 98%

c) Replace Item No. 15, Price Schedule, Schedule No. 1 by the following.

NEPAL ELECTRICITY AUTHORITY									
PROJECT MANAGEMENT DIRECTORATE									
Distribution Control Centre Project									
Electricity Grid Modernization Project									
PMD/- 01: Design, Supply, Installation and Commissioning of Distribution Command and Control Centre.								FC: Foreign Currency	
Schedule No.1: Plant and Equipment including Mandatory Spares to be Supplied from Abroad.								LC: Local Currency	
Item No	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)	
			Unit	Qty	FC			FC	LC
					Currency	Unit Rate	Amount		
1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
	Existing								
15	Communication equipment, switches etc. as required for data and control connectivity from FRTU to DCC to integrate with the SCADA DMS. Breakdown list shall be provided with details with rate of items to be furnished		Lot	300					
	Amendment								
15	Communication equipment, switches etc. as required for data and control connectivity from FRTU to DCC to integrate with the SCADA, DMS as furnished below:								
15.1	SDH Equipment(STM- 16 MADM up to 5 MSP protected directions) :- STM-1 Base Equipment Equipped with 4X STM-1 Interface with redundant Cross connect and Redundant AC Power Supply cards along with Common cards power cabling, other hardware & accessories including sub-racks,		No.	12					

	patch cords, with SFP and Ethernet cards.								
15.2	SDH Equipment (STM-4 MADM up to 5 MSP protected directions):-Base Equipment (Common cards, Cross Connect/control cards, optical base cards, power supply cards, power cabling, other hardware and accessories including sub racks, patch cord ,with SFP and Ethernet cards.		No.	10					
15.3	SDH Equipment (STM-1 MADM up to 5 MSP protected directions):-Base Equipment (Common cards, Cross Connect/control cards, optical base cards, power supply cards, power cabling, other hardware and accessories including sub racks, patch cord ,with SFP and Ethernet cards.		No.	7					
15.4	(Optical Fiber Switch (24 ports with SFP for 2/5/10/20/25km, having Ethernet, VLAN Supporting, manageable L2 switch)		No.	150					
15.5	Optical fiber Switch (8/16 ports with SFP for 2/5/10/20km, having Ethernet, VLAN Supporting, Manageable L2 switch)		No.	274					
15.6	Optical Modems (Single mode/Multimode)		No.	100					
15.7	PS unit , DC to DC Converters, 48v/24v		No.	40					
15.8	PS unit , DC to DC Converters, 110v to 48v and 24v		No.	20					
15.9	FODP, FMS 48 ports and 96 ports with all accessories		No.	100					
15.10	OF Patch Cord with cables and required all accessories for 1 station		No.	100					
15.11	GPRS Canopy Equipment set for both ends of S/S and SW/S		No.	50					
15.12	All communication equipment hardware, software and accessories required for successful operation of the communication network		Lot.	1					
15.13	Digital Multimetre with all required accessories		No.	5					
15.14	Ethernet tester with all required accessories		No.	4					
15.15	Optical fiber tester(laser tester) with all		No.	4					

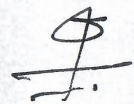


	required accessories								
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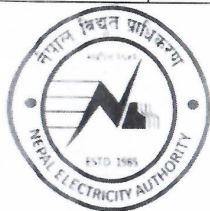
d) Replace Item No. 15, Price Schedule, Schedule No. 4, by the following.

Schedule No.4: Installation and other Services								LC: Local Currency	
a. Installation and Construction Charges									
Item No	Item description	Country of origin	Estimated		CIP Project Site including insurance, clearing, forwarding and transportation to site (Excluding Taxes and Duties applicable in Nepal)			Total Amount (Excluding Taxes and Duties)	
			Unit	Qty	FC			FC	LC
					Currency	Unit Rate	Amount		
1	2	3	4	5	6	7	8 = (7) x (5)	9=8	10
	Existing								
15	Communication equipment, switches etc. as required for data and control connectivity from FRTU to DCC to integrate with the SCADA DMS. Breakdown list shall be provided with details with rate of items to be furnished		Lot	300					

	<u>Amendment</u>								
15	Communication equipment, switches etc. as required for data and control connectivity from FRTU to DCC to integrate with the SCADA DMS as furnished below:								
15.1	SDH Equipment(STM- 16 MADM up to 5 MSP protected directions) :- STM-1 Base Equipment Equipped with 4X STM-1 Interface with redundant Cross connect and Redundant AC Power Supply cards along with Common cards power cabling, other hardware & accessories including sub-racks, patch cords, with SFP and Ethernet cards.		No.	12					
15.2	SDH Equipment (STM-4 MADM up to 5 MSP protected directions):-Base Equipment (Common cards, Cross Connect/control cards, optical base cards, power supply cards, power cabling, other hardware and accessories including sub racks, patch cord ,with SFP and Ethernet cards.		No.	10					
15.3	SDH Equipment (STM-1 MADM up to 5 MSP protected directions):-Base Equipment (Common cards, Cross Connect/control cards, optical base cards, power supply cards, power cabling, other hardware and accessories including sub racks, patch cord ,with SFP and Ethernet cards.		No.	7					
15.4	(Optical Fiber Switch (24 ports with SFP for 2/5/10/20/25km, having Ethernet, VLAN Supporting, Manageable L2 switch)		No.	150					
15.5	Optical fiber Switch (8/16 ports with SFP for 2/5/10/20km, having Ethernet, VLAN Supporting, Manageable L2 switch)		No	274					



15.6	Optical Modems (Single mode/Multimode) & all Accessories		No.	100					
15.7	PS unit , DC to DC Converters, 48v/24v & all Accessories		No.	40					
15.8	PS unit , DC to DC Converters, 110v to 48v and 24v & all Accessories		No.	20					
15.9	FODP, FMS 48 ports and 96 ports with all accessories		No.	100					
15.10	OF Patch Cord with cables and required all accessories for 1 location		No.	100					
15.11	GPRS Canopy Equipment set for both ends of S/S and SW/S & all Accessories		No.	50					
15.12	All communication equipment hardware, software and accessories required for successful operation of the communication network		Lot	1					



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1. COMMUNICATION NETWORK

NEA intends to design, supply, establish, install, testing, commissioning, operate and maintain Advanced Metering Infrastructure (AMI) for consumers & other Smart Grid Applications through other Contracts. NEA intends to deploy the RF communication network with its auxiliary system all across Kathmandu valley (Kathmandu, Lalitpur and Bhaktapur) within an area of 220 sq. miles.

Also, NEA intends to establish an electrical distribution management system and distribution control centre for Distribution & Customer Services that is capable to access real-time data and provide all information on a single console at the Distribution Control Centre in an integrated manner with the possibility to remotely control the entire network and reduce outages and increase operational efficiency. The GPRS/RF/OFC canopy is to be established, using wireless technology, shall be in the form of a GPRS/RF/OFC mesh with field devices like nodes, routers/repeaters, collectors/gateways etc.

NEA is currently planning for distribution automation of the distribution network within distribution centre in different phases. The distribution network is proposed to be connected through optical fibre communication and act as a back bone of the network. Through this specification NEA intends to develop Optical Fibre Communication Network with substation equipment and other field equipment's connected with the underground and overhead system.

The distribution automation system is being installed at two distribution centre (NEA Branch), which will involve around mix of underground system and overhead ABC HT network which includes RMUs, GO switches and DTs. For 5 DCs of Kathmandu district contract has been signed and for Lalitpur and Bhaktapur districts, the Bidder selection is in process. These contract and bid document also include the distribution automation works, which include supply of FRTUs and communication modules.

So, the scope under this project includes integration of all these equipment for data and control signal from the field IEDs, FRTU and RTUs installed using RF / OFC /GPRS. But NEA's preferred network will be use of OFC. Those OPFC cables will be provided by NEA from all the substations to LDC/near DCC building. The bidder is required to supply all equipment which is required to operate the system with full function, in addition to equipment which is already supplied.

Thus the work includes coordination with the other contractors during integration work, such that total automation is achieved. The Bidder shall be responsible for detailed design and engineering of overall system, subsystems, elements, system facilities, equipment, services, facilitate and integrate distribution automation.

Thus, the Contractor shall make ready all the equipment like RMU, DTs, FPI and GO switch to connect with the new distribution centre without any problems, like data acquisition from distribution field level (until Distribution Transformers) till monitoring and controlling of the overall electrical distribution network including Ring Main Units (RMUs), Sectionalizers, ARCBs (Auto Reclose Circuit Breakers) and FPIs (Fault passage Indicators) within the network.



The design and engineering shall include provision of communication equipment in all the field equipment and substation equipment and execution of all interfaces with systems, equipment, material and services of Owner for proper and correct design, performance and operation of the project. Successful Bidder shall provide complete engineering data, drawings, reports, manuals and services offered etc. for NEA's review, approval and records.

The proposed system shall be compatible to operate with the RF network mentioned above and the optical fibre network under planning and construction. The control centre to be established under this project will be at NEA LDC Syuchataar, Kathmandu.

All electrical equipment until distribution transformers will be monitored and remotely operated by the use of Field RTUs over a Optical Fibre Communication Network and backup RF mesh canopy. The distribution control centre shall also be connected with the AMI system mentioned in the previous chapters.

The communications system hierarchy will be as follows:

The FRTUs and IEDs shall report to the main and backup control centres using IEC-60870-5-104 protocol. The FRTUs and IEDs shall be connected to wireless Customer Premises Equipment (CPE) via Ethernet interfaces.

The Base stations will be connected with optical fibre to the nearest node in the existing SDH ring, which shall carry the signals to the control centres. The base stations will also have the capability to communicate with other base stations in the network using point to point (PTP) or GPRS, 4G Network that are also compatible to 3G Networks.

The existing SDH network shall also be expanded by adding equipment at selected locations as required. The SDH network shall be expanded by adding STM-4/16 SDH equipment or as per existing equipment to the existing network. The expanded network shall be made in a ring configuration.

The contractor shall be responsible for supply & installation of all required communication equipment for successful operation of the distribution automation system. The supply and installation of Communication equipment, switches, modem, SDH equipment etc as required for data and control connectivity from FRTU to DCC to integrate with the SCADA DMS shall be in the scope.

The bidder is required to provide the breakdown list for the item 15 in the BPS with the rate of items as per published schedules in addendum II.

The Contractor is required to offer standard products and designs. It should be noted that preliminary design information and information specified in the bid price schedule are indicative only. The Contractor shall verify the design data during the site surveys & detail engineering and finalize the BOQ as required for ultimate design & system performance.

The Bidder's proposal shall address all functional and performance requirements shall include sufficient information and supporting documentations. The Contractor shall be responsible for providing at no added cost to the Employer, all such items and services such that a viable and fully functional communication equipment system is implemented that meets or exceeds the capacity, and performance requirements specified. Such materials and services shall be considered to be within the scope of the contract. To the extent possible, the Bidders shall



identify and include all such additional items and services in their proposal with unit price. The payment will be made as per the unit rate for the supplied items.

All equipment provided shall be designed to interface with existing equipment and shall be capable of supporting all present requirements and spare capacity requirement identified in this specification.

The communication equipment shall be designed and provisioned for expansions and reconfigurations without impairing normal operation, including adding and removing circuits. The offered items shall be designed to operate in varying environments. Adequate measures shall be taken to provide protection against rodents, contaminants, pollutants, water & moisture, lightning & short circuit, vibration and electro-magnetic interference etc.

The Bidders are advised to make necessary studies, prior to the submission of a proposal, and make surveys and assessments as deemed necessary for proposal submission. The successful bidder (Contractor) is required to visit all sites. The site visits after contract award shall include all necessary surveys to allow the contractor to perform the design and implementation functions.

After the site survey, the Contractor shall submit to the Employer a survey report on each link and site. This report shall include at least the following items:

- a. Proposed layout of Equipment in the existing rooms, buildings, RMU etc.
- b. Proposed routing of power, earthing, signal cables and patch cords etc.
- c. Confirmation of adequacy of space and AC/DC Power supply requirements
- d. Proposals for new rooms/buildings, if required
- e. Identification of facility modifications, if required
- f. Identify all additional items required for integration for each site/location.

The Bidder's proposal shall address all functional and performance requirements shall include sufficient information and supporting documentations. The Contractor shall be responsible for providing at no added cost to the Employer, all such items and services such that a viable and fully functional communication equipment system is implemented that meets or exceeds the capacity, and performance requirements specified. Such materials and services shall be considered to be within the scope of the contract. To the extent possible, the Bidders shall identify and include all such additional items and services in their proposal with unit price. The breakdown shall include following, as required by the bidder's communication scheme: The bidder is required to submit the communication architecture for their proposal connecting existing FRTUs with DCC. The payment will be made as per the unit rate for the supplied items.

Please note these items with rate are necessary for the exemption of custom duty during custom clearances. The bidders are encouraged to be fair and avoid any price loading, during assessment of unit cost for above items.

