OFFICE OF THE PRINCIPAL GOVERNMENT ENGINEERING COLLEGE JAGDALPUR (C.G.)494005

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INVITATION FOR QUOTATION

TEQIP-II/2014/CG1G02/Shopping/188/75 **19/03/2016**

To,

Sub: Invitation for Quotations for supply of Goods

Dear Sir,

1. You are invited to submit your most competitive quotation for the following goods with item wise detailed specifications given at Annexure I,

Sr. No	Brief Description	Quantity	Delivery Period(In days)	Place of Delivery	Installation Requirement (if any)
1	DC motor Coupled 3 Phase salient Motor	3	45	Govt. Engineering College Jagdalpur, Distt. Bastar, (C.G.) 494005	Yes
2	DC Integrated Machine foot mounted on Chasis	2	45	Govt. Engineering College Jagdalpur, Distt. Bastar, (C.G.) 494005	Yes
3	3 Phase salient pole synchronous Generator with Damper Bars	2	45	Govt. Engineering College Jagdalpur, Distt. Bastar, (C.G.) 494005	Yes
4	3 Phase AC slip ring Induction Motor	1	45	Govt. Engineering College Jagdalpur, Distt. Bastar, (C.G.) 494005	Yes

2. Government of India has received a credit from the International Development Association (IDA) towards the cost of the **Technical Education Quality Improvement Programme[TEQIP]-Phase II** Project and intends to apply part of the proceeds of this credit to eligible payments under the contract for which this invitation for quotations is issued.
3. Quotation,
   3.1 The contract shall be for the full quantity as described above.
   3.2 Corrections, if any, shall be made by crossing out, initialing, dating and re writing.
   3.3 All duties and other levies payable by the supplier under the contract shall be included in the unit price.
   3.4 Applicable taxes shall be quoted separately for all items.
   3.5 The prices quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
   3.6 The Prices should be quoted in Indian Rupees only.
4. Each bidder shall submit only one quotation.
5. Quotation shall remain valid for a period not less than **55** days after the last date of quotation submission.
6. Evaluation of Quotations,

   The Purchaser will evaluate and compare the quotations determined to be substantially responsive i.e. which
   6.1 are properly signed ; and
   6.2 confirm to the terms and conditions, and specifications.
7. The Quotations would be evaluated for all items together.
8. Award of contract:

   The Purchaser will award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation price.
   8.1 Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of contract.
   8.2 The bidder whose bid is accepted will be notified of the award of contract by the Purchaser prior to expiration of the quotation validity period. The terms of the accepted offer shall be incorporated in the purchase order.

9. All supplied items are under warranty of **12** months from the date of successful acceptance of items.
10. You are requested to provide your offer latest by **16:00** hours on **20-April-2016 .**
11. Detailed specifications of the items are at Annexure I.
12. Training Clause (if any) **Required**
13. Testing/Installation Clause (if any) **Yes**
14. Information brochures/ Product catalogue, if any must be accompanied with the quotation clearly indicating the model quoted for.
15. Sealed quotation to be submitted/ delivered at the address mentioned below,
    Government Engineering College, Jagdalpur, Dhrampura-3, Jagdalpur, Bastar
17. We look forward to receiving your quotation and thank you for your interest in this project.

(Authorized Signatory)

Name & Designation

S.No.	Name OF the Equipment	Specification
1	DC motor Coupled 3 Phase salient Motor	3 phase Salient Pole Alternator coupled to DC integrated motor setup (Motor-Generator setup): 1) 3 Phase Salient pole alternator : Voltage: 415VAC, 50Hz, Capacity: 300W/4 pole/ 1500RPM, Rotor construction: Star connected, four terminals including star point brought out on 4 slip rings mounted on shaft,

		Stator construction: Separately excited field winding with laminated solid yoke, 4 pole, brought out on Two terminal, Frame/mounting: 100 frame, chassis mounted, 19mm shaft dia with easily swappable gear coupling. 2) DC Integrated motor: Voltage: Varm = 180V, Vfield = 180V, Capacity: 300W/2 pole/ 1500RPM/6 terminals, Rotor construction: Standard commutator / brush arrangement with laminated stack, brought out on 2 terminals, Stator construction: Separately excited field winding with laminated solid yoke 2 pole and series winding brought out on 4 terminals, Frame/mounting: 100 frame, chassis mounted, 19mm shaft dia, trunnion mounted m/c for use as dynamometer with torque & speed sensors. **CONTROL PANEL SPECIFICATIONS :** **Aluminum profile sturdy (5x4) flat panel (table top) system, carrying various high voltage components housed in plastic enclosures (panel) to minimise shock possibility. Input 3 phase DOL Starter panel (EMT1) *[10 Shrouded Banana]*** •4 pole MCB of 415 V/4A. •DOL 9AContactor with 230V / 50 Hz / 11VACoil. •Bimetallic thermal O/L relay with range 1.4A- 2.3A. **1 Phase Motor,Alternator & Sync. Motor Panel (EMT 16) [14 Shrouded Banana]**•1 MCBs of 4A/1.6A1 each. •2no 2P2W selector switches to run as 1 alternator then as synchronous motor. •8 Apushbutton switch to simulate as centrifugal switch. **3 Ph. Bidirectional power cum Energy meter panel (EMT 34/20) (8 shrouded Banana)**•Bidirectional Multifunction •3 Phase ¾ wire, 415V, CT Input 5A •LCD/LED display, Aux supply 230V, 45-65 Hz, 5W •V,I., Hz, Pf, KVA, KW, KWH •Modbus RTU RS 485 (optional) **Integrated AC 1 phase multifunction measurement panel (EMT20F) [8 Shrouded Banana]** •Consist of 1 nos of (96X96mm) Digital meter for 1 Measures V, I, PF (0.2 lag - unity 0.2 lead), W, VA, VAR, Hz etc. •Current Range = 5A. •Auxiliary supply = 170-250VAC **FWD/REV, Star-Delta starter panel (EMT 4) [12 Shrouded Banana]** •FWD/REV, 3 pole 3 way switch with centre OFF, 6A/440V. •Star/Delta switch 3 pole, 3 way with centre OFF, 6A/440V. **3 Phase wound Rotor & Sync. Motor panel (EMT 5A/B) [8 Shrouded Banana]** •Rotor resistors of 30E/5Awith 3 taps of 0E, 15E, 21E, 30E(each 3 nos) •Rotor resistor selector switch, 3 pole.6 Way .6A/440 V.•DC Rotor excitation over current Circuit Bracker (3Amp) **DC voltmeter and DC ammeter panel (EMT 6A/B [14 Shrouded Banana]** a)DC voltmeter (0-300V), b)DC Ammeter (0-5A) with polarity protection diode c)Field failure relay to control Armature supply. Both 6A/6B needed simultaneously. **SCRActuator (variable DC) cum sensor signal conditioning panel (EMT9x 3 Nos) [4 Shrouded Banana]** •Full bridge SCR based 0V-195V / 5Amp cosine firing with linear charateristics. •Supports signal conditioning circuit for speed, torque in kg wt to output 0-2.5Vdc (FS). •2 Nos. of these supplies required for DC Armature, DC motor field &AC generator excitation. **Instrumentation Power supply cum Multichannel DPM panel (EMT 8 [10 Shrouded Banana]** (a) +/-12 V, 500 mA, (b) +5V, 300mA, (c) Unregulated 17V dc/750 mA (d) line synchronizing signal, (e) 13V / 3 Amp. (f) Multi channel DPM for digital display of torque, speed etc **Resistor Load Panel**

		(EMT14A/B)(1)AC Resistors = 10K /5K/ 3.5K / 2.5K/2K/1.5K/200WX3 phases/ 6 taps(2)DC Resistors = 750E /600E /300E /212E /162E /125E / 112E /100E/400W / 6 taps +OFF+ separate 60E tap for DC series Gen.**LC Load Panel (EMT15A/B)** (A) Inductive Load = 0.15H /0.3H /0.45H /0.6H / 0.75 H /1.5H/3H/400mAX 3 Nos.(B)Capacitive Load = 1.25 uF / 2.5 uF/5u/415V x 3 Nos. **Variable AC/DC power Supply Panel (EMT 23 [08 Shrouded Banana]** •Ac output 0 to 270V / 3Amp. •Dc output 0 to 230V / 3Amp. **Mechanical Dimension (mm) : =** 1170(L) X 300 (W) X 990 (H) **Net Weight Trainer: 56** kg, DC Motor = 40 kg, **3 Ph. Motor** - 35 kg.
2	DC Integrated Machine foot mounted on Chasis	Voltage:Vram=180v Vfield=180v Capacity/RPM/terminal:300w/2 pole m/c/1500 RPM 6 terminals Rotor construction: stator commentator/ brush arrangement with laminated stack, brought out on 2 terminals Stator Construction: Separately excited field winding with laminated solid yoke 2 pole and series winding brought out on four terminals. Winding Temperature: An embedded thermistor brought out on two eyelets mounted on terminal box for monitoring winding temperature. Torque Speed Characteristics: Provision of load cells 6 kg. 2 no. and speed sensor assembly to measure the torque speed. Frame/Mounting Shaft Dia: 100 frame,Chais with handle clamps to easy coupling two motors with four vibration mould with soft nylon coupler to be provided. **CONTROL PANEL SPECIFICATIONS :** **Aluminum profile sturdy flat panel (table top) system, carrying various high voltage components housed in plastic enclosures (panel) to minimise shock possibility.Mechanical Dimension(mm):** 1170(L) x300(W) x990(H) • **Net Weight :** 56 kg **Optional Accessories:** (1) Hand held non contact Digital tachometer (2) EMT-34 bidirectional power meter & analyser with RS232C /RS485 **Input 3 phase DOL Starter panel (EMT1)***(10 Shrouded Banana)*: 4 pole MCB of 415 V/4A, DOL 9A Contactor with 230V / 50 Hz / 11VA COIL,Bimetallic thermal O/L relay with range 1.4A - 2.3A .**Integrated (1 Ph.) measurement panel (EMT 20F) *(8 shrouded Banana*):** Multifunction. 0 to 300VAC, CT 1A/5A,LCD/LED Display, Aux. Supply 230VAC 45-65Hz, 5W, V,A., Hz, PF, KW, KVA, KVAr, Energy,1A/5A current selector switch **3 Ph. Bidirectional power cum Energy meter panel (EMT 34/20) (8 shrouded Banana):** Bidirectional Multifunction ,3 Phase ¾ wire, 415V, CT Input 5A, LCD/LED display, Aux supply 230V, 45-65 Hz, 5W ,V,I., Hz, Pf, KVA, KW, KWH ,Modbus RTU RS 485 (optional) **FWD/REV, Star-Delta starter panel (EMT 4) (12 Shrouded Banana):** FWD/REV, 3 pole 3 way switch with centre OFF, 6A/440V,Star/Delta switch 3 pole, 3 way with centre OFF, 6A/440V. **3 Phase wound Rotor & Sync. Motor panel (EMT 5A/B) (8 Shrouded Banana):** Rotor resistors of 30E/5A with 3 taps of ,15E, 21E, 30E each - 3 Nos, Rotor resistor selector switch, 3 pole. 6 Way 6A/440V,DC Rotor excitation with circuit breaker (3Amp) **1 ph. Motor, Alternator & Sync. Motor Panel (EMT 16) (14 Shrouded Banana):** 1 ph. MCBs

		of 4A/1.6A 1 each,2 no. 2P2W selector switches to run as 1ph. alternator then as synchronous motor. 8A pushbutton switch to simulate as centrifugal switch. **DC voltmeter and DC ammeter panel (EMT 6A/B) (14 Shrouded Banana):** DC voltmeter(0-300V), DC Ammeter (0-5A) with polarity protection diode, Field failure relay to control Armature supply, 4A Circuit Breaker. **SCR Actuator (variable DC) cum sensor signal conditioning panel (EMT9) (4 Shrouded Banana):** Full bridge SCR based 0V-195V / 3 Amp cosine firing with linear characteristics,Supports signal conditioning circuit for speed, torque in kg to give output 0-2.5Vdc (FS),3 Nos. of these supplies required for DC Armature, DC motor field and AC generator field. **Instrumentation Power supply cum Multichannel DPM panel (EMT 8)(10 Shrouded Banana): +**12V, -12V, 500 mA , +5V, 300mA, Unregulated 17VDC /750 mA ,line synchronizing signal, Multi channel DPM for digital display of torque, speed etc. **Resistive Load (EMT14A/B): AC Resistors** 10K**/**5K/3.5K/2.5K/2K/1.5K/OFF, 200W x 3 phases/ 6 taps, **DC Resistors** 750E/600E/300E/212E/162E/ 125E/, 112E/100E/400W /8 taps + OFF + separate 60E tap for DC series Gen. **LC Load (EMT 15A/B) panel: Inductive load** = 0.15H/0.3H/0.45H/0.6H/0.75H/ 1.5H/3H/400mA X 3Nos, **Capacitive load** =1.25u /2.5u/5u/415VX 3Nos **Variable AC & DC Supply Panel (EMT23)** *(8 banana sockets):* Variable O**/**P **:** AC 0-270V/3A,Variable O**/**P **:** DC 0-250V/3A
3	3 Phase salient pole synchronous Generator with Damper Bars	Voltage: 415 VAC,50 Hz Capacity/RPM/Terminals: 300 W/4/1500 RPM Rotor Construction: Star Connected 4 terminals including star point brought out 4 slip rings mounted on shaft. Stator Construction: Seperately excited field winding with laminated solid yoke 4 pole brought out on two terminals. Winding Temperature: An embedded thermistor brought out on two eyelets mounted on terminal box for monitoring winding temperature. Frame/Mounting Shaft Dia: 100 frame,Chais mounted 19 mm Dia with easily swappable gear coupling. **CONTROL PANEL SPECIFICATIONS :** **Aluminum profile sturdy flat panel (table top) system, carrying various high voltage components housed in plastic enclosures (panel) to minimise shock possibility.** **Mechanical Dimension(mm):** 1170(L) x300(W) x990(H) • **Net Weight :** 56 kg **Optional Accessories:** (1) Hand held non contact Digital tachometer (2) EMT-34 bidirectional power meter & analyser with RS232C /RS485 **Input 3 phase DOL Starter panel (EMT1)*(10 Shrouded Banana)* :** 4 pole MCB of 415 V/4A, DOL 9A Contactor with 230V / 50 Hz / 11VA COIL,Bimetallic thermal O/L relay with range 1.4A - 2.3A .**Integrated (1 Ph.) measurement panel (EMT 20F) *(8 shrouded Banana*):** Multifunction. 0 to 300VAC, CT 1A/5A,LCD/LED Display, Aux. Supply 230VAC 45-65Hz, 5W, V,A., Hz, PF, KW, KVA, KVAr, Energy,1A/5A current selector switch **3 Ph. Bidirectional power cum Energy meter panel (EMT 34/20) (8 shrouded Banana):** Bidirectional Multifunction ,3 Phase ¾ wire, 415V, CT Input 5A, LCD/LED display, Aux supply 230V, 45-65 Hz, 5W ,V,I., Hz, Pf, KVA, KW, KWH ,Modbus RTU RS 485 (optional) **FWD/REV, Star-Delta starter panel (EMT 4) (12 Shrouded Banana):** FWD/REV, 3 pole 3 way switch with centre OFF, 6A/440V,Star/Delta switch 3 pole, 3 way with centre OFF, 6A/440V. **3 Phase wound Rotor & Sync. Motor panel (EMT 5A/B) (8 Shrouded**

		Banana): Rotor resistors of 30E/5A with 3 taps of ,15E, 21E, 30E each - 3 Nos, Rotor resistor selector switch, 3 pole. 6 Way 6A/440V,DC Rotor excitation with circuit breaker (3Amp) **1 ph. Motor, Alternator & Sync. Motor Panel (EMT 16) (14 Shrouded Banana):** 1 ph. MCBs of 4A/1.6A 1 each,2 no. 2P2W selector switches to run as 1ph. alternator then as synchronous motor. 8A pushbutton switch to simulate as centrifugal switch. **DC voltmeter and DC ammeter panel (EMT 6A/B) (14 Shrouded Banana):** DC voltmeter(0-300V), DC Ammeter (0-5A) with polarity protection diode, Field failure relay to control Armature supply, 4A Circuit Breaker. **SCR Actuator (variable DC) cum sensor signal conditioning panel (EMT9) (4 Shrouded Banana):** Full bridge SCR based 0V-195V / 3 Amp cosine firing with linear characteristics,Supports signal conditioning circuit for speed, torque in kg to give output 0-2.5Vdc (FS),3 Nos. of these supplies required for DC Armature, DC motor field and AC generator field. **Instrumentation Power supply cum Multichannel DPM panel (EMT 8)(10 Shrouded Banana): +**12V, -12V, 500 mA , +5V, 300mA, Unregulated 17VDC /750 mA ,line synchronizing signal, Multi channel DPM for digital display of torque, speed etc. **Resistive Load (EMT14A/B): AC Resistors** 10K**/**5K/3.5K/2.5K/2K/1.5K/OFF, 200W x 3 phases/ 6 taps, **DC Resistors** 750E/600E/300E/212E/162E/ 125E/, 112E/100E/400W /8 taps + OFF + separate 60E tap for DC series Gen. **LC Load (EMT 15A/B) panel: Inductive load** = 0.15H/0.3H/0.45H/0.6H/0.75H/ 1.5H/3H/400mA X 3Nos, **Capacitive load** =1.25u /2.5u/5u/415VX 3Nos **Variable AC & DC Supply Panel (EMT23)** *(8 banana sockets):* Variable O**/**P **:** AC 0-270V/3A,Variable O**/**P **:** DC 0-250V/3A
4	3 Phase AC slip ring Induction Motor	3 AC Integrated motor with following specs: Voltage: Capacity: Rotor construction: Stator construction: Frame/mounting: Loading arrangement: Speed Measurement: 415VAC, 50Hz, 300W/4 pole/ 1500RPM, Star connected, four terminals including star point brought out on 4 slip rings mounted on shaft, Six terminal are brought out to start the machine using star-delta starter, 100 frame, chassis mounted, 19mm shaft dia. Friction break pulley (60.5mm dia) for loading arrangement with 20Kg spring balance for torque measurement. Using hand held tachometer. **CONTROL PANEL SPECIFICATIONS :** **Aluminum profile (4X2) sturdy flat panel (table top) system, carrying various high voltage components housed in plastic enclosures (panel) to minimise shock possibility. • Input 3 phase DOL Starter panel (EMT1)**[10 Shrouded Banana] 1] 4 pole MCB of 415 V/4A. 2] DOL 9A Contactor with 230V / 50 Hz / 11VA Coil .3] Bimetallic thermal O/L relay with range 1.4A - 2.3A. 4] R-Y-B Input Indicators. **•Integrated AC 3 phase multifunction measurement panel (EMT20**[14 Shrouded Banana] 1] Consist of 1 nos of (96X96mm) Digital meter for 3 Measures V, I, P (0.2 lag unity 0.2 lead), Hz. 2] Current specs for 3 phase meter = 5A **•FWD-OFF-REV Switch panel (EMT 4)** [12 Shrouded Banana] 1] FWD/REV, 3 pole 3 way switch with centre OFF, 6A/440V. 2]Star/Delta awitch 3 pole,3way with centre OFF,6A/440V **•3 Phase wound Rotor & Sync. Motor panel (EMT 5A/B)** 1] Rotor resistors of 30E/5A with 3 taps of 0E, 15E, 21E, 30E each - 3 nos 2] Rotor resistor selector switch, 3 pole.6 Way .6A/440 V.3] DC Rotor excitation with circuit breaker (3Amp) **•DC voltmeter & DC ammeter panel (EMT 6B)** 1]DC voltmeter (0-300V) 2] DC Ammeter(0-5A) with polarity protection diode. **•SCR Actuator (variable DC) cum sensor signal conditioning panel (EMT9)** 1] Full bridge SCR based 0V-195V / 3 Amp cosine

		firing with linear characteristics. 2]Supports signal conditioning circuit for speed, torque in kg wt to output 0-2.5Vdc (FS). •**Instrumentation Power supply cum Multichannel DPM panel (EMT 8)**(a)+/-12 V, 500 mA (b) +5V, 300mA (c) Unregulated 17V dc/750 mA (d) line synchronizing signal. (e) 13V / 3 Amp. (f) Multi channel DPM for digital display of torque, speed etc •**Mechanical Dimension (mm):** 960(L)**x**300 (W) X 545 (H)•**Net Weight :** 56 kg

FORMAT FOR QUOTATION SUBMISSION

(In letterhead of the supplier with seal)

Date: _____

To:

_____

_____

Sl. No.	Description of goods (with full Specifications)	Qty.	Unit	Quoted Unit rate in Rs. (Including Ex Factory price, excise duty, packing and forwarding, transportation, insurance, other local costs incidental to delivery and warranty/ guaranty commitments)	Total Price (A)	Sales tax and other taxes payable	
						In %	In figures (B)
Total Cost							

Gross Total Cost (A+B): Rs. _____

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. ———————— (Amount in figures) (Rupees ————————amount in words) within the period specified in the Invitation for Quotations.

We confirm that the normal commercial warranty/ guarantee of ——————— months shall apply to the offered items and we also confirm to agree with terms and conditions as mentioned in the Invitation Letter.

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

Signature of Supplier

Name: _____

Address: _____

Contact No: _____