



## **MAZAGON DOCK SHIPBUILDERS LIMITED**

(Formerly known as Mazagon Dock Ltd.)

**CIN: U35100M**

**H1934GOI002079**

(A Government of India Undertaking)

Dockyard Road, Mazgaon, Mumbai 400010. India.

Certified – ISO 9001:2008 for Shipbuilding Division

Website: [www.mazagondock.in](http://www.mazagondock.in)

### **EXPRESSION OF INTEREST (EOI)**

<b>Department</b>	<b>: Planning Additional Project – East Yard</b>
<b>E-mail ID</b>	<b>: abpatil@mazdock.com</b>
<b>Phone no.</b>	<b>: 022 – 23763596</b>
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<b>EOI /RFI no.</b>	<b>: EY/PLG/AP/EOI /RFI-LIB/2006/01</b>
<b>EOI / RFI date</b>	<b>: 24 February 2022</b>
<b>EOI / RFI closing date &amp; time</b>	<b>: 31 March 2022, 15:00 Hrs</b>

### **EXPRESSION OF INTEREST / REQUEST FOR INFORMATION INVITED FROM INDIAN FIRMS FOR INDIGENIZATION AND BUSINESS DEVELOPMENT THROUGH COLLABORATION FOR LITHIUM ION BATTERIES OF SUBMARINE**

#### **A. LETTER OF INVITATION**

Mazagon Dock Shipbuilders Limited (MDL) seeks response from firms / consortiums meeting the requirements of this EoI /RFI and are willing to be associated with MDL through a Collaboration on long term basis for Indigenization and Business Development for Indigenized Lithium Ion Batteries of Submarine other than EKM class Submarines under Make-I program of Indigenization.

The participating firm / consortium should be in a position to design, engineer, manufacture, test and supply. The detailed terms and conditions and other definitive documents of collaboration shall be mutually agreed upon.

Firms / consortiums shall be short listed based on technical, commercial and financial evaluation as depicted in this EoI /RFI & thereafter Limited tenders /RFP will be floated among the shortlisted firms / consortiums, clearly indicating work and cost share for the indigenous development leading to a manufacture of prototype equipment / systems duly tested

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**SECTION-1**

**DISCLAIMER**

1. MDL, its employees and advisors make no representation or warranty and shall incur no liability under any law, statute, rules or regulations as to the accuracy, reliability or completeness of the EoI / RFI document.
2. MDL may, in its absolute discretion, but without being under any obligation to do so, modify, amend or supplement the information in this EoI / RFI document.
3. The issue of this EoI /RFI does not imply that MDL is bound to select and shortlist any or all the participating firm. Even after selection of suitable participating firm, MDL is not bound to proceed ahead with the participating firm and in no case be responsible or liable for any commercial and consequential liabilities in any manner whatsoever.
4. The participating firm shall bear all costs associated with the preparation, technical discussion/presentation and submission of EoI /RFI. MDL shall in no case be responsible or liable for these costs regardless of the conduct or outcome of the EoI /RFI process.
5. Canvassing in any form by the participating firm or by any other agency on their behalf shall lead to disqualification of their EoI /RFI.

**SECTION-2****SCHEDULE OF EoI / RFI PROCESS & CONTACT DETAILS****1. SCHEDULE OF EoI / RFI PROCESS**

The schedule of activities during the EoI Process shall be as follows -

Sl. No.	Description	Date
1	Issue of EoI /RFI document	24 February 2022
2	Last date of Submission of EoI / RFI response	31 March 2022; 15:00 Hrs

**2. CONTACT DETAILS:****Submission of proposal:**

Proposal (**Original + one soft copy**) super-scribing the enquiry number, enquiry subject, last date for receipt of EOI /RFI and shall be addressed to

Girish Jadav

HoS/DGM (Additional Projects, PLG-EY),

4<sup>th</sup> Floor, Reclamation Building

Additional Projects, PLG-East Yard,

Mazagon Dock Shipbuilders Limited,

Dockyard road, Mumbai 400010

Tel: 022-23763596

E-Mail: [gjadav@mazdock.com](mailto:gjadav@mazdock.com)/ [abpatil@mazdock.com](mailto:abpatil@mazdock.com)

## SECTION – 3

### DETAILS OF EXPRESSION OF INTEREST (EoI)

#### 1. ABOUT MDL

Mazagon Dock Shipbuilders Limited (MDL) is a leading submarine and shipbuilding company in the country with a Miniratna Category-1. The company was taken over by the Government of India and established as a Public Sector Undertaking under the Ministry of Defence in 1960. Over the last six decades, MDL has delivered over 250 warships/submarines/ platforms to various customers in India and abroad. Out of these 30 major warships/submarines have been delivered to the Indian Navy. The diversified platforms delivered to various customers range from Destroyers, Stealth Frigates, Submarines, Missile Boats, Corvettes, Offshore Patrol Vessels, Multipurpose Support Vessels, Offshore Supply Vessels, Dredgers, Tugs and Cargo-Cum-Passenger Vessels.

The demand for the equipment / system under consideration is vast in Indian Navy / Coast guard, since there are several new projects lined up and in line with GoI - Atmanirbhar/ Make in India initiatives to substitute the obsolete / defective imported equipment with domestically developed products during refits. Hence development of these systems domestically has great potential. MDL being frontline warship / Submarine manufacturer may be able to spearhead these projects. The induction of indigenized system will open up an opportunity for supporting these systems with spares and services for the life of the Ship/Submarine.

MDL intends to identify competent firms who can become potential indigenization / technology demonstration through newly developed product partners to supply required Lithium Ion battery.

#### 2. TECHNICAL REQUIREMENTS:

##### 2.1 AIM:

The project aims to develop High Capacity Lithium Ion Battery (LIB) system that is scalable for building a full stack Lithium-ion battery system. The total capacity of Lithium Ion battery system is envisaged to be not less than 500 KWh which should be scalable upto 5 MWh for submarines other EKM Class. LIB System will be controlled through a Battery Management System (BMS) interfaced with the Integrated Platform Management System (IPMS), if applicable.

##### 2.2 SCOPE OF THE PROJECT

2.2.1 The tasks required for completion of the scope of work shall be carried out in two phases as follows:

Phase	Description
I	Finalization of cell chemistry, design and its acceptance from MDL for prototype 500 KWh Lithium Ion battery
II	Phase II Prototype Development (At respective OEM facility)
III	Phase III Type testing of the prototype (Designated labs)

2.2.2 The details of the tasks to be carried out in the two phases are as follows:

Task#	TASK DESCRIPTION	COVERAGE AREAS
<b><u>PHASE I Finalization of cell chemistry, design and its validation from MDL for prototype 500 KWh Lithium Ion battery</u></b>		
1	Design of prototype 500 KWh Lithium Ion battery and its acceptance from MDL	<ul style="list-style-type: none"> <li>• Basic design of LIB system along with BMS</li> <li>• Bill of Material (BOM),</li> <li>• Finalization of LIB chemistry.</li> <li>• Charge and discharge characterization of the LIB along with the BMS</li> </ul>
<b><u>PHASE II PROTOTYPE DEVELOPMENT (AT RESPECTIVE OEM FACILITY)</u></b>		
2	Development of prototype 500 KWh Lithium Ion battery at OEM facility	Developing a prototype by OEM
<b><u>PHASE III Type testing of the prototype (Designated labs)</u></b>		
3	Type Test of prototype	As per approved type test procedure
4	Final Prototype	All deficiencies to be made good in the type tested equipment & the product in workable condition to be handed over to MDL by respective OEM.

2.2.3 During prototype design and development, the following are to be kept in consideration:

- a) Design of a 500 KWh Lithium Ion battery system for demonstration purpose.
- b) Selection and characterization of Li Ion chemistry for making a cell that would provide maximum capacity and robust safety.
- c) Study and design of system architecture (arrangement of Li Ion cells in parallel or series).
- d) Design and development of the Battery Monitoring System (BMS).

Development of Acceptance Test Protocols for the Lithium Ion Battery module

### 2.2.4 TASK LIST AND RESPONSIBILITY MATRIX

The details of the tasks with responsibility assigned are given below:

Task No.#	TASK DESCRIPTION	RESPONSIBILITY		DELIVERABLE FORMAT
		Firm	MDL	
<b>PHASE-I</b>				
1	Design of prototype 500 KWh Lithium Ion battery	Execute	Review, comment & accept	Document
<b>PHASE-II</b>				
2	Building of a Prototype	Execute	Review, comment & accept	Product Completion Report
<b>PHASE-III</b>				
3	Type Test of prototype	Execute	Witness	Trial Documents & Reports
4	Final Prototype	Execute	Review & Accept	Product

### 2.2.5 DOCUMENTATION

- (a) The Documentation to be provided shall include the Technical Manuals, Drawings, Instruction Manuals, Operation & Maintenance documents etc.
- (b) The Documents shall also include recommendations for optimal usage.
- (c) The maintenance related Documentation is to be provided in accordance with the Maintenance Philosophy.

## 2.3 DESIGN OF LITHIUM ION BATTERY (LIB)

### 2.3.1 Capacity and Dimension of LIB system:

The LIB is to be designed for retro fitment in lieu of Lead Acid Batteries (LAB) batteries. The dimensional specifications of the battery system are therefore restricted to the dimensional details of the Lead Acid battery cell. Considering that the existing volume of Lead Acid Batteries is 0.24 m<sup>3</sup> (L-500 mm, B-360 mm, H — 1325 mm) and a total of 180 cells can be fitted inside a battery set. It is desirable that the new design of the battery module should be limited to the dimensions of the existing cell. However, the number of cells can vary depending on the total voltage requirement of LIB system which is considered to be from 300V-500V. It is envisaged that the Voltage of a module would also be around 300V-500 V and all the modules would be connected in parallel

to achieve the same LIB system voltage. Effectively, the power output per module would be 500 KWh which should be scalable upto 5MWh.

### **2.3.2 Sourcing of Li Ion Cells:**

The design is to be based on either imported / indigenous Li Ion cells. If imported cells are used for the development project, the volume for encasing the cells is to be chosen such that it is amenable to be changed later with an indigenous cell, if available. The choice of chemistry of the Li Ion cells along with report for testing and evaluation need to be finalized along with the design documents.

### **2.3.3 Configuration of Cells inside Modules:**

Considering that the LIB development is meant for evaluation for its suitability for retro-fitting, the module has to meet the existing Voltage and current requirements of the Lead Acid battery. Accordingly, the configuration of the Li ion cells inside a LIB is to be chosen such that it meets the overall voltage level requirements of the battery group (300-500V). The option for series, parallel or a combination arrangement of Li Ion module thus need to be evaluated for the battery group and thereafter a suitable arrangement for Li ion cells needs to be selected for the LIB.

### **2.3.4 Battery Management System (BMS):**

The LIB has to be designed with an integrated Battery Management System. The BMS is to include sensors for current, voltage and temperature along with switch gear arrangement for isolation of erratic cells/ sub-module /module and short circuit protection device for the module. The BMS design has to cater for safe exploitation during charging and discharge cycles of the module. Based on the operational parameters for the constituent Li ion cells, the BMS has to cater for continuous monitoring of parameters, auto balancing of voltage and implement a protection sequence with graduated mode of evolution from warning to isolation of erratic cells/ sub module/ module. The BMS has to display exploitation parameters of the cells and facilitate active monitoring/ intervention in case if required. The BMS has to record parameters and generate advice wrt to state of charge of the module during charging/ discharging of the battery. The design therefore has to cater for an integrated BMS in the module and Interactive central control and display unit. The design architecture of the BMS is required to be finalized in consultation with the MDL.

### **2.3.5 Safety and Protection Design:**

The following safety aspects are to be catered in the design: -

- i. Cell level. The Li Ion cell to be selected with a safety vent, and overcharge safety device.
- ii. Module level. The LIB module has be integrated with a management device along with a power relay assembly device.
- iii. System level. The battery management system is to provide management for string of modules along with short circuit protection device.



### 2.3.6 **Testing Levels:**

The following testing is envisaged for the various component of the LIB system ...

- a) Cell. Test for cell thermal runaway conditions.
- b) Cell tray/ submodule level. At the sub-module level, safety features of BMS are to be integrated for monitoring and isolation
- c) Battery Module. Study propagation behaviors within the battery module and thermal energy release outside of the module.
- d) Battery Unit. Test of the configuration of unit to unit fire spread with heat release rate and gas analysis to determine potential for explosion.
- e) System Integration. Closed room test configuration of unit to unit fire spread with fire mitigation equipment.
- f) Test Protocols. The prototype LIB system has to tested for energy output at various discharge rates to validate capacity. The test protocols are to include the following details: -

#### 2.3.6.1 **Electrical performance**

- a. Discharge rates at C1, C3, C5, C20, etc.
- b. Insulation test.
- c. Charge retention test
- d. Internal resistance test.
- e. Charging time.
- f. Warranted capacity test.
- g. Life Cycle test.
- h. Thermal Abuse - radiant heat, thermal stability, compromise of thermal insulation, overheat, thermal runaway, thermal shock cycling, elevated temperature storage testing
- i. Safety function of test of BMS.

#### 2.3.6.2 **Safety Test**

- a. Over charge and Over discharge test.
- b. Short Circuit.
- c. Heat exposure.
- d. External fire exposure.
- e. Salt water immersion.
- f. Safety function test of BMS.

#### 2.3.6.3 **Reliability test.**

- a. Weight and dimensions
- b. Tilt Test
- c. Immersion test
- d. Shock test - shock, drop, penetration, roll over, immersion and crush Testing.
- e. EMI/EMC test – Required to comply with MIL STD 461 E/F
- f. Environmental test- To be conducted as per JSS – 55555 – 2012 for indigenous equipment

- g. Environmental stress screening (ESS) test – ESS test is applied on 100 % of Electrical and Electronics items, equipment, module to identify and defective, abnormal / marginal parts and manufacturing defects.

### 2.3.7 Environment Conditions:

The system should be able to operate under the following.

Sr. No.	Specification / parameter	Values
1	Ambient air temperature	1 deg cel to 40 deg cel.
2	Relative environmental humidity at temp 35 deg Cel.	Up to 98 %
3	List	(i) Continuous upto 45 deg (ii) Short term roll with period 3-14 upto 45 deg
4	Trim	(i) Continuous upto 15 deg (ii) Short term (upto 3 minutes) upto 30 deg.
5	Variation of external pressure	Upto 1.52 Bar
6	Ingress protection rating for module	IP 67

### 3. SCOPE OF ASSOCIATION:

- a) MDL is seeking response from Indian companies / consortiums led by Indian companies, duly registered, (under Indian Companies Act-2013), willing for Indigenisation and Business development through collaboration for indigenised Lithium Ion Batteries of Submarine Other than EKM Class Submarine along with MDL, under Make-I program. The participating firm must possess necessary knowledge of the field of collaboration.
- b) The participating firm must possess basic necessary knowledge of the field of collaboration.
- c) The technology if any possessed by participating firm must be non-infringing while delivering the desired performance and it must be clear from third-party IP infringement claims.
- d) The participating firm must show willingness on its letter head to achieve more than 50% local content in above mentioned projects in line with GoI policies amended from time to time.
- e) Interested companies meeting the Pre-Qualification Requirements (PQR) as given in Section-4 and ready to associate with MDL as per broad scope/ expectations given above are invited to submit their offer in response to this EoI /RFI.
- f) Upon receipt of responses against this EoI /RFI, MDL will review the responses to ascertain suitability of the offer and shortlist participating firm based on prequalification (technical, commercial and financial) documents submitted by firm

& this will be binding on bidders. The shortlisted firm will be required to sign a Non-Disclosure Agreement (NDA) regarding the confidentiality of Techno Commercial Aspects. If more than one valid responses are there, then Subsequently, tender will be issued only to these shortlisted firms through Limited Tender Enquiry (LTE). Shortlisting of firms will be done as per qualification criteria & other aspects of this EoI / RFI .

#### **4. EVALUATION AND SHORTLISTING**

- a) Upon receipt of responses against this EoI /RFI , MDL will review the responses to ascertain suitability and shortlist participating firm based on prequalification (technical, commercial and financial) documents submitted by firm & this will be binding on bidders.
- b) Individual Firms will be called for a Technical negotiation meeting at MDL by the concerned team. In the discussion, firm may be required to present the way ahead of the project leading development of prototype. The funding of the project and other details also may be discussed during this meeting.
- c) Based on the scrutiny of responses and the technical meetings, firms will be short listed for further course of action. The shortlisted firms may be required to sign a Non-Disclosure Agreement (NDA) regarding the confidentiality of Techno Commercial Aspects.
- d) Once shortlisted, either of the following routes may be followed as per the approval from MDL management.
  - i) Signing of MOU and definitive agreements with the firm if only one firm / consortium is shortlisted for the indigenous development leading to a manufacture of prototype equipment / systems duly tested.
  - ii) If more than one firm is short listed then Limited Tender may be floated for inviting Technical & Price bids as applicable for the project, clearly indicating the work and cost share. for the indigenous development leading to a manufacture of prototype equipment / systems duly tested.

#### **5. INSTRUCTIONS**

- a) Language: All correspondences and documents related to the EoI / RFI response shall be in English language only.
- b) The participating firm shall abide by the terms & conditions, as applicable, of the EoI /RFI .
- c) All pages of the EoI/RFI shall be duly signed by the authorised signatory.
- d) Multiple proposals from the same participating firm should not be submitted.
- e) MDL at their discretion shall inspect the participating firm works/office/reference site premises for the purpose of evaluation, as deemed necessary before selection of partner. MDL decision in this regard shall be final.
- f) Any participating firm which has been debarred/blacklisted or given tender holiday by Central/State Governments or by any entity controlled by Central/State

Governments from participating in any of their project, as on date of submission of EoI/RFI , shall not be eligible to submit the EoI /RFI .

**6. PROCESS TO BE CONFIDENTIAL:**

Information relating to the examination, clarification, evaluation and comparison of EoI /RFI and recommendations shall not be disclosed to participating firm. Any effort by participating firm to influence MDL processing of EoI /RFI or selection decisions may result in the rejection of the EoI / RFI .

**7. MISCELLANEOUS:**

Right to accept or reject any or all Applications:

- a) Notwithstanding anything contained in this EoI/ RFI , MDL reserves the right to accept or reject any application and to annul the EoI /RFI process and reject all applications, at any time without any liability or any obligation for such acceptance, rejection or annulment and without assigning any reasons, thereof. In the event that MDL rejects or annuls all the applications, it may at its discretion, invite all eligible participating firms to submit fresh applications.
- b) MDL reserves the right to disqualify any applicant during or after completion of EoI/RFI process, if it is found there was a material misrepresentation by any such applicant or the applicant fails to provide within the specified time, supplemental information sought by MDL.
- c) MDL reserves the right to verify all statements, information and documents submitted by the applicant in response to the EoI/RFI. Any such verification or lack of such verification by MDL shall not relieve the applicant of his obligations or liabilities hereunder nor will it affect any rights of MDL.

**8. GOVERNING LAWS & JURISDICTION:**

The EoI/ RFI process shall be governed by, and construed in accordance with, the laws of India and the Courts at Mumbai (India) shall have exclusive jurisdiction over all disputes arising under, pursuant to and / or in connection with the EoI/ RFI process.

**SECTION- 4****PRE-QUALIFICATION CRITERIA**

The determination of eligibility will take into account the technical and experience capabilities and past performance of the participating firm along with financial status; it will be based upon an examination of documentary evidence of the participating firm qualifications submitted by the participating firm as well as such other information, as the MDL deems necessary and appropriate. The participating firm willing to associate with MDL should meet the following Pre-Qualification Criteria The firm's response could be liable for rejection in case of not meeting the Technical, commercial and financial qualification criteria as enumerated in the succeeding paragraphs

**1. Technical Qualification: -**

- a) The firm responding to EOI should have domain expertise, experience and capable to Design and Manufacture Marine grade Lithium Ion Battery (LIB).
- b) Firm should have expertise in BMS or similar testing/monitoring equipment design. Firm to submit earlier experience certificate related to BMS design and details related to Manpower and Infrastructure for BMS design.
- c) Should be willing to undertake cell level testing of claimed parameters at any NABL accredited Lab and should be willing to submit a sample cell for verification trials by end user if requested
- d) They have to submit documentary evidence (PO copies, WDCs, Appreciation letter etc.) proving their experience in similar kind of equipment to establish their domain expertise.
- e) They have to essentially submit the following:
  - i. Technical response to technical requirement projected in this document and readiness to undertake the project. A brief to be submitted as to how the firm will be executing the project
  - ii. Company Profile.
  - iii. List of infrastructure/equipment held by them along with details of their manufacturing facilities.
  - iv. Details of personnel (Project Management Team) with designation, qualification and experience to determine their capabilities.
  - v. ISO 9001:2015 or equivalent certificate.
  - vi. Firm should fill and submit the specifications of the battery in the format as per **Annexure – 3**.
  - vii. Participating firm should submit the compliance matrix in the format as per **Annexure – 4**. Deviation if any may be indicated with justifiable reason. Acceptance of the same will be at the discretion of MDL.

**2. Commercial Qualification: -** Firms shall not be under a declaration of ineligibility issued by Govt. of India / State govt. / Public Sector Undertakings etc.

The firms shall submit the following as a part of commercial qualification.

- a) Shop & Establishment registration certificate.
- b) Certificate of Incorporation.

- c) Registration certificate from local bodies for conducting business.
- d) MSME certificate if applicable
- e) GST certificate

**3. Financial Qualification: -**

- a. Shall have Average Annual turnover of Rs.5 Cr (min) or equivalent Foreign currency during the last three years ending as on 31 Mar 2021 to participate in this EOI / RFI.
- b. The Firms shall enclose with its Proposal as per **Annexure-2**, certificate issued by Chartered Accountant with their seal and signature, stating the firms net worth & turnover during the past three years. Firm to submit Balance Sheet and Profit and Loss statement for last 3 years.
- c. Bidder shall demonstrate access to unutilised line of credit / overdraft facility / cash credit facility from its consortium of banks. Alternatively, or complimentarily should demonstrate liquid asset in form of cash / marketable securities in its balance sheet.
- d. Companies / Start-ups may be relaxed for conditions of turnover, experience (PO copies),  
Infrastructure etc offering proven innovative product / technology having Business prospects. MDL reserves right to consider or reject based on merits of such proposal.

**SECTION- 5**

- 1. Bid Rejection Criteria:** - MDL may at its sole discretion and at any time during the evaluation of proposal, disqualify any firm, if:
- a) Response received after due date.
  - b) Bidder's failure to furnish sufficient or complete details for evaluation of the bids within the given period.
  - c) Incomplete / misleading / false / ambiguous in the proof of eligibility requirements.
  - d) Failed to produce timely clarifications related thereto, when sought.
  - e) Bids not meeting qualification criteria mentioned above at Section-4.
  - f) Submitted more than one proposal for single specialisation area.
  - g) Declared ineligible by the Government of India / State govt. / Public sector undertaking.
  - h) Bids with technical requirements and or terms not acceptable to MDL.
  - i) Information relating to the evaluation, clarification and recommendation for pre-qualification shall not be disclosed to bidders or any other persons not officially concerned with such process until the pre-qualification process is completed. Any effort by the bidder to influence MDL prequalification process may result in rejection of his EOI /RFI.

**SECTION- 6**

Documents to be submitted along with EoI\*

**1. List of documents:**

Participating firm should submit following documents along with their Proposal as part of EoI / RFI..

<b>Sl.</b>	<b>Document Description</b>	<b>Filled in Formats to be Submitted with Proposal</b>	<b>Remarks</b>
1	Covering Letter		As per format attached
2	General information	Annexure-1	
3	Financial Information	Annexure-2	
4	Specification of Lithium Ion Battery developed by Firm (To be filled by firm)	Annexure-3	
5	compliance matrix	Annexure-4	
6	Pre-Qualification Document and detailed technical response to EOI/RFI		As indicated in section-4
7	Documents / Presentation in support of area of collaboration		

\*In case of consortium, same to be provided for constituent companies of consortium indicating the lead firm.



EoI FORMS

Format for Covering Letter

*[On the Letterhead of the Participating firm]*

To,

Mr. Girish Jadav,  
HoS/DGM (Additional Projects, PLG-EY)  
Mazagon Dock Shipbuilders Limited (MDL),  
Mumbai-400010, India.  
Contact No- 022-23763591 / 3596  
E-Mail: [gjadav@mazdock.com](mailto:gjadav@mazdock.com)/ [abpatil@mazdock.com](mailto:abpatil@mazdock.com)

**Ref: Submission of Expression of Interest (EoI) /Request for information (RFI)**

Sir,

Being duly authorized to represent and act on behalf of.....  
(Hereinafter Referred to as “the Applicant”), and having reviewed and fully understood the evaluation criteria and information provided, the undersigned hereby applies in response to the EoI / RFI document.

We would like to associate with MDL for Lithium Ion Batteries of Submarines (area of collaboration). We understand that MDL is not bound to accept the EoI /RFI.

We further show our willingness to work towards achieving more than 50% local content in projects mentioned in subject matter of EoI / RFI as per extant GoI guidelines amended from time to time.

I am enclosing the Expression of Interest with the details as per the requirements of the EoI /RFI document, for your evaluation.

I hereby declare that the details furnished in this EoI / RFI proposal are true and correct to the best of my knowledge and belief. In case any of the information is found to be false or untrue or misleading or misrepresenting, I am aware that I will be held liable for it and MDL is free to take any legal / commercial action not limited to barring / blacklisting.

We hereby declare that we are not under a declaration of ineligibility / blacklisting /debaring/ tender holiday from doing business issued by Govt. of India / State govt. / Public Sector Undertakings etc.

Yours faithfully,

---

(Signature & Seal of Authorised Signatory)

Name:

Designation:

Date:

Address:

**Annexure-1**

**General Information to be submitted by Applicant along with cover letter**

1. Name of the Company/ Companies (if consortium):
2. Legal status of the Company (ies):
3. Brief description of the Company(ies) including details of its business groups / subsidiaries / affiliates:
4. Date of Incorporation:
5. Date of Commencement of Business:
6. Full address including Telephone nos. / Fax nos.:  
Registered Office:  
Head Office:  
Address for communication:  
Contact Details:  
Office Address in India, if any:
7. Documents to be enclosed:  
As per pre-qualification criteria

Signature & Seal  
Authorised Signatory of the Party

## Annexure-2

**Financial Information**

Date: [insert day, month, year]

Legal Name: [insert full name]

## 1. Financial Data: -

Sl. No.	Last three Financial	Annual Turnover	Annual Net Profit	Net worth as at the end of the financial year
1				
2				
3				

\* Exchange rate for conversion to INR shall be as published by Reserve Bank of India as on date of floating EoI/RFI.

## 2. Financial documents

The participating firm shall provide copies of the financial statements including balance sheets, P&L and related income statements for latest 3 years.

The financial statements shall:

- Reflect the financial situation of the participating firm submitting EoI / RFI.
- Be audited by a certified accountant.
- Be complete, including all notes to the financial statements.
- Correspond to accounting periods already completed and audited (no statements for partial periods shall be accepted).

#In case of consortium, same to be provided for constituent companies of the consortium.

(Signature & Seal)

Authorized Signatory of the Party

**Certificate from Chartered Accountant**

This is to certify that \_\_\_\_\_ (name of the Applicant) has received the payments shown above against the respective years and that the net worth is as computed.

Name of the Authorized Signatory representing Auditing firm:

Designation:

Name of firm (Chartered Accountant):

Signature of the Authorized Signatory:

## Annexure-3

**Specifications of Lithium Ion Battery developed by Firm**

(To be filled by firm)

**1. Module**

Battery Module	
Electrical	
Cell	
Configuration	
Capacity (Nominal)	
Voltage (Nominal)	
Energy (Nominal)	
Standard Charge Condition	
Standard Discharge	
Internal / external communication type	
Cooling	
Usable Pattern	
Charge end Voltage	
Discharge end Voltage	
Max Charge Current	
Max Discharge Power	
Environmental	
Operating Temperature	
Operating Humidity	
Recommend Operating temperature	
Storage Temperature	
Noise Level	
Mechanical	
Dimension	
Weight	
Enclosure Material	

## 2. Battery Protection Unit (BPU)

<b>Electrical Specification</b>		
Model		
Main DC	Voltage	
	Current (Rated)	
Fan Power / Aux Power	Voltage Range	
	Power Consumption	
<b>Mechanical Specification</b>		
Housing Material		
Dimension (W xD xH)	SMPS BOX	
	BPU	
Unit Weight	SMPS BOX	
	BPU	
Indicator	Status	
Cooling System		
Main DC Terminal		
Control Power Housing	Upper	
	Lower	
E- STOP Input Terminal		
Main DC Wire		
<b>Protection</b>		
Over/Under Voltage		
Over Current		
Over Temperature		
Over / Under SOC		
Short Circuit		
Inrush Current		
<b>Operating Environment</b>		
Storage temperature		
Operating temperature range		
Recommended operating temperature		
Operating Humidity		
Operating Altitude		
Pollution Degree		
Warranty		

## Annexure-4

**Compliance Matrix**

<b>Sr. No.</b>	<b>Qualification Criteria</b>	<b>Compliance</b>
1	Willingness to exclusively collaborate with MDL for the project of indigenisation of Lithium Ion Battery as depicted in this EoI/RFI	Yes / No
2	Design & manufacturing facility or tie up for Lithium Ion Battery	Yes / No.
3	Arrangement and experience to make and supply of Lithium Ion Battery .	Yes / No.
4	Country of origin for collaborators, should not be from Indian hostile countries.	Agreed / Not agreed
5	Compliance to the Technical particulars provided in the section 3 of this EoI / RFI in case of awarding the contract.	Yes/No

Signature & Seal  
 Authorised Signatory of the Party