Office of the Project Director Madhya Pradesh Skills Development Project,
Directorate of Skill Development, Madhya Pradesh
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Addendum 1: - Clarification to the Pre-Bid Queries

Project No: 3710-IND/ Madhya Pradesh Skills Development Project

Name of Goods/Package: MPSDP/GSP/Equipment/13, Electrical- Trainers for GSP

Invitation for Bids No.: MPSDP/GSP/14/2022-23, Dated: 04.11.2022

Employer: "The Project Director, Madhya Pradesh Skills Development Project, Directorate of Skill Development, Madhya Pradesh - 462023

Date and Time of Pre-Bid Meeting: 14.11. 2022, Time 15:30 hrs.

Queries raised by Bidders on the bidding document and Amendment acceptable by Technical Committee:

S. NO.	Name of Items	Clause of Bid Document	Technical Specifications	Queries raised by prospective bidders	Amendment Proposed by MPSDP Technical committee
1	**Demo board with Distribution board and commercial installation wiring for testing purpose**	Section-6 Item No. 1	**Item Name:** **Demo board with Distribution board and Commercial installation wiring for testing purpose** **Application:** Demo board for Demonstration of Distribution and Commercial installation wiring with provision for inspection and testing. **Technical Specifications:** Figure shows an illustrative reference of the item intended for procurement. Approximate size of the demo board should not be less than 1.8.m x1.2m. Board should be sufficiently thick and strong to connect and hold electrical items fitted on it. The Board should include the following minimum items: **1. TPN distribution board (pre-wired and mounted) complete with,** a) 40A TP MCB / MCCB Three phase - 1 no	**Regarding following** - Metal Conduit (19mm dia, 25mm dia) - Metal trunking (50 x 50mm) - Edison Lamp Holder (E27) x 2 - Edison Filament Lamp 60W, E27, 230V - Edison screwed threaded LED lamp 12W, 230V - 200Watt ,230V Halide Lamp assembly, wall mounted - 20A 3ph outdoor industrial socket outlet - 1ph 16 A industrial socket outlet	**Amendment** - PVC Conduit (19mm dia, 25mm dia) - Metal Insulated trunking (50 x 50mm) - Lamp Holder (B22) x 2 - Filament Lamp 60W, B22, 230V - LED lamp 12W, 230V - 20A 3ph outdoor industrial socket outlet - 1ph 16 A industrial socket outlet **Deleted** 200Watt ,230V Halide Lamp assembly, wall mounted

			b) 40A TP RCCB (100mA), - 1 no, c) 16A TP MCB - 1 no, d) 10A SP MCB - 1 no, e) 20A SP MCB – 2 no. f) 30A SP MCB – 1 no g) Should be connected to lamp luminaire, switches and socket outlets and external weatherproof isolator. h) Installation wiring is to be complete and functional on demo board. **2. Industrial Isolator (I)** - 3P / Yellow with Red knob design - High Impact polycarbonate enclosure - Contoured base for easy wiring - Padlock can be inserted in the off position - Neutral & earth Terminals - IP65 Ingress protection **3. Industrial Isolator (II)** - 3P / Rectangular box in grey design - High Impact polycarbonate enclosure - Contoured base for easy wiring - Padlock can be inserted in the off position - Neutral & earth Terminals - IP65 Ingress protection **4. Accessories** - 1-way switch (metal clad) - 13A switch socket outlet (metal cladded) - Metal Conduit (19mm dia, 25mm dia) - Metal trunking (50 x 50mm) - Edison Lamp Holder (E27) x 2 - Edison Filament Lamp 60W, E27, 230V - Edison screwed threaded LED lamp 12W, 230V - 200Watt ,230V Halide Lamp assembly, wall mounted - 20A 3ph outdoor industrial socket outlet - 1ph 16 A industrial socket outlet **Accessories:** All accessories required for the functioning of the Unit.	Rating of Isolator	Should be connected to lamp luminaire, switches and socket outlets and external weatherproof isolator of suitable capacity

2	Lighting circuit training	Section-6 Item No. 2	**Item Name:** **Lighting Circuit Training** Figure shows an illustrative reference of the item intended for procurement. Picture is not intended to recommend or suggest any make or model. **Key features and Technical Specifications:** ▪ Lighting circuit training set up must be designed and build with the following; • Data loggers & software • Power meter • LED spot light • Conventional spot light • All mounted on a custom built trolley. ▪ The complete system must allow students to: • to make comparisons of the energy consumption on a lighting fixtures between LED spot light and conventional spot light (same wattage) • use of the energy monitoring software via the power meter / DAQ to analyse the data. ▪ Should include the drawing in pdf and AutoCAD format of; • Wiring system • logic diagram • Isometric layout of the components on the board ▪ Include the customized training manuals to operate and maintain the system ▪ Refer to the Figure shown for other items and accessories to be mounted in the Trainer. **Accessories:** All accessories required for the functioning of the Unit.	Regarding "LED spot light" in specification of Lighting circuit training	**Deleted:** • LED spot light **Amendment** • LED light **Added** All lights suitable for 230V, 50 Hz And wattage ranging from 7 Watts to 24 watts

3	**LV Main demo Switchboard (200A), for testing purpose**	Section-6 Item No. 5	**Item Name: LV Main Demo Switchboard (200A), for testing purpose** Figure shows an illustrative reference of the item intended for procurement. Picture is not intended to recommend or suggest any make or model. Location of sub items shown in the figure is only indicative **Key Features and Technical Specifications:** Approximate dimensions: H2100mm x W1200mm x D450mm LV Main Demo Switchboard (200A), completely wired with indicating and measuring circuit, over current and earth fault protection and shunt trip circuit with one outgoing MCCB connected to C4 connecting plug. **Should have the following minimum components and accessories:** 1. I/C and O/G Indicating Lamp - 6 no's 2. 200A HRC backup incoming fuses (x3) and neutral link (x1) 3. Digital Ammeter, a.c. 0- 200A - 1 no's 4. Digital Voltmeter, a.c. 0-500V - 1 no. 5. Fuses, 2A for Incoming and o/g lamp and voltmeter protection - 6 no's 6. Fuse ,2A - Relay protection circuit 7. Fuse, 4A - Energy Meter protection 8. Digital Energy Meter - 1 no 9. Metering CT for Ammeter and Energy Meter - 1 set each 10. Protection CTs - 4 Nos 11. Analogue O/C relay - 1 no's 12. Analogue E/F relay - 1 no's 13. 200A Main MCCB with shunt trip coil,240V rated. 14. Outgoing MCCBs, 60A - 3 no's 15. All terminals are to be tag and labelled. 16. Switchboard layout drawing and single line drawing should be provided 17. Provide short circuit link at bus bar for conducting primary injection test 18 Vendors should list down the schedule on brand for each item quoted to check for quality and reliability.	**Regarding following**: 5. Fuses, 2A for Incoming and o/g lamp and voltmeter protection - 6 no's 6. Fuse ,2A - Relay protection circuit 7. Fuse, 4A - Energy Meter protection 10. Protection CTs - 4 Nos 11. Analogue O/C relay - 1 no's 12. Analogue E/F relay - 1 no's	**Amendment:** 5. Fuses of suitable capacity A for Incoming and o/g lamp and 6. Fuses of suitable capacity for Relay protection circuit 7. Fuses of suitable capacity for Energy Meter protection 10. Protection CTs of suitable rating - 4 Nos 11. Analogue O/C relay of suitable rating - 1 no's 12. Analogue E/F relay of suitable rating - 1 no's

4	**LV Sub-Main Switchboard (100A) with C4 connection. Portable panel - with lockable wheel base for demo and testing purpose**	Section-6 Item No. 7	**Item Name:** **LV Sub-Main Switchboard (100A) with C4 connection. Portable panel - with lockable wheel base for demo and testing purpose** Figure shows an illustrative reference of the item intended for procurement. Picture is not intended to recommend or suggest any make or model. Location of sub items shown in the figure is only indicative **Key Features and Technical Specifications:** Should be a portable panel with lockable wheel base for demo and testing purpose Should have the following minimum Components and Accessories: 1. I/C and O/G Indicating Lamp - 6 no's 2. Ammeter, a.c. 0- 100A - 1 no's 3. Voltmeter, a.c. 0-500V - 1 no. 4. Voltmeter and Ammeter selector switch - 1 no each 5. Fuses, 2A - 6 nos5 6. Metering Current Transformer, 100/5A with appropriate burden for the earth leakage relay - 3 no's 7. Zero CT 8. Earth Leakage Relay (0.1 to 10A selectable setting) 9. G-clamp - 2 no's 10. Cables, 1.5 mm2 and 2.5 mm2 (pre-wired with proper terminal tag and labelling) ▪ As built Switchboard layout drawing and single line drawing to be provided. ▪ Should list down the schedule on brand for each item to check for quality and reliability.	Regarding rating of Cable	**Deleted** 10. Cables, 1.5 mm2 and 2.5 mm2 (pre-wired with proper terminal tag and labelling) **Amendment** 10. Cables of suitable rating (pre-wired with proper terminal tag and labelling)
5	**LV Sub-Main Switchboard (100A) with C4, Portable panel with lockable wheel base - Testing use**	Section-6 Item No 8	**Item Name:** **LV Sub-Main Switchboard (100A) with C4, Portable panel with lockable wheel base -Testing use** Figure shows an illustrative reference of the item intended for procurement. Picture is not intended to recommend or suggest any make or model. Location of sub items shown in	Rating of Fuses	**Deleted** 9 Fuses, 2A **Amendment** Fuses of suitable rating

			the figure is only indicative **Key Features and Technical Specifications:** **Approximate Dimensions:** H1450mm x W 800mm X D 640mm Should have the following minimum components and accessories: 1. Incoming and Out Going Indicating Lamp - 6 no's 2. Ammeter, a.c. 0- 100A - 1 no's 3. Voltmeter, a.c. 0-500V - 1 no. 4. Voltmeter and Ammeter selector switch - 1 no each 5. Fuses, 2A - 6 nos5 6. Metering Current Transformer, 100/5A with appropriate burden for the earth leakage relay - 3 no's 7. Zero CT 8 Earth Leakage Relay - 1 no. 9 Fuses, 2A - 3 no's 10.All terminals to be labelled and tagged for easy connection. 11. Switchboard layout drawing and single line drawing to be provided.		
6	**Smart LV switch board with Smart meters, Automatic corrective power factor unit, Main withdrawal ACB & 4 outgoing MCCBs supplying**	Section-6 Item No 9	**Item Name:** **Smart LV switchboard with Smart meters, Automatic corrective power factor unit, Main withdrawal ACB & 4 outgoing MCCBs supplying Induction motors, Resistive Load Bank, Inductive Load Bank.** Figure shows an illustrative reference of the item intended for procurement. Picture is not intended to recommend or suggest any make or model. Location of sub items shown in the figure is only indicative. Connection diagram is shown to assist in assembling the components. No specific product model or make is recommended although given in diagram for illustration.	Provide the Rating of the Items	**Added** 3-Phase, 400V, 50Hz All items of suitable rating for the above voltage **Deleted** 1.17 The Power factor correction unit is built in / external Auto/Manual power factor improvement system

	Induction motors, Resistive Load Bank, Inductive Load Bank.		**Key features and Technical Specifications:** The intended item has to be DESIGNED and FABRICATED based on the illustrative reference diagrams shown. The item has to be installed, tested and commissioned as a LOW VOLTAGE SWITCHBOARD TRAINING SYSTEM **The 3-Phase, 400V, 50Hz Low Voltage Switchboard Training System shall comprise of the following:** 1.1 Metal Structure of approximate dimensions: H2030mm x W2000mm x D1050mm 1.2 Covers and Doors with bonding wire 1.3 Compartments 1.4 Incoming and Outgoing LED Indicator Lamps 1.5 Automatic Transfer Switch of appropriate capacity 1.6 Incoming Withdrawable Air Circuit Breaker of appropriate capacity 1.7 Overcurrent and Earth Fault Protection Relays 1.8 Digital Voltmeter 1.9 Digital Ammeter 1.10 Power Meters 1.11 Outgoing Moulded Case Circuit Breakers of appropriate capacity 1.12 Variable Resistive Load Bank (External unit – to be integrated -Procured at items no. XXX) 1.13 Variable Inductive Load Bank (External unit – to be integrated -— Procured at items no. XXX) 1.14 Power Factor Correction Unit with capacitor banking (External unit – to be integrated -— Procured at items no. XXX) 1.15 Should provide as built switchboard layout drawing and single line drawing. 1.16 The different resistive inductive and capacitive loads are to be connected such that the smart meters can read the power factor, energy, voltage and current. 1.17 The Power factor correction unit is built in / external Auto/Manual power factor improvement system integrated into the design of the smart switchboard to perform power		integrated into the design of the smart switchboard to perform power factor correction. There should be proper isolation and protection for the capacitance banks **Amendment** 1.17 The Power factor correction unit is integrated into the design of the smart switchboard to perform power factor correction. There should be proper isolation and protection for the capacitance banks

			factor correction. There should be proper isolation and protection for the capacitance banks 1.18 Should list down the schedule on brand for each item in use to check for quality and reliability 1.19 Should list down the schedule on brand for each item in use to check for quality and reliability		

- **Others terms and conditions and Specifications will remain unaltered**

Dated: 18/ 11/2022

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Project Director