

MAZAGON DOCK SHIPBUILDERS LIMITED

**माझगांव डॉक शिपबिल्डर्स लिमिटेड**

"EXPRESSION OF INTEREST" (EOI) ref no. EY/CD/TAJ/MRLC/2020 Battery Commissioning



**माझगांव डॉक शिपबिल्डर्स लिमिटेड**

MAZAGON DOCK SHIPBUILDERS LIMITED

Mumbai-10


# रुचि की अभिव्यक्ति (ईओआई) का आमंत्रण

**NOTICE INVITING EXPRESSION OF INTEREST (EOI)**

**FROM REPUTED VENDORS FOR**

**BATTERY COMMISSIONING OF MRLC PROJECT**

1. EOI Ref. No. : EY/CD/TAJ/MRLC/2020
2. Description : Battery commissioning of MRLC
3. Date of Issue of EOI : 26 Jun'2020
4. Last date for Submission of EOI : 17 July'20, at 1500 hrs

 <b>CERTIFIED</b>  ISO 9001: 2000  for Submarine Division	<b>माझगांव डॉक शिपबिल्डर्स लिमिटेड</b> MAZAGON DOCK SHIPBUILDERS LIMITED  (A govt. of India Undertaking) Dockyard Road,  Mumbai 400 010.INDIA  PHONE +91(22) 2376 2607 FAX No. - 91(22) 23741386  Website - www.mazdock.com
<b>रुचि की अभिव्यक्ति (ईओआई) का आमंत्रण</b> <b>"EXPRESSION OF INTEREST" (EOI)</b>	
EOI No: - EY/CD/TAJ/MRLC/2020 Battery Commissioning	
EOI date: 26.06.2020	
CLOSING DATE 15:00 hrs on 17 July 2020	OPENING DATE : 15:30 hrs on 17 July 2020

**SUB: INVITATION OF "EXPRESSION OF INTEREST" (EOI) from Reputed Vendors with expertise in the field of BATTERY COMMISSIONING OF PROJECT MRLC.**

Mazagon Dock Shipbuilders Limited is the India's premier shipyard under the Ministry of Defence Production constructing warships, Submarines. The company invites Expression of Interest from reputed ISO certified indigenous firm's engaged in shipbuilding activities/ marine structures for long term participation in its production programme for its submarine Project.

**SUB: SUB-CONTRACT FOR BATTERY COMMISSIONING OF INS SHISHUMAR**

**MAZAGON DOCK SHIPBUILDERS LIMITED INVITES** expression of interest (EOI) IN TRIPLICATE from reputed ISO certified indigenous contractors/ship builders with expertise in the field of ship building/marine structures for the following Work. For this work there will be parallel contracts.

**I. Brief Scope of work:**

- I. Battery cells of Type-II for SSK 209 Class Submarine manufactured by M/s Exide Industries Limited (**India**) having dimensions of 1421X290X450mm and weighing approximately 520kg are required to be commissioned under overall coordination & control of MDL and IN. The present scope is for hiring of services for Commissioning of Main Batteries for INS Shishumar:
  - 1.1 Loading and safe transportation, unloading, de-crating & internal shifting of Cell Boxes & associated accessories along with acid supplied by IN.
  - 1.2 Preparation and handling of Electrolyte.
  - 1.3 Connectorisation of battery links, connecting of accessories viz. Operating plugs, cooling pipe & level indicators, further monitoring and watch-keeping for battery parameters (round the clock) during Battery Charging as per Commissioning procedure and guidelines issued during process by the OEM/IN/MDL.
  - 1.4 Safe Transportation and delivery of commissioned batteries at the MDL/ND (MB)/MBPT or any other location as intimated by MDL.

- 1.5 Hook rails to be placed at bottom of cell prior loading on-board.

**2. Pre-Qualification criteria:**

Bidders to have following requisite Infrastructure facilities to execute the work

2.1 Bidder should have his own facility under one roof for commissioning of submarine batteries. Facility to include DM Water preparation plant and storage facility, Electrolyte preparation plant (GLT and Reactors) and storage facility, HP air compressors, Chillers with close loop cooling systems, charging racks (for about 135 cells) with provision of close loop LP cooling system and LP air lines for battery agitation system. Facility should also include Battery Charger (capacity about 1500Amps) and DC Resistance box (Load Bank) discharge capacity about 600 Amps for charging and discharging batteries.

2.2 Bidder should have experience of handling & manual pouring of concentrated sulphuric acid, electrolyte preparation and pouring of electrolyte in lead acid of Industrial Batteries/ Special Grade Batteries with capacity of 2000 Ah & above.

2.3 Bidder should have experience with electrical activity like Connectorisation/ Deconnectorization and parameters monitoring of electrical nature along with operation of main switchboard, manning of battery & battery charger. Bidder should also have experience of handling high voltages (300 V DC and above) and high currents (1500 A DC and above).

2.4 Firm should be ISO 9001:2008 certified and should have similar work experience in Ship building / submarines / marine structures or should have worked with similar specification OR having experience in organizing, planning and execution of work with similar size and complexity. Firm should submit the past experience record and work completion certificates, as evidence of similar jobs done in last 3 years.

2.5 Firm should have following equipment:

MAZAGON DOCK SHIPBUILDERS LIMITED

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"EXPRESSION OF INTEREST" (EOI) ref no. EY/CD/TAJ/MRLC/2020 Battery Commissioning

Sr. No.	Instrument description	Make as Recommended by OEM	Qty
1	Digital density meter- DMA-35/ Equivalent	Anton Parr	02
2	Digital Multimeter-179/True RMS 287/289	Fluke	03
3	Digital Megger, 500 Volt	Fluke/ Megger	02
4	Digital weighing machine -1000kg Type- Electronic balance	.....	02
5	Air flow meter	.....	02
6	Hydrometer	.....	05
7	Oximeter	Technovatiion	02
8	Gas Flow Meter	Toshniwal	02
9	Mercury Thermometer	.....	05
10	Manual Pump for removal of electrolyte from Battery	.....	05
11	Decrating machine (Battery operated or 230 V AC)	.....	02
12	5 Ltr jar polypropylene Clear and having good chemical resistance with raised graduations	.....	04
13	Small soft brush for cleaning battery top	.....	10
14	01 Ltr HDPE sterilized bottles for collection samples of Acid/Electrolyte/DM water	.....	48
15	Calico/ Galley Cloth	.....	200
16	Petroleum jelly	.....	30 Kg
17	Cooling Plastic pipe (As per sample)	.....	800
18	Agitation Plastic Pipe ID 6 mm (As per sample)	.....	400
19	Portable Hydrogen analyzer	.....	02
20	Portable Oxygen analyzer		02
Sr. No.	Instrument description	Make as Recommended by OEM	Qty
1	Digital density meter- DMA-35/ Equivalent	Anton Parr	02
2	Digital Multimeter-179/True RMS 287/289	Fluke	03
3	Digital Megger, 500 Volt	Fluke/ Megger	02
4	Digital weighing machine -1000kg Type- Electronic balance	.....	02
5	Air flow meter	.....	02
6	Hydrometer	.....	05
7	Oximeter	Technovatiion	02
8	Gas Flow Meter	Toshniwal	

9	Mercury Thermometer	.....	05
10	Manual Pump for removal of electrolyte from Battery	.....	05
11	Decrating machine (Battery operated or 230 V AC)	.....	02
12	5 Ltr jar polypropylene Clear and having good chemical resistance with raised graduations	.....	04
13	Small soft brush for cleaning battery top	.....	10
14	01 Ltr HDPE sterilized bottles for collection samples of Acid/Electrolyte/DM water	.....	48
15	Calico/ Galley Cloth	.....	200
16	Petroleum jelly	.....	30 Kg
17	Cooling Plastic pipe (As per sample)	.....	800
18	Agitation Plastic Pipe ID 6 mm (As per sample)	.....	400
19	Portable Hydrogen analyzer	.....	02
20	Portable Oxygen analyzer		02

### 3 **Instructions To The Bidders:**

Bidders must submit the following documents along with their offer:

- i) Details of company Profile and valid Shop & Establishment registration certificate.
- ii) List of equipment held by them with model / year / working status along with details of their manufacturing facilities and personnel with designation, qualification and experience to determine their capabilities.
- iii) Audited / Certified Balance sheet, Profit / Loss account for past 3 years and valid solvency certificate / Banker's opinion issued by Nationalized / Reputed international / scheduled bank.
- iv) Bidder's average Audited Annual financial turnover certificate.
- v) Valid ISO certificate.
- vi) The bidders experience and past performance on similar services (Ship building & Marine Structures/piping) in the last 3 years (Order copies & work completion certificates to be appended).
- vii) List of employees on their pay roll & their work experience their qualification related to painting work.

- 4 **Additional requirement:** All the additional qualifying criteria as per scope of work that needs to be met while quoting for MDL Limited tender.

- 5 **Terms & Conditions Of EOI:** Participating firms shall indicate acceptance of terms & conditions of EOI as given below:

**V.1 Confidentiality:** All the information provided to the vendors shall be treated as confidential and should not be disclosed in any manner to any unauthorized person under any circumstances.

**V.2 Visits to Vendors' Premises:** MDL may undertake visit to the premises/workshop of the participated vendors for verifying the facilities and demonstration also to assess the capability.

**V.3 Statutory Requirement, Official Secret Act, Safety and Security Rules**

In the event of placement of Order, contractor shall also abide to all statutory requirements, Official Secrets Act 1923, Security and Safety Rules. The documents are available on MDL website. Bidders are required to submit a non-disclosure agreement on Rs.200 stamp paper in the format as per Enclosure-I

**V.4 Submission of EOI:**

EOI complete in all respect with all supporting documents must be submitted with unique password to each bid.

Detailed process is as follows:

i. bid is to be password protected and submitted on email ID of Mr. Snehal Madaye, M(C-EY) : sgmadaye@mazdock.com. Password of the bid to be submitted soon after the due date and time of tender in 50:50 splits form to the following two email ids.

a) Mr. C V Srivastvan, AGM(F-EY): [fin-ey.mdl@mazdock.com](mailto:fin-ey.mdl@mazdock.com)

b) Mr. Snehal Madaye, M(C-EY): [sgmadaye@mazdock.com](mailto:sgmadaye@mazdock.com)

Also MDL reserves right to demand/ask for soft copy through non Rewritable CD.

**5.4 Bid rejection Criteria**

Bids received after EOI closing date & time will not be acceptable.

**5.5 Opening Of EOI:**

The EOI received will be opened on the due date at the declared time or next working day if closing date happens to be holiday declared by MDL. Participated firms, who wish to remain present during the EOI opening, should nominate on their company's letterhead the name and designation of one person authorized to remain present at the time of opening the EOI and send this letter so as to reach the undersigned at least one working day prior to closing date of the tender.

**VI. Purpose:**

For identifying the firms who are interested to execute the work as per the standards and process as desirable for the scope of work.

All the EOI received by MDL, on or before the due date & time would be scrutinized w.r.t the scope of work. Upon completion of meetings and scrutiny, MDL will finalize tender. The firms may please note that mere meeting of the requirement mentioned in the EOI does not entitle any firm the right for awarding the tender or contract.

**VII. Expression of Interest & Selection of Bidders:**

Technical offers submitted against expression of interest shall be evaluated by MDL user in line with present requirements as stated in the technical documents/EOI. MDL team may further visit to bidder's premises to ascertain the capability and capacity required to undertake the task. MDL team thereafter shall shortlist the suitable bidders based on the technical offers and visit report of MDL team to progress further. Decision of MDL team/User with regards to short listing of bidders shall be final. MDL has right to accept and reject expression of interest at any stage of the process.

**VIII. Contact Person:**

- (i) For any further technical details/queries ,firms may contact Mr Yogesh Vartak CM(PLG-SCR-EY), Tel no. 022-2376 3599, 9970440822.

- (ii) For any commercial details/queries, firm may contact Mr. P S Chavan, CM (C-EY), Tel No. +91 22 23762610 or Mr. Pravin Nikhare, M(C-EY), Tel No. +91 22 23762606, Fax no. +91 22 2374138V, tajaulkar@mazdock.com

**IX. Public Grievance Cell:**

A Public Grievance Cell headed by Shri. H V Karekar, ED (ED\_EY) has been set up in the Company. Members of public having complaints or grievances are advised to contact him on Wednesday between 10.00 hours and 12.30 hours in his office on Fourth Floor, Project House Building, or send their complaints / grievances to him in writing for redressal. Contact Telephone No is 23763514. Interested firms are requested to submit their Expression of Interest (EOI) on or before the due date & time.

Thanking you,  
For MAZAGON DOCK SHIPBUILDERSLIMITED,

**Enclosure:-**

- 1. Scope of work**
- 2. Rate sheet**
- 3. Non Disclosure Agreement Format Enclosure-I**
- 4. Official Secrets Act 1923 (Available on MDL Website)**

Note: The documents mentioned under reference and formats shall be downloaded from MDL's Website: [www.mazdock.com](http://www.mazdock.com) > Tender/EY-Submarine

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*"EXPRESSION OF INTEREST" (EOI) ref no. EY/CD/TAJ/MRLC/2020 Battery Commissioning*

Enclosure-1



**MAZAGON DOCK LIMITED**  
**DOCKYARD ROAD, MUMBAI 400 010**

**Vetted**

**SCOPE OF WORK**

**Outsourcing of Services for Battery Commissioning–INS ShishumarMRLC**  
**(Y-72177)**



## 1. Brief Work Content

Battery cells of Type-II for SSK 209 Class Submarine manufactured by M/s Exide Industries Limited (**India**) having dimensions of 1421X290X450mm and weighing approximately 520kg are required to be commissioned under overall coordination & control of MDL and IN. The present scope is for hiring of services for Commissioning of Main Batteries for INS Shishumar:

- 1.1 Loading and safe transportation, unloading, de-crating & internal shifting of Cell Boxes & associated accessories along with acid supplied by IN.
- 1.2 Preparation and handling of Electrolyte.
- 1.3 Connectorisation of battery links, connecting of accessories viz. Operating plugs, cooling pipe & level indicators, further monitoring and watch-keeping for battery parameters (round the clock) during Battery Charging as per Commissioning procedure and guidelines issued during process by the OEM/IN/MDL.
- 1.4 Safe Transportation and delivery of commissioned batteries at the MDL/ND (MB)/MBPT or any other location as intimated by MDL.
- 1.5 Hook rails to be placed at bottom of cell prior loading on-board.

## 2. Bidders to have following requisite Infrastructure facilities to execute the work

- 2.1 Bidder should have his own facility under one roof for commissioning of submarine batteries. Facility to include DM Water preparation plant and storage facility, Electrolyte preparation plant (GLT and Reactors) and storage facility, HP air compressors, Chillers with close loop cooling systems, charging racks (for about 135 cells) with provision of close loop LP cooling system and LP air lines for battery agitation system. Facility should also include Battery Charger (capacity about 1500Amps) and DC Resistance box (Load Bank) discharge capacity about 600 Amps for charging and discharging batteries.
- 2.2 Bidder should have experience of handling & manual pouring of concentrated sulphuric acid, electrolyte preparation and pouring of electrolyte in lead acid of Industrial Batteries/ Special Grade Batteries with capacity of **2000 Ah** & above.
- 2.3 Bidder should have experience with electrical activity like Connectorisation/ Deconnectorization and parameters monitoring of electrical nature along with operation of main switchboard, manning of battery & battery charger. Bidder should also have experience of handling high voltages (300 V DC and above) and high currents (1500 A DC and above).

### **3. MDL/ IN Scope of Work**

- 3.1 Indian Navy shall be providing dry battery cells from the site of M/s Exide Industries Limited (India) /Naval Stores at Ghatkopar/ Naval Dockyard (MB) and acid from Naval Stores at Ghatkopar/ ND(Mb).
- 3.2 Continuous monitoring of loading, unloading, de-crating, alignment of cells in racks and all other battery commissioning related activities.
- 3.3 Provision of technical documents/Manufacturer's manual/Commissioning manual required for battery commissioning and as per OEM instructions.
- 3.4 Witnessing/ validation in confirmation of acid test, DM water test, electrolyte test, capacity test, hydrogen evolution test and other quality tests carried out by subcontractor during battery commissioning activities.
- 3.5 Work completion record shall be maintained by MDL.
- 3.6 Requisite reference protocol logbook format for recording shall be issued to subcontractor before start of work.
- 3.7 Hook rail plates and its associated accessories shall be provided by IN/MDL.
- 3.8 Dry Batteries and accessories viz. Level indicators & agitation plugs.

### **4. Subcontractor's Scope of Work and Supply**

- 4.1 Safe loading of dry cells boxes and Acid from Naval Stores Ghatkopar/Sewri or as intimated by IN and safe transportation to the subcontractor's premises. Balanced acid and empty bottles & Spare commissioned cells after commissioning to be returned to IN (NSD, Ghatkopar/BCF Sewri).
- 4.2 Safe unloading of dry cells, de-crating and to facilitate the dry cell inspection at subcontractor's premises with the help of battery operated forklifts. Placement of cells on charging racks for connectorisation with load tested Lifting Yoke. Lifting Yoke (Two in nos.) suitable to batteries has to be arranged by firm for shifting of Dry and commissioned batteries. Subcontractor will make sure that all requisite accessories like slings, eyebolts etc. properly calibrated with certificates available whilst Loading/Unloading of the cells. Weight of the dry cell would be approximately 400 Kgs and that of commissioned battery would be approximately 525Kgs. Firm should have dedicated area for acid storage and handling, unloading, de-crating and inspection of dry cells before placing on commissioning rack including washing and cleaning of cells.
- 4.3 Carry out visual inspection of the dry cells for cracks/ abnormalities/damages jointly with OEM, IN, QA-EY and other reps.

- 4.4 Perform cold checks as per the promulgated protocol/ manufacturer's guidelines. Carry out insulation check for each cell using Digital Insulation Tester Fluke/Megger make and should be calibrated.
- 4.5 Placement of each cell on charging racks aligned in such a fashion that connecting links can be mounted on each cell easily and without damaging cells. Connecting links along with suitable nuts, bolts, washers, bridging connectors, bulge arresters etc. to be arranged by subcontractor.
- 4.6 Ensure that each dry cell remains intact, scratchproof and jerk proof while loading, unloading, mobilizing, de-crating and aligning on charging racks.
- 4.7 Waste material, wooden box, scrap etc. be removed in a systematic way and keep all passages and emergency ways cleared round the clock as per safety norms during the course of commissioning process.
- 4.8 Subcontractor should possess/arrange all necessary cables, piping, accessories and calibrated measuring instruments like 02 in nos. Digital Density Meters of Anton Paar make, sufficient nos. of thermometers suitable to be used and measure temperatures up to 100 degrees in acid environment, 02 in nos. Insulation Testers/ Meggers of Fluke/Megger make, 03 in nos. Multi-meters, Conductivity meter, Air Flow meters, PH Meters, Gas Flow Meter, Oximeter, Electronic weighing machine (1 Ton capacity with accuracy of  $\pm 1$  Kg) and Interlink Connectors etc. List of tools and equipment's is attached as Annexure – I
- 4.9 Ensure that all accessories and materials provided by IN/ MDL remain neat, clean and undamaged pre and post uses. And same to be delivered to MDL/ND(MB)/BCF Sewari after commissioning in operational state. In case of physical damage during process same should be replaced.
- 4.10 Commissioning facility to be equipped with flame proof lighting arrangement and adequate ventilation system.
- 4.11 Arrangement of appropriate transport (with loading and unloading arrangements) for collection of dry cells and acid to subcontractor's premises and delivery of commissioned wet cells at MDL/ N D (MB).
- 4.12 Availability of fire safety measures including portable fire extinguishers and major firefighting facilities operational during entire process of commissioning.
- 4.13 Use of Personnel Protective Equipment (PPE) like Acid Proof Aprons and safety suits, Protective Eyewear (Goggles), Acid proof Gloves, HV Protective Gloves safety shoes, face masks for acidic environment etc. by all personnel involved in battery commissioning activities.
- 4.14 Availability of adequate cranes, Battery operated forklifts and other material handling equipment with proper valid load tested certificates.
- 4.15 Availability of standby input AC powersupply and output DC Power for charging as redundancy arrangement in case of power failure, as approved rated supply arrangements recommended for battery commissioning procedure.
- 4.16 Availability of uninterrupted supply of DM Water.

- 4.17 Availability of adequate manpower required for battery commissioning activities i.e. minimum of 06 Nos. ITI qualified and experienced watch keepers and one supervisor in each shift (8 hours) round the clock during commissioning process.
- 4.18 Availability of machineries and equipment with accessories required for battery commissioning activities. Also in case of breakdown of any equipment contingency/spare/standby equipment should be available so that commissioning process is not effected.
- 4.19 Pouring of Acid in GLT and preparation of Electrolyte in reactor and storage capacity as per required quantity to meet battery commissioning schedule.
- 4.20 Carrying out laboratory tests for Acid, DM water and Electrolyte for their qualities at NABL approved laboratory/OEM recommended for each batch or as per recommendation of OEM/IN/MDL.
- 4.21 Transfer of electrolyte from storage tanks to dry cells after obtaining satisfactory test results from lab. Same needs to be approved by OEM/ IN before pouring.
- 4.22 Checking and operational availability of DM water cooling system, chilled water cooling system, fume extraction system and air agitation system prior to commencement of battery commissioning work.
- 4.23 Contractor cannot sub contract the commissioning activity or any associated activity to any other vendor.
- 4.24 Charging and discharging of batteries as per procedure promulgated in manufacturer's manual/ commissioning schedules or as advised during the commissioning process by OEM/IN/MDL.
- 4.25 Watch-keeping and checking all the parameters (density, temperature, agitation, electrolyte level, voltage of each cell and group voltage etc.) round the clock during charging and discharging as specified in technical manual and also as per the instructions issued during the commissioning process by OEM/IN/MDL along with updation of log books on hourly basis.
- 4.26 Preparation and logging of parameters in Log Books (both soft copy and hard copy).
- 4.27 Hydrogen Evolution Test to be performed during the Commissioning process as specified in manufacturer's manual (calibrated equipment required for hydrogen evolution test has to be arranged by vendor) as per guideline of OEM.
- 4.28 Conducting the Capacity test of each group to analyze capacity of the batteries.
- 4.29 De-linking of cells, thorough cleaning, including accessories and preservation till transportation onboard in operational condition and post commissioning inspection of cells.
- 4.30 Firm to undertake any alteration/addition of any activity recommended by OEM/IN/MDL during course of commissioning process to achieve results without any additional cost.
- 4.31 Electrolyte level adjustment as per OEM/IN/MDL recommendation.
- 4.32 Safe loading and transportation of the commissioned batteries without spillage of electrolyte to MDL/ ND (MB)/MBPT. Wooden boxes, tarpaulins & securing arrangements to be made by firm for safe transportation of the commissioned batteries. Firm to transport all the commissioned (532) cells to MDL which comprise of 528 on-board cells and 4 in nos. spare cells. Spare cells

are to be transported to IN premises (BCF, Sewri)/OEM M/S Exide thereafter. (Trailer and hydra to be arranged by vendor).

- 4.33 Safe unloading of commissioned batteries at MDL with own arranged Crane. Firm to carryout hook rail fixing activity at MDL, Firm to arrange adequate hook rail stands for fixing of hooks at bottom of commissioned batteries and pallet platform for resting of at least 60 in nos. commissioned cells with hook rails. Firm to arrange hydra, Hook rail stands and pallets.
- 4.34 Work progress status to be reported to MDL and IN in both soft and hard copies on daily basis.
- 4.35 Firm to arrange one Ambulance round the clock during commissioning to meet any emergency.
- 4.36 Firm should obtain necessary permissions and clearance from concerned Government Depts. to carry out battery commissioning and transportation of acid, dry cells & commissioned batteries.
- 4.37 Firm to carry out the commissioning of cells in not more than 4 batches. (One batch comprises of 132 to 135 cells).
- 4.38 Firm to maintain batteries as per OEM maintenance schedule in his premises if there is any delay in on board battery embarkation.
- 4.39 Portable Hydrogen analyzer – 02 no., portable Oxygen analyzer – 02 no., washing soda for neutralizing acid and all insulated tools for handling of cells are to be arranged by subcontractor (refer manufacturer's manual).

5. **Work Completion Certificate (WCC)** will be certified within ten working days after completion of activity as applicable, by the executive of the rank not less than Chief Manager of the MDL/IN subject to satisfactory work completion by IN to their full satisfaction.

## 6. General Requirements

- 6.1 Subcontractor has to deploy technically qualified and experienced manpower for execution of work onsite per shift. Failure to meet the battery commissioning schedule by not deploying the required no. of qualified & relevant experienced personnel deems to cancellation of contract without notice period. Vendor should also note that non-compliance of procedural process and or adopting short cut which is affects the quality of work will also deem to cancellation of contract without notice period. Records of attendance onsite shall be maintained by subcontractor & shall be duly authorized by MDL executive on daily basis.
- 6.2 Subcontractor to note that all required process for battery commissioning such as loading & unloading of cells from transport, de-crating of cells using appropriate own insulated tools/tackles, physical, visual & cold checks of battery cells, arrangement & alignment of battery cells in the racks as per MDL desired sequence, Marking of cells, fitment of copper links, assembling and fixing of operational plugs, cooling/agitation pipelines & level indicators, manual pouring of sulphuric acid in tank, cleaning of electrolyte tanks & interconnected accessories, preparation of

electrolyte, flushing of the pouring lines, pouring/ removal of electrolytes in battery cells (as and when required), attending various faults whilst watch keeping of battery parameters, top up of electrolytes during watch keeping, delinking of battery cells, removal of vent plugs, cooling pipes & level indicators, cable link & interconnected activities, altering movement & cleaning of battery cells, weighing inspection, safe loading on transport and defect free delivery at MDL/ IN designated places are his prime responsibilities. Contractor may note that the aforementioned activity may have to be repeated as per site conditions, for such work no extra cost is chargeable. All requisite personnel protective equipment& safety gears of ISO standards and duly approved by SOT (IN)/MDL as per safety norms are to be arranged by the subcontractor (i.e. Acid proof overalls, masks suitable to work in acidic atmosphere, acid proof gloves and HV insulated gloves, safety shoes, first aid box etc.). No operator shall be allowed to work at site without requisite personnel protective equipment. Such cases, if found, will be considered as absence of those personnel for that shift and day.

- 6.3 All requisite tooling and tackles (except special battery lifting jig) for de-crating shall be in subcontractor's scope and should have valid calibration certificates prior to using them. Further, sufficient no of 500/250 ml Glass sterilized bottles for collection of samples of acid/ electrolyte/ DM water & HDPE jugs and HDPE tanks of suitable capacity for topping up of cells are required to be made available by the subcontractor before commencement of commissioning activity.
- 6.4 The subcontractor should have capable experts in the team who can analyze the behavior of battery during commissioning. The team should have the decision making and prompt action capability based upon OEM recommendation and battery parameters during commissioning.
- 6.5 Subcontractor will have to mobilize resources within 15 days' time and ensure that appropriate tooling/ instruments with valid certification to be made available before 30 days from date of start of commissioning schedule as informed by MDL/IN. Parallely, subcontractor can submit the list of operators along with their qualification, professional experience certificate, photo ID, mobile no. etc.
- 6.6 Battery Commissioning schedule will be promulgated to the firm, however firm to anticipate changes/postponement depending upon readiness/availability of platform without any change in cost implication as per MDL/IN.

**7. Tentative Plan/ Delivery Schedule for Battery commissioning:**

- |     |  |               |
|-----|--|---------------|
| 7.1 | Commencement of Battery Commissioning Activities | : 01. 10.2020 |
| 7.2 | Completion of Battery Commissioning Activities   | :31. 12.2020  |

**8. Contract Validity Period:** As per delivery schedule.

**9. Parallel Contract:** No

**10. Guarantee/ Warranty:**

**11. LD Clause:** Activity-wise schedule of battery commissioning shall be finalized after placement of Order in coordination with subcontractor, OEM, IN and MDL. If there is any delay in the mutually agreed overall commissioning schedule due to subcontractor's negligence/ failure, LD will be applicable on pro-rata basis.

**12. Expected Activity-wise Completion Period:**

Sr.	Description of work	Qty.	Expected Completion Period	Man Power	Mandays Required	Infrastructure Required	Remarks
a	Loading and transportation of Batteries from Ghatkopar Store/ Naval Dockyard	532 Nos. (Approx.)	1 trip per day for 14 days	Riggers-4 Supervisor-01	70	Trailer (40 feet 20 T carrying capacity) Forklift - 3 T	
b	Loading and Unloading of Acid from Naval Stores Depot to Contractors premises	20 to 25T (Approx.)	05 Days	Chemical/Hazardous mat. Handlers – 05	25	Suitable Chemical handling Transport	
c	Unloading, Decrating, cold checks, weighing & alignment of battery cells along with all interlinked activities prior to commissioning	532 Nos. (Approx.)	16 Days	Riggers-6 Electricians -4 Carpenters -2	192	Forklift – 3 T Battery Operated Forklift (1/2 T)	
d	Acid handling, DM water preparation, Electrolyte preparation, flushing of pipe lines & tanks, cleaning of electrolyte tanks along with all interlinked activities, pouring of electrolyte and troubleshooting, if any.	For 532 cells (Approx.)	20 Days	Chemical Handlers - 10 Supervisor -01 for preparation of electrolyte for required density	220	Glass Lined Tank Reactor DM Water Plant Chiller plant Electrolyte Storage Tank 25 T DM Water Storage Tank 15 T	

**माझगांव डॉक शिपबिल्डर्स लिमिटेड**

“EXPRESSION OF INTEREST” (EOI) ref no. EY/CD/TAJ/MRLC/2020 Battery Commissioning

e	Connectorisation (linking), Application of Petroleum jelly, Installation of level Indicators, Operating Plugs and all interconnected activities.	For 532 cells (Approx.)	12 Days	Electricians -5 Supervisor -01	72	All Insulated Tools  Flexible pipe for Cooling & agitation	
f	De-Connectorisation, Removal & cleaning of each cell, level Indicators, Operating Plugs, cooling & agitation pipes, removal of cables and all interlinked activities.	For 532 cells (Approx.)	12 Days	Electricians -5 Supervisor-01	72	All Insulated Tools	
g	Watch keeping, troubleshooting& noting requisite parameter at regular interval and allied activities like Post commissioning Activity& Inspection inclusive of generating records in Excel sheet.	For 532 cells (Approx.)	15 days per batch of 133 cells(Total 60 Days)	Electricians -12 Supervisor-3	900	Skilled electricians having battery commissioning exposure (continuous activity round the clock till completion of each batch as per commissioning manual).	
h	Loading duly commissioned battery cells on transportand delivery to designated places at MDL/ND(MB).	For 532 cells (Approx.)	16 Days	Riggers-4 Electrician-2	96	1. Trailer (40 feet 20 T carrying capacity)  2. Hydra/Crane	



**माझगांव डॉक शिपबिल्डर्स लिमिटेड***"EXPRESSION OF INTEREST" (EOI) ref no. EY/CD/TAJ/MRLC/2020 Battery Commissioning*

i	Fixing of Hook Rails before embarkation at MDL/ND(MB)	528 Cells	15 days	Riggers-4 Supervisor-01 Electrician-01	90	1. Hook Rail stands. 2. Hydra/Cran	
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**Note:** Above indicated completion periods are tentatively defined & activity completion may take less/ more time. In case of more time than expected for completion with minimum manpower, bidders may have to deploy the additional manpower to adhere to schedules without additional cost at short notice. Minimum manpower requirement & tentative period of completion is evaluated considering commissioning of 532 cells in parallel with watch keeping batteries. Total time required for the entire battery commissioning is expected to be 90-95 days.

## Annexure 1

**List of Instruments / Tools**

<b>Sr. No.</b>	<b>Instrument description</b>	<b>Make as Recommended by OEM</b>	<b>Qty</b>
1	Digital density meter- DMA-35/ Equivalent	Anton Parr	02
2	Digital Multimeter-179/True RMS 287/289	Fluke	03
3	Digital Megger, 500 Volt	Fluke/ Megger	02
4	Digital weighing machine -1000kg Type- Electronic balance	.....	02
5	Air flow meter	.....	02
6	Hydrometer	.....	05
7	Oximeter	Technovation	02
8	Gas Flow Meter	Toshniwal	02
9	Mercury Thermometer	.....	05
10	Manual Pump for removal of electrolyte from Battery	.....	05
11	Decrating machine (Battery operated or 230 V AC)	.....	02
12	5 Ltr jar polypropylene Clear and having good chemical resistance with raised graduations	.....	04
13	Small soft brush for cleaning battery top	.....	10
14	01 Ltr HDPE sterilized bottles for collection samples of Acid/Electrolyte/DM water	.....	48
15	Calico/ Galley Cloth	.....	200
16	Petroleum jelly	.....	30 Kg
17	Cooling Plastic pipe (As per sample)	.....	800
18	Agitation Plastic Pipe ID 6 mm (As per sample)	.....	400
19	Portable Hydrogen analyzer	.....	02
20	Portable Oxygen analyzer		02

**RATE SHEET**

<b>Sr.</b>	<b>Description of work</b>	<b>Quoted Price (INR)</b>
1	Loading and transportation of 532 nos. battery cells from Ghatkopar Store/ Naval Premises to the subcontractor's premises along with acid supplied by IN, Carrying out Battery Commissioning activities,& watch-keeping and Delivery of Commissioned Batteries to designated places at MDL/ Naval Dockyard.	

Note: Should bidder required any additional documents / information. And if its confidential in nature then bidder need to submit Non Disclosure Agreement NDA as per attached format.

**NON DISCLOSURE AGREEMENT**

**(Format)**

**(On Rs.500.00 Non Judicial stamp)**

THIS NON DISCLOSURE Agreement made at Mumbai, India on this \_\_\_\_\_ day of \_\_\_\_\_ 2014 between Mazagon Dock Shipbuilders Limited a company registered under the Companies Act, 195V and having its registered office at Dockyard Road, Mumbai-400 010 (hereinafter referred to as "MDL") and \_\_\_\_\_ a company registered under the Companies Act, 195V and having its Registered office at \_\_\_\_\_ (hereinafter referred to as "\_\_\_\_\_").

MDL and \_\_\_\_\_ shall hereinafter be collectively referred to as "the Parties" and individually as "a Party". WHEREAS

A\*. MDL has floated a tender and is required to provide certain information to (name of the bidder) to prepare his bid and/or

AA \*\*. The Parties are considering to enter into a \_\_\_\_\_ for which each Party shall provide information ("Disclosing Party") to the other Party ("Receiving Party") which at present is confidential and not in the public domain.

B. The Parties intend that the aforesaid information be kept confidential as between the Parties. The Parties undertake and declare that they shall not divulge, publish or reproduce the same before any party or person except in accordance with the terms of this Agreement.

NOW THEREFORE the Parties agree as follows:

1. As used in this Agreement (hereinafter referred to as the "Agreement") the term "Confidential Information" shall mean any technical, confidential, proprietary or trade secret information or data disclosed by the Disclosing Party in connection with the \_\_\_\_\_ to the Receiving Party including without limitation any written or printed documents, specifications for the vessel, plans, general arrangement plans, production schedules, drawings, samples, models, information regarding business operations, financial information, marketing strategies, either in writing or orally or any means of disclosing such Confidential Information that the Disclosing Party may elect to use prior to the execution or during the validity of this Agreement. The Receiving Party agrees that all Confidential Information shall be treated as absolute confidential and the Receiving Party shall not disclose to any person such information otherwise than in terms of this Agreement. The Receiving Party will impose a similar duty of confidentiality on any person to whom the Receiving Party is permitted to transfer such information in accordance with the terms hereof.

For the purposes of this Agreement, the term "Receiving Party" shall mean and include its officers, employees, directors, agents, contractors, representatives, affiliated companies, successors and assigns.

2. Nothing in this Agreement may be construed as compelling the Disclosing Party to disclose any Confidential Information to the Receiving Party or to enter into any contractual relationships with the Receiving Party.

3. Any information or data in whatever form disclosed by the Disclosing Party to the Receiving Party and which (i) is clearly identified as Confidential Information by an appropriate and conspicuous marking or (ii) has been identified as Confidential Information at the time of disclosure shall be subject to the relevant terms and conditions of this Agreement. The Disclosing Party's decision whether any information disclosed by it under this Agreement is confidential or not shall be final and binding on the Receiving Party.

4. The Receiving Party hereby covenants that the Confidential Information received from the Disclosing Party shall:

- (a) Be safely kept by the Receiving Party; the Receiving Party shall protect the Confidential Information with the same degree of care as the Receiving Party uses with its own confidential information in order to prevent its disclosure, copy and / or its use (but in no event less than reasonable care) for purposes other than the Proposal.
- (b) Be only disclosed to, and used by, those employees or directors who have a need to know.
- (c) Not be disclosed to a third party except those with a need to know provided they receive such information subject to the same restrictions as are contained in this Agreement.
- (d) Be used by the Receiving Party directly or indirectly, solely for the purpose of considering, evaluating and effecting the tender/bid/contract.

5. The Receiving Party shall promptly upon requests by the Disclosing Party at any time return all copies of the Confidential Information communicated to it hereunder together with all copies and extracts made thereof and shall not retain any copies of the same, in any form whatsoever.

V. The Receiving Party shall have no obligations or restrictions with respect to:

- (a) Information publicly known through no wrongful act of the Receiving Party.

(b) Information rightfully disclosed by a third party without breach of this Agreement by the Receiving Party and which can be communicated without restriction.

(c) Information which was already known or which was independently developed by the Receiving Party (provided that the Receiving Party can demonstrate the same).

(d) Information, the disclosure of which the Disclosing Party authorizes in writing.

7. Nothing in this Agreement shall be construed as granting to the Receiving Party any patent, copyright or design license, or rights of use under similar intellectual property rights in respect of the Confidential Information.

8. The Receiving Party shall not without prior written consent of the Disclosing Party:

(a) Disclose to any person, directly or indirectly:

i) The fact that the Confidential Information has been made available to the Receiving Party by the Disclosing Party or that the Receiving Party has inspected any portion of the Confidential Information; or

ii) The fact that any discussion or negotiation is taking place concerning the Proposal; or

iii) Any of the terms, conditions or other facts with respect to the Proposal, including the status thereof; or

(b) Make any private or public announcement or statement concerning or relating to the Proposal.

9. The Disclosing Party represents and warrants that save as otherwise notified in writing to the Receiving Party:

a) Disclosure of information by it to the Receiving Party does not infringe the rights of any third party nor is it under any restriction with regard to the disclosure of any information, and that where applicable, it has obtained all licenses and consents necessary to enable the lawful disclosure of information by it to the Recipient; and

b) It is not aware of any restriction on the use of such information by the Receiving Party, save as provided in this Agreement.

c) To the effect that the foregoing representations and warranties shall be deemed to be given at the date of this Agreement and after that date upon and in respect of each disclosure. The Disclosing Party makes no warranty or representation whatsoever as to the accuracy, completeness, suitability or adequacy of any information or as to the results obtained from it and assumes no responsibility in respect of the use of the information by the Receiving Party.

10. The Receiving Party shall indemnify and hold harmless the Disclosing Party from and against any action, claim or proceeding and any loss, damage, costs, expenses or liabilities arising out of any such action, claim or proceeding, brought by any third party pursuant to any unauthorized disclosure or use of any information by the Receiving Party, or by any person for whom the Receiving Party is responsible under this Agreement, or pursuant to any breach of any undertaking, warranty or representation contained in this Agreement.

11. For the purposes of this Agreement 'Classified Information' shall mean information, documents and material of any kind which the respective Government i.e. Indian Government has given or caused to be given a security classification irrespective of whether the same is transmitted orally, electronically, in writing or by hand. Notwithstanding any other provision of this Agreement:

a) Each Party hereto undertakes to follow security procedures prescribed for military purposes with respect to disclosure, receipt, production, use and handling of Classified Information.

b) Any Classified Information, disclosed by one Party hereto shall be, whatever the method of disclosure be, identified by the Disclosing Party as Classified Information at the time of disclosure.

c) The provisions of this Clause are to remain in full force and effect notwithstanding any termination by expiration or otherwise of this Agreement.

12. In the event the Receiving Party is required to disclose Confidential Information under any provision of law or upon an action, subpoena or order of a court of competent jurisdiction or of any requirement of legal process regulation or governmental order, decree, regulation or rule, the Receiving Party will immediately notify the Disclosing Party of its having received a request to so disclose (along with the terms and circumstances thereof), unless otherwise prohibited by law and consult with the Disclosing Party on action or steps to be taken in response to such request.

13. This Agreement represents the entirety of the agreement of the Parties relating to the disclosure of the Confidential Information and shall not be waived, amended or assigned by the Receiving Party except by prior written consent of the Disclosing Party. No failure or delay by any party in exercising any right, power or privilege hereunder shall operate as a waiver thereof nor shall any single or partial exercise of any right, power or privilege. The rights and remedies herein provided shall be cumulative and not exclusive of any rights or remedies provided by law.

14. This Agreement shall be valid for a period of \_\_\_\_\_(\_\_\_\_\_) years from the date of its execution between the parties. Notwithstanding the aforesaid, the obligations of Parties in connection with confidentiality under this Agreement shall survive in perpetuity.

15. The foregoing constitutes the entire Agreement between the Parties with respect to the subject matter hereof and supersedes and cancels any prior representation, understanding and commitment (whether oral and written) made between the Parties with respect to or in connection with any of the matter of things to which this Agreement applies.

16. This Agreement shall be governed by and shall be interpreted in accordance with the laws of India.

17. Any dispute arising in connection with or out of the validity, performance or the interpretation of this Agreement shall be finally settled by the competent jurisdiction in Mumbai.

18. The Receiving Party acknowledges that any breach of the terms and conditions of this Agreement may cause the Disclosing Party irreparable damage for which recovery of money damages would be inadequate. Therefore, the Receiving Party agrees that the Disclosing Party shall be entitled, in addition to any other remedies available to it, to seek injunctive relief and/or other equitable relief to prevent or restrain any breach by the Receiving Party or its employees/officials, or otherwise to protect its rights, under this Agreement.

19. Unless otherwise provided herein, all notices or other communications under or in connection with this Agreement shall be given in writing and may be sent by personal delivery or post or courier or facsimile at the address as specified herein below:

To MDL  
Address:

Phone No.:  
Fax:  
E-mail:

To \_\_\_\_\_  
Address:

Phone No.:  
Fax No. :  
E-mail:

Any such notice or other communication will be deemed to be effective if sent by personal delivery, when delivered, if sent by post, 4 (four) days after being deposited in the post and if sent by courier, one day after being deposited with the courier, and if sent by facsimile, when sent (on receipt of a confirmation to the correct facsimile number).

IN WITNESS WHEREOF, this Agreement is executed by authorized representatives of both the Parties in two (2) originals.

Signed by the within named Signed by the within named MDL \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

In the presence of

In the presence of

**Note:** The above Agreement is to be drawn up by the contractor on non-judicial stamped paper of value Rs. 100/-, if it executed in Maharashtra. However, for other places stamp duty is to be levied as per Stamp Act of respective States. The value of stamp paper to be confirmed from Legal Department, MDL

\* - A: Pre-submission of Bid

\*\* - AA: Post Entering of Contract

In case any changes to format are desired by the supplier, same shall be approved as under –

- i) Dealing Executive to initiate and put up.
- ii) HOD(C)/PE(C) to recommend
- iii) CS/GM (L&E) to vet.
- iv) Functional Director to approve.