

**E-5**

Electrical

**PROCUREMENT OF GOODS  
UNDER  
NATIONAL SHOPPING  
PROCEDURES**

**COEP/TEQIP-II/CoE-SRES/March2016/NS/01**

**For**

**Design and Development of two Digress of Freedom Electro  
hydraulic Systems**

**Bid Price: Nil/-**

**INVITATION FOR QUOTATIONS FOR SUPPLY OF**

**Design and Development of two Digress of Freedom Electro hydraulic Systems**

1. You are invited to submit your most competitive quotation for the following goods: -

Sr. No	Title /Name of the equipment /System	Brief description [Attach separate annexure if necessary for detailed specifications	Quantity
1	<b>Design and Development of two Digress of Freedom Electro hydraulic Systems</b>	<b>Design and Development of two Digress of Freedom Electro hydraulic Systems Please refer to the Annexure A</b>	<b>One</b>

The schedule is as follows

Date of inviting the quotations	23/03/2016
Last date of submitting the sealed quotation to TEQIP office, COEP	04/04/2016 [upto 3:00 pm]
Opening of the quotations	04/04/2016 [4:00 pm]
Validity of quotation	Min 45 days
Delivery Period	<b>4 months from the acceptance of PO</b>

2. College of Engineering has received the grants for establishing Center of Excellence in Smart Renewable Energy System under MHRD's Technical Education Quality Improvement Program-Phase II. The said procurement is for this center. This project is World Bank sponsored project. This procurement is being carried out using the National Shopping Process, and will observe the guidelines of Shopping under TEQIP-II.

3. **Bid Price**

- a) The contract shall be for the full quantity as described above and in the annexure. Corrections, if any, shall be made by crossing out, initialing, dating and re-writing.

- b) All duties, taxes and other levies payable by the contractor under the contract shall be included in the total price. However, break- up of the basic price and taxes/duties shall be indicated clearly.
  - c) The bidders will be evaluated on the basic price.
  - d) The rates quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.
  - e) The Prices should be quoted **in Indian Rupees** only.
4. Each bidder shall submit only one quotation.
5. **Validity of Quotation**
- Quotation shall remain valid for a period not less than 45 days after the deadline date specified for submission.
6. **Evaluation of Quotations**
- The purchaser shall evaluate and compare the quotations determined to be substantially responsive i.e. which
- (a) are properly signed ; and
  - (b) conform to the terms and conditions, and specifications.
- The Quotations would be evaluated considering all items together in this packet.**
7. **Award of contract**
- The Purchaser shall award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation price.
- 7.1 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.
- 7.2 The bidder whose bid is accepted shall 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.
8. 80 % Payment shall be made immediately after delivery of the goods. Remaining 20 % payment will be made after successful commissioning and testing of the equipment/system.

9. Three years commercial warranty/ guarantee shall be applicable to the supplied goods.
10. You are requested to provide your offer in sealed envelope latest by **4<sup>th</sup> April 2016**. Please indicate ***“Quotation for Design and Development of two Digress of Freedom Electro hydraulic Systems [CoE-SRES/ March2016 /NS /01]” at the right hand corner of the sealed envelope***
11. The bidder has to supply the material within the prescribed date. A penalty as per norms will be imposed for delayed supply upto 6 weeks. Any further delay will automatically terminate the purchase order/ contract.
12. The supplier requires supplying the store exactly as per the specifications and will be responsible to replace the defective supplies at his risk and cost.
13. The Supplier should submit deviation statement if any. The quotations simply mentioning “asper your specification and cost” shall be rejected.
14. The supplier should arrange for free demo / working trial of equipment (if required) at the Institute / Manufacturers place as the case may be at suppliers cost. The Purchase Order would be placed subject to satisfactory demonstration of the equipment.
15. Commissioning / Installation is at suppliers cost unless otherwise specified.
16. Conditional quotation will not be accepted.
17. We look forward to receiving your quotations and thank you for your interest in this project.

**Name: Prof. B. N. Chaudhari**  
Principal Investigator  
Center of Excellence-Smart Renewable Energy System

## Annexure A

### Detailed technical specifications for Design and Development of two Digress of Freedom Electro hydraulic Systems

#### **SPECIFICATIONS**

##### **The system should consist the following features**

- Two degree of freedom (linear and rotary) for position as well as velocity control of load electro hydraulically using servo valves and or possible combination of proportional and servo valves.
- Facility to easily add second degree of freedom in auto mode in future
- Maximum speed: 0.5 m/s
- The system should be capable of 10 kg loading or more if required
- Load should be added vertically from top and should be variable
- The necessary arrangement for loading and unloading

##### **Sensor module:**

Linear(LVDT) and angular position and velocity sensors with following specification

- Linearity error: +/- 0.1%
- Repeatability: 0.01 mm
- Maximum speed: 0.5 m/s
- Output: 0 to 10 V DC
- Total Distance travelled: 600 mm
- Extremely low friction. Supplied unit is Seals 8 type. Following graph shows the friction limits
- 1 degree resolution for rotary
- Range 30 -0 +30 degrees

##### **Linear Position Transmitter**

- Range: 0- 250 mm
- Output: 0- 10 V dc or 4 to 20 mA

##### **Power Supply Unit**

- 1 HP 3 Phase operated
- With built-in cooling arrangement for longer operating cycle
- Designed to generate force (when used with above components) to the tune of 650 kg
- With built-in safety and appropriate analog indicators
- Cast Aluminum body

##### **Work station with castor wheel and lock**

- Work station is a vertical Frame unit (made of MS, duly powder coated)
  - Overall preferred occupied Size (W x H) 1000 mm x 1800 mm
- Foot base – Wheel with locking arrangement

##### **Power control card for control unit**

Necessary power card with 12 Volt input and 0-12 volt DC.

**General**

- The system should be designed to serve the purpose of research and development work at the institute. All the parameters should have digital display and/or analog display.
- Necessary safety components such as filters and stress release mechanism should be included in the system
- The entire system should be interfaced with PC (PC not in the scope of supply) for control and data acquisition