

**PROCEEDINGS OF THE PRE-BID CONFERENCE HELD ON 17-Feb-2021 AT ICAST CONFERENCE HALL, CSIR-NAL, TOWARDS PROCUREMENT OF LITHIUM BATTERY SYSTEM.**

The Pre-bid Conference was held and the following T&PC members attended the meeting: -

Sl. No.	Name & Designation		Role
1	Dr. M. Manjuprasad	Chief Scientist, STTD	Chairman
2	Mr. R. Ravindiran	Sr. Principal Scientist ,ELB	Specialist Member
3	Mr. Kamalakannan, G.M	Sr. Principal Scientist, CSMST	Specialist Member
4	Mr. Satish Rohidekar,R	Chief Scientist, CAD	Member
5	Mr. Dilip Kumar Sahu,	Sr. Technical Officer-2, CAD	Member
6	Mr. Vineet Kumar	Chief Scientist/ CAD	PD SARAS
7	Dr. Abhay Pashilkar	Chief Scientist, FMCD	Prog-Director-SARAS
8	Mr. Sai Kiran P. V. R	Sr. Scientist, ALD	Member - Convener (TSC)
9	AO or his representative		Member
10	FAO or his representative		Member
11	CoSP/SPO or his representative		Member - Convener (T&PC)

The list of Prospective bidders who attended the Pre-bid Conference is as per **Annexure-I**.

At the outset, the Chairman welcomed all the Members and the representatives of the Bidders and briefed in general the scope of the Project and thereafter requested **Sr. CoSP** to brief the Bidders on the salient features of the commercial terms. The Indenting Officer to read out the clarification sought by the bidders and the replied thereto as detailed in **Annexure-II (Part A: Technical Clarification and Part B: Commercial Clarification, if any)**.

The representatives present were satisfied with the replies given and it was informed that the corrections / additions / clarifications given, as discussed during the Pre-Bid Conference would be hosted on the website of CSIR-NAL and all prospective bidders are required to take cognizance of the proceedings of the Pre-Bid Conference before formulating and submitting their bids as stipulated in bidding Documents.

The meeting ended with a vote of thanks to the Chair.

Encl: as above.

*17.2.21*  
S&P-Member - (T&PC)

*R. Ravindiran*  
R. Ravindiran  
Specialist- Member

*Vineet Kumar*  
Vineet Kumar  
PD SARAS

*Sai Kiran P. V. R.*  
Sai Kiran P. V. R  
Member - Convener (TSC) 19/02/2021

*G.M. Kamalakannan*  
G.M. Kamalakannan  
Specialist - Member

*G.M. Kamalakannan*  
Kamalakannan G. M  
Specialist - Member

*Dr. Abhay Pashilkar*  
Dr. Abhay Pashilkar  
Prog- Director- Member

*Admin-Member*  
Admin-Member 25.2.2021

*DilipKumar Sahu*  
DilipKumar Sahu  
Member

*Satish Rohidekar R*  
Satish Rohidekar R  
Member

*Dr. M. Manjuprasad*  
Dr. M. Manjuprasad  
Chairman 25/2/21


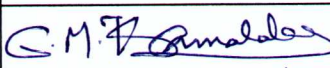
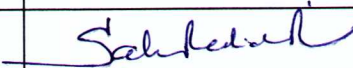



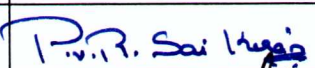
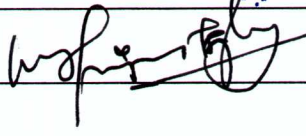

CSIR-NATIONAL AEROSPACE LABORATORIES  
BENGALURU - 560 017

TENDER NO.: NAL/PUR/STTD/368/20-Z  
DATE & TIME : 17-Feb-2021 @ 10:30 AM  
VENUE: THROUGH WEBEX

ANNEXURE - I

Pre-Bid Conference for Procurement of Lithium Battery System.

ATTENDANCE SHEET - T&PC MEMBERS

Sr. No.	Name		Signature
1	Dr. M. Manjuprasad, Chief Scientist, STTD	Chairman	
2	Mr. R. Ravindiran, Sr. Principal Scientist/ELB	Specialist Member	
3	Mr. Kamalakammam G. M, Sr. Principal Scientist, CSMST	Specialist Member	
4	Mr. Satish Rohidekar, R, Chief Scientist, CAD	Member	
5	Mr. Dilip Kumar Sahu, Sr. Technical Officer-2, CAD	Member	
6	Mr. Vineet Kumar, Chief Scientist/ CAD	PD SARAS	
7	Dr. Abhay Pashilkar, Chief Scientist, FMCD	Prog-Director-SARAS	
8	Mr. Sai kriran ,Sr. Scientist, ALD	Member- Convenor -TSC	
9	COFA or his representative	Member	
10	CoA or his/her representative	Member	
11	Sr.CoSP or his representative	Member-Convenor T&PC	

NATIONAL AEROSPACE LABORATORIES  
BENGALURU - 560 017

TENDER NO.: NAL/PUR/STTD/368/20-Z  
DATE & TIME : 17-Feb-2021 @ 10:30 AM

VENUE: ICAST Conference Hall, CSIR-NAL, HAL Airport Road, Kodihalli, Bengaluru-560017

Pre-Bid Conference for Procurement of Lithium Battery System.

ANNEXURE - I

Sr. No.	Name of the Firm	Name & Designation of Representative	E-tender Registration (Yes/No)	Email ID	Signature
1	High Energy Batteries (H) LTD			jsr@highenergybtl.com	
2	HBL power Systems LTD			natraj@hbl.in, mathur@hbl.in uvraman@hbl.in	
3					
4	Micronel Global Engineers Pvt LTD			ss@micronel.net sc@micronel.net	
5				mp@micronel.net P1@micronel.net	
6				amf@micronel.net P30@micronel.net	
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					



CSIR-NATIONAL AEROSPACE LABORATORIES  
BANGALORE

TECHNICAL QUERIES & CLARIFICATION

**Tender No. : NAL/PUR/STTD/368/20-Z**

**Item Description: Procurement of Lithium Battery system**

**Technical Clarification of pre-bid meeting for Procurement of Lithium Battery system**

Table 1: Technical Clarifications

Sl. NO.	Query Description	NAL Response	Remarks
1	<p>Clause Number 4.2 Detailed Specifications (Table 1 &amp; Table 2)</p> <p><b><u>NAL Tender Ref:</u></b></p> <p>Point Number 01 (Capacity)</p> <p>1. 60Ah @ 1C rate battery nominal at 23°C/73.4°F</p> <p>2. 40Ah @ 1C rate battery nominal at 23°C/73.4°F</p> <p><b><u>Query from Bidder:</u></b></p> <p>1. Please share the load profile of both the Power Output rating for appropriate sizing of the battery, else we need to assume that the battery is already sized by NAL as per desired load profile and bidder needs to consider the specified rating of 40 Ah at 1C and 60 Ah @ 1C.</p> <p>2. Additionally both 40 Ah and 60 Ah batteries have to be developed by HBL to meet the specifications for SARAS and these are not off the shelf batteries. Hence Please allow the</p>	<p>1. CSIR NAL has done a detailed load analysis for SARAS Mk II and accordingly the Capacity of Battery is arrived for SARAS MK II. However, the load profile is specific to SARAS electrical system design.</p> <p>2. This tender is about procurement of readily available off the shelf product. However, if Vendor ready to design, develop, qualify and Certify the battery in the stipulated time frame, vendor may quote accordingly meeting the delivery timelines and with relevant Lifepo4 battery chemistry past experience.</p>	

*P. R. Sai Kumar*

Sl. NO.	Query Description	NAL Response	Remarks
	vendors to quote the NRE (Development) charges.		
2	<p>Clause Number 4.2 Detailed Specifications (Table 1)</p> <p><b><u>NAL Tender Ref:</u></b></p> <p>Point Number 09- Flammability Rating (Case And Vent Tube (14CFR 25.853 (a))</p> <p><b><u>Query from Bidder:</u></b></p> <p>Section 25.853 of Part 25 of the FAR is for Compartment Interiors. Please advise how this is applicable for batteries. Please advise the location of the batteries.</p>	<p>Flammability requirement for Case and Vent Tube is the mandate requirement for lithium Battery as per DO 311A as per section 2.1.1 and 2.3.1. Hence it is mandate requirement</p>	
3	<p>Clause Number 4.2 Detailed Specifications (Table 1)</p> <p><b><u>NAL Tender Ref:</u></b></p> <p>Point Number 10- Performance at extremely high temperature (up to 70°C/158°F) should not affect its output current giving capability or State of charge(SOC)</p> <p><b><u>Query from Bidder:</u></b></p> <p>Lithium Batteries generally works only upto 60 Deg.c , the battery specifications till now in usage are also around the same , we request you to review this clause for high temperature.</p>	<p>As per the standard requirement for the operating temperature conditions, the specifications mentioned in RFQ is essential. However, the design shall take care of the limitations of the lithium technology if any.</p> <p>In summary the battery shall meet this specifications.</p>	

*P.R. Sai Kumar*

Sl. NO.	Query Description	NAL Response	Remarks
4	<p>Clause Number 4.2 Detailed Specifications (Table 1)</p> <p><b><u>NAL Tender Ref:</u></b></p> <p>Point Number 17- Certifications FAA TSO certified to C179b ETSO certified to C179b RTCA DO-160G qualified RTCA DO-311A qualified UNDOT/IATA qualified</p> <p><b><u>Query from Bidder:</u></b></p> <p>As per BASA agreement signed between DGCA &amp; FAA the FAA does not approve Indian companies and Please accept our proposal. The Indian batteries are to be certified by DGCA India which is equivalent to FAA TSO 179b and DGCA needs to issue ITSO. Please allow the bidders to issue DGCA Form 1. The Process Under FAA TSO can be noted that , once FAA receives the documents from DGCA , then FAA issues Letter of Design Approval( LODA) and not TSOA</p>	<p>Equivalent ITSO issued by DGCA is also considered.</p>	
5	<p>Clause Number 4.2 Detailed Specifications (Table 1)</p> <p><b><u>NAL Tender Ref:</u></b></p> <p>Point 22- Airworthy Certificate (FAA approved</p>	<p>Equivalent ITSO issued by DGCA is also considered</p>	

*P. V. R. Sai Kumar*





Sl. NO.	Query Description	NAL Response	Remarks
	Travelling should be arranged by the purchaser and other costs w.r.t inspection charges will be in contractor's account.		
8	<p>Clause Number 4.4</p> <p><b><u>NAL Tender Ref:</u></b></p> <p>(ACCEPTANCE PROCEDURE) Battery System (FAA Form 8130)</p> <p><b><u>Query from Bidder:</u></b></p> <p>HBL propose to issue DGCA Form-1 instead of FAA form 8130.</p>	<p>Equivalent release form from DGCA is also acceptable.</p>	
9	<p>Clause Number 4.5 (Incidental and Warranty related terms and conditions)</p> <p><b><u>NAL Tender Ref:</u></b></p> <p>2Years from date of successful Installation &amp; Commissioning and date of acceptance.</p> <p><b><u>Query from Bidder:</u></b></p> <p>Warranty should be reckoned from the date of receipt of goods as the Installation or it has deemed to be started if the acceptance certificate is not issued within 5 days from the completion date of training.</p>	<p>Not agreeable.</p> <p>Warranty starts from the date of Acceptance at NAL</p>	
10	<p>Clause Number 4.7</p> <p><b><u>NAL Tender Ref:</u></b></p> <p>Delivery Schedule.</p> <p>Both 40 Ah &amp; 60 Ah batteries have to be developed as per customized needs through development program (NRE) and we request NAL to allow time additional frame agreement for such</p>	<p>This tender is about procurement of readily available off the shelf product. However, if Vendor ready to design, develop, qualify and Certify the battery in the stipulated time frame, vendor may quote accordingly meeting the delivery timelines and with relevant Lifepo4 battery</p>	

*P. V. S. Sai Kumar*

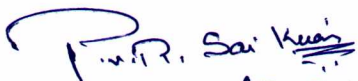





Sl. NO.	Query Description	NAL Response	Remarks
	<p><b><u>Query from Bidder:</u></b></p> <p>Lithium-Ion battery is newly evolving technology in Aircraft application hence the product needs to be newly developed through NonRecurring Engineering hence, it will be impossible to submit successful operational certificate for Lithium Aircraft Battery.</p>	<p>Certify the battery in the stipulated time frame, vendor may quote accordingly meeting the delivery timelines and with relevant Lifepo4 battery chemistry past experience.</p>	
14	<p><b><u>NAL Tender Ref:</u></b></p> <p>The Schedule for Submission of e-Bids and Opening of eBids is as follows: -</p> <p><b><u>Query from Bidder:</u></b></p> <p>Point-6 (Invitation for e-Bids / Notice Inviting e-Tender) We request NAL to extend the bid submission date by at least 3 weeks considering extensive documentation involved.</p>	<p>It is Extended by a two week</p>	
15	<p><b><u>Query from Bidder:</u></b></p> <p>HBL has qualification and also supplying Nickel Cadmium and Ag Zn for Air craft Application, however,</p> <p>we currently don't have it for Lithium Batteries mentioned what would be NAL's approach to qualify the vendors</p>	<p>As per DGCA vendor qualification process.</p>	
16	<p><b><u>Query from Bidder:</u></b></p> <p>Shall we offer Lithium Titanium Oxide(LTO) system instead of Lithium Ion Phosphate. LTO system will meet the Technical Requirements (Chapter 4) of</p>	<p>CSIR-NAL requirement is of Lifepo4 lithium battery system for its aircraft design and development.</p> <p>Any other chemistry is not</p>	

*P. V. R. Sai Kumar*

Sl. NO.	Query Description	NAL Response	Remarks
	the tender document.	efficient and suitable for SARAS MK II Electrical design and hence LFP is essential for SARSA Mk II	
17	<b><u>Query from Bidder:</u></b> Qualification Tests(QT), Specification for the QT and QT matrix	Qualification tests and certification are mentioned chapter 4 Table 1 and Table 2.	

  
 Signature of IO (P.V.R. Sai Kumar)  
 19/02/2021

  
 Signature of PL  
 (Vinest Kumar)

18	<b><u>Query from bidder:</u></b> Whether warranty period 2 years	Yes	
19	<b><u>Query from bidder:</u></b> Whether the Delivery date is 45 days?	Yes, it will be extended by 15 days additional. Total 60 days is acceptable.	





**CSIR-NATIONAL AEROSPACE LABORATORIES  
BENGALURU**

**COMMERCIAL QUERIES & CLARIFICATION**

Tender Id : 2021\_CSIR\_68969\_1  
Tender No. : NAL/PUR/STTD/368/20-Z  
Item Description : Procurement of Lithium Battery System.

Sr. No.	Query / Clarification Sought	Clarification/Amendment
1	<u>Chapter 1 (clause 1.16)</u>  Bid Security / EMD	Bid Security / EMD : NIL  BIDDER TO SUBMIT BID SECURING DECLARATION.  As per Annexure-B, Chapter-8  The Bid Security Declaration in the name of "The Director, National Aerospace Laboratories, Bengaluru" to be part of the Technical Bid, failing which the bid is liable to be rejected.
2	MSME Registered Company. Whether exempted from Bid Security.	Refer ITB Clause No.1.16.8

  
**Sr. Controller of Stores & Purchase**  
For and on behalf of CSIR