



Dibrugarh University Institute of Engineering & Technology,
Dibrugarh, Dibrugarh University, Dibrugarh, Assam- 786004., Assam

INVITATION LETTER

Package Code: TEQIP-III/2019/AS/duie/77

Current Date: 27-Feb-2020

Package Name: DUIET/TEQIP34/ME/APPLIED

Method: Shopping Goods

THERMODYNAMICS

To,

Sub: INVITATION LETTER FOR DUIET/TEQIP34/ME/APPLIED THERMODYNAMICS

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	Item Name	Quantity	Place of Delivery	Installation Requirement (if any)
1	Dual, automotive engine with open ECU	1	Office of the Director, DUIET, Dibrugarh University, 786004.	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 III** 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, initialling, 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.


27/02/2020
Director

Dibrugarh University Institute
of
Engineering & Technology, DU

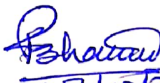
- 3.6 The Prices should be quoted in Indian Rupees only.
4. Each bidder shall submit only One Sealed Quotation containing Technical and Financial Bid with PAN/TAN and GST Certificate. The sealed envelope must be superscribe with the NIQ Number, Material/ Service Name quoted for, Contact Number and Email ID of the Bidder.
 5. Quotation shall remain valid for a period up to 30 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. Payment shall be made in Indian Rupees as follows:

Payment Description	Expected Delivery Period (in Days)	Payment Percentage
Satisfactory Delivery & Installation	30	90 %
Satisfactory Acceptance	30	10 %

10. Liquidated Damages will be applied as per the below:
 Liquidated Damages Per Day Min %: 0.01
 Liquidated Damages Max %: 10


 25/02/2020
Director
Dibrugarh University Institute
of
Engineering & Technology, DU

11. All supplied items are under warranty of 36 months from the date of successful acceptance of items and AMC/Others is **Yes**.
12. You are requested to provide your offer latest by **12:30** hours on **13-March-2020**.
13. Detailed specifications of the items are at Annexure I.
14. Training Clause (if any) **Required**
15. Testing/Installation Clause (if any) **Required**
16. Information brochures/ Product catalogue, if any must be accompanied with the quotation clearly indicating the model quoted for. The same must be available in the company website.
17. Sealed quotation to be submitted/ delivered at the address mentioned below, **Dibrugarh University Institute of Engineering & Technology, Dibrugarh University, Dibrugarh, Assam- 786004., Assam**
18. We look forward to receiving your quotation and thank you for your interest in this project.


27/03/2020

(Prof. Pramathesh Bhattacharyya)

Director, DUIET,
Dibrugarh University

**Director
Dibrugarh University Institute
of
Engineering & Technology, DU**

Annexure I

Engine Specification: Type: Automotive, No. of Cylinders: 01, Torque: 30 Nm@2000 rpm or better, Power: 9 hp@3000 rpm or better, Electronic EGR (Hot & Cold), Volume: 600 cc or more, CR: 18:1 or more

Fuel system: CRDi System – High Pressure Pump – 1000 bar, Feed Pump Control for Pressure Control (PCV less system), Injector: Solenoid, Multi-hole, Peak & Hold, **Sensors** - Engine Temp (Accuracy: 0.1 degC), Camshaft Position Sensor – Hall Effect, Crankshaft Position Sensor - Inductive, Fuel Line Pressure Sensor (Accuracy: 0.1 MPa), Driver Demand Sensor (Accuracy: 0.1 %), Inlet Air Temp (Accuracy: 0.1 degC), Air Flow (Accuracy: 0.01 Kg/hr)

ECU system: Injector Drivers: 8 or more, Number on Pins: 190 or more.

Online change of parameters (while engine is running): Injection Quantity, Injection Pressure (Closed Loop), Injection Timing (Range: 0-720 deg, Accuracy: 0.1 deg), Multiple Injections (Min.3, Quantity & Separation Control), EGR Control – Solenoid Valve, PC Based Software with CAN Communication having features like online data monitoring, online change of parameters, recording for offline analysis. Error Diagnosis in the same software. Industry Standard ECU, 12V, Suitable Wiring Harness, Table Top Control box for easy access to Starter, Ignition, Communication, Emergency Stop. Reverse Polarity Protection. Supplier to submit complete technical details highlighting above. **Coolant Temp. Control:** Required functionality for Engine Temperature Control as per the set point.

Secondary fuel control: Secondary Fuel Control (Injection Timing & Pulse width control) based on load and speed with automatic proportional reduction in diesel quantity, compatible with different fuels like CNG, H₂, LPG, and Gasoline, Methanol, Ethanol. Gaseous Fuel Flow Measurement: ECU should have the provision for estimation of injected quantity based on Gas Equation. Liquid Fuel Measurement: Electronic Fuel measurement in the ECU. **CNG Fuel System:** Provision for CNG Injection duration & Timing Control, Saturated Injector, **LPG Fuel System:** Provision for CNG Injection duration & Timing Control, Saturated Injector, **H₂ Fuel System:** Provision for CNG Injection duration & Timing Control, Saturated Injector, **Methanol Fuel System:** Provision for CNG Injection duration & Timing Control, Saturated Injector, **Ethanol Fuel System:** Provision for CNG Injection duration & Timing Control, Saturated Injector, **Gasoline Fuel System:** Provision for CNG Injection duration & Timing Control, Saturated Injector,

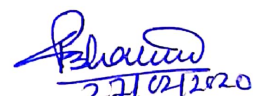
Dynamometer: Type: Eddy Current, water cooled, Cardan Shaft, Cardan shaft cover, water pressure control valve, water pressure gauge, filter/strainer.

Speed Control Mode (based on 0-5V signal, All speed PID governor), Throttle pedal for variable speed engine test.

DAC: Combustion Pressure Sensor, DAC, Combustion Analysis Software, Data Logging facility, Fuel Flow Measurement System, Load Indication, RPM Indication, Fuel Line Pressure Sensor, Air/Fuel/Load Measurement,

Miscellaneous: Integration of Engine, Dyno Controller and Dynamometer, Exhaust flange, Fuel filter, Oil filter, Air filter, Water inlet, Water Outlet, Exhaust Temperature Sensor (900 degc) – Pt1000.

Warranty & others: 36 Months


27/02/2020

Director
Dibrugarh University Institute
of
Engineering & Technology, DU

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. _____ (Amount in figures)

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. _____ (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. _____