



**Government of West Bengal  
Irrigation & Waterways Directorate  
Office of the Executive Engineer  
Metropolitan Drainage Mechanical Division  
Jalasampad Bhawan (4<sup>th</sup> floor), Salt Lake City, Kolkata-91  
Telephone No-03323345768, Email Id: [mdmdiwd@gmail.com](mailto:mdmdiwd@gmail.com)**

**EoI No.: WBIW/EE/MDMD/EoI-03/2022-23**

**NOTICE INVITING**

**EXPRESSION OF INTEREST (EoI)**

*For*

**Supply, installation, testing and commissioning including trial run and one year successful operation and maintenance of external water lubricated Vertical Turbine pump sets four (04) nos. 50 cusec with electro-mechanical installation complete for the proposed pumping station at the outfall of cantonment khal, Dist- North 24 PGS ,West Bengal .**

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Telephone No-03323345768, Email Id: [mdmdiwd@gmail.com](mailto:mdmdiwd@gmail.com)**

**EoI No.: WBIW/EE/MDMD/EoI-03/2022-23**

**NOTICE INVITING EoI FOR FOR MOST SUITABLE TECHNICAL  
SPECIFICATIONS, BOQ AND BUDGETARY QUOTES**

Offline bids are hereby invited by the Executive Engineer, Metropolitan Drainage Mechanical Division, Irrigation & Waterways Directorate on behalf of the Irrigation & Waterways Department of West Bengal through single stage offline sealed bid for obtaining most suitable Methodology, Technical specifications, BOQ and Budgetary quotes from all interested bidders/agencies/contractors within the country having Original Equipment Manufacturer of V.T. Pump Pre-Qualification (eligibility) credential for execution of works of similar nature and financial capabilities. The technical bid and the financial bid will determine the final selection and acceptance of price schedule, items of work, ToR, Specifications and even scope of work for framing of a DPR of the project mentioned later.

The participants may submit their bid with all necessary documents along with the covering letter duly signed by an authorized signatory **on or before 13.03.2023 by 15.00 Hrs** at the following address:

Office of the Executive Engineer  
Metropolitan Drainage Mechanical Division  
Jalasampad Bhawan (4<sup>th</sup> floor), Salt Lake City, Kolkata-91  
Telephone No-03323345768, Email Id: [mdmdiwd@gmail.com](mailto:mdmdiwd@gmail.com)

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## SECTION – I

### NOTICE INVITING EXPRESSION OF INTEREST (EoI)

EoI No.: WBIW/EE/MDMD/EoI - **03**/2022-23; Dated **13 th February, 2023**

**Subject: Supply, installation, testing and commissioning including trial run and one year successful operation and maintenance of external water lubricated Vertical Turbine pump sets four (04) nos. 50 cusec with electro-mechanical installation complete for the proposed pumping station at the outfall of cantonment khal, Dist- North 24 PGS ,West Bengal .**

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Telephone No-03323345768, Email Id: [mdmdiwd@gmail.com](mailto:mdmdiwd@gmail.com)**

Expression of Interests (EoIs) are invited by **Executive Engineer, Metropolitan Drainage Mechanical Division, Irrigation & Waterways Directorate** from eligible registered firms for obtaining **Methodology, Specifications, BOQ and (Proposed) Budgetary Quotes** for **Supply, installation, testing and commissioning including trial run and one year successful operation and maintenance of external water lubricated Vertical Turbine pump sets four (04) nos. 50 cusec with electro-mechanical installation complete for the proposed pumping station at the outfall of cantonment khal, Dist- North 24 PGS ,West Bengal .**

1.	EoI Document	The EoI document can be downloaded from <a href="http://www.wbiwd.gov.in">www.wbiwd.gov.in</a> from <b>13.02.2023</b> onwards
2.	Last date and time for bid submission	<b>13.03.2023 at 15:00 Hrs.</b>
3.	Bid Security	<b>NIL</b>
For any queries , bidder may contact this office before submission of offline bid at 033-23345768 , E-mail : <a href="mailto:mdmdiwd@gmail.com">mdmdiwd@gmail.com</a>		

## SECTION - II

### 1.0 INTRODUCTION TO THE PROJECT

It is experienced from past few year that a vast area adjoining of B.S.T. plant and Cantonment khal were inundated for a substantial period during rainy season. It is also observed that the gravity flow of cantonment khal is inadequate due to higher H.W.L/H-F.L of Bagjola Khal and compounding with tidal flooding at Bagjola Khal. To get relieve of the inhabit ants of that area, it is proposed for a lifting drainage pumping station at Dumdum park, Dist.24 Pgs (N). During non monsoon period i.e. October to June, gravity flows are sufficient to remove the drainage water from cantonment canal. But the pumping is required for monsoon period i.e., June to October, at the time of flood flow or back water from storm run off. This canal carries high volume of drainage water with municipal debris, fibers and silts.

### 1.1 LOCATION

The proposed Pumping Station is located at the outfall of cantonment khal at Dumdum park , Kolkata, Dist- 24 PGS(N) ,West Bengal.

### 1.2 OBJECTIVE

Objective of setting up the proposed Pumping Station is to provide intended extent of relief to the command areas of the proposed Pumping Station from water logging. This will lead to significant improvement of environment quality in the area as also the economic improvement of the community. Construction of Pumping Station of adequate capacity at out fall locations of the canals to reduce the frequency and extent of flooding thereby improving the level of service provided by the canals.

## 2.0 SALIENT DESIGN DATA(S) OF THE PUMPING STATION

### 2.1 Civil & Hydraulic Data

SI No	Particulars	Data
1.2.1	(a) inlet arrangement	
1.2.2	Canal Bed Level at inlet to the sump	-1.82 M. (U/S of canal)
1.2.3	F.D.L.	+21.35 M(GTS)
1.2.4	(b) Hydraulic Parameter of Pumping Station	
1.2.5	Pump Floor Level	+6.625 M(GTS)
1.2.6	Pump Suction Level	-3.0 M(GTS)

1.2.7	H.W.L	+2.9 M(GTS)
1.2.8	Sump Bottom Level	-4.0 M(GTS)
1.2.9	Canal Bed Level at delivery side	+1.82 M(GTS)
1.2.10	(c ) Outlet arrangement	
1.2.11	C.L. of Discharge pipe(above H.W.L.)	+5.1 M(GTS)

## 2.2 V.T. Pump Design

Sl No	Particulars	Data
01	Service	Drainage/Clear water
02	Type	Axial/ Mixed Flow Vertical Turbine
03	Designation	SWF Pumps
04	Duty	Continuous
05	Location	Indoor
06	Design Capacity	50 Cusec
07	Nos. Required	4 nos.
08	Static Head in Mtr	6.3 Mtr.
09	Speed	<600 r.p.m.
10	Min Bowl efficiency required at design capacity,%	85
13	Nos. of pumps working in parallel	Not Applicable
14	Range of Operation	Between 70% and 130% of rated capacity
15	Suction specific speed	7500<S<11000 ,US unit S=8500 (preferred)
16	Design & Constructional feature	As per Technical Specification
17	Material of Construction	As per Technical Specification
18	Supply of accessories and service	As per Technical Specification
19	Tests and Inspection	As per Technical Specification

## 2.3 BRIEF SCOPE OF THE PROJECT :

The scope of work under this estimate includes the **Supply, installation, testing and commissioning including trial run and one year successful operation and maintenance of external water lubricated Vertical Turbine pump sets four (04) nos. 50 cusec with electro-mechanical installation complete for the proposed pumping station at the outfall of cantonment khal, Dist- North 24 PGS ,West Bengal .**

The works include all Mechanical, electrical, instrumentation, control and other related work as per as details scope of this estimate. The works are to be executed as per technical specification enclosed a separate part of this estimate. The part of specification shall be read in conjunction with other parts such as specifications, drawings and appendices which provide further information and details.

The contractor shall confirm of having visited site and collected and verified the data relating to site condition. The contractor acknowledges that any failure to acquaint itself with all such data and information shall not relieve its responsibility. The contractor shall be responsible for overall verification of equipment under the scope of work eg. Make, Model, specifications and responsible for detailed design of mechanical and electrical works of the proposed pumping station. Compliances with these specifications does not limit the responsibility of the contractor for the overall performance of the pumping station. Contractor can offer changes in design for better performance. Justification of such changes shall be provided by the contractor. such changes are subject to approval by E.I.C.

## 2.0 ELIGIBILITY CRITERIA/PRE-QUALIFICATION

While submitting the proposal, the bidder shall ensure that the bidder meets the conditions of eligibility as described below:

Sl. No.	Eligibility criteria	Capability Assessment Documents
1.	Should be registered in India	<ul style="list-style-type: none"><li>● IT Return</li><li>● GST No. (If applicable)</li></ul>
2.	Should be a original equipment manufacturer of VT Pumps	Authorization of manufacturer, if any
4.	Technical Credentials	<ul style="list-style-type: none"><li>● It is desirable to firm have experience in</li></ul>

		similar nature of works in drainage / lifting water pumping station ● Completion certificate, If any
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#### 4.0 INSTRUCTIONS TO BIDDERS

##### Submission of Application

The EoI document can be downloaded from [www.wbiwd.gov.in](http://www.wbiwd.gov.in) from 13.02.2023 onwards. **Last date & time of submission of bid manually in drop box at office of Executive Engineer , Metropolitan Drainage Mechanical Division, is on 13.03.2023 till 15:00 Hours (IST).**

**No processing fee or bid security (EMD) is required during submission of the bid.**

The applicant bidders/contractors are advised to carefully read all the ‘Terms & Conditions’ contained in this EoI. They should particularly go through the minimum desired Pre-qualification (PQ) works credential & financial eligibility criteria and satisfy them for all the mandatory eligibility requirements. Bidders desirous of participating in the EoI and should submit bids only if they fulfill the minimum PQ eligibility criteria and are in possession of all the required PQ Credential documents “in original”

This EoI is not an agreement and is neither an offer nor invitation by ‘The Authority’ to the prospective Bidders or any other person to allot the project. The information contained in this EoI or subsequently provided to Bidder, whether verbally or in documentary or any other form by or on behalf of the ‘Authority’ or any of its employees or advisors, is provided to Bidder on the terms and conditions set out in this EoI and such other terms and conditions subject to which such information is provided. The purpose of this EoI is to provide interested parties with information that may be useful to them in making their financial offers (Bids) pursuant to this EoI. This EoI includes statements, which reflect various assumptions and assessments arrived at by the ‘Authority’ in relation to the Project. Such assumptions, assessments and statements do not purport to contain all the information that each Bidder may require. This EoI may not be appropriate for all persons, and it is not possible for the ‘Authority’, its employees or advisors to consider the objectives, financial situation and particular needs of each party who reads or uses this EoI. The assumptions, assessments, statements and information contained in the Bidding Documents, especially the Project Report/data may not be complete, accurate, adequate or correct. Each Bidder should, therefore, conduct its own investigations and analysis and should check the accuracy, adequacy, correctness, reliability and completeness of the assumptions, assessments, statements and information contained in this EOI and obtain independent advice from appropriate sources.



Information provided in this EoI to the Bidder(s) is on a wide range of matters, some of which may depend upon interpretation of law. The information given is not intended to be an exhaustive account of statutory requirements and should not be regarded as a complete or authoritative statement of law. The 'Authority' accepts no responsibility for the accuracy or otherwise for any interpretation or opinion on law expressed herein.

The 'Authority', its employees and advisors make no representation or warranty and shall have no liability to any person, including any Applicant or Bidder under any law, statute, rules or regulations or tort, principles of restitution or unjust enrichment or otherwise for any loss, damages, cost or expense which may arise from or be incurred or suffered on account of anything contained in this EoI or otherwise, including the accuracy, adequacy, correctness, completeness or reliability of the EoI and any assessment, assumption, statement or information contained therein or deemed to form part of this EoI or arising in any way for participation in this Bid Stage.

The 'Authority' also accepts no liability of any nature whether resulting from negligence or otherwise howsoever caused arising from reliance of any Bidder upon the statements contained in this EoI.

The 'Authority' may in its absolute discretion, but without being under any obligation to do so, update, amend or supplement the information, assessment or assumptions contained in this EoI.

The issue of this EoI does not imply that the 'Authority' is bound to select a Bidder or to appoint the Selected Bidder/Consortium or Contractor, as the case may be, for the Project and the 'Authority' reserves the right to reject all or any of the Bidders or Bids without assigning any reason whatsoever.

The Bidder shall bear all its costs associated with or relating to the preparation and submission of their Bid including but not limited to preparation, documentation, scanning uploading, expenses associated with any demonstrations or presentations which may be required by the 'Authority' or any other costs incurred in connection with or relating to its Bid. All such costs and expenses will remain with the Bidder and the 'Authority' shall not be liable in any manner whatsoever for the same or for any other costs or other expenses incurred by a Bidder in preparation or submission of the e-Bid, regardless of the conduct or outcome of the e-Bidding Process.

I&WD reserve the right to verify all statements, information and documents submitted by the applicant in response to the EoI Document. Failure of the I&WD to undertake such verification shall not relieve the applicant of its obligations or liabilities hereunder nor will it affect any rights of I&WD there under.

The EoI document shall be submitted by the bidder duly signed on each page of the document. In case the proposal is submitted on the document downloaded from official website, the applicant shall be responsible for its accuracy and correctness as per the version uploaded by I&WD and shall ensure that there are no changes caused in the content of the downloaded document. In case of any discrepancy between the downloaded or photocopied

version of the EoI document and the original EoI document issued by the I&WD, the later shall prevail.

The right to suspend the short-listing process or part of the process to accept or reject any or all applications at any stage of the process and / or to modify the process or any part thereof at any time without assigning any reason therefore is reserved by I&WD without any obligation or liability whatsoever.

**The bid document should be sealed in single envelope marked with the address, Name of work and EoI notice No., Last Date and Time of submission, Date and time of opening, name and address of the applicant.**

**The bid document should contain the following documents attached as annexure:**

1. Cover Letter (as per Annexure-A/1)
2. Details of Representative from Bidder/Lead Member of Consortium (as per Annexure-A/2)
3. Technical Credentials of the Bidder and / or Consortium (Form-1)
4. Approach and Methodology being adopted by the Bidder and / or Consortium (Form-2)
5. BOQ details with Estimated cost in item rate (as per Form-3)

If the envelope is not sealed and marked as instructed above, this office assumes no responsibility for the misplacement or premature opening of the contents of the Proposal submitted. This office is not responsible for the non-receipt or delayed receipt of bid document send through courier or post.

**Note: -**

The envelope shall contain EoI document, signed copy of budgetary quotes along with Annexure in the prescribed format.

The Proposal shall be made in the Forms specified in this EoI Document. Any attachment to such Forms must be provided on separate sheets of paper and only information that is directly relevant should be provided. This may include photocopies of the relevant pages of printed documents.

EoIs received by this office after the specified time on the due date shall not be eligible for consideration and shall be summarily rejected.

Executive Engineer is not bound to accept any EoI and reserve the right to accept or reject any EoI, and reserve the right to annul the selection process and reject all EoI at any time prior to the award of the selection without assigning any reason(s) whatever and without thereby incurring any liability towards the affected participant(s) on this ground.

## **5.0 SCOPE OF THE WORK**

The Basic scope covers the design, manufacturing, supply and inspection, testing, delivery, installation and commissioning of 04 nos. 50 cusec VT pump for the proposed pumping station at Dumdum park, Kolkata with bell mouth, column assembly, discharge elbow, motor stool, thrust bearing , non-reversing device & lubricating system .

Each Vertical Turbine pump shall be capable of developing the required total head at rated capacity for continuous operation at the required total head at low water level in the sump. The pump will be required to work with / without parallel operation satisfactorily over the head requirements as per system resistance curves. Supply and installation of E.O.T. crane of 15 MT with 5 MT auxiliary hoist, MS Gratings, Bore well with submersible pump and centrifugal pump for cooling and lubrication purpose are also in the scope of work.

The design, drawing, manufacture, fabrication, erection, testing/ inspection of 11 KV indoor substation shall be carried out strictly as per Indian Electricity Rules , Latest BIS code of practices and prior approval of Directorate of Electricity , Govt of West Bengal.

Supply, installation, testing, commissioning of 2 nos. power transformer ( 800 KVA, 11/415 V , ONAN) , Consumer 1 panel ACB at Sub Station (433 V), 1 set LT panel at Pump House ,Capacitor Bank , HT &LT Cabling , Earthing, , Internal illumination and allied electrical works ,Lightening conductor, instrumentation and communication system, Batter bank with charges also in the scope of work.

## **6.0 DECLARATION**

I/We have completely read and hereby accept the scope of work, requirements, terms & conditions.

**Signature of bidders authorised**

**Representative with seal:**

**Full address:**

### SECTION - III

ANNEXURE – A/1

#### Cover letter for Expression of Interest

To,  
The Executive Engineer  
Metropolitan Drainage Mechanical Division,  
Jalasampad Bhawan (4<sup>th</sup> floor), Salt Lake City, Kolkata-91  
Telephone No-03323345768, Email Id: ee-metromechdvn.wbiwd@gov.in  
I & WD, Govt. of West Bengal

***Sub: Submission of bid for obtaining Methodology, Technical Specification, BOQ and Budgetary Quote for the proposed: Supply, installation, testing and commissioning including trial run and one year successful operation and maintenance of external water lubricated Vertical Turbine pump sets four (04) nos. 50 cusec with electro-mechanical installation complete for the proposed pumping station at the outfall of cantonment khal, Dist- North 24 PGS ,West Bengal*** ..

Dear Sir,

In response to the Invitation for Expressions of Interest (EoI) published on \_\_\_\_\_ bearing Ref. No. \_\_\_\_\_ **“Supply, installation, testing and commissioning including trial run and one year successful operation and maintenance of external water lubricated Vertical Turbine pump sets four (04) nos. 50 cusec with electro-mechanical installation complete for the proposed pumping station at the outfall of cantonment khal, Dist- North 24 PGS ,West Bengal .”**

I / We acknowledge that Executive Engineer will be relying on the information provided in the Bid and the documents accompanying the Bid for recommendation of the most suitable Methodology, Technical Specification, BOQ and Budgetary quotes for the aforesaid Project, and we certify that all information provided therein is true and correct; nothing has been omitted which renders such information misleading; and all documents accompanying the Bid are true copies of their respective originals.

I / We shall make available to the Executive Engineer any additional information it may find necessary or require to supplement or authenticate the Bid.

I / We acknowledge the right of the Executive Engineer to reject our Bid without assigning any reason or otherwise and hereby waive, to the fullest extent permitted by applicable law, our right to challenge the same on any account whatsoever.

I / We declare that:

- a) I / We have examined and have no reservations to the Bidding Documents, including any Addendum issued by the Authority; and
- b) I / We do not have any conflict of interest in accordance with the EoI document; and

I / We understand that you may cancel the Bidding Process at any time and that you are neither bound to accept any Bid that you may receive nor to invite the Bidders to Bid for the Project, without incurring any liability to the Bidders.

In the event of my / our being declared as the Recommended Bidder, I / we agree to enter into an Agreement in accordance with the documents that has been provided to me / us. We agree not to seek any changes in the aforesaid documents and agree to abide by the same.

I / We agree and understand that the Bid is subject to the provisions of the Bidding Documents. In no case, I / we shall have any claim or right of whatsoever nature if the Project / Agreement is not awarded to me / us or our Bid is not opened or rejected.

The estimated budgetary price has been quoted by me / us after taking into consideration all the terms and conditions stated in the EoI documents, our own estimates of costs including all direct and indirect tax liabilities and after a careful assessment of the site and all the conditions that may affect the project cost and implementation of the project.

I / We agree and undertake to abide by all the terms and conditions of the EoI document.

In witness thereof, I / we submit this Bid under and in accordance with the terms of the EoI documents.

Yours faithfully,

(Signature, Name & Designation of the Authorized Signatory)

Date:

Place:

Name & Seal of Bidder

**Details of Representative from Bidder/Lead Member of Consortium**

<b>Part A : General Information of Bidding Companies/Agency</b>		
<b>1</b>	Name of the Company/Agency	
<b>2</b>	Type of Organization	
<b>3</b>	Address of the registered office of the company/Agency	
<b>4</b>	Year incorporated	
<b>5</b>	Address for communication	
<b>6</b>	Contact person:  Name Designation Phone No. Fax No. Mobile No. Email address	
<b>General Information Subsidiary and Associated Companies (wherever applicable):</b>		
<b>1</b>	Name of the company	
<b>2</b>	Address of the registered office of the company/Agency	
<b>3</b>	Nature of Business	
<b>4</b>	Brief description of company (not more than 100 words)	
<b>5</b>	Any other information the bidder would like to include:	
<b>Part B - Details of GST</b>		
<b>1</b>	GST Registration No.	

<b>2</b>	LUT No. for zero rated supply	

**(Form-1)**

**Technical Credentials of the Bidder and / or Consortium**

**Name of Client (End User) :**

**Name of the Work :**

**Nature of Work :**

**Description of services  
performed by the company :**

**Project Location :**

**Name, e-mail ID, telephone no.  
and fax no. of client's**

**Project Cost (Rs. in lakh)**

**Start date and finish date of  
the services (month and year):**

**Brief description of the Work:**

**Notes:**

- Use separate sheet for each Eligible Assignment.



## (Form-2)

**DESCRIPTION OF APPROACH AND METHODOLOGY, RESPONDING TO THE EOI SCOPE**

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A description of the approach, methodology and work plan for performing the assignment, including a detailed description of the proposed methodology and staffing for the assignment.

- ❖ ***Technical Approach and Methodology.*** {Please explain your understanding of the objectives of the assignment as outlined in the scope mentioned in the Expression of Interest (EoI) document, the technical approach, and the methodology you would adopt for implementing the tasks to deliver the expected output(s), and the degree of detail of such output. Please do not repeat/copy the EoI in here.}

## SCHEDULE OF WORK (BOQ)

Name of the project: **Supply, installation, testing and commissioning including trial run and one year successful operation and maintenance of external water lubricated Vertical Turbine pump sets of four(04) nos. 50 cusec with electro-mechanical installation complete for the proposed Pumping Station at the outfall of the Cantonment khal, Dist. North 24pgs.**

Sl. No	Description of work as per preliminary assessment	Qty.	Unit	Rate	GST Rate (18%)	Rate Excluding GST	Rate including GST & Cess	Amount (Rs).
1	Supply, delivery, storing at site, installation, testing & commissioning of vertically suspended wetpit installation, axial/mixed flow, non pull out type, continuous rating VT pump complete with bowl assembly, column pipe assembly, discharge tee, base plate, motor stool, thrust bearing assembly etc. and all accessories conforming to the latest revision of IS 1710/IS 5120 and Hydraulic Institute standard USA and shall be designed to be protected against reverse direction of rotation suitable for following duties and conforming to detailed specification and enclosed G.A. drawing including two coats of painting with approved paint . Pump should be suitable for pumping solid bearing liquid such as wastewater, industrial discharge, storm or canal drainage etc.	4	set					
	a) Pump capacity - 5100 M <sup>3</sup> /Hr (each)							
	b) TDH (maximum) = 5.95 MWC							
	c) Maximum static head = 4.30 m.							
	d) Column pipe dia. = 900 mm							
	e) Motor speed <= 600 rpm							
	f) Lubrication & cooling = external clear water							
	g) Bowl efficiency = 85% (Minimum)							
	h) Sump data : sump floor level - (-)2.50 M, C/L of delivery pipe - (+)4.0 M, pump house floor level- (+)6.0M, sump bay width- 2400mm							
	i) Delivery below pump house floor level.							
	(The enclosed G.A.drawing, actual site condition and all datas are to be verified by the bidder)							
	<b>Make-Kirloskar/WILO Mather &amp; Platt/WPIL/ Xylem /Flowmore</b>							

2	Supply, delivery, storing at site, installation, testing & commissioning of 125KW, TEFC squirrel cage vertical flange mounting induction motor, F class insulation and temperature rise limited to B class, suitable to operate on 415V, 3ph, 50Hz AC supply with voltage variation of ± 10% and frequency variation of ±3%, synchronous speed 600 r.p.m (10 pole) suitable for S1 duty, direct coupling with the vertically suspended pump and as per latest version of IS 325, IS 4722, IEC 60034 and other relevant IS specification to meet the power requirement of the pump with 95% efficiency. (Motor rating to be verified by the bidder keeping in sufficient factor of safety as per site condition). Make-ABB/Marathon /CGL /Siemens/Kirlosker/BHEL	4	set					
3	Supply, delivery, storing at site, installation, testing & commissioning of C.I.D.F delivery pipes with flange and fittings complete with all accessories as per specification including jointing conforming to the latest revision of IS : 1710, IS : 5120, IS: 1537 & IS:1538.	7.865	MT					
	Straight pipe of 900 mm. dia. & 3000 mm. long(approx.) (one piece not exceeding 2.5m)							
4	Supply, delivery, storing at site, installation, testing & commissioning of double acting automatic air relief valve of nominal size 100mm as per IS 14845 with isolating mitre bevel geared sluice valve as per IS 14846 complete of material body & top cover- CI, IS 210 FG 260, internal fittings- bronze IS 318 LTB 2, hardware in contact with water- SS 304 and as per following specification.	4	set					
	Working Pressure Body/seat - 7 / 5 kg/cm <sup>2</sup>							
	Design Pressure Body/seat - 18 / 12 kg/cm <sup>2</sup>							
	Testing as per IS 14846							
5	Supply, delivery, storing at site, installation, testing & commissioning of 900mm. dia. C.I. Single flange, swing type double hung flap valve with pressure rating as per specific standard (Body, flap Cast iron, IS:210, FG:260, Body & disc set: stainless steel, AISI 304, Hinge pin: Stainless steel AISI 410), flange standard IS 1538, leakage as per IS 13349 class 3 and as per specification -	4	set					
	Rated flow - 5100 M <sup>3</sup> /Hr, Velocity at rated flow - 2.228 m/sec							
	Design Pressure - 15 MWC							

	Testing as per IS 14858							
6	Supply, delivery, storing at site, installation, testing & commissioning of lubrication and cooling water pump horizontal, single/multi-stage, 6m <sup>3</sup> per hour capacity, fitted with 3phase 415 V, 2.2 KW motor 23 mtr. Head contineous rating centrifugal pump of approved brand complete with squirrel cage induction motor with base plate, coupling etc.along with with all fittings, non-return valve, sluice valves, striner and all accessories for suction from water reservoir and allied equipments all upto delivery as per approved design and drawing.	2	set					
7	Supplying, fitting and fixing of cooling & lubricating water G.I. pipe line of TATA make with all necessary accessories, specials viz. socket, bend, tee, union, cross, elbo, nipple, longscrow, reducing socket, reducing tee, short piece etc. fitted with holder bats clamps, including cutting pipes, making threads, fitting, fixing etc. complete in all respect including cost of all necessary fittings as required, jointing materials and two coats of painting with approved paint in any position above ground. (For Exposed Work)							
7.1	80 mm dia. medium quality	20	p/mtr					
7.2	50 mm dia. medium quality	40	p/mtr					
7.3	25 mm dia. medium quality	30	p/mtr					
8	Supply, Installation, testing & commissioning of pressure gauge meter (as per IS 3624) for cooling & lubricating water pipeline completer with all accessories and suitable class of enclosure, including all sundries, fixtures as required as per specification and direction of E.I.C.	10	set					
9	Supplying, fitting and fixing Peet's valve fullway gunmetal standard pattern best quality of approved brand bearing I.S.I. marking with fittings (tested to 21 kg per sq. cm.)							
9.1	50 mm dia	4	each					
9.2	25 mm dia	8	each					
10	Supplying P.V.C. water storage tank of approved quality with closed topwith lid (Black) - Multilayer( 1000 litre capacity)	4	each					

11	Supply, delivery, storing at site, installation, testing & commissioning of trashrack/ bar screen/ grating conformong to relevent IS codes (IS:11388, IS:800, IS:2062) fabricated with structural steel sections such as ms flat, channels, angles etc. including cost of materials, machinary, labour, cutting, aliging, welding as per approved drawing including transportation charges as per direction of E.I.C. Material should be hot dip galvanized MS. All the steel materials should be of SAIL / TATA/JINDAL/APPROVED make.	11019	p/kg					
	Size: 2600mm (W) x 4700mm (H) x 8 nos							
12	<b>Electrically operated monorail crane with supporting MS structure for trashrack lifting lowering.</b> Design, supply, delivery, storing at site, installation, testing & commissioning of 5 M.T. capacity straight monorail (02 nos) placed at a distance of 1.5 mtr(approx.) for travel length of 14 mtr.(approx). Both the monorails shall be supported on goal post steel structure and top of goal post structure shall be covered by suitable sheet metal to protect the hoist from direct sun and rain. Both hoisting and LT motion electrical and to be operated by 2nos 5MT capacity wire rope type electrical hoist with electrical trolley and lift 7 mtr. The crane shall be suitable for outdoor operation of M-5 (Class II) duty, indoor operation as per IS: 807, IS: 3177or equivalent at its latest revision. This work also includes design, manufacture supply & fixing of 2sets of DSL arremgement and isolating switch for feeding power to the crane along longitudinal travel comprising of 4 line PVC shrouded type GI conductor with supporting brackets and a set of current collector for each hoist. The crane should be marked with safe working load (SWL). The whole work must be completed in all respect as per direction of E.I.C.	1	set					
	<b>EOT crane inside pump house.</b>							

13	Design, supply, delivery, storing at site, installation, testing & commissioning of 15 M.T. capacity x 6.5 mtr span x 7.5 mtrs. lift double girder pendent controlled EOT travelling crane having hoisting , CT motion and LT motion to be electrically operated from floor. The crane shall be of M-5 (Class II) duty, indoor operation as per IS: 807, IS: 3177 or equivalent at its latest revision. This work also includes manufacture supply & fixing of long travel steel gantry girder with square rail for travel length of 12.1 mtr. and designed for maximum column pitch distance of 3 mtr. and DSL arrangement for feeding power to the crane along longitudinal travel comprising of 4 line PVC shrouded type GI conductor with supporting brackets and a set of current collector. The crane should be marked with safe working load (SWL). The whole work must be completed in all respect as per direction of E.I.C.	1	set					
14	Sinking of 200 mm. dia. (8") well x 180 m depth (approx) with 30 M strainer.							
	Labour for drilling perfectly vertical bore hole of specified dia. For a specified depth below ground level in alluvial soil strata by mud rotary rig drilling as required to suit the site condition as per direction of E.I.C. Including use of own rigs and its accessories, tools & plants and consumables etc. for lowering of finished bore suitable for lowering of 200 mm. dia. GI/PVC pipes for housing, fitted with socket and with or without well screen as per necessity for the soft, medium, hard and boulder formation (GI/PVC casing pipes of required by the contractor to protect collapse of over burden portion) including lowering and withdrawing of casing pipe after drilling 200 mm. to 450 mm. dia. in over burden portion. Electrologging and Geophysical Investigation test to be done and Test report to be submitted for approval.	1	p/job					
	Supply of all pipes material and labour and T & P for lowerin the GI/PVC pipes with or without slotted pipes as per the necessity from ground level and fitted and fixed up in perfectly vertical position, including cutting and threading of pipe and slotted pipe and fixing all joints, materials etc. complete and keeping the top of the casing pipe threaded including plugging tube wells to prevent entry of foreign materials from the above excluding the cost of fittings and materials.							

	Cleaning and developing the production well using thir own compressor continuously worked till clear and adequate discharge is obtained from the tube well including supply and use of all necessary equipments and labour as nper direction of E.I.C.							
	Supply all labours, T & P for packing the bore with washed gravel (Size P - 6) around the pipes in good quality including cost of gravel etc. complete as per direction of E.I.C.							
	Supplying all materiasls, labour and T & P and grouting with cement slurry for sanitary sealing around the GI casing pipe up to 3 mtrs. Below ground level including cost of cement all complete as per direction of E.I.C.							
15	Supply, delivery, installation (Bore hole installation) and testing at site of 11 m <sup>3</sup> per hour capacity, 50 m head, continuous rating vertical submersible pump conforming to IS : 8034- 2002 and coupled with 3.7kw, 3 phase, 415 volt, induction motor conforming to IS 9283 - 1995 of approved brand along with NRV and required quantity of 1 x 3 x 4 sq. mm. PVC submersible flat cable along with required length of G.I./PVC pipe with necessary fittings for connecting pump delivery from under ground well to overhead reservoir. Supply and delivery fittings including sundries, fixtures as required as per direction of E.I.C.	1	p/job					
16	Carriyng out CFD analysis of the sump as per design and drawing , based on details of pump being offered at reputed educational institute/ laboratory with prior approval of E.I.C. and to provide suitable arrangement of flow guides, buffers, splitters etc. at the sump to achive smooth pump operation free from vortex, pre rotation, swirl etc.	1	p/job					
	<b>Electrical components</b>							
17	SITC of 11 KV, 630 Amps 3 PANEL with 11 KV, 630 Amps 26.3 KA VCB switchgear along with Panel top moounted P.T. as per enclosed specification. 1 no. Incomer feeder 2 nos. Outgoing feeder. (Make- Siemens, Schneider,ABB) (This item comprise 17.01-17.07)	1	set					
17.01	RATING: 630A BUSBAR 630A COPPER (25KA for 3sec) - 1no							
17.02	A: MOVING PORTION: A1: 12KV, 630A, 25/26.2 KA for 3sec VCB - 1no A2: VCB Enclosure + 630A Copper connections - 1no A3: 630A PVC sleeved Copper Bus Bars -1no							

17.03	B: CT AND PT DETAILS: B1: 2 Core CT: CTR:100/1A+1A - 3nos CORE 1: For metering, class-0.5, 15Va CORE 2: For Protection, Class-5P10, 15VA B2: 3 Nos 1Phase PTR:11KV/v3/110V/v3, Cl. 1 50VA (Panel top mounted PT) (Drawout type) - 1no							
17.04	C: BREAKER PANEL INDICATION LAMPS: C1: BREAKER On/OFF/Trip circuit Heathy/ Spring charge indication/ Breaker test position/ Breaker service position.- 6nos C2: R-Ph./ Y-Ph./ B-Ph. -3nos							
17.05	D: SWITCHES AND OTHER ACCESSORIES: D1: DC ON/ OFF Switch- 1no D2: AC ON/ OFF Switch-1no D3: Auxiliary contactor (2NO + 2NC) - 1no D4: Heater with heater switch & thermostat -2nos D5: Cubicle illumination lamp-1 D6: 15A, 230V, 3 pin plug & socket and MCB -1no D7: Local Remote Switch -1no D8: T-N-C Switch -1no D9: Mech. On-OFF push button -1no D10: TTB -1no D11: Buzzer- 1no							
17.06	E: METERS & TRANSDUCERS: E1: Ammeter with selector switch -1no E2: Voltmeter with selector switch- 1no E3: Digital MFM - 1no							
17.07	F: RELAYS F1: Numerical relay communicable on MODBUS protocol MICOM P 127 with Power Pack Unit- 1no , F2: Mastertrip lockout relay VAJH 13 (86)- 1no F3: Electromechanical type DC fail relay VAA21 -1no F4: Electromechanical type Trip circuit Supervision Relay (VAX31)- 1no PT should be drawout type & Power pack unit must be provided for tripping circuit Cable entry box both side (Incomer & Outgoing) suitable for 3C X 240 sq. mm XLPE 11KV grade cable.							
18	Supply, delivery, storing at site, installation, testing & commissioning of 800 KVA, 11KV /433V, 3 phase, 50HZ Δ/λ, Dyn 11 outdoor ONAN type <b>transformer</b> in IP 55 enclosure with copper windings, OFF load tap changing arrangement in HV Side @ 2.5% in 6 steps From -10% to +5%, having HT cable end boxes with cable gland plate suitable for terminating 11KV ,3C x 240 sqmm XLPE/ ARMD, AL cables for primary side and 1.1KV, 6 x 3-1/2C x 300 sqmm. XLPE/ARMD, AL cables on the secondary side, three channel temperature scanner for continuous monitoring of the windings , with supply of all associated materials and accessories like oil conservator, silica gel breather, Buchluz relay, mounting channels bolts ,nuts washers, screw, clamps, painting, earthing etc. and confirming to IS- 1180 (Level-2) and as per specification as laid down in the contract complete in all respect as required at site including construction of required size CC pedestal. <b>Make- Schneider/True Volt/ABB/RPG-Raychem/Century</b>	2	set					
	<b>LT PANEL AT PUMP HOUSE</b>							



19	Supply, delivery, storing at site, installation, testing & commissioning of 415V (35MVA) TPN floor mounting free standing LTpanel made of min. 2mm thick sheet steel and stiffened by angle iron frame as necessary extensible on either side totally enclosed, dust and vermin proof, self supported, free standing unit with base channel, multi tier, compartmentalised cubicle, front access type construction with details of feeders as given below. LT panel shall be suitable for 500/415VAC 50HZ, 3-phase and neutral system.Panels shall be treated with seven tanks process before painting with two coats of epoxy paint over two coats of epoxy primer/powder coated paint all of approved shade complete with front operated incoming and outgoing switchgears, cablealleys, provision for cable entries from top and bottom, necessary meters, internal wiring with 1.1KV, copper wire (2.5 sq.mm) protection HRC fuse etc terminal blocks, selector switches, inter connection with insulated(1.1KVgrade) colour coded copper conductor cable, gland plates, earth bus of copper, lifting bolts, level inscriptions, earth connections etc and supply of all necessary accessories all complete and mending good the damages as required.	1	set					
	<b>Make- Siemens/L&amp;T/ABB/OEM authorised company</b>							
	Note:All works are to be done in accordance with I.E.rules and regulation and as per direction of Engineer-in-charge.GA drawing for each panel has to be get approved by the engineer-in-charge before manufacturing the same.							
	(A) Incomer -2set each set comprising the following items (i) 1-Nos 1000A FP, 433V, 50 KA, Air Circuit Breaker (ACB) (ii) 1-set (3 Nos in each set) 15VA, 1000/5A, CL-1 for metering CTs (iii) 1-set cable termination box suitable for 4 nos x 3½ C x 300 sq. mm., 1.1KV, XLPE /A, AL cable (iv) 1-set 0-1000A AC flush mounting digital ammeter with selector switch. (v) 1-set 0-500V flush mounted digital voltmeter with selector switch (vi) 1-set ON/OFF/TRIP/TRIP CIRCUIT HEALTHY lamps and push buttons (vii) 1-set R/Y/B phase indication lamps (viii) 1-set TRIP/NEUTRAL/CLOSE selector switch (ix) Earth bus-bar and all other accessories complete (x) Annunciator unit. 8W (xi) 1-set Multi Function Meter							
	(B) Bus-Bars 2-Set TPN, 500/415V, 1000A, 50Hz, 35 MVA continuous rated copper bus-bar with insulating sleeves							
	(C) Bus-Coupler (i) 1-Nos 1000A FP, 433V, 50 KA, Air Circuit Breaker (ACB) with indication & inter-locking.							

	(D ) Outgoing (i)5 nos-500A 3P 500/415V, AC 50KA breaking capacity MCCB microprocessor based. Fully Automatic Star Delta Starter (FASD) for operation of 125KW pump motor having 3nos. 300A, 415V, TP AC 3 contactors and timer 0-30 sec CT operated LT Motor Protection relay Model: MM-10( L & T Make) with compatible Contractor ON/OFF/TRIP lamps, START/STOP push buttons, 0-500A, CT operated digital ammeter with 500/5A class-1 CTS and selector switch, local/remote selector switch, temperature scanner (Masibus/Minilec make), completely wired up to the terminals (for 04 nos VT pump & 01 no spare) (ii) 5 nos- 100A TPN 500/415V MCCB with breaking capacity of 50 KA including 0-100A CL-1 digital ammeter with 60/5A class-1 CTs and selector switch and ON/OFF/TRIP indication light complete ( 1 no for EOT crane, 1 nos for LDB, 1 nos for PDB, 2 nos spare).							
	(D) Earth bus-bar Continuous earth bus bar of 50 x 6mm G.I. flat running continuous through out the length of the switch board with earthing terminals.							
20	<p>CONSUMER 1-PANEL AIR CIRCUIT BREAKER AT SUB-STATION</p> <p>Supply,delivery, storing at site,erection testing &amp; commissioning of indoor, floor mounted metal clad totally enclosed horizontal cubicle fully compartmentalized,extensible on either side motor operated spring charged, electrically/manually operated fully draw-out type 433V Air Circuit Breaker(ACB) Board having rupturing capacity of 35MVA at 433V conforming to specification etc and detail shown in single line diagram and as described below Including supplying necessary mounting channels and all other mounting accessories complete.LT panel shall be suitable for 433V AC 50HZ,3 phase and neutral system. Make-Siemens/L&amp;T/ABB/Schneider</p> <p>Note:All works are to be done in accordance with I.E.rules and regulation and as per direction of Engineer-in-charge.GA drawing for each panel has to be get approved by the engineer-in-charge before manufacturing the same. (A) Incomer/ Outgoing</p> <p>(i) 1-Nos 1000A FP,500V, 50 KA,Air Circuit Breaker (ACB)</p> <p>(ii)1-set (3 Nos in each set) CT with CTR 1000/1A, 15VA,CL-1 for metering .</p> <p>(iii)2-set cable termination box suitable for 6 nosx 3½ -C x 300 sqmm.1.1KV, XLPE /A, AL cable</p> <p>(iv)1-set 0-1000A AC flush mounting digital ammeter with selector switch.</p> <p>(v) 1-set 0-500V flush mounted digital voltmeter with selector switch</p> <p>(vi) 1-set ON/OFF/TRIP/TRIP CIRCUIT HEALTHY lamps and push buttons</p> <p>(vii) 1-set R/Y/B phase indication lamps</p> <p>(viii) 1-set TRIP/NEUTRAL/CLOSE selector switch</p> <p>(ix) Earth bus-bar and all other accessories complete</p> <p>(x) 1-set Multi Function Meter</p>	2	set					
	<b>Cooling/lubrication pump &amp; submersible pump starter.</b>							

21	Supply and fitting fixing of wall mounted cubicle panel board fabricated with 2mm MS CRC sheet complete with powder coated paint, copper busbar with all accessories. 1 Nos-100A TPN 500/415V, AC 50KA breaking capacity MCCB microprocessor based with all other accessories complete including 415V, 2nos DOL starter for operation of 02 nos 2.2KW cooling/lubrication pump motor and 1no Submesiable Pump controller Starter fully automatic star-delta starter (L&T make) for 01no submersible pump having 1 no contactor 32A, thermal O/L relay having setting range 4-6.3A with, single phase preventor, ON/OFF/TRIP lamps, START/STOP push buttons, 0-10A, ammeter, local/remote selector switch, completely wired up to the terminals (2 nos. 2.2 KW lubrication/cooling pump motor and 1no submercible pump motor of suitable size)	1	set					
	<b>Capacitor Bank</b>							
22	Supply, delivery and storing at site, erection, testing & commissioning of capacitor bank of 85KVAR or suitable rating to reach improve power factor near to 1, delta connected double dielectric heavy duty Metalised poly propylene -Heavy duty (MPP-H) power factor correction capacitor 415V AC, 3ph, 50Hz, as per IS:13340 & IEC specification to be connected directly in parallel with the 125 KW motor terminals including supply and installation of Reactor/ Inductor coil against each module. Including supply of 16G well ventilated, Powder coated MS enclosure of appropriate size and duly painted. Note:Capacitor should be able to with stand a 110% of rated voltage and 130% of rated current. Make- EPCOS/Universal/L&T/ABB/Madhav)	4	set					
23	Supplying and fixing of 5.0 kg capacity <b>fire extinguishers</b> (Dry chemical type) to be fitted in wall with suitable bracket including cutting, chipping and mending good the damages.	6	Each					
24	Supplying and fixing 9 lts. Capacity MS fire bucket coloured red.	6	Each					
25	Supplying and fixing of <b>shock treatment chart</b> duly framed with glass on wall with necessary screws.	2	Each					
26	Supplying and fixing of 250 mm x 250 mm x 2 mm thick <b>danger boards</b> with screws.	8	Each					
27	Supplying and delivery high high voltage tested electrical rubber mat size (1mte x 2 mtr) and thickness 25 mm at site.	4	Each					

28	Supplying and fixing of <b>First Aid Box</b> with all items as required by rule on MS Bracket including mending good the damages.	1	Set						
29	Supplying and Fixing following Indoor Industrial High bay lumminaires on top of masonary structure by 3 Nos. 10 mm dia. x 87 mm long rag bolts, nuts & double washers complete either 37 mm x 10 mm MS flat support/or by other means as required.								
	(BY325P LED100S CW PSE GR FG WB PB)	4	Each						
30	Supply, Installation , testing & commissioning of battery charger with DCDB of 30 volt DC, considering of 15 to 16 nos dry maintenance free batteries of 180 AH capacityExide Make , complete with metal racks & all other accessories housed in a common floor mounted enclosed & properly Ventilated sheet steel Cubicle ( IP-42) including preparation of Pedastal, Position of charger & batteries including necessary inter connection as supply, painting, earthing all complete as per specification. System Earthing: Solidly Earthed. Enclosure : Materials-Mild Steel Sheet 2mm Thick, Painting: Powder Coated, Cable Entry:- From Bottom, Ventalation: Air Natural.	1	Set						
31	Operation and running routine maintenance of pumps and allied electro-mechanical system and cleaning of trash rack/ barscreen/ gratings at inlet to the pump bays after commissioning of the pumps for 12(twelve) months and replacement of spares(if required) during the 1st year of warranty period. (03 nos operator, 03 nos electrician & 08 nos helper per day round the clock)	12	Month						
32	<b>Supply and delivery of following Pump spares</b>								
32.1	Pump shaft set including top, intermediate, bottom/impeller shaft for 50 cusec pump.	1	Set						
32.2	Shaft sleeve complete set for 1(one) no pump (50 cusec)	1	Set						
32.3	Muff coupling complete set for 1(one) no pump(50 cusec)	1	Set						
32.4	Cut less rubber bush complete set for 50 cusec pump.	2	Set						
32.5	Ratchet pin for 50 cusec pump.	2	Set						
32.6	Keys for 50 cusec pump.	2	Set						
								Total	

