

REQUEST FOR INFORMATION

Supply and Delivery of Transformers, Conductors, Pre/Post Payment Meters, Tools and Equipment for Liberia Electricity Corporation

September 17, 2018

Country: Liberia	Funding Agency: Millennium Challenge Corporation
City/Locality: Monrovia	Buyer: Millennium Challenge Account – Liberia (MCA-Liberia)
Project Name: Energy Project	

1. The United States of America, acting through the Millennium Challenge Corporation (“MCC”) and the Government of Liberia (the “Government” or “GOL”) have entered into a Millennium Challenge Compact dated October 2, 2015 to help facilitate poverty reduction through economic growth in Liberia (the “Compact”) in the amount not to exceed Two Hundred Fifty-Six Million Seven Hundred Twenty-Six Thousand United States Dollars (US\$256,726,000) (“MCC Funding”). Liberia’s Compact entered into force on January 20, 2016.

The goal of the Compact is to reduce poverty through economic growth. Specifically, the Compact seeks to address two binding constraints to economic growth currently existing in Liberia:

- a) lack of access to reliable and affordable electricity, and
- b) inadequate road infrastructure.

The Government, acting through Millennium Challenge Account - Liberia (the “MCA Entity”), intends to apply a portion of the MCC Funding to eligible payments under a contract for Supply and Delivery of Transformers, Conductors, Pre/Post Payment Meters, Tools and Equipment

1. **Introduction:** For the intended procurement of goods, LEC provided specific technical requirements for various electrical equipment, instruments and tools. To avoid restrictive technical requirements, MCA-Liberia wish to provide generic technical requirements, which can be met by different manufacturers for similar equipment, instruments and tools. To source the required information, MCA-Liberia intends to conduct a market survey for obtaining the generic technical specifications vis-à-vis the technical requirements /specifications required by LEC and to determine the availability of the goods meeting the required specifications from various national and international manufacturers.
2. **Summary of Requirements:** The details of the goods proposed to be procured for which the information is being requested, are provided in the **Annex 1**.
3. You are invited to comment on the technical specifications indicated and submit the relevant minimum generic technical specifications required, standards to be complied, availability of goods, warranties required, acceptance tests needed at site and compatibility of the proposed goods to the electrical standards and requirements of Liberia.

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4. You are requested to provide information related to all the items indicating manufacturer and country of origin.
5. You are requested to provide the information on the mode of delivery of the goods, whether to final destination to LEC (CIP) or delivery to port in Monrovia (CIF) and the most practical delivery period for the receipt of such goods in Liberia.
6. You are also requested to declare your interest in all, several or only one lot of the following five lots:

Lot	Description
Lot 1	Electrical Transformers
Lot 2	Electricity Meters
Lot 3	LV Aerial Conductors with associated Connectors and Clamps
Lot 4	Tools
Lot 5	Personal Protective Equipment

7. This request is to obtain information only. The intention of MCA-Liberia is to obtain generic technical specifications for the goods and subsequently reach to market with general, acceptable and non-restrictive minimum requirements for the proposed procurement to get as many responsive and competitive bids as possible.

8. **IMPORTANT!**

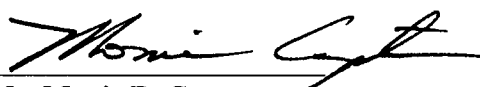
This is not a Request for Quotation (RFQ). MCA-Liberia is not hereby requesting the submission of quotes in response to this Request for Information (RFI). The purpose of this RFI is for qualified suppliers/manufacturers to indicate their interest and provide their suggestions and comments on the technical requirements to modify them in such a way that different suppliers/manufacturers can offer their products meeting the minimum technical requirements specified. MCA-Liberia intends to request for supply of goods within the next four weeks.

This RFI does not obligate MCA-Liberia to release an Invitation to Bid or award a contract, nor does it commit MCA-Liberia to pay for any costs incurred in response to this RFI.

9. Interested suppliers/manufacturers, may request additional information, and send their profile, full contact details and the requested information, by **September 25, 2018**, to the email address below.

MCA-Liberia Procurement Agent, email: MCALiberiaPA@cardno.com with copy to slewionj@mca.gov.lr

Please be guided accordingly,


Mr. Monie R. Captan
CEO, MCA-Liberia

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Annex 1

Supply and Delivery of Transformers, Conductors, Pre/Post Payment Meters, Tools and Equipment for Liberia Electricity Corporation

Details of Goods

Item	Goods required	Technical Specifications required	Supplier's Comments/Suggestions on specifications to make it generic, if required	Manufacturer, Country of Origin, Delivery period
1	<p>Instruments</p> <p>A. Phase Sequence Indicator (0-1000v)</p>	<p>The indicator shall be effective for measuring phase rotation in all areas where three phase supplies are used to feed motors, drives and electrical systems. It shall have a rotary field indicator and should provide clear indication of the 3-phase via an LCD display and the phase rotation direction to determine correct connections. It shall allow rapid determination of phase sequence and shall have a voltage (up to 1000 V) and frequency range suitable for commercial and industrial applications. The test probes shall have a variable clamping range for safe contact, also in industrial sockets.</p> <ul style="list-style-type: none"> • Voltage range: 40-1000 V • Frequency range: 15-400 Hz • Operating timer: Continuous • Operating temperature: 0 °C to 40 °C • Dust/water resistance: IP 40 • phase indication • Indication of phase rotation • Clear LCD display • No battery be required • Size: 124 x 61 x 27 mm 		

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Item	Goods required	Technical Specifications required	Supplier's Comments/Suggestions on specifications to make it generic, if required	Manufacturer, Country of Origin, Delivery period
B. Digital High Voltage Indicator (40kv)	<p>As tools for linework, the Digital Voltage Indicator shall apply to most system voltages. The Distribution shall provide 1 to 40 kV readouts; and the Transmission shall cover 16 to 161 kV. For overhead applications, the hooked probe shall hang directly onto the conductor or apparatus. For underground systems, the Distribution shall indicate voltage at elbow test points or through bushings and elbows. For such uses as confirming a "dead" condition before placing temporary grounds for de-energized maintenance, the Indicator shall provide an easy, yet reliable, means to determine if a line is:</p> <ul style="list-style-type: none"> • De-energized... • Carrying less than normal system voltage from any source or induced charges from an adjacent live circuit... • Energized at full system voltage. <p>Special Design Features</p> <p>On selection of "Peak Hold", the indicator shall display and retain of its approximate highest reading for 10-15 seconds. The indicator shall have built-in self-test function, which shall allow for a quick check of the meter before and after each use.</p>			
C. Transformer Oil Tester	<p>The Transformer Oil Breakdown Voltage Analyzer shall be compliant with IEC60156 Standard and standard of GB-86 Insulating Oil Dielectric Strength Testing Method.</p> <p>It shall have LCD screen to display test procedure and test result. All the human interaction operations shall be completed by the rotating mouse. It shall measure the</p>			

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		<p>breakdown voltage of all kinds of oil. The tester shall print the test result by the micro printer internal to the tester. There shall be provision for uploading the test data to PC from RS232 for data analyzing. The tester shall have special circuit design to perform well at stability and anti-noise.</p> <p>Technical Parameters:</p> <ul style="list-style-type: none"> • Output voltage: AC 0~80KV or 0-100KV • Rate of voltage rise: 2KV/s±10% • Measuring precision: 3%RDG+0.3%FS • Test times setting: 1-9 or similar test time range • Mixing time setting: 0~99 second • Waiting time setting: 0-9 minute 59second • Maximum storage capacity: 100 groups of test data • Test standards: IEC60156 • Display: 256*128 LCD or comparable • Rated power supply: AC 220V±10% 50Hz/60Hz • Environment temperatures: 0-50°C Relative humidity ≤80%RH 		
	D. Insulator Tester (Preferably Fluke) Up To 5000v	<ul style="list-style-type: none"> • Test voltages to up 5 kV • CAT III 1000 V, CAT IV 600 V safety rating • Warning function to alert the user that line voltage is present and shall give the voltage reading up to 600 V AC or DC for increased user safety • Selectable test voltages in 50 V steps from 250 V to 1000 V, and 100 V steps above 1000 V 		

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Item	Goods required	Technical Specifications required	Supplier's Comments/Suggestions on specifications to make it generic, if required.	Manufacturer, Country of Origin, Delivery period
		<ul style="list-style-type: none"> • Measurements shall be stored in up to 99 memory locations, with each location assigned a unique, user defined, label for easy recall • Long battery life to provide over 750 tests between charges • Shall have Automatic calculation of Dielectric Absorption (DAR) and Polarization Index (PI) with no additional setup • Guard system to eliminate the effect of surface leakage current on high-resistance measurements • Large digital/analog LCD for easy viewing • Capacitance and leakage current measurement • Ramp function for breakdown testing • Resistance measurements up to 2 TΩ • Timer settings up to 99 minutes for timed tests • Shall have 3-year warranty 		
	E. Clamp Multi Tester (Preferably Fluke)	<ul style="list-style-type: none"> • VoltAlert™ technology or its equivalent for non-contact voltage detection • AutoVolt automatic AC/DC voltage selection 		
	F. Amp Meter	<p>The clamp Amp meters shall be designed to perform in the toughest environments and provide noise-free, reliable results.</p> <p>Technical Parameters:</p> <ul style="list-style-type: none"> • 400 A ac and dc current measurement • 600 V ac and dc voltage measurement • True-rms ac voltage and current for accurate measurements on non-linear signals 		

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Item	Goods required	Technical Specifications required	Supplier's Comments/Suggestions on specifications to make it generic, if required	Manufacturer, Country of Origin, Delivery period
		<ul style="list-style-type: none"> • Resistance measurement up to 40 kΩ with continuity detection • Temperature and capacitance measurement • Frequency measurement • Shall have Slim, ergonomic design • Shall have Large, easy to read backlight display • CAT IV 300V/CAT III 600 V safety rating • Shall have Hold button • Shall have Two-year warranty • Soft carrying case 		
	G. Voltage Pen Indicator	<p>Shall have special low-power circuitry to sustain battery life and to ensure 2AC is always ready</p> <ul style="list-style-type: none"> • Shall have 'Battery Check' button function to ensure battery is in good condition • Shall have function of Voltage detection from 90 to 1000 V ac, suitable for a wide range of residential, commercial and industrial needs • Shall have Category IV – 1000 V overvoltage rating for user protection • Shall have Integrated clip design, and optimized for pocket storage • Shall be powered by 2 AAA batteries • Shall have two-year warranty <p>Specifications</p> <ul style="list-style-type: none"> • Shall be Safety compliant • Shall be EMC compliant • Shall meet IEC 61326-1:2006 standards 		

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Item	Goods required	Technical Specifications required	Supplier's Comments/Suggestions on specifications to make it generic, if required	Manufacturer, Country of Origin, Delivery period
		<ul style="list-style-type: none"> • Shall operate at 90 V ac to 1000 V ac • Temperature: <ul style="list-style-type: none"> ○ Operating: -10 °C to 50 °C (14 °F to 122 °F) ○ Storage: -10 °C to 50 °C (14 °F to 122 °F) • 1000 m length of cable that can be tested (CAT IV 1000 V) • Battery life: shall be greater than one year 		
	H. Three Phase Cable Identifier	<p>The Three-Phase Cable Identifier shall identify the correct phases on long lengths of de-energized and discharged overhead and underground cables. It shall include a sender and receiver that are designed to be hand held with or without gloves. The Instrument shall perform test up to a mile of cable. Both units shall have LEDs to indicate that the units are connected to the same phases on each end of a cable.</p> <p>Cable Identifier Features</p> <ul style="list-style-type: none"> • Shall Identify all three cable phases simultaneously and any short-circuited phases • Shall have higher test voltage of 36VDC to allow for longer cable lengths to be tested - minimum one mile • Shall be used in overhead or underground systems • Shall be compact, lightweight and easy-to-use • Shall have super bright LED indicators • Shall have large copper alligator clips with heavy duty boots 		

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Item	Goods required	Technical Specifications required	Supplier's Comments/Suggestions on specifications to make it generic, if required	Manufacturer, Country of Origin, Delivery period
		<ul style="list-style-type: none"> • Shall have Low battery indicator 		
2	Tools A. Chain Hoist (1 Ton)	<ul style="list-style-type: none"> • The chain hoist shall be rated at 2,000 lbs and shall be compact. • The compact ratchet handle shall rotate 360° to make the hoist reach to tight spaces. • Shall have double reduction gearing and one-hand take-up when removing the slack. • Shall have a screw and disc load break and be enclosed to protect from dirt and debris. • Lifting distance: 5', 10', 15', and 20' • Weight: Approximately 15 lbs. 		
	B. Strap Hoist (1-2 Ton)	<ul style="list-style-type: none"> • Lincoln (or its equivalent) standard series web strap hoist • Shall meet ASTM B30.21 specifications • To have Stress link overload warning system • Capacity: Single Line-2000 lbs, Double Line-4000 lbs. • Lifting Distance: Single Line-10 ft, Double-Line-5 ft. • Minimum Hook-to-Hook Distance: Single Line-22", Double Line-30" • Handle Length: 36" • Hoist Weight: Approximately 15 lbs • Forged steel hooks with safety latch • Oiled for life bearings 		

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Item	Goods required	Technical Specifications required	Supplier's Comments/ Suggestions on specifications to make it generic, if required	Manufacturer, Country of Origin, Delivery period
		<ul style="list-style-type: none"> • Double flanged drum to keep web strap from contacting ratchet teeth 		
	C. Telescopic Disconnect Stick 24-36kV	<p>Hastings (or its equivalent) fiberglass telescopic hot stick with tip lock feature. All sections shall be of reinforced high-density electrical grade fiber glass laminated with unusual color stability, greater strength and high dielectric properties. Tubular sections shall be engineered to allow for air circulation; and to ensure condensate and moisture is not trapped when the stick is retracted. Universal head shall be adaptable to standard fit on accessories. It shall have Disconnect hook and The Tip shall completely retract and lock into next larger section giving double wall strength and rigidity for heavy lifting operations. Stick shall be locked in lengths listed by means of one pin locking two or more sections.</p> <ul style="list-style-type: none"> • Top section on all Sticks shall be insulated with fire retardant polyurethane foam core. • Shall be 100% tested as per OSHA and ASTM F-711. • Usable Lengths: 22', 26', 30', 35', 40' • Retracted Length: Not exceeding 6' • Base Diameter: Not exceeding 3" • Weight: Approximately 15 lbs 		
	D. Ordinary Disconnect Stick 34-36kV	<ul style="list-style-type: none"> • Hastings Tel-O-Pole II or its equivalent shall have combination of hot stick and measuring stick. • "No Twist" triangular stick design • Length to be Extended: 40 Feet • Length to be Retracted: Approximately 70 inches 		

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Item	Goods required	Technical Specifications required	Supplier's Comments/Suggestions on specifications to make it generic, if required	Manufacturer, Country of Origin, Delivery period
		<ul style="list-style-type: none"> • Weight: Approximately 15 lbs • Shall measure height as well as open and closing switches, disconnects, and cut-outs • Should have Eye level reading • Markings to be printed in large easy to read numbers • English marks in feet and inches 		
E. Lineman Gas Drill		<ul style="list-style-type: none"> • Petrol Engine Drill • Gas powered drill shall be with a reversing lever to allow quick and easy change of drilling directions. • 1.3 h.p. two-stroke engine • 20:1 gear reduction • At least 17 output torque (ft lbs.) • Dual position front handle • Weight: Approximately 10.0 lbs. 		
F. Lineman Bolt Cutter (Large)		<p>Hastings (or its equivalent) fiberglass handled general purpose bolt cutter. The fiberglass handles with unicellular foam core shall be replaceable.</p> <ul style="list-style-type: none"> • Center cut style jaws. • Adjustable jaws for hard materials to Rockwell C48 hardness. • Overall Length: 36" • Handle Length: 26" • Jaw Capacity: minimum 5/8" • Weight: Approximately 10 lbs • Head shall be replaceable. 		

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Item	Goods required	Technical Specifications required	Supplier's Comments/Suggestions on specifications to make it generic, if required	Manufacturer, Country of Origin, Delivery period
G. Lineman Crimping Tool		<p>It shall have a large jaw opening of 1-3/16" and be capable to splice up to 600 MCM using 12-ton "U" type dies. It shall be designed for use with larger cable diameters and larger connectors. Most internal hydraulic components are the same as the EP-410 and EP-510.</p> <ul style="list-style-type: none"> • OUTPUT: 12 Tons • LENGTH: 24" • JAW OPENING: 1-3/16" • RANGE: Lugs up to 750MCM, splices up to 600MCM • Two -stage pumping piston for rapid advance 		
H. Lineman Guy Wire Cutter		<p>This cutter shall cut up to 1/2" Extra High Strength (EHS) guy strand with this ratcheting cutter. The Greenlee model 758 or its equivalent shall use a bicycle style chain to extend the jaws and ratchet slice the jaws together. Also, shall cut 1/2" mild steel rods and bolts.</p> <ul style="list-style-type: none"> • Overall length: Approximately 28" 		
I. Measuring Wheel		<p>This tool shall have a large 12-1/2" diameter wheel for heavy duty professional use. The sturdy frame shall be foldable for easy storage.</p> <ul style="list-style-type: none"> • Large approximately 12" wheel • Folding frame • Folding kickstand • Hefty pistol grip handle 		

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Item	Goods required	Technical Specifications required	Supplier's Comments/ Suggestions on specifications to make it generic, if required	Manufacturer, Country of Origin, Delivery period
	J. Diggy Bar	<p>This shall be drop forged and tempered for superior strength during prying, digging and tamping. It shall be used for breaking stones and concrete.</p> <p>(A) Flat pointed</p> <p>LENGTH (inches) : Approximately 70"</p> <p>WEIGHT (lbs) : Approximately 15</p> <p>(B) Pin pointed</p> <p>LENGTH (inches) : Approximately 70"</p> <p>WEIGHT (lbs) : Approximately 15</p>		
	K. Cant Hook	<p>Cant Hooks shall be made with hard maple handles and high-carbon steel hooks which shall be heat treated for strength and durability. The hook stop shall be designed to prevent the hook from falling back and damaging the handle.</p>		
	L. Cable Strapping Tools	<ul style="list-style-type: none"> • Mark I (or its equivalent) stripper with tool stop • 1700SS (or its equivalent) Semi-con Scoring Tool • LPW1525/TK120x-N (or its equivalent) Probe Tool • Bit/TK120C-Q (or its equivalent) Bushing Insert Tool • SC11 (or its equivalent) Edge Wedge Knife • SC13 (or its equivalent) Roller Grip Pliers • CPK-14 (or its equivalent) Canvas Bag 		
	M. Extension Ladders 20ft (two sections) and 30ft (3 sections)	<ul style="list-style-type: none"> • Steps to provide easy access to second stories • Fiberglass construction to provide safety around electricity 		

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Item	Goods required	Technical Specifications required	Supplier's Comments/ Suggestions on specifications to make it generic, if required	Manufacturer, Country of Origin, Delivery period
		<ul style="list-style-type: none"> • Slip-resistant, TRACTION-TRED or its equivalent D-rungs to provide secure footing • Interlocking side rails with internal rail guides on bottom of fly section to securely connect rails • Weather resistant for outdoor use • Shall have smooth operating pulley with durable polypropylene rope 		
	<p>N. Lineman Grips (Assorted Sizes)</p>	<p>(A) .31" -.53" 4,500lbs</p> <ul style="list-style-type: none"> • For Bare ACSR, Aluminum, and Stranded-Copper Cables • Round, Smooth jaws grip with maximum contact to ensure no damage to conductors • Minimum Cable: 2 MCM ACSR .31" • Maximum Cable: .53" • Maximum safe Load: 4,500 lbs • Jaw Length: Approximately 4-3/4" • Weight: Approximately 3.75 lbs <p>(B) .20" -.40" 4,500lbs</p> <ul style="list-style-type: none"> • For Bare ACSR, Aluminum, and Stranded-Copper Cables • Round, Smooth jaws grip with maximum contact to ensure no damage to conductors • Minimum Cable: 6 ACSR .20" • Maximum Cable: 1/0 ACSR .40" • Maximum safe Load: 4,500 lbs • Jaw Length: Approximately 4" • Weight: Approximately 3 lbs 		

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Item	Goods required	Technical Specifications required	Supplier's Comments/Suggestions on specifications to make it generic, if required	Manufacturer, Country Of Origin, Delivery period
		<p>(C) .86" -.96" 8,000lbs</p> <ul style="list-style-type: none"> • For Bare ACSR, Aluminum, and Stranded-Cooper Cables • Round, Smooth jaws grip with maximum contact to ensure no damage to conductors • Minimum Cable: .86" • Maximum Cable: .96" • Maximum safe Load: 8,000 lbs • Jaw Length: Approximately 5-1/2" • Weight: Approximately 8.3 lbs <p>(D) ABC conductors line tension tongs (4 x 50 sqmm) (E) ABC conductors line tension tongs (4 x 95 sqmm)</p>		
	O. Auger Bits (Assorted Sizes)	<p>A- 3/4" ; B- 5/8" ; C- 1/2"</p> <ul style="list-style-type: none"> • Double spur carbide tipped single flute auger. • The FIREBALL (or its equivalent) shall be a general purpose, carbide-tipped, wood boring bit. It has to be milled from a single piece of steel with a solid center and a truly unique flute design. It shall feature double spur, carbide-tip and its proven, power-auger flute design. • Diameter: 15/16" • Length: 18" Overall, 15" Twist • Shank: 7/16" Quick-Change Hex • Weight: Approximately 1.5 lbs 		
	P. Linemans's 5-Tool Kit with Pouch	<ul style="list-style-type: none"> • 42266BL Buckingham (or its equivalent) 5 Tool Leather Pouch 		

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		<p>Technical Specifications required</p> <ul style="list-style-type: none"> • D2000-9NE Klein (or its equivalent) 9" Lineman Pliers • 420 Chanellock (or its equivalent) 9" Pliers • 507-10 Klein (or its equivalent) 10" Adjustable Wrench • 602-6 Klein (or its equivalent) 6" Cushion Grip Screwdriver • 7090 Buckingham (or its equivalent) Skinning Knife with Ring 		
	<p>Q. Post Hole Digger (Javal)</p>	<p>Split Handle and Solid Handle Post Hole Diggers: With the split-handle digger, the operator shall be able to use a forward-and-back motion sliding the handles past each other. The blades shall be made of special alloy steel. The blades shall be attached by welding instead of riveting making a durable joint with no rivets to shear off. The fulcrum members shall be made of heavily constructed, channel-shaped steel with no castings. The diameter of the circle circumscribed by the digger blades shall be approximately 6 inches. Two bolts shall hold each handle to the digger head to make it easy to replace when necessary.</p>		
	<p>R. Bashin Leather Apprentice Package</p>	<p>A- 4000 lbs</p> <p>The meters shall be with analog mechanical design (no batteries or LCD). Standard units shall come with installed fittings ready to hook up to hoist and wire grip.</p> <ul style="list-style-type: none"> • CAPACITY: 4,000 lbs • METER GRADUATIONS: 100 lbs • OVERALL LENGTH: 14" 		

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		<ul style="list-style-type: none"> • WEIGHT: Approximately 4 lbs <p>B-2000lbs</p> <p>The meters shall be with analog mechanical design (no batteries or LCD). Standard units shall come with installed fittings ready to hook up to hoist and wire grip.</p> <ul style="list-style-type: none"> • CAPACITY: 2,000 lbs • METER GRADUATIONS: 50 lbs • OVERALL LENGTH: 13" • WEIGHT: Approximately 3lbs 		
3	Personal Protective Equipment			
	A. Helmets	<ul style="list-style-type: none"> • Shall have adjustable nape strap suspension to hold hat securely in place • Shall have Nylon crown suspension straps • Shall be Light weight and balanced • Shall be made of a durable polyethylene shell • ITEM WEIGHT: Approximately 13 ounces • COLOUR: YELLOW & WHITE 		
	B. Steel Toe Safety Boots	<p>The safety boots shall be water resistant with an ASTM-rated composite toe for protection from electrical and industrial hazards. The boots shall have provision to keep feet dry inside with a full-cushion footbed for comfort.</p> <p>Non-conductive composite toe rated ASTM F2413-11 M I/75 C/75 EH</p> <ul style="list-style-type: none"> • Genuine full-grain leather 		

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Item	Goods required	Technical Specifications required	Supplier's Comments/ Suggestions on specifications to make it generic, if required	Manufacturer, Country of Origin, Delivery period
		<ul style="list-style-type: none"> • Waterproof membrane lining • Sturdy, flexible and classic welt construction design • Removable double density footbed to add cushioning and stability • Rubber/polyurethane outsole • Lightweight nylon shank • Oil resistant sole 		
C.	Rechargeable Spot Light	<p>25,000 Candle Power LED Spot light.</p> <ul style="list-style-type: none"> • 6-volt, 4.5amp hour minimum, sealed. • Built-in overcharge protection and battery condition lights. • Yellow housings. • Neoprene-booted toggle switch. • Chargeable from a 12-volt DC Vehicle Source. • Shall include one battery, charger, and pivoting stand. • Shall Operate at least 3 to 4 hours on steady beam or 6 to 8 hours intermittently on one charge. • Dimensions: Approximately 5-1/2" Diameter x 8" L • Weight: Approximately 4.5 lbs 		
D.	Rechargeable Led Spotlight	<p>LED Pistol Grip Spotlight</p> <ul style="list-style-type: none"> • 3 Modes: High, Low, Emergency Strobe • Rechargeable lithium ion battery 		

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Item	Goods required	Technical Specifications required	Supplier's Comments/Suggestions on specifications to make it generic, if required	Manufacturer, Country of Origin, Delivery period
E. Led Headlamp		<p>The Argo (or its equivalent) shall feature state-of-the-art LED technology for the long life and reliability. It shall have digitally controlled brightness levels, battery indicator, a durable compact case, and rubber & elastic head straps for use with hard hats.</p> <ul style="list-style-type: none"> • Digitally controlled brightness levels: • High – Up to 9,2500 candela(peak beam intensity), 150 lumens measured system output, 190m beam distance • Medium – Up to 6,375 candela(peak beam intensity), 100 lumens measured system output, 160m beam distance 		

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Item	Goods required	Technical Specifications required	Supplier's Comments/Suggestions on specifications to make it generic, if required	Manufacturer, Country of Origin, Delivery period
		<ul style="list-style-type: none"> • Low – Up to 2,750 candela(peak beam intensity), 45 lumens measured system output, 103m beam distance. • Pushbutton switch – hold three (3) seconds for "blink mode" • RUN TIME: • High: 3 hours continuous runtime to the 10% output level. • Medium:4.5 hours continuous runtime to the 10% output level • Low: 30 hours continuous runtime to the 10% output level. • 90° tilting head, shall Include elastic head strap and rubber hard hat strap • to be powered by "AAA" alkaline batteries • IPX4 rated for water resistance 		
	F. Danger Warning Signs	<p>It shall be in Rust-Free Aluminum, that will not chip, crack, or rust.</p> <ul style="list-style-type: none"> • THICKNESS 0.04" • OUTDOOR DURABILITY 5 To 7 Years • SERVICE TEMP. RANGE -40° To 212°F 		
	G. Disposable Suit/Hood (Asbestos)	<p>DuPont Proshield Basic Coveralls (or its equivalent)</p> <ul style="list-style-type: none"> • Disposable coveralls shall be designed to be lightweight, soft and breathable for all day comfort. • Shall protect from dirt, grime and hazardous dry particles. 		

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Item	Goods required	Technical Specifications required	Supplier's Comments/Suggestions on specifications to make if generic, if required	Manufacturer, Country of Origin, Delivery period
		<ul style="list-style-type: none"> • Feature elastic ankles, serged seams, with comfort fit design to allow motion. • Front closure: Zipper • number of pockets: No pocket • Size: Universal • Hood: Integrated with Suit 		
H.	Respirator (Asbestos)	It shall provide protection against exposure to Asbestos fibers.		
I.	Gloves	Chemical protection glove, nitrile, seamless, nylon, polyester, Cat. III, for all round work		
J.	Disposable Shoe Cover (Asbestos)	<ul style="list-style-type: none"> • Shall be made of lightweight but high quality "CPE" material • Shall be designed to be Non-slip shoe covers, to avoid slips and falls, with full elastic band in ankle for fit over shoes • Covers shall contain an elastic band for flexibility, shall fit over all shoes/boots up to EU size 45. 		