

**Specifications Submission and Compliance Sheet (Form PG4-4)**

Invitation for Tender No: NESCO/SMP/Purchase/42

Date: 30/01/2019

Tender Package No: 01

Package Description:

Supply, Installation, Testing &amp; Commissioning of Smart Pre-Payment Meter with Related Services on Turn Key Basis for NESCO Ltd.

**1. Rack Mounted Router**

SL. No	Name of Item	Unit	Required Specifications	Full Technical Specification & Standard (To be mentioned)
01	Quality	-	ISO 9001/9002 for manufacturer, FCC for quality assurance. Bidder needs to submit required supporting documents.	
02	Brand		To be mentioned by the bidder	
03	Model		To be mentioned by the bidder	
04	Country Of Origin		USA/EU/Japan	
05	Country of Manufacture		To be mentioned by the bidder	
06	Environmental		Maintain International Quality Environmental Safety standard	
07	Enclosure Type		Rack-mountable	
08	Architecture		The router should be modular in architecture with a services-based hardware architecture	
09	Router Processor		Dedicated Route Processor with Quad Core Processor	
10	Service Processor		Dedicated services processor module	
11	Default Memory		8-GB DRAM	
12	Power supply		Redundant N+1	
13	Forwarding throughput		Minimum 5 Gbps (Full-Duplex) from day 1, Upgradable to 18 Gbps or more if required in future without hardware changing.	
14	Interface		Should have at least 6 x 1 GE SFP ports populated with Multi mode SFP modules from day 1.	
			The router should be populated with 2 x 10GE SFP+ module interface from day 1.	
			The router should support wide variety of interfaces including STM-1, STM-4, SDH and Channelized E1, Fast Ethernet and	

			Gigabit Ethernet, 10 Gigabit Ethernet WAN Interface	
<b>15</b>	<b>No of slots.</b>		Minimum 1 module/shared port adapter slots	
<b>16</b>	<b>Management</b>		Support diagnostic commands and system health checks within the Router	
			Bidder must propose Central Management System license with configuration, troubleshooting license.	
<b>17</b>	<b>Manufacturer's part number</b>		Bidder should submit BOQ of proposed device including the details part numbers and Manufacturer Warranty.	
			Bidder should submit the required performance document for the proposed device. If the additional accessories are essential, Bidder will provide by this additional accessory according to the proposed model.	
<b>18</b>	<b>Installation, Testing and Commissioning</b>		Bidder must carry out on site installation, testing and commissioning. In consultation with IT Department, bidder must configure appropriate security and administration related policies, must do integration with other related hardware/software required to make the LAN functional and shall provide respective documentation to IT Division.	
<b>19</b>	<b>Manufacturer authorization</b>		Bidder must submit Manufacturer Authorization from the OEM.	
<b>20</b>	<b>Warranty</b>		Mentioning manufacturer warranty part number should be quoted, minimum 3 (Three) year warranty should be provided for this unit from the date of successful commissioning.	

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## 2. Rack Mounted Managed Switched

SL. No	Name of Item	Unit	Required Specifications	Full Technical Specification & Standard (To be mentioned)
01	Quality		ISO 9001/9002 for manufacturer, FCC for quality assurance. Bidder needs to submit required supporting documents.	
02	Brand		To be mentioned by the bidder	
03	Model		To be mentioned by the bidder	
04	Country Of Origin		USA/EU/Japan	
05	Country of Manufacture		To be mentioned by the bidder	
06	Environmental		Maintain International Quality Environmental Safety standard	
07	Enclosure Type		Rack-mountable	
08	Architecture		Should be highly performed fixed switch with wire rate Layer 2 and Layer 3 throughput on all the ports on the chassis.	
			Should have minimum of 24 x 10GE SFP+ transceiver based ports	
			The Switch Should support 10G Ethernet & 1GE Ethernet on all SFP+ Ports.	
			Each Switch should have 24 x 10GE SFP+ modules with required Cable Installed from day one. All the SFP should be OEM original SFP Module.	
			Support virtual stacking	
			Dual redundant platinum rate power supply and redundant Fans from day 1.	
09	Stacking Bandwidth		480 Gbps	
10	Switching Performance		Minimum Switching capacity 640 Gbps or more	
			Minimum Forwarding Throughput 454 Mpps or more	
11	Switch Layer 2		Layer 2 switch ports and VLAN	

	<b>Services</b>		trunks	
			IEEE 802.1Q VLAN encapsulation	
			Support for up to 4000 VLANs	
			Minimum 32,000 MAC Address	
			Support minimum 9198 bytes Jumbo frame	
			Support STP, RSTP, EtherChannel/LACP, VLAN Trunking, Q-in-Q/IEEE VLAN Tunneling	
			Must have 30 MB of shared buffer for traffic/packet Queuing and processing	
<b>12</b>	<b>Switch Layer 3 Services</b>		Support Routing Protocols Static, OSPF, RIP, Policy-Based Routing/Forwarding, ECMP L3 load Balancing, Virtual redundant Routing Protocol (VRRP) from day 1	
			Routing protocols BGPv4, IS-IS, IS-ISv4, OSPFv3 from day 1	
			VRF, L3VPN, Ethernet over MPLS, H-VPLS, IPv6 on Virtual Provider Edge, Multicast VPN for network virtualization and segregation from day 1	
			Minimum Up to 60,000 indirect IPv4 route and 30,000 IPv4 direct/host IPv4 route	
			Minimum Up to 30,000 indirect IPv6 route and 15,000 IPv6 direct/host IPv6 route	
			Support minimum 4000 L3 VLAN Interfaces or Switched Virtual Interfaces	
			Minimum 500,000 flow entries for security and traffic visibility.	
			Support Dual-stack for IPv4/IPv6 for IPv4-to-IPv6 migration.	
			Support wire-speed forwarding for IPv6 networks	
			NAT, VXLAN and PAT from day 1	
			Support Internet Group Management Protocol (IGMP), PIM Stub etc.	
			Support QoS with 802.1p Class of Service, Weighted Random Early Detection, DSCP field classification, Class-Based Weighted Fair Queuing, Shaped	

			Round Robin scheduling or similar protocol	
			Support Stateful Switchover (SSO), OS patch update resiliency and Nonstop Routing for high-availability.	
			Support Bootstrap Router Protocol, Multicast Source Discovery Protocol	
<b>13</b>	<b>Manufacturer authorization</b>		Bidder must submit Manufacturer Authorization from the OEM.	
<b>14</b>	<b>Warranty</b>		Mentioning manufacturer warranty part number should be quoted, minimum 3 (Three) year warranty should be provided for this unit from the date of successful commissioning.	

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### 3. Rack Mounted Fire wall

SL. No	Name of Item	Unit	Required Specifications	Full Technical Specification & Standard (To be mentioned)
01	Quality		ISO 9001/9002 for manufacturer, FCC for quality assurance. Bidder needs to submit required supporting documents.	
02	Brand		To be mentioned by the bidder	
03	Country Of Origin		USA/EU/Japan	
04	Country of Manufacture		To be mentioned by the bidder	
05	Model		To be mentioned by the bidder	
06	Environmental		Maintain International Quality Environmental Safety standard	
07	Enclosure Type		Rack-mountable	
08	Hardware Architecture		The appliance-based security platform should be capable of providing Next Generation IPS functionality with application visibility, URL filtering and Malware Protection in a single appliance from day 1.	
			The appliance should support at least 8 x 10G SFP+ Ethernet ports with 2 x 1G Copper SFP ports and 8 x 10G Multi-Mode SFP interface from Day one and should be scalable to additional 2 * 40G network bypass ports in future for scalability.	
			The appliance hardware should be a multicore CPU architecture with a hardened 64 bit operating system to support higher memory Proposed IPS should not be proprietary ASIC based in nature & should be open architecture based on multi-core cpu's to protect & scale against dynamic latest security threats.	

<b>09</b>	<b>Performance &amp; Scalability</b>		The solution should support at least 10 Gbps or more of Next-Generation IPS performance throughput considering next-generation security feature like Application Visibility & IPS, malware protection and URL-filtering from day 1.	
			The solution should support at least 8,500,000 concurrent sessions or more	
			The solution should support at least 65,000 connections per second with Application visibility	
			The solution should support at least 9,000 VPN peers or end-points with at least 5 Gbps VPN throughput	
			The solution should support Active/Standby failover for redundancy.	
			The solution should support LACP functionality for the failover control & data interfaces for provide additional level of redundancy	
			The solution should support redundant interfaces to provide interface level redundancy before device failover	
<b>10</b>	<b>Manufacturer authorization</b>		Bidder must submit Manufacturer Authorization from the OEM.	
<b>11</b>	<b>Warranty</b>		Mentioning manufacturer warranty part number should be quoted, minimum 3 (Three) year warranty should be provided for this unit from the date of successful commissioning.	

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## 4. SAN Switch

SL. No	Name of Item	Unit	Required Specifications	Full Technical Specification & Standard (To be mentioned)
01	<b>Brand</b>		To be mentioned by the bidder	
02	<b>Model</b>		To be mentioned by the bidder	
03	<b>Country Of Origin</b>		USA/EU/Japan	
04	<b>Country of Manufacture</b>		To be mentioned by the bidder	
05	<b>Active ports</b>		Should have minimum 24 Active ports, upto supported 40 ports (each with minimum port speed 16Gbps).	
06			SAN Extension should have at least 2 numbers of 10Gigabit Ethernet (GbE) ports, and 8 numbers of 10 GbE Fiber Channel over Ethernet ports for SAN extension over WAN.	
07	<b>Protocol</b>		Should support FCIP protocol.	
08	<b>Port trunking</b>		Should have capability of port trunking.	
09			Should have optical transceivers for short wave and long wave.	
10	<b>Management Software</b>		Should have GUI based management software for administration and configuration.	
11			Should be possible to configure the switches with alerts.	
12			Should support zoning configuration or equivalent.	
13			Should support fabric routing to enable cross fabric connectivity or equivalent.	
14			All other necessary fibre cables and racking accessory should be supplied.	
15	<b>Diagnostic features</b>		Should have inbuilt diagnostic features like Online Diagnostics, power on self-test, Online Health System or equivalent etc.	
16	<b>Authentication</b>		Should support RADIUS authentication or SSH.	



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### 5. Tape Library

SL. No	Name of Item	Unit	Required Specifications	Full Technical Specification & Standard (To be mentioned)
01	Brand		To be mentioned by the bidder	
02	Model		To be mentioned by the bidder	
03	Country Of Origin		USA/EU/Japan	
04	Country of Manufacture		To be mentioned by the bidder	
05	Drive type		Drive Type - LTO Generation 7.	
06	No. of drives		Tape library should be offered with min 8*LTO7 drives and 100 slots	
07			Offered LTO6 drive in the Library shall conform to the Continuous and Data rate matching technique for higher reliability.	
08	Data Transfer Rate		Offered LTO7 drive shall have native speed of +at least 300MB/sec and a compressed speed of 600MB/sec	
09	Encryption		Offered LTO7 drive in the library shall offer WORM and AES 256bit encryption.	
10	Modularity and Scalability		Offered tape Library shall provide the granular modularity and scalability in the increments Of 100 slots.	
11	Power Supply		Should be offered with redundant power supply	
12			RAS Features Hot-swappable drives; Tape Library shall provide remote monitoring capability.	
13	Platform		Supported Host Platform AIX, Linux, Solaris, Windows.	
14			Offered tape Library shall be Modular design To Allow configuration, add capacity and increase performance.	

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### 6. Rack with monitor and Console Kit

SL. No	Name of Item	Unit	Required Specifications	Full Technical Specification & Standard (To be mentioned)
01	Brand Name		To be mentioned by the Bidder	
02	Model No.		To be mentioned by the Bidder	
03	Country of Manufacture / Assemble		To be mentioned by the Bidder	
04	Peripherals and Accessories		To be mentioned by the Bidder	
05	Country of Origin		USA/EU/UK/Switzerland	
06	Form Factor		42 U	
07	Console Switch		Min 12 Port Console Switch with cables.	
08	PDU		Two units of 32 amp	
09	Console Display		Same branded Min. 17-inch, flat screen TFT monitor with truly accurate images and virtually no distortion.	
10	Other Features		Space-saver server Keyboard with Touchpad. -Top cover fully vented. -Support full density of all OEM servers by improved air flow allowing for a fan-free rack environment. -Rear Vented Metal Door with Lock.	
11	Colour		Black	
12	Warranty		3 Years	

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### 7. External Storage

SL. No	Name of Item	Unit	Required Specifications	Full Technical Specification & Standard (To be mentioned)
01	Brand		To be mentioned by the bidder	
02	Model		To be mentioned by the bidder	
03	Country Of Origin		USA/EU/Japan	
04	Country of Manufacture		To be mentioned by the bidder	
05			The Storage system should have unified capability i.e. should support block and file access with host connectivity for FC, iSCSI, NFS and CIFS. Any hardware/software required for this functionality shall be supplied along with it in NSPOF mode per storage controller.	
06	Controller		The Storage system should have at least two controllers running in an active-active mode with automatic failover to each other in case of one/any controller failure.	
07			The system should be dedicated appliance with specifically optimized OS to provide both SAN and NAS functionalities. The architecture should allow Data in place upgrades hardware and software for investment protection. The system should be suitably configured for achieving enhanced performance and throughput.	
08			The storage system should have dual controllers & file system heads with automatic Fail over capabilities in case of one controller or head failure. The storage should be installed in the OEM Rack to be supplied.	
09			Easy to use GUI based or web enabled administration interface for configuration, storage	

			<p>management for all protocols asked i.e. both SAN and NAS Management.</p> <p>Performance management tools should show detailed real time and historical key performance characteristics like, Read and Write IOPS, Throughput in MB/s or GB/s, controller utilization, disk utilization, capacity utilization etc. Management GUI shall support scheduling email of reports for above performance metrics."</p>	
<b>10</b>	<b>RAID</b>		<p>The storage system should have auto-negotiating 8/16Gbps FC, SAS 1 GbE and 10 GbE interfaces. The Storage System should support Raid Levels 5, 6, 10 or equivalent data protections. Multiple raid configurations to be configured in the proposed solution.</p>	
<b>11</b>			<p>The Storage System should have support for SSD, SAS Drives, and NL SAS Drives.</p> <p>The storage system should have support for 6Gbps SAS 2.0 drives. Proposed system should be able to support all on-line data storage tiers in order to maximize both system performance and capacity scalability. Proposed system should support flash, Minimum 10K RPM SAS2.0 as well as 7.2K RPM drives.</p>	
<b>12</b>			<p>The storage system should be supplied with 30 TB of usable disk space at raid level 5 after over heads like formatting, raid configuration, one hot spare disk for every 30 disks and configured with 10K RPM SAS 2.0 drives and necessary disk enclosures.</p> <p>All the drives should be in addition to the drives used to hold the system's OS.</p> <p>Offered Storage shall be configured with Min of 32 GB of cache.</p>	
<b>13</b>			<p>The Storage System should have the capability to support Non-</p>	

			Disruptive Data migration across Volumes. The Storage System should be configured with host multi-pathing drivers.	
<b>14</b>			No replacement or upgrade of controllers should be required for supporting the 150 disks. It should be a single or tightly clustered singly managed system rather than aggregate of multiple separate smaller boxes.	
<b>15</b>			The storage should have the ability to create logical volumes without physical capacity being available (Thin Provisioned) or in other words system should allow Over provisioning of the capacity. The feature should be made available for the maximum supported capacity.	
<b>16</b>			For file access It should be possible to set quotas and should have LDAP integration. Support for heterogeneous client Operating System platforms (on both block and file level) like LINUX , Microsoft Windows, HP-UX, SUN Solaris, IBM-AIX, ESXi, etc.	
<b>17</b>			The Storage System should have the Capability to support creation of instantaneous or Point In Time Snapshot copies of volumes. The snapshot feature should support incremental and thin provisioned volumes.	

## CCTV System

### A. CCTV Camera Specification

SL. No	Name of Item	Unit	Required Specifications	Full Technical Specification & Standard(To be mentioned)
1.	Brand		To Be Mentioned	
2.	Model		To Be Mentioned	
3.	Type		HD/Bullet CC Camera	
4.	Horizontal Resolution		1080P (Minimum)	
5.	Night vision		Yes	
6.	Sensor type		2MP CMOS Image Sensor (Minimum)	
7.	IR range		Up to 40m	
8.	Warranty		01(One Year)	

### B. UPS (Off Line)

05 KVA 02 Hr Backup

### C. Monitor

18-Inch LED Monitor of any International Reputed Brand.

## D. HD DVR Specification

SL. No	Name of Item	Unit	Required Specifications	Full Technical Specification & Standard(To be mentioned)
1		<b>Brand</b>	To Be Mentioned	
2		<b>Model</b>	To Be Mentioned	
3		<b>Type</b>	08 Channel HD DVR	
4		<b>Video output(VGA)</b>	1920 x 1080 / 60 Hz, 1280 x 1024 / 60 Hz, 1280 x 720 / 60 Hz, 1024 x 768 / 60 Hz	
5		<b>Audio Input channel RCA</b>	1-ch RCA (2.0 Vp-p, 1 kΩ)	
6		<b>Two way audio</b>	1-ch, RCA (2.0 Vp-p, 1 KΩ)	
7		<b>Video recording res</b>	HD 1080P	
8		<b>Frame rate</b>	Main stream: 3 MP/1080p/720p/VGA/WD1/4CIF/ CIF@15fps, 1080p/720p@15fps; VGA/WD1/4CIF/CIF@25fps (P)/30fps (N), 720p/VGA/WD1/4CIF/CIF@25fps (P)/30fps (N)	
9		<b>Stream type</b>	Video/Video&Audio	
10		<b>Dual stream support</b>	Support	
11		<b>Number HDD interface(SATA)</b>	1 SATA Interface	
12		<b>Max HDD support (GB TB)</b>	Up to 6 TB for each disk	
13		<b>HDD Capacity</b>	2 TB (Minimum)	
14		<b>Network interface(RJ45)</b>	1; 10M / 100M self-adaptive Ethernet interface	
15		<b>USB Port</b>	2 x USB2.0	
16		<b>Power supply</b>	12V DC	
17		<b>Others</b>	Chassis: Mini 1U chassis, Network protocols: TCP/IP, PPPoE, DHCP, Hik-Connect, DNS, DDNS, NTP, SADP, NFS, iSCSI, UPnP, HTTPS, ONVIF, Remote connections: 128, Playback Resolution: 3 MP/1080p/720p/VGA/WD1/4CIF/ CIF, Audio Bit Rate: 64kbps, Video Bit Rate: 32	
18		<b>Warranty</b>	1 year	