

| Government eProcurement System                                                            |                                                                                              | Government eProcurement System               |                                                                                                      |
|-------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|----------------------------------------------|------------------------------------------------------------------------------------------------------|
| Tender Details                                                                            |                                                                                              | Date : 05-Mar-2021 04:30 PM                  |                                                                                                      |
|          |                                                                                              |                                              |                                                                                                      |
|  Print |                                                                                              |                                              |                                                                                                      |
| <b>Basic Details</b>                                                                      |                                                                                              |                                              |                                                                                                      |
| <b>Organisation Chain</b>                                                                 | Council of Scientific and Industrial Research  CECRI-Karaikudi - CSIR  Purchase-CECRI - CSIR |                                              |                                                                                                      |
| <b>Tender Reference Number</b>                                                            | CECRI 2021 5739-100 MWh LIB PLANT ON TURNKEY BASIS                                           |                                              |                                                                                                      |
| <b>Tender ID</b>                                                                          | 2021_CSIR_71577_1                                                                            |                                              |                                                                                                      |
| <b>Tender Type</b>                                                                        | Global Tenders                                                                               | <b>Form of contract</b>                      | Item Rate                                                                                            |
| <b>Tender Category</b>                                                                    | Goods                                                                                        | <b>No. of Covers</b>                         | 2                                                                                                    |
| <b>General Technical Evaluation Allowed</b>                                               | No                                                                                           | <b>ItemWise Technical Evaluation Allowed</b> | No                                                                                                   |
| <b>Payment Mode</b>                                                                       | Not Applicable                                                                               | <b>Is Multi Currency Allowed For BOQ</b>     | Yes                                                                                                  |
| <b>Is Multi Currency Allowed For Fee</b>                                                  | No                                                                                           | <b>Allow Two Stage Bidding</b>               | No                                                                                                   |
| <b>Cover Details, No. Of Covers - 2</b>                                                   |                                                                                              |                                              |                                                                                                      |
| Cover No                                                                                  | Cover                                                                                        | Document Type                                | Description                                                                                          |
| 1                                                                                         | Fee/PreQual/Technical                                                                        | .pdf                                         | Bid form in letter head.                                                                             |
|                                                                                           |                                                                                              | .pdf                                         | Bidder information form in letter head.                                                              |
|                                                                                           |                                                                                              | .pdf                                         | Manufacturer authorisation form                                                                      |
|                                                                                           |                                                                                              | .pdf                                         | Integrity pact.                                                                                      |
|                                                                                           |                                                                                              | .pdf                                         | Bid securing declaration in letter head of bidder                                                    |
|                                                                                           |                                                                                              | .pdf                                         | Performance statement form                                                                           |
|                                                                                           |                                                                                              | .pdf                                         | Deviation statement form                                                                             |
|                                                                                           |                                                                                              | .pdf                                         | service support details form                                                                         |
|                                                                                           |                                                                                              | .pdf                                         | format of declaration of abiding by code of integrity.                                               |
|                                                                                           |                                                                                              | .pdf                                         | format of affidavit of declaration for domestic value addition. to be signed by auditor.             |
|                                                                                           |                                                                                              | .pdf                                         | format of certificate to be provided for sub contracting.                                            |
|                                                                                           |                                                                                              | .pdf                                         | format of self declaration of bid to be enclosed                                                     |
|                                                                                           |                                                                                              | .pdf                                         | technical brochure for LIB equipment                                                                 |
|                                                                                           |                                                                                              | .pdf                                         | technical brochure for dry room                                                                      |
|                                                                                           |                                                                                              | .pdf                                         | technical brochure for utilities.                                                                    |
|                                                                                           |                                                                                              | .pdf                                         | Detailed technical bid of the bidder with detailed specifications, model, make etc of turnkey contra |
|                                                                                           |                                                                                              | .pdf                                         |                                                                                                      |

|   |         |      |                                                                |
|---|---------|------|----------------------------------------------------------------|
|   |         |      | ALL DOCUMENTS ESTABLISHING ELIGIBILITY CRITERIA. IN CHAPTER 6. |
|   |         | .pdf | ORDER COPIES, CONTRACT COPIES, PERFORMAMNCE CERTIFICATE        |
|   |         | .pdf | BALANCE SHEET COPIES                                           |
|   |         | .pdf | SOLVENCY CERTIFICATE.                                          |
|   |         | .pdf | AUDITOR CERTIFICATE FOR TURNOVER CRITERIA.                     |
|   |         | .pdf | OTHER DOCUMENTS.                                               |
|   |         | .pdf | COPIES OF PAN, GST ETC.                                        |
|   |         | .pdf | MISCELLANEOUS DOCUMENTS.                                       |
| 2 | Finance | .xls | PRICE OFFER IN EXCEL                                           |
|   |         | .pdf | PRICE BID IN LETTER HEAD AS PER FORMAT.                        |

#### Other Important Documents

| S.No | Category               | Sub Category                  | Sub Category Description   | Format/File         |
|------|------------------------|-------------------------------|----------------------------|---------------------|
| 1    | Machinery Details      | Machinery Details             | Machinery Details          | eProc_Machinery.xls |
| 2    | Machinery Details      | Details of Technical Manpower | Technical Manpower Details |                     |
| 3    | Purchase Order Details | Purchase Orders - 1           | Purchase Orders - 1        |                     |

#### Tender Fee Details, [Total Fee in ₹ \* - 0.00]

|                              |      |                |     |
|------------------------------|------|----------------|-----|
| Tender Fee in ₹              | 0.00 |                |     |
| Fee Payable To               | Nil  | Fee Payable At | Nil |
| Tender Fee Exemption Allowed | No   |                |     |

#### EMD Fee Details

|                 |       |                                            |     |
|-----------------|-------|--------------------------------------------|-----|
| EMD Amount in ₹ | 0.00  | EMD through BG/ST or EMD Exemption Allowed | No  |
| EMD Fee Type    | fixed | EMD Percentage                             | NA  |
| EMD Payable To  | Nil   | EMD Payable At                             | Nil |

#### Foreign Currency BOQ Details

| S.No | Currency          | Conversion rate in ₹ |
|------|-------------------|----------------------|
| 1    | US Dollar         | NA                   |
| 2    | European Euro     | NA                   |
| 3    | British Pound     | NA                   |
| 4    | Australian Dollar | NA                   |
| 5    | Swiss Franc       | NA                   |
| 6    | Japanese yen      | NA                   |
| 7    | Canadian Dollar   | NA                   |
| 8    | Singapore Dollar  | NA                   |

#### Work /Item(s)

|                                      |                                                                                             |                  |                     |              |                   |
|--------------------------------------|---------------------------------------------------------------------------------------------|------------------|---------------------|--------------|-------------------|
| Title                                | CECRI 2021 5739-100 MWh LIB PLANT ON TURNKEY BASIS                                          |                  |                     |              |                   |
| Work Description                     | CECRI 2021 5739-100 MWh LIB PLANT ON TURNKEY BASIS                                          |                  |                     |              |                   |
| Pre Qualification Details            | SEE CHAPTER 6 OF THE TENDER DOCUMENT                                                        |                  |                     |              |                   |
| Independent External Monitor/Remarks | Shri Anand Deep, 117/363,, H-I, Next to Gurudwara Pandu Nagar, Kanpur, 208005 Uttar Pradesh |                  |                     |              |                   |
| Tender Value in ₹                    | NA                                                                                          | Product Category | Miscellaneous Goods | Sub category | TURNKEY CONTRACT. |

|   |         |      |                                                                |
|---|---------|------|----------------------------------------------------------------|
|   |         |      | ALL DOCUMENTS ESTABLISHING ELIGIBILITY CRITERIA. IN CHAPTER 6. |
|   |         | .pdf | ORDER COPIES, CONTRACT COPIES, PERFORMAMNCE CERTIFICATE        |
|   |         | .pdf | BALANCE SHEET COPIES                                           |
|   |         | .pdf | SOLVENCY CERTIFICATE.                                          |
|   |         | .pdf | AUDITOR CERTIFICATE FOR TURNOVER CRITERIA.                     |
|   |         | .pdf | OTHER DOCUMENTS.                                               |
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|   |         | .pdf | MISCELLNEOUS DOCUMENTS.                                        |
| 2 | Finance | .xls | PRICE OFFER IN EXCEL                                           |
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#### Other Important Documents

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|------|------------------------|-------------------------------|----------------------------|---------------------|
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| 2    | Machinery Details      | Details of Technical Manpower | Technical Manpower Details |                     |
| 3    | Purchase Order Details | Purchase Orders - 1           | Purchase Orders - 1        |                     |

#### Tender Fee Details, [Total Fee in ₹ \* - 0.00]

|                              |      |                |     |
|------------------------------|------|----------------|-----|
| Tender Fee in ₹              | 0.00 |                |     |
| Fee Payable To               | Nil  | Fee Payable At | Nil |
| Tender Fee Exemption Allowed | No   |                |     |

#### EMD Fee Details

|                 |       |                                            |     |
|-----------------|-------|--------------------------------------------|-----|
| EMD Amount in ₹ | 0.00  | EMD through BG/ST or EMD Exemption Allowed | No  |
| EMD Fee Type    | fixed | EMD Percentage                             | NA  |
| EMD Payable To  | Nil   | EMD Payable At                             | Nil |

#### Foreign Currency BOQ Details

| S.No | Currency          | Conversion rate in ₹ |
|------|-------------------|----------------------|
| 1    | US Dollar         | NA                   |
| 2    | European Euro     | NA                   |
| 3    | British Pound     | NA                   |
| 4    | Australian Dollar | NA                   |
| 5    | Swiss Franc       | NA                   |
| 6    | Japanese yen      | NA                   |
| 7    | Canadian Dollar   | NA                   |
| 8    | Singapore Dollar  | NA                   |

#### Work /Item(s)

|                                      |                                                                                             |                  |                     |              |                   |
|--------------------------------------|---------------------------------------------------------------------------------------------|------------------|---------------------|--------------|-------------------|
| Title                                | CECRI 2021 5739-100 MWh LIB PLANT ON TURNKEY BASIS                                          |                  |                     |              |                   |
| Work Description                     | CECRI 2021 5739-100 MWh LIB PLANT ON TURNKEY BASIS                                          |                  |                     |              |                   |
| Pre Qualification Details            | SEE CHAPTER 6 OF THE TENDER DOCUMENT                                                        |                  |                     |              |                   |
| Independent External Monitor/Remarks | Shri Anand Deep, 117/363,, H-I, Next to Gurudwara Pandu Nagar, Kanpur, 208005 Uttar Pradesh |                  |                     |              |                   |
| Tender Value in ₹                    | NA                                                                                          | Product Category | Miscellaneous Goods | Sub category | TURNKEY CONTRACT. |



**CSIR - CENTRAL ELECTROCHEMICAL RESEARCH INSTITUTE  
COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH)**

**KARAIKUDI – 630 003, /TAMIL NADU**

**☎ 04565-227206, 241217, 241226 [spo@cecric.res.in](mailto:spo@cecric.res.in) ,  
[purchase@cecric.res.in](mailto:purchase@cecric.res.in)**

CECRI 2021 5739

12.03.2021

Etender ID: 2021\_CSIR\_71577\_1 dated 5.3.2021

**Procurement of 100 MWh Lithium Battery plant on Turnkey basis.**

The pre bid conference for all prospective bidders are given below. The meeting schedule is as follows.

| Date       | Morning Session         | Afternoon session                              |
|------------|-------------------------|------------------------------------------------|
| 15.03.2021 | 11.00 a.m. to 1.00 p.m. | 1.45 p.m. to 6.00 p.m. and beyond, if required |
| 16.03.2021 | 9.30 a.m. to 1.00 p.m.  | 1.45 p.m. to 6.00 p.m. and beyond, if required |
| 17.03.2021 | 9.30 a.m. to 1.00 p.m.  | 1.45 p.m. to 6.00 p.m. and beyond, if required |
| 18.03.2021 | 9.30 a.m. to 1.00 p.m.  | 1.45 p.m. to 6.00 p.m. and beyond, if required |
| 19.03.2021 | 9.30 a.m. to 1.00 p.m.  | 1.45 p.m. to 6.00 p.m. and beyond, if required |

The meeting is online only and physical presence of bidders at Karaikudi is not required and not encouraged in the pandemic time.

Users joining the pre bid conference through the link is strictly advised to follow this protocol.

Please type your name and the company / organisation, you belong to when you join. This will help us maintain record of participants.

Bonafide participation by prospective bidders are encouraged and all prospective bidders are welcome. **The language of communication is restricted to English only**, as this is a Global tender.

All users to note that this is a strictly procurement meeting and all users are advised to follow decorum and discipline. Users repeatedly disrupting the meeting will be asked to leave or in the worst scenario, admin will take action on the particular user.

**The link for the meeting is as given below.**

## Microsoft Teams meeting

**Join on your computer or mobile app**

[Click here to join the meeting](#)

[Learn more](#) | [Meeting options](#)

[Click here to join the meeting](#)

<https://teams.microsoft.com/l/meetup-join/19%3a716b5abb23ca4cc6b7251c4125f3ff61%40thread.tacv2/1615511490516?context=%7b%22Tid%22%3a%22b867f20e-8a9c-4603-b5ab-39c3840dfb64%22%2c%22Oid%22%3a%22532fc5bc-3b84-49f4-a9eb-e57b5f660375%22%7d>

**Stores and Purchase officer  
For Director, CSIR-CECRI  
(Central Electro-Chemical Research Institute)  
(Council of Scientific and Industrial Research)**

मिसिल संख्या

File No. CECRI / 2021 / 5739

दिनांक : 05.03.2021

Date 05.03.2021.



वै.औ.अ.प - केन्द्रीय विद्युत रसायन अनुसंधान संस्थान  
(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद)

कारैकुडी - ६३० ००३, तमिलनाडु

CSIR - CENTRAL ELECTROCHEMICAL RESEARCH INSTITUTE  
(COUNCIL OF SCIENTIFIC & INDUSTRIAL RESEARCH)

KARAIKUDI – 630 003, TAMIL NADU

Telephone: 04565 – 227206, 241226, 241217

e-mail: [spo@cecric.res.in](mailto:spo@cecric.res.in) , [purchase@cecric.res.in](mailto:purchase@cecric.res.in)

Global Tender document



आपूर्ति, संस्थापन और कमीशनिंग और संतोषप्रद निदर्शन

के लिए निविदा दस्तावेज

**TENDER DOCUMENT**

**FOR**

**DESIGN, MANUFACTURE, SUPPLY, INSTALLATION, INTEGRATION,  
TESTING, COMMISSIONING , SATISFACTORY DEMONSTRATION AND  
TRAINING OF 100 MWh LITHIUM ION BATTERY PLANT ON TURNKEY  
BASIS**

## बोली - आमंत्रण / निविदा आमंत्रण सूचना

## INVITATION FOR BIDS / NIT

01. निदेशक, सीएसआईआर-केन्द्रीय विद्युतरसायन अनुसंधान संस्थान (सीएसआईआर-सीईसीआरआई), कारैकुडी - 630 003, तमिलनाडु, भारत, नीचे सूचीबद्ध मदों के क्रय के लिए विनिर्माताओं, उनके वितरकों और विदेशी प्रमुख या उनके भारतीय अभिकर्ताओं से ऑनलाइन बोलियाँ (इटीइएनडीइआरएस.जीओवी.आइएन) आमंत्रित करते हैं

Director, **CSIR-CENTRAL ELECTROCHEMICAL RESEARCH INSTITUTE, Karaikudi, Tamilnadu, India**, invites online bids (etenders.gov.in) from manufacturers, their authorised distributors and Indian Agent of Foreign principals, if any, for purchase of items listed below. **This NIT is a Global Tender. This bid is open to all bidders including non local suppliers as defined by PPMII circular(s).**

| क्रमांक<br>Sl.No. | निविदा<br>संख्या<br>Tender<br>No. | सामग्री - विवरण<br>Description of items                                                                                                                                                                                              | मात्रा<br>Quantity | एकल /<br>द्वि- बोली<br>Single/<br>Double<br>bid | बयाना जमा<br>Bid<br>Security<br>(EMD)<br>(in Indian<br>Rupees)                           |
|-------------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-------------------------------------------------|------------------------------------------------------------------------------------------|
| 1                 | CECRI /<br>2021 /<br>5739         | <b>DESIGN,<br/>MANUFACTURE,<br/>SUPPLY,<br/>INSTALLATION,<br/>INTEGRATION,<br/>TESTING,<br/>COMMISSIONING<br/>,SATISFACTORY<br/>DEMONSTRATION<br/>AND TRAINING OF<br/>100 MWh LITHIUM<br/>ION BATTERY PLANT<br/>ON TURNKEY BASIS</b> | 1 UNIT             | DOUBLE<br>BID                                   | BID<br>SECURING<br>DECLARATION<br>AS PER<br>FORMAT IN<br>THE LETTER<br>HEAD OF<br>BIDDER |

02. Interested Bidders may obtain further information from the office of the Stores and Purchase Officer, CSIR-CECRI, Karaikudi, 630 003.

03. A Pre-bid Conference will be held online in MS TEAM or other platforms with all

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File No. CECRI / 2021 / 5739

दिनांक : 05.03.2021

Date 05.03.2021.

prospective bidders as per the schedule given from 15.03.2021 to 19.03.2021 at timings 9.30 A.M (IST) to 1.00 p.m. and 1.45 p.m. to 6.00 p.m. or so. On 15.03.2021 alone it the meeting will start at 11.00 a.m. onwards and not at 9.30 a.m.

15.3.2021, 16.3.2021 and 17.03.2021- LIB equipment and dry room

18.03.2021 - Civil infrastructure and electrical infrastructure

19.03.2021 - Any pending / overflow topics and briefing on tender document

All prospective bidders are mandatorily requested to

1. Register their names, email id of all the prospective persons in their organization who wish to join in the online meeting. Meeting links will be sent to all these persons. Persons who converse well in English are requested to attend the meeting. Further it is also requested that only the required persons attend the same so as not to clutter the meeting platform.

2. Kindly submit their queries by email or through the e-tender portal, if any to the address indicated above so as to reach the SPO, CECRI , Karaikudi (**Designated Officer**) latest by 12.03.2021

04. Bidding is online only.

05. The Director, CSIR-CECRI, KARAIKUDI reserves the right to accept or reject any bids or accept all tenders either in part or in full or to split the order, or to annul the bidding process without assigning any reason.



## निबंधन और शर्तें

## TERMS AND CONDITIONS

- कोटेशन क्रेता द्वारा दिये गए प्रपत्र में ही होना चाहिए और शोधन और कांट-छांट से मुक्त होना चाहिए। अपरिहार्य शोधन / कांट-छांट होने पर, वह ठीक से साक्ष्यंकित होना चाहिए। ऐसा होने पर कोटेशन माननीय नहीं होगा। हस्तलिखित कोटेशन माननीय नहीं होगा।

The quotation must be in the form furnished by the Purchaser and should be free from corrections/erasures. In case there is any unavoidable correction it should be properly attested. If not the quotation will not be considered. Hand written Quotations will not be considered.

- आपकी बोलियाँ

It may kindly be noted that your bid should

- एकल बोली होनी चाहिए  
be in **single part/two part**
- के साथ रू. की बोली प्रतिभूति सुरक्षा होनी चाहिए  
accompany **Red Security declaration**
- आपके पक्ष में अनुबंध होने पर, आश्चस्ति काल के पश्चात दो महीने की अवधि के लिए, आपके द्वारा निष्पादन बैंक प्रत्याभूति जमा करनी होगी।  
on the event of award of Contract in your favour, you need to submit a Performance Bank Guarantee valid for a period of 2 Months beyond the Warranty period of 12 months plus delivery time.

- कोटेशन जमा करने की निम्न विधियाँ होंगी:

- ~~भेजे गए प्रत्येक कोटेशन को युग्मित लिफाफों में निदेशक, वै.औ.अ.प.के.वि.र.अ.सं., कारैकुडी, तमिलनाडु, भारत को प्रेषित होनी चाहिए।~~
- ~~व्यक्तिगत रूप से जमा किए जाने वाले कोटेशन भंडार एवं क्रय अधिकारी के कार्यालय में रखी हुई टेंडर बाक्स में डाली जानी चाहिए।~~
- सभी बोलियाँ केवल ऑनलाइन **इटीइएनडीइआरएस.जीओवी.आइएन** प्रस्तुत की जाएंगी।

The mode of submission of tender will be as follows:

- ~~Each quotation sent by post / courier is to be enclosed in double cover addressed to The Director, C.S.I.R-C.E.C.R.I., Karaikudi, Tamilnadu, India.~~
- ~~Quotations delivered personally should be put in the tender box kept in the office of The Stores and Purchase Officer, C.S.I.R-C.E.C.R.I., Karaikudi, Tamilnadu, India.~~
- All bids to be submitted online through **etenders.gov.in** only

- कोटेशन की स्वीकृति वै.औ.अ.प.के.वि.र.अ.स., कारैकुडी, तमिलनाडु, भारत के सक्षम प्राधिकारी की होगी, जो की निम्न तम कोटेशन की स्वीकृति के लिए बाध्य नहीं होगा और बिना कोई कारण बताए सभी या किसी को भी अस्वीकृत करने या आंशिक रूप से स्वीकृत करने का अधिकार रखता है।

The acceptance of the quotation will rest with the competent authority of **C.S.I.R-**

**C.E.C.R.I., Karaikudi, Tamilnadu, India** who does not bind himself to accept the lowest quotation and reserves the right to himself to reject, or partially accept any or all the quotations received without assigning any reason.

5. बोलीमें बतार्गई कीमतें निवल होनी चाहिए और कोटेशन खोलने की तारीक से न्यूनतम १० दिनों के लिए वैध होनी चाहिए।

Price quoted should be net and valid for a minimum period **of 120 days** from the date of opening of the quotation.

- ~~6. इस निविदा में भागीदारी केवल आमंत्रण द्वारा है और के ता के चयनित प्रांजीकृत आपूर्तिकर्ताओं तक ही सीमित है। अनचाहे ऑफर को अनदेखा किया जा सकता है। हालांकि, भविष्य में ऐसे निविदाओं में भाग लेने की इच्छुक आपूर्तिकर्ता इलेक्ट्रॉनिक निविदा के नोटिस में ला सकते हैं और प्राक्रिया के अनुसार प्रांजीकरण के लिए आवेदन कर सकते हैं। यह ध्यान दिया जाए कि सशर्त / बिना हस्ताक्षर किए गए निविदाओं पर विचार नहीं किया जाएगा।~~  
~~Participation in this tender is by invitation only and is limited to the selected Purchaser's registered suppliers (refer to eligible bidders in INSTRUCTION TO BIDDERS). Unsolicited offers are liable to be ignored. However, suppliers who desire to participate in such tenders in future may bring it to the notice of the purchaser and apply for registration as per procedure. It may be noted that Conditional / Unsigned tenders shall not be considered.~~

7. बोली दाता द्वारा **इटीएनडीइआरएस.जीओवी.आइएनमेदिगाएबीओक्यू /**

**निविदा दस्तावेज में दिगाए प्रपत्रानुसार मूल्य अनूसूची प्रस्तुत करना होगा।**

The bidder must submit the applicable Price Schedule Form as annexed to the **BOQ in etenders.gov.in / Tender Document.**

8. कोट कर ते समय सम्पूर्ण विनिर्देश के साथ निर्माता का नाम व पता दिया जाना चाहिए। जहाँ भी लागू हो साहित्य / ब्रोशर / पम्प्लेट / तकनीकी डाटाशीट / ड्राइंग संलग्न होने चाहिए।

Complete specifications with manufacturer's Name and address should be given while quoting. Literature / brochures / pamphlets / technical data sheets / drawings must be enclosed with the quotation wherever applicable.

9. उद्धृत मूल्य, इंकवायरी में उल्लिखित इकाई में ही होनी चाहिए। कोटेशन अन्य इकाई में दी जाने पर, दो नो इकाईयों के बीच के संबंध भी बतायें। मात्रात्मक छूट,

यदि हो तो उल्लिखित करें। मर्दों को हमारे कोटेशन के लिए निवेदनानुसार क्रमांकित कर उद्धृत करें।

Prices are required to be quoted in units indicated in the enquiry. When quotations are given in terms of other units, relationship between two sets of units should be furnished. Quantity discounts, if any should also be indicated. The items should be quoted indicating the serial No. of our RFQ.

#### 10. The bidder must

**1. Quote of currency must be in the currencies in the BOQ only**

**2. Comply with Make in India Order No.** no.P-45021/2/2017-PP (BE-II) dated 16th September 2020 of Ministry of Commerce and Industry, Government of India and any amendments thereon.

**3. Comply with Order**No.P-45021/112/2020-PP(BE-II)(E-43780) dated 24.08.2020 of Ministry of Commerce and Industry, Department for Promotion of Industry and Internal Trade and any amendments thereon.

11. This lab is registered with Dept. of Scientific & Industrial Research, Govt. of India and concessional customs duty and GST & IGST are leviable vide notification No. 54/2002-Customs on all imports covered under Notification No.51/96-Customs dated 23.07.1996, Notification No.47/2017-Integrated Tax (Rate) and Notification No. 45/2017-Central Tax (Rate) both dated 14<sup>th</sup> November, 2017
12. प्रेषण / ढुलाईकामाध्यम **हवाई / सामुद्रिक / रेल / सडक** हीहोगा।  
The mode of dispatch/transportation of the items must be by **Air / Sea / Rail / Road only**.
13. मर्दोंकी आपूर्तिकेलिएजरूरीसुपुर्दगीअवधिकाकोटेशनमेनिरपवादउल्लेखहोनाचाहिए।ऑर्डरदिएजा नेपरप्रस्तुतसुपुर्दगीअवधिकासख्तीसेपालनकरनाहोगा।  
Delivery period required for supplying the material should be invariably specified in the quotation. The offered delivery period shall have to be strictly adhered to in case an order is placed.
14. देरीकेलिएपरिनिर्धारितनुकसानीधारा :  
निविदादस्तावेजमेंअनुबंधकीसामान्यशर्तोंकीधारा२.२७अनुसार  
Liquidated Damages Clause for delays: As per clause 2.27 of GCC in the tender document.
15. यदिआपूर्तिसमयपरनहोऔरइसवजहसेआपकेजोखिमपरक्रेताअन्यकहींसेसामग्रीखरीदनेकेलिएबाध्यहोताहोनेपर, जोहानिऔरनुकसानहोगी, उसेदोषीविक्रेतासेबरामदकियाजाएगा।  
If the deliveries are not maintained and due to that account the purchaser is forced to buy the material at your risk and cost from elsewhere, the loss or damage that may be sustained there by will be recovered from the defaulting supplier.
16. सभीआपूर्तियाँस्वीकृतिसेपूर्वनिरीक्षणऔरअनुमोदनपरआश्रितहै।जहाँकहींभीलागूहोनिर्माताकीआश्वस्तिप्रमाण पत्रऔरनिर्माता / सरकारअनुमोदितप्रयोगशालाकीनिरीक्षणप्रमाणपत्रआपूर्तिकेसाथप्रस्तुतकरें।  
All supplies are subject to inspection and approval before acceptance. Manufacturer warranty certificates and manufacturer/Government approved lab test certificate shall be furnished along with the supply, wherever applicable.
17. लागूनियम / अधिनियम / कानूनकेप्रावधानअनुसारआ.क / वसेकस्त्रोतपरकरकटौतीवसूलाजाएगा।  
IT / GST TDS would be recovered as per applicable rule / regulations / provisions of law.
18. कृपयाकोटेशनमेअपनास्लेसंऔरव.से.कसंख्याकाउल्लेखकरें।  
Kindly furnish your PAN & GST Number etc. in your quotation for our records.

19. Our normal payment terms are as mentioned in G.C.C and S.C.C
20. सभी विवाद केवल कराईकुडी क्षेत्राधिकार की अदालतों में सुलझाए जाएंगे। विवरण अ.सा.शकेधारा २.३२ में उपलब्ध है।  
All disputes shall be settled in the courts of **Karaikudi** Jurisdiction only. Details available under clause 2.32 of GCC as given in tender document.
21. निविदा की शर्तें (अधोमुख पर मुद्रित), यदि कोई हो, या निविदा के संग भेजी गई हों तो, हम पर बाध्य नहीं होगा।  
Tender conditions (printed on the reverse), if any, or otherwise sent along with the tender shall not be binding on us.
22. उपरोक्त सभी अनुदेश और हमारे सामान्य निबंधन और शर्तों का अनुपालन करना होगा जिसके न होने पर आप पक प्रस्ताव अस्वीकार किया जा सकता है।  
All the above instructions and our standard terms and conditions must be complied failing which your offer may be liable for rejection.
23. **Purchase Preference to Micro and Small Enterprises (MSEs) and Purchase Preference linked with MAKE IN INDIA Order shall be applicable subject to full compliance of other terms and conditions of the RFQ / NIT and Contract, as per Government of India procurement policies.**

The purchaser intends to give purchase preference to:

1. Make in India (as per Order no.P-45021/2/2017-PP (BE-II) dated 16th September 2020 of Ministry of Commerce and Industry, Government of India. The preference to Public Procurement (Preference to Make in India) Order 2012" shall be subject to meeting technical specifications and full compliance of other terms and conditions of the RFQ / NIT and Contract.

2. Products / goods manufactured by micro and small enterprises as per MSE order 2012 and any amendments thereon. If the bidder wants to avail the Purchase preferences, the bidder must be the manufacturer of the offered product in case of bid for supply of goods. Traders are excluded from the preview of public procurement policy for micro and small enterprises. In respect of bid for services, the bidder must be the service provider of the offered service. Relevant documentary evidence in this regard shall be uploaded along with the bid in respect of the offered product or service. The aforesaid Policy is meant for procurement of only goods produced and Services rendered by MSEs and not for any trading activities by them. An MSE unit will not get any Purchase Preference over any other MSE Unit.

In case a bidder is eligible to seek benefit under Purchase PP- MAKE IN INDIA policy as well as PPP for MSE 2012, then the bidder should categorically seek benefits against only one of the two policies i.e. either MAKE IN INDIA OR MSE policy in BID FORM. The option once exercised

cannot be modified subsequently.

**Purchase preference benefits shall be extended to the bidder based on the declared option subject to the bidder meeting the requirements contained in that purchase preference policy.**

24. भंडारएवंक्रयप्रभागसेउद्भवित, ओपननिविदापरलागू, बोलीदाताओंकेलिएनिर्देश, अनुबंधकीसामान्यशर्तें, टेंडरशीर्षकेतहतहमारेवेबसाइटसीईसीआरआई.आरईएस.आईएनपरयाटेंडरदस्तावेजपरदेखसकतेहैं।

Instruction to Bidders, General Conditions of Contract applicable to open tenders originating from S&P division along with different formats can be viewed on our website cecri.res.in under the head tenders or in tender document.

25. **Site visit: The engineers from the prospective bidder can visit the site at CSIR MADRAS COMPLEX, CECRI CHENNAI UNIT, TARAMANI, CHENNAI 600113 on any working day (Saturday, Sunday are holidays including any other holiday of Government of India) during working hours between 9.30 a.m. to 12.30 p.m. and 1.30 p.m. to 5.00 p.m. IST. The contact person for site visit is SIC Chennai unit Dr. P. Periasamy and / or Er. Balasubramanian at CECRI unit, Chennai. 91-44- 22542818 / 91-44- 22542068.**

**भंडारएवंक्रयअधिकारी  
STORES AND PURCHASE OFFICER**

**अनुक्रमणिका**  
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| 4.                 | बोली पूर्व सम्मेलन, यदि हो तो<br>Pre-bid Conference, if any                                                | 15.03.2021 11.AM. to 1.00 PM and 1.45 PM to 6.00 PM<br><br>16.03.2021 TO 19.03.2021<br>9.30 A.M. TO 1.00 PM AND<br>1.45 PM TO 6.00 P.M. |
| 5.                 | बोली जमा करने की प्रारंभिक दिनांक और समय<br>Bid Submission Start Date & time                               | 22.03.2021 1.00 PM.                                                                                                                     |
| 6.                 | बोली जमा करने की अंतिम दिनांक और समय<br>Bid Submission End Date & Time                                     | 30/03/2021 3.00 P.M.                                                                                                                    |
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| 3.    | Date of communication of Rejection of Bids       | XX + 65              |
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## **A Introduction**

### **1.1. Eligible Bidders**

1.1.11.1.1 This Invitation for Bids is open to all suppliers subject to para 23 of the invitation to bids and clause 1.1.7 through 1.1.11 of ITB.

1.1.2A supplier or bidder shall be considered to be from a country if

- (i) The entity is incorporated in that country, or
- (ii) a majority of its shareholding or effective control of the entity is exercised from that country; or
- (iii) more than 50% of the value of the item being supplied has been added in that country. Indian suppliers shall mean those entities which meet any of these tests with respect to India.

1.1.3 MSEs would be treated as owned by Scheduled Caste/Schedule Tribe enterprises as under:

- (a) In case of proprietary MSE, proprietor(s) shall be SC/ST.
- (b) In case of partnership MSE, the SC/ST partners shall be holding at least 51% (fifty-one percent) shares in the unit.
- (c) In case of Private Limited Companies, at least 51% (fifty-one percent) shares shall be held by SC/ST promoters.

Document in support of claim must be submitted along with the bid.

1.1.4 Bidders should not be associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by the Purchaser to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the goods to be purchased under this Invitation of Bids.

1.1.5 Bids from Joint Ventures, Consortium or Associations so long as they are formed and registered prior to the bid submission date.

1.1.6 The bidders who have been temporarily suspended or removed from the list of registered suppliers by the purchaser or banned from Ministry/country wide procurement shall be ineligible for participation in the bidding process.

1.1.7 Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority (Registration Committee as constituted by Department of Promotion of Industry and Internal Trade) and submits a valid registration Certificate. (please refer to Order no.6/18/2019-PPD dated 23 July 2020 and any amendments thereon.)

1.1.8 "Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial judicial person not falling in any of the descriptions of bidder stated hereinbefore, including any agency branch or Officer controlled by such person, participating in a procurement process.

1.1.9 "Bidder from a country which shares a land border with India" for the purpose of this order means:

- I. An entity incorporated, established or registered in such a country; or

- II. A subsidiary of an entity incorporated, established or registered in such a country; or
- III. An entity substantially controlled through entities incorporated, established or registered in such a country; or
- IV. An entity whose beneficial owner is situated in such a country; or
- V. An Indian (or other) agent of such an entity; or
- VI. A natural person who is a citizen of such a country; or
- VII. A consortium or joint venture where any member of the consortium or joint venture fails under any of the above

#### 1.1.10 The beneficial owner for the purpose of above will be as under

- I. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more judicial person, has a controlling ownership interest or who exercise control through other means.

##### Explanation -

- a) "Controlling ownership interest" means ownership of a or entitlement to more than twenty-five percent of shares or capital or profits of the company;
- b) "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreements.
- II. In case of a partnership firm, the beneficial owner is the natural persons(s) who, whether acting alone or together, or through one or more judicial person, has ownership of entitlement to more than fifteen percent of capital or profits of the partnership;
- III. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting alone or together, or through one or more judicial person, has ownership of or entitlement to more than fifteen percent of the property or capital or profits of such association or body of individuals;
- IV. Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who holds the position of senior managing official;
- V. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen percent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

1.1.11 An agent is a person employed to do any act for another, or to represent another in dealings with third person.

1.1.12 Eligibility with respect to Make In India

(a) In procurement of all goods, services or works in respect of which the Nodal Ministry / Department has communicated that there is sufficient local capacity and local competition, only 'Class-I local supplier', as defined under the Order no.P-45021/2/2017-PP (BE-II) dated 16th September 2020 of Ministry of Commerce and Industry, Government of India, shall be eligible to bid irrespective of purchase value.

(b) Only 'Class-I local supplier' and 'Class-II local supplier', as defined under the Order, shall be eligible to bid in procurements undertaken by procuring entities, except when Global tender enquiry has been issued. In global tender enquiries, 'Non-local suppliers' shall also be eligible to bid along with 'Class-I local suppliers' and 'Class-II local suppliers'. In procurement of all goods, services or works, not covered by sub- para 3(a) of Order no.P-45021/2/2017-PP (BE-II) dated 16th September 2020 of Ministry of Commerce and Industry, Government of India, and with estimated value of purchases less than Rs 200 Crore, in accordance with Rule 161(iv) of General Finance Rules, 2017, Global tender enquiry shall not be issued except with the approval of competent authority as designated by Department of Expenditure. **This tender is open for Class I, II and also non local suppliers as it is floated as a Global tender.**

## 1.2 Cost of Bidding

- 1.2.1 The Bidder shall bear all costs associated with the preparation and submission of its bid, and "the Purchaser", will in no case be responsible or liable for these costs, regardless of the conduct or outcome of the bidding process.

## 1.3 Code of Integrity

- 1.3.1 The bidders/suppliers should sign a declaration about abiding by the Code of Integrity for Public Procurement in bid documents. In case of any transgression of this code, the bidder is not only liable to be removed from the list of registered suppliers, but it would be liable for other punitive actions such as cancellation of contracts, banning and blacklisting or action in Competition Commission of India, and so on.

- 1.3.2 **Code of integrity for Public Procurement:** The Purchaser as well as bidders, suppliers, contractors and consultants should observe the highest standard of ethics and should not indulge in the following prohibited practices, either directly or indirectly, at any stage during the procurement process or during execution of resultant contracts:

- i) **"corrupt practice"**: making offers, solicitation or acceptance of bribe, rewards or gifts or any material benefit, in exchange for an unfair advantage in the procurement process or to otherwise influence the procurement process or contract execution;
- ii) **"Fraudulent practice"**: any omission or misrepresentation that may mislead or attempt to mislead so that financial or other benefits may be obtained or an obligation avoided. This includes making false declaration or providing false information for participation in a tender process or to secure a contract or in execution of the contract;
- iii) **"anti-competitive practice"**: any collusion, bid rigging or anti-competitive arrangement, or any other practice coming under the purview of the Competition Act, 2002, between two or more bidders, with or without the knowledge of the purchaser, that may impair the transparency, fairness and the progress of the procurement process or to establish bid prices at artificial, non-competitive levels;

iv) “**coercive practice**”: harming or threatening to harm, persons or their property to influence their participation in the procurement process or affect the execution of a contract;

v) “**conflict of interest**”: participation by a bidding firm or any of its affiliates that are either involved in the consultancy contract to which this procurement is linked; or if they are part of more than one bid in the procurement; or if the bidding firm or their personnel have relationships or financial or business transactions with any official of purchaser who are directly or indirectly related to tender or execution process of contract; or improper use of information obtained by the (prospective) bidder from the purchaser with an intent to gain unfair advantage in the procurement process or for personal gain; and

vi) “**Obstructive practice**”: materially impede the purchaser’s investigation into allegations of one or more of the above mentioned prohibited practices either by deliberately destroying, falsifying, altering; or by concealing of evidence material to the investigation; or by making false statements to investigators and/or by threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or by impeding the purchaser’s Entity’s rights of audit or access to information;

### 1.3.3 Obligations for Proactive disclosures

i) The Purchaser as well as bidders, suppliers, contractors and consultants, are obliged under Code of Integrity for Public Procurement to sue-moto proactively declare any conflicts of interest (coming under the definition mentioned above – pre-existing or as and as soon as these arise at any stage) in any procurement process or execution of contract. Failure to do so would amount to violation of this code of integrity; and

ii) The bidder must declare, whether asked or not in a bid document, any previous transgressions of such a code of integrity with any entity in any country during the last three years or of being debarred by any other Procuring Entity. Failure to do so would amount to violation of this code of integrity;

iii) To encourage voluntary disclosures, such declarations would not mean automatic disqualification for the bidder making such declarations. The declared conflict of interest would be evaluated and mitigation steps, if possible, taken by the purchaser.

### 1.3.4 Punitive Provisions

Without prejudice to and in addition to the rights of the Purchaser to other penal provisions as per the bid documents or contract, if the Purchaser comes to a conclusion that a (prospective) bidder/supplier, directly or through an agent, has violated this code of integrity in competing for the contract or in executing a contract, the purchaser may take appropriate measures including one or more of the following:

i) **If his bids are under consideration in any procurement:**

- a) Forfeiture or encashment of bid security;
- b) Calling off of any pre-contract negotiations; and
- c) Rejection and exclusion of the bidder from the procurement process.

- ii) **If a contract has already been awarded**
  - a) Cancellation of the relevant contract and recovery of compensation for loss incurred by the purchaser;
  - b) Forfeiture or encashment of any other security or bond relating to the procurement;
  - c) Recovery of payments including advance payments, if any, made by the purchaser along with interest thereon at the prevailing rate.
- iii) **Provisions in addition to above:**
  - a) Removal from the list of registered suppliers and banning/debarment of the bidder from participation in future procurements of the purchaser for a period not less than one year;
  - b) In case of anti-competitive practices, information for further processing may be filed under a signature of the Joint Secretary level officer, with the Competition Commission of India;
  - c) Initiation of suitable disciplinary or criminal proceedings against any individual or staff found responsible.

## **B. The Bidding Documents**

### **1.4 Cost of Tender Documents**

- 1.4.1 Interested eligible bidders may purchase the bidding documents on payment of the cost of bidding documents as indicated in the invitation forbids/NIT or alternatively, the bidding documents can be downloaded from our Website as indicated in the Invitation for Bids/NIT free of cost.

### **1.5 Content of Tender Documents**

- 1.5.1 The goods required, bidding procedures and contract terms are prescribed in the bidding documents which should be read in conjunction. The bidding documents, apart from the invitation for bids and Critical Date Sheet have been divided into **8** Chapters as under:

- Chapter 1: Instructions to Bidder (ITB)
- Chapter 2: General Conditions of Contract (GCC) and Special Condition of Contract (SCC)
- Chapter 3: Schedule of Requirements
- Chapter 4: Specifications and Allied Technical Details
- Chapter 5: Price Schedule Forms
- Chapter 6: Qualification requirements
- Chapter 7: Contract Form
- Chapter 8: Other Standard Forms comprising:
  - (1) Bidder Information Form
  - (2) Manufacturer's Authorization Form (MAF);
  - (3) Bid Security Form
  - (4) Bid Securing declaration
  - (5) Performance Statement form
  - (6) Deviation Statement Form;

- (7) Service Support details;
- (8) Bid form
- (9) Performance Security Form;
- (10) Acceptance Certificate Form
- (11) Integrity pact
- (12) Format of letter of authority for participating in bid opening
- (13) Format for declaration by the bidder for code of integrity and Conflict of interest.

1.5.2 The Bidder is expected to examine all instructions, forms, terms, and specifications in the bidding documents. Failure to furnish all information required by the bidding documents or submission of a bid not substantially responsive to the bidding documents in every respect will be at the Bidder's risk and may result in rejection of its bid.

## **1.6 Clarification of tender documents**

1.6.1 A prospective Bidder requiring any clarification of the Bidding Documents shall contact the Purchaser in writing at the Purchaser's address specified in the Special Conditions of Contract (SCC), latest by the date specified in the critical date sheet. No request for clarification or query shall normally be entertained after the deadline/pre-bid conference if any. Should the Purchaser deem it necessary to amend the Tender Documents as a result of a clarification, it shall do so following the procedure under Clause relating to amendment of Tender Documents and Clause relating to Deadline for Submission of Bids.

The queries, clarifications and amendments issued would also be hosted on the website of the Purchaser for the benefit of the other prospective bidders and also shall be sent to all bidders who have purchased the tender documents.

## **1.7 Amendment of Tender Documents**

1.7.1 At any time prior to the deadline for submission of bids, the Purchaser may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the tender documents by amendment. The same would also be hosted on the website of the Purchaser and all prospective bidders are expected to surf the website before submitting their bids to take cognizance of the amendments. However, the copies of the amendments would be sent by registered post/speed post/courier/e-mail to all the bidders who have purchased the tender documents.

1.7.2 In order to allow prospective bidders' reasonable time in which to take the amendment into account in preparing their bids, the Purchaser, at its discretion, may extend the deadline for the submission of bids and host the changes on the website of the Purchaser.



## **C. PREPARATION OF BIDS**

### **1.8. Language of Bid**

- 1.8.1 The bid prepared by the Bidder, as well as all correspondence and documents relating to the bid exchanged by the Bidder and the Purchaser shall be written in English language only.
- 1.8.2 The Supplier shall bear all costs of translation, if any, to the English language and bear all risks of the accuracy of such translation, for documents provided by the Supplier.

### **1.9 Purchase Preference Policies**

#### **A. Purchase Preference Policy in respect of MSEs**

- 1.9.1 The purchaser intends to give product reservation/purchase preference/price preference in line with current Govt. of India procurement policies to help inclusive national economic growth by providing long term support to Micro and Small enterprises and disadvantaged sections of the society and to address environmental concerns along with preferential market access in govt. procurements.
- 1.9.2 A bidder in the category of Micro and Small Enterprises (to be supported by valid documents – to be uploaded along with technical bid), qualifying for price-bid and quoting price within price band of L1+15 percent shall also be allowed to supply a portion of requirement by bringing down their price to L1 price in a situation where L1 price is from someone other than a Micro and Small Enterprise shall be allowed to supply upto 25 percent of the total tendered value (ratio of non-MSME and MSME will be 80:20).
- 1.9.3 In case more than one such Micro and Small Enterprise, the supply shall be shared proportionately.
- 1.9.4 If the lowest is MSME then the entire order will be finalized on L1.

#### **B. Purchase Preference Policy in respect of Make in India**

- (a) Subject to the provisions of Order no.P-45021/2/2017-PP (BE-II) dated 16th September 2020 of Ministry of Commerce and Industry, Government of India and to any specific instructions issued by the Nodal Ministry or in pursuance of this Order, purchase preference shall be given to 'Class-I local supplier' in procurements undertaken by procuring entities in the manner specified here under.
- (b) In the procurements of goods or works, which are covered by para 3(b) of Order no.P-45021/2/2017-PP (BE-II) dated 16th September 2020 of Ministry of Commerce and Industry, Government of India above and which are divisible in nature, the 'Class-I local supplier' shall get purchase preference over 'Class-II local supplier' as well as 'Non-local supplier', as per following procedure.
- i. Among all qualified bids, the lowest bid will be termed as L1 If L1 is 'Class-I local supplier', the contract for full quantity will be awarded to L1.



- ii. If L1 bid is not a 'Class-I local supplier', 50% of the order quantity shall be awarded to L1. Thereafter, the lowest bidder among the 'Class-I local supplier' will be invited to match the L1 price for the remaining 50% quantity subject to the Class-I local supplier's quoted price falling within the margin of purchase preference, and contract for that quantity shall be awarded to such 'Class-I local supplier' subject to matching the L1 price. In case such lowest eligible 'Class-I local supplier' fails to match the L1 price or accepts less than the offered quantity, the next higher Class-I local supplier' within the margin of purchase preference shall be invited to match the L1 price for remaining quantity and so on, and contract shall be awarded accordingly. In case some quantity is still left uncovered on Class-I local suppliers, then such balance quantity may also be ordered on the L1 bidder.

(c) In the procurements of goods or works, which are covered by para 3(b) Order no.P-45021/2/2017-PP (BE-II) dated 16th September 2020 of Ministry of Commerce and Industry, Government of India and which are not divisible in nature, and in procurement of services where the bid is evaluated on price alone, the 'Class-I local supplier' shall get purchase preference over Class-II local supplier' as well as 'Non-local supplier', as per following procedure.

i. Among all qualified bids, the lowest bid will be termed as L1. If L1 is 'Class-I local supplier', the contract will be awarded to L1.

ii. If L1 is not 'Class-I local supplier', the lowest bidder among the 'Class-I local supplier', will be invited to match the L1 price subject to Class-I local supplier's quoted price falling within the margin of purchase preference, and the contract shall be awarded to such 'Class-I local supplier' subject to matching the L1 price.

iii. In case such lowest eligible 'Class-I local supplier' fails to match the L1 price, the Class-I local supplier' with the next higher bid within the margin of purchase preference shall be invited to match the L1 price and so on and contract shall be awarded accordingly. In case none of the 'Class-I local supplier' within the margin of purchase preference matches the L1 price, the contract may be awarded to the L1 bidder.

(d) "Class-II local supplier" or "Non local supplier" will not get purchase preference in any procurement, undertaken by procuring entities.

**This tender being a turnkey contract is not divisible in nature.**

**1.9.5 Purchase Preference to Micro and Small Enterprises (MSEs) and Purchase Preference linked with MAKE IN INDIA Order shall be applicable subject to full compliance of other terms and conditions of the RFQ / NIT and Contract. As per Government of India procurement policies.**

**The purchaser intends to give purchase preference to :**

**1. Make in India (as per Order no.P-45021/2/2017-PP (BE-II) dated 16th September 2020 of Ministry of Commerce and Industry, Government of India. The preference to Public Procurement (Preference to Make in India)**

**Order 20120" shall be subject to meeting technical specifications and full compliance of other terms and conditions of the RFQ / NIT and Contract.**

**2. Products / goods manufactured by micro and small enterprises as per MSE order 2012 and any amendments thereon. If the bidder wants to avail the Purchase preferences, the bidder must be the manufacturer of the offered product in case of bid for supply of goods. Traders are excluded from the preview of public procurement policy for micro and small enterprises. In respect of bid for services, the bidder must be the service provider of the offered service. Relevant documentary evidence in this regard shall be uploaded along with the bid in respect of the offered product or service. The aforesaid Policy is meant for procurement of only goods produced and Services rendered by MSEs and not for any trading activities by them. An MSE unit will not get any Purchase Preference over any other MSE Unit.**

**In case a bidder is eligible to seek benefit under Purchase PP- MAKE IN INDIA policy as well as PPP for MSE 2012, then the bidder should categorically seek benefits against only one of the two policies i.e. either MAKE IN INDIA OR MSE policy in BID FORM. The option once exercised cannot be modified subsequently.**

**Purchase preference benefits shall be extended to the bidder based on the declared option subject to the bidder meeting the requirements contained in that purchase preference policy.**

**1.9.6 For price matching opportunities and distribution of quantities among bidders (bidder's option to avail any one out of two applicable purchase preference policies, i.e., MAKE IN INDIA 2020 or PPP-2012 will be considered), the precedence shall be in the following order:**

**1 Public Procurement Policy for MSE 2012**

**2 Purchase Preference MAKE IN INDIA 2020**

#### **1.10.1 Documents comprising the bid**

The bid prepared by the Bidder shall include documents as under:

**A. Technical bid**

- (a) Bidder Information Form;
- (b) Declaration abiding by the Code of Integrity and no conflict of interest for public procurement;
- (c) Bid security as specified in the Invitation to Bids;
- (d) Service support details form;
- (e) Deviation Statement Form;
- (f) Performance Statement Form;
- (g) Manufacturer's Authorization Form along with a certified copy of the Agency Agreement between the bidders and the Indian Agent;
- (h) Documentary evidence establishing that the bidder is eligible to bid and is qualified to perform the contract if its bid is accepted;
- (i) Integrity Pact, if required;

- (j) Documents establishing goods eligibility and conformity to bidding documents; indicating the Indian Customs Tariff Number (ICT & HSN No.) .
- (k) Schedule of requirements.
- (l) Self certification that the item offered meets the minimum local content of 50% giving details of the location(s) at which the local value addition is made in case the bidder wishes to avail the benefits under the make in India policy, if applicable.
- (m) In cases of procurement for a value in excess of ₹ 10 crores, the local supplier shall be required to provide a certificate from the statutory auditor or cost auditor of the company (in the case of companies) or from a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies) giving the percentage of local content to avail the benefits under the make in India policy, if applicable.
- (n) Documentary evidence about the status of the bidder i.e. whether MSE or not, owned by SC/ST or not and whether the MSE is owned by a women entrepreneur or not.

**B Price bid**

- (l) Bid form;
- (m) Applicable Price Schedule Form;

**1.11. Bid form and price schedule**

1.11.1 The bidder shall complete the Bid Form and the appropriate price schedule form furnished in the bidding documents. These forms must be completed without any alterations to its format and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested. The Bid Form and the appropriate Price Schedule form shall be submitted in accordance with Clause 1.18.3 of the bidding documents.

**1.12. Bid Prices**

1.12.1 The Bidder shall indicate on the appropriate price schedule form, the unit prices and total bid prices of the goods it proposes to supply under the contract.

1.12.2 Prices indicated on the price-schedule form shall be entered separately in the following manner:

**(a) For Goods manufactured within India**

- (i) The price of the goods quoted Ex-works including taxes already paid.
- (ii) GST and other taxes, if any which will be payable on the goods if the contract is awarded.
- (iii) The charges for inland transportation, insurance and other local services required for delivering the goods at the desired destination as specified in the price schedule form.
- (iv) Wherever applicable, the cost towards the installation, commissioning, spares, extended warranty, AMC/CMC, site preparation and training including

any incidental services, if any.

**(b) For Goods manufactured abroad**

- (i) The price of the goods, quoted on FCA (named place of delivery abroad) or FOB (named port of shipment), as specified in the price schedule form.
- (ii) The charges for insurance and transportation of the goods to the port / place of destination both by Air/Sea.
- (iii) The agency commission charges, if any.
- (iv) Wherever applicable, the cost towards the installation, commissioning, spares, extended warranty, AMC/CMC, site preparation and training including any incidental services, if any.

1.12.3 The terms FOB, FCA, CIF, CIP etc. shall be governed by the rules prescribed in the current edition of the Incoterms published by the International Chambers of Commerce, Paris.

1.12.4 Where there is no mention of packing, forwarding, freight, insurance charges, taxes etc. such offer shall be rejected as incomplete.

1.12.5 The price quoted shall remain fixed during the contract period and shall not vary on any account

1.12.6 All lots and items must be listed and priced separately in the Price Schedules. If a Price Schedule shows items listed but not priced, their prices shall be assumed to be included in the prices of other items. Lots or items not listed in the Price Schedule shall be assumed to be not included in the bid.

1.12.7 The Purchaser is registered with Dept. of Scientific & Industrial Research, Govt. of India and concessional customs duty and GST & IGST are leviable vide notification No. 54/2002-Customs on all imports covered under Notification No.51/96-Customs dated 23.07.1996, Notification No.47/2017-Integrated Tax (Rate) and Notification No. 45/2017-Central Tax (Rate) both dated 14<sup>th</sup> November, 2017

1.12.8 Please state specifically in your offer whether the duties and taxes are extra over the prices quoted, failing which it will be presumed that the prices are inclusive of taxes and duties and no claim would be entertained for statutory variations at a later date.

1.12.9 Stipulations like "GST is presently not applicable but the same will be charged if it becomes leviable later on" is not acceptable unless in such cases it is clearly stated that GST will not be charged if the same becomes applicable later on due to increase in turn over etc. If a bidder fails to comply with this requirement, his quoted price shall be loaded with the quantum of duty which is normally applicable on the item in question for the purpose of comparison with the prices of other tenderers.

**Note: All payments due under the contract shall be paid after deduction of statutory levies at source (like TDS etc.), wherever applicable.**

**1.13. Bid Currencies**

1.13.1 Prices shall be quoted in Indian Rupees for offers received for supply within India and in freely convertible foreign currency in case of offers received for supply from

foreign countries i.e. domestic tenderers are to quote and accept their payment in Indian currency; Indian agents of foreign suppliers are to receive their agency commission in Indian currency; cost of imported goods & services rendered in India, which are directly imported against the contract, may be quoted in foreign currency (currencies). (currencies as available in BOQ only).

#### **1.14. Documents Establishing Bidder's Eligibility and qualifications**

1.14.1 The bidder shall furnish, as part of its bid, documents establishing the bidders' eligibility to bid and its qualification to perform the contract if its bid is accepted.

1.14.2 The documentary evidence of the bidder's qualification to perform the contract if the bid is accepted shall establish to the purchaser's satisfaction that;

- (a) The bidder meets the qualification criteria listed in bidding documents if any.
- (b) Bidder who doesn't manufacture the goods it offers to supply shall submit Manufacturers' Authorization Form (MAF) using the form specified in the bidding document to demonstrate that it has been duly authorized by the manufacturer of the goods to quote and/or supply the goods.
- (c) In case a bidder not doing business within India, it shall furnish the certificate to the effect that the bidder is or will be represented by an agent in India equipped and able to carry out the supply, maintenance, repair obligations etc. during the warranty and post warranty period or ensure a mechanism at place for carrying out the supply, maintenance, repair obligations etc. during the warranty and post-warranty period.

1.14.3

**Conditional tenders shall not be accepted.**

#### **1.15 Documents Establishing Goods' Eligibility and Conformity to Bidding Documents**

1.15.1 To establish the goods' eligibility, the documentary evidence of the goods and services eligibility shall consist of a statement on the country of origin of the goods and services offered which shall be confirmed by a certificate of origin at the time of shipment.

1.15.2 To establish the conformity of the goods and services to the specifications and schedule of requirements of the bidding document, the documentary evidence of conformity of the goods and services to the bidding documents may be in the form of literature, drawings and data, and shall consist of:

- (a) A detailed description of the essential technical and performance characteristics of the goods;
- (b) A list giving full particulars, including available sources and current prices, of spare parts, special tools, etc., necessary for the proper and continuing functioning of the goods during the warranty period following commencement of the use of the goods by the Purchaser in the Priced-bid; and

- (c) An item-by-item commentary on the Purchaser's Technical Specifications demonstrating substantial responsiveness of the goods and services to those specifications or a statement of deviations and exceptions to the provisions of the Technical Specifications.

1.15.3 For purposes of the commentary to be furnished pursuant to above, the Bidder shall note that standards for workmanship, material and equipment, designated by the Purchaser in its Technical Specifications are intended to be descriptive only and not restrictive. The Bidder may substitute these in its bid, provided that it demonstrates to the Purchaser's satisfaction that the substitutions ensure substantial equivalence to those designated in the Technical Specifications.

1.15.4 Alternate offers/makes/models would not be considered.

#### 1.16. Bid Security

1.16.1 The Bidder shall furnish, as part of its bid, a bid security (BS) for an amount as specified in the Invitation for Bids. In the case of foreign bidders, the BS shall be submitted either by the principal or by the Indian agent and in the case of indigenous bidders; the BS shall be submitted by the manufacturer or their specifically authorized dealer/bidder.

1.16.2 The bid security is required to protect the Purchaser against the risk of Bidder's conduct, which would warrant the security's forfeiture.

1.16.3 The bid security shall be in Indian Rupees for offers received for supply within India and denominated in the currency of the bid or in any freely convertible foreign exchange in the case of offers received for supplies from foreign countries in equivalent Indian Rupees. The bid security shall be in one of the following forms at the bidders' option:

- (a) A bank guarantee issued/confirmed by a Scheduled Commercial Bank in India in the form provided in the bidding documents and valid for 45 days beyond the validity of the bid. In case a bidder desires to submit a BG issued from a foreign bank, then the same should be confirmed by a Scheduled commercial bank in India; or
- (b) Fixed Deposit receipt pledged in favour of the Lab. /Institute.
- (c) A Banker's cheque or demand draft in favour of the purchaser issued by any Scheduled commercial bank in India.
- (d) Bid Securing Declaration

1.16.4 The bid security shall be payable promptly upon written demand by the purchaser in case the conditions listed in the ITB clause 1.16.9 are invoked.

1.16.5 The bid security should be submitted in its original form. Copies shall not be accepted.

1.16.6 The bid security of unsuccessful bidder will be discharged /returned as promptly as



possible positively within a period of 30 days after the expiration of the period of bid validity or placement of order whichever is later, without any interest.

1.16.7 The successful Bidder's bid security will be discharged upon the Bidder furnishing the performance security, without any interest.

1.16.8 Bidders that are currently registered with the purchaser, DGS&D or registered as MSEs will continue to remain registered during the tender validity period also and are exempted from payment of EMD. In case the tenderer falls in these categories, the bidder should furnish a certified copy of its valid registration details. Except for MSEs, this exemption is valid for the trade group and monetary value of registration only. The MSEs are provided tender document free of cost and are exempted from the payment of Bid Security provided the goods are produced and the services are rendered by them and not for any trading activities undertaken by them. Further firms who are having Udyog Aadhar Memorandum are entitled to all benefits available for MSEs under the Public Procurement Policies for MSEs and can get registered with any of the following agencies:

- a) District Industries Centre
- b) Khadi and Village Industries Commission
- c) Khadi and Village Industries Board
- d) Coir Board
- e) National Small Industries Corporation
- f) Directorate of Handicraft and handloom and
- g) Any other body specified by the Ministry of MSME

1.16.9

Where any aggregator has been appointed by the Ministry of MSME, themselves quote on behalf of some MSE units, such offers will be considered as offer from MSE units and all such facilities would be extended to these aggregators also.

1.16.10

The bid security may be forfeited:

- (a) If a Bidder withdraws or amends or modifies or impairs or derogates its bid during the period of bid validity specified by the Bidder on the Bid Form; or
- (b) In case of a successful Bidder, if the Bidder fails to furnish order acceptance within 14 days of the order or fails to sign the contract and/or fails to furnish Performance Security within 21 days from the date of contract/ order.

1.16.11 Whenever the bidder chooses to submit the Bid Security in the form of Bank Guarantee, then he should advise the banker issuing the Bank Guarantee to immediately send by Registered Post (A.D.) an unstamped duplicate copy of the Guarantee directly to the Purchaser with a covering letter to compare with the original BG for the correctness, genuineness, etc.

## 1.17. Period of Validity of Bids

1.17.1 Bids shall remain valid for minimum of 90 days after the date of bid opening prescribed by the Purchaser. A bid valid for a shorter period shall be rejected by the Purchaser as non-responsive.

1.17.2 In exceptional circumstances, the Purchaser may solicit the Bidder's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing (by post, fax or e-mail). The bid security provided shall also be suitably extended failing which the bid would be summarily ignored. A Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request will not be required nor permitted to modify its bid.

1.17.3 Bid evaluation will be based on the bid prices without taking into consideration the above corrections.

#### **1.18. Format and Signing of Bid**

1.18.1 ~~The bids may be submitted in single envelop or in two parts as specified in the Invitation for Bids.~~

~~1.18.2 In case the bids are invited on single envelop basis, then the Bidder shall prepare two copies of the bid, clearly marking each "Original Bid" and "Copy Bid", as appropriate. In the event of any discrepancy between them, the original shall govern.~~

~~1.18.3 In case the bids are invited on two bid system, the Bidder shall submit the bids in two separate parts. One part shall contain Technical bid comprising all documents listed under clause relating to Documents Comprising the Bid excepting bid form and price schedules. The other part shall contain the priced bid comprising bid form and price schedules. The Bidder shall prepare two copies of the bid, clearly marking each "Original Bid" and "Copy Bid", as appropriate.~~

~~1.18.4 The original and all copies of the bid shall be typed or written in indelible ink and shall be signed by the Bidder or a person or persons duly authorized to bind the Bidder to the Contract. All pages of the bid, except for un-amended printed literature, shall be initialled by the person or persons signing the bid detailing his/her name and contact details.~~

1.18.5 Any interlineations, erasures or overwriting shall be valid only if they are initialled by the persons or persons signing the bid.

1.18.6. All online bids to be signed digitally with DSC of the authorized person of the bidder.

### **D. Submission and sealing of Bids**

#### **1.19. Submission, Sealing and Marking of Bids**

1.19.1 ONLY ONLINE BIDS IN THIS PORTAL WILL BE ACCEPTED. ~~The bidders may submit their duly sealed bids generally by post or by hand. (Bids received by FAX/E mail would not be considered for evaluation.)~~

~~1.19.2 In the case of bids invited on single envelop basis, the Bidders shall seal the original and each copy of the bid in separate inner envelopes, duly marking the envelopes as "original" and "copy". The envelopes shall then be sealed in an outer envelope.~~



~~1.19.3 In the case of bids invited on two part basis, the Bidder shall seal the un-priced commercial and technical bid comprising the documents as listed in ITB 1.10.1 excepting for "l" & "m" and the priced bid in two separate envelopes duly marked as "Technical bid" and "priced bid". Both the envelopes shall then be sealed in one outer envelope.~~

~~1.19.4 (a) The inner and outer envelopes shall be addressed to the \_\_\_\_\_ (Designation and Address of the officer concerned) and deposited in the Tender box kept in Purchase Section, if delivered by hand.~~

~~(b) Bear the name and address of the bidder, Tender No., due date and a warning "Do not open before \_\_\_\_\_" to be completed with the time and \_\_\_\_\_ date as specified in the invitation for bids.~~

~~1.19.5 If the outer envelope is not sealed and marked as required above, the Purchaser will assume no responsibility for the bid's misplacement or premature opening. In such cases, bids received in open condition within the due date and time will be accepted at the risk of the bidder if the same is presented to the Controller of Stores & Purchase before expiry of the due date and time of opening of the bids.~~

~~1.19.6 Firms submitting bids in a single envelope against the requirement of two bid system would be considered for further evaluation at the risk & responsibility of the bidder. However, the opened priced bid, if prepared separate from the technical bid, would be sealed immediately by the Tender Opening Committee without disclosing the price.~~

## **1.20. Deadline for Submission of Bids**

1.20.1 Bids must be received by the Purchaser at the address specified at Clause 1.19.4 (a) not later than the time and date specified in invitation for bids. In the event of the specified date for the submission of Bids being declared a holiday for the Purchaser, the Bids will be received up to the appointed time on the next working day.

1.20.2 The Purchaser may, at its discretion, extend the deadline for submission of bids by amending the bid documents in accordance with Clause relating to Amendment of Bidding Documents in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

## **1.21. Late Bids**

~~1.21.1 Any bid received by the Purchaser after the deadline for submission of bids prescribed by the Purchaser will be rejected.~~

~~1.21.2 Such tenders shall be marked as late and not considered for further evaluation. They shall not be opened at all and be returned to the bidders in their original envelope without opening.~~

## **1.22. Withdrawal, substitution and Modification of Bids.**

~~1.22.1 A Bidder may withdraw, substitute, or modify its Bid after it has been submitted by sending a written notice in accordance with ITB Clause 1.19 duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB Sub-Clause 1.18.4 (except that no copies of the withdrawal notice are required). The corresponding substitution or modification of the bid must accompany the respective written notice. All notices must be:~~

~~(a) Submitted in accordance with ITB Clauses 1.18 and 1.19 (except that withdrawal notices do not require copies), and in addition, the respective envelopes shall be clearly marked "WITHDRAWAL," "SUBSTITUTION," or "MODIFICATION"; and~~

~~(b) Received by the Purchaser prior to the deadline prescribed for submission of bids, in accordance with ITB Clause 1.20.~~

#### ~~1.22.2~~

~~Bids requested to be withdrawn in accordance with ITB Sub-Clause 1.22.1 shall be returned unopened to the Bidders. No bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Bid Form or any extension thereof.~~

1.22.3. Any withdrawal, substitution, modification etc. is subject to the policy of the CPP portal.

## E. Opening and Evaluation of Bids

### 1.23 Opening of Bids by the Purchaser

~~1.23.1 The Purchaser will open all bids one at a time in the presence of bidders' authorized representatives who choose to attend, as per the schedule given in invitation for bids. The Bidders' representatives who are present shall sign the quotation opening sheet evidencing their attendance. In the event of the specified date of Bid opening being declared a holiday for the Purchaser, the Bids shall be opened at the appointed time and location on the next working day. In two part bidding, the financial bid shall be opened only after technical evaluation.~~

~~1.23.2 First, envelopes marked "WITHDRAWAL" shall be opened and read out and the envelope with the corresponding bid shall not be opened, but returned to the Bidder. No bid withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at bid opening. Next, envelopes marked "SUBSTITUTION" shall be opened and read out and exchanged with the corresponding Bid being substituted, and the substituted Bid shall not be opened, but returned to the Bidder. No Bid substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at bid opening. Envelopes marked "MODIFICATION" shall be opened and read out with the corresponding Bid. No Bid modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at Bid~~

~~opening. Only envelopes that are opened and read out at Bid opening shall be considered further.~~

~~1.23.3 The bidders' names, bid modifications or withdrawals, bid prices, discounts, and the presence or absence of requisite bid security and such other details as the Purchaser, at its discretion, may consider appropriate, will be announced at the opening. No bid shall be rejected at bid opening, except for late bid(s). The contents of the bid forms and price schedules would however be announced only at the time of opening of Priced bids in the case of two bid system.~~

~~1.23.4 Bids that are received late shall not be considered further for evaluation, irrespective of the circumstances.~~

~~1.23.5~~

~~Bidders interested in participating in the bid opening process, should depute their representatives along with an authority letter to be submitted to the purchaser at the time of bid opening as per form Annexed at Chapter 9.~~

1.23.6 Bid opening will be done online only.

#### 1.24. Confidentiality

1.24.1 Information relating to the examination, evaluation, comparison, and post qualification of bids, and recommendation of contract award, shall not be disclosed to bidders or any other persons not officially concerned with such process until publication of the Contract Award.

1.24.2 Any effort by a Bidder to influence the Purchaser in the examination, evaluation, comparison, and post qualification of the bids or contract award decisions may result in the rejection of its Bid.

#### 1.25. Clarification of Bids

1.25.1 To assist in the examination, evaluation, comparison and post qualification of the bids, the Purchaser may, at its discretion, ask the Bidder for a clarification of its bid. The request for clarification and the response shall be in writing and no change in prices or substance of the bid shall be sought, offered or permitted. However, no negotiation shall be held except with the lowest bidder, at the discretion of the purchaser. Any clarification submitted by a bidder in respect to its bid which is not in response to a request by the purchaser shall not be considered.

#### 1.26. Preliminary Examination

1.26.1 The Purchaser shall examine the bids to confirm that all documents and technical documentation requested in ITB Clause 1.10 have been provided, and to determine the completeness of each document submitted.

1.26.2 The Purchaser shall confirm that the following documents and information have been provided in the Bid. If any of these documents or information is missing, the offer shall be rejected.

(a) Bid Form and Price Schedule, in accordance with ITB Clause 1.10;

(b) All the tenders received will first be scrutinized to see whether the tenders meet the basic requirements as incorporated in the tender enquiry document. The tenders, who do not meet the basic requirements, are to be treated as unresponsive and ignored. The following are some of the important points, for which a tender may be declared as unresponsive and to be ignored, during the initial scrutiny:

- (i) The Bid is digitally unsigned.
- (ii) The Bidder is not eligible.
- (iii) The Bid validity is shorter than the required period.
- (iv) The Bidder has quoted for goods manufactured by a different firm without the required authority letter from the proposed manufacturer.
- (v) Bidder has not agreed to give the required performance security or has not furnished the bid security.
- (vi) The goods quoted are sub-standard, not meeting the required specification, etc.
- (vii) Against the schedule of Requirement (incorporated in the tender enquiry), the bidder has not quoted for the entire requirement as specified in that schedule.
- (viii) The bidder has not agreed to some essential condition(s) incorporated in the tender enquiry.

#### **1.27 Bidder's right to question rejection.**

1.27.1 A Bidder shall have the right to be heard in case he feels that a proper procurement process is not being followed and/or his tender has been rejected wrongly. Only a directly affected bidder can represent in this regard as under:

- i) Only a bidder who has participated in the concerned procurement process i.e. pre-qualification, bidder registration or bidding, as the case may be, can make such representation;
- ii) In case pre-qualification bid has been evaluated before the bidding of Technical bids, an application for review in relation to the technical bid may be filed only by a bidder who has qualified in pre-qualification bid;
- iii) In case technical bid has been evaluated before the opening of the financial bid, an application for review in relation to the financial bid may be filed only by a bidder whose technical bid is found to be acceptable.
- iv) Following decisions of the purchaser in accordance with the provision of internal guidelines shall not be subject to review:
  - a) Determination of the need for procurement;
  - b) Selection of the mode of procurement or bidding system;
  - c) Choice of selection procedure;
  - d) Provisions limiting participation of bidders in the procurement process;
  - e) The decision to enter into negotiations with the L1 bidder;
  - f) Cancellation of the procurement process except where it is intended to subsequently re-tender the same requirements;

- g) Issues related to ambiguity in contract terms may not be taken up after a contract has been signed, all such issues should be highlighted before consummation of the contract by the vendor/contractor; and
- h) Complaints against specifications except under the premise that they are either vague or too specific so as to limit competition may be permissible.

1.27.2 In case a Bidder feels aggrieved by the decision of the purchaser, he may then send his representation in writing to the Purchaser's address as indicated in special conditions of contract (SCC) within 05 working days from the date of communication of the purchaser intimating the rejection for reconsideration of the decision by the purchaser.

### **1.28 Responsiveness of Bids**

1.28.1 Prior to the detailed evaluation, the purchaser will determine the substantial responsiveness of each bid to the bidding documents. For purposes of this clause, a substantive responsive bid is one, which conforms to all terms and condition of the bidding documents without material deviations, reservations or omissions. A material deviation, reservation or omission is one that:

- (a) Affects in any substantial way the scope, quality, or performance of the Goods and Related Services specified in the Contract; or
- (b) Limits in any substantial way, inconsistent with the Bidding Documents, the Purchaser's rights or the Bidder's obligations under the Contract; or
- (c) If rectified, would unfairly affect the competitive position of other bidders presenting substantially responsive bids.

1.28.2 The purchasers' determination of a bid's responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.

1.28.3 If a bid is not substantially responsive, it will be rejected by the Purchaser and may not subsequently be made responsive by the Bidder by correction of the material deviation, reservation or omission.

#### **1.28.4**

If a bidder quotes Nil Charges/consideration, the bid shall be treated as unresponsive and will not be considered.

### **1.29 Non-Conformity, Error and Omission**

#### **1.29.1**

Provided that a Bid is substantially responsive, the Purchaser may waive any nonconformities or omissions in the Bid that do not constitute a material deviation.

#### **1.29.2**

Provided that a bid is substantially responsive, the Purchaser may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities or omissions in the bid related to documentation requirements. Such omission shall not be related to any aspect of

the price of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.

#### 1.29.3

Provided that the Bid is substantially responsive, the Purchaser shall correct arithmetical errors on the following basis:

- (a) if there is a discrepancy between the unit price and the line item total that is obtained by multiplying the unit price by the quantity, the unit price shall prevail and the line item total shall be corrected, unless in the opinion of the Purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the line item total as quoted shall govern and the unit price shall be corrected;
- (b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
- (c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.

#### 1.29.4

Provided that a bid is substantially responsive, the purchaser may request that a bidder may confirm the correctness of arithmetic errors as done by the purchaser within a target date. In case, no reply is received then the bid submitted shall be ignored and its Bid Security may be forfeited.

### 1.30 Examination of Terms & Conditions, Technical Evaluation

1.30.1 The Purchaser shall examine the Bid to confirm that all terms and conditions specified in the GCC and the SCC have been accepted by the Bidder without any material deviation or reservation.

1.30.2 The Purchaser shall evaluate the technical aspects of the Bid submitted in accordance with ITB Clause 1.15, to confirm that all requirements specified in Schedule of Requirements of the Bidding Documents have been met without any material deviation or reservation.

1.30.3 If, after the examination of the terms and conditions and the technical evaluation, the Purchaser determines that the Bid is not substantially responsive in accordance with ITB Clause 1.28, it shall reject the Bid.

### 1.31 Conversion to Single Currency

1.31.1 To facilitate evaluation and comparison, the Purchaser will convert all quoted prices expressed in various currencies to Indian Rupees at the selling exchange rate established by any bank in India as notified in the Newspapers on the date of bid opening (techno-commercial bid in the case of two-part bidding) For this purpose, exchange rate notified in [www.xe.com](http://www.xe.com) or [www.rbi.org](http://www.rbi.org) or any other website could also be used by the purchaser.

**1.32 Evaluation and comparison of bids**

1.32.1 The Purchaser shall evaluate each bid that has been determined, up to this stage of the evaluation, to be substantially responsive.

1.32.2 To evaluate a Bid, the Purchaser shall only use all the factors, methodologies and criteria defined below. No other criteria or methodology shall be permitted.

1.32.3 Purchase preference shall be given to all Class I local suppliers in all procurements undertaken by the purchaser in the following manner:

(a) Where the purchaser has restricted the eligibility of suppliers to Indian suppliers only as per para 23 of the invitation to bid

(b) In the procurements of goods or works, which are covered by para 3(b) of Order no.P-45021/2/2017-PP (BE-II) dated 16th September 2020 of Ministry of Commerce and Industry, Government of India and which are divisible in nature, the 'Class-I local supplier' shall get purchase preference over 'Class-II local supplier' as well as 'Non-local supplier', as per following procedure.

i. Among all qualified bids, the lowest bid will be termed as L1. If L1 is 'Class-I local supplier', the contract for full quantity will be awarded to L 1.

ii. If L1 bid is not a 'Class-I local supplier', 50% of the order quantity shall be awarded to L1. Thereafter, the lowest bidder among the 'Class-I local supplier' will be invited to match the L1 price for the remaining 50% quantity subject to the Class-I local supplier's quoted price falling within the margin of purchase preference, and contract for that quantity shall be awarded to such 'Class-I local supplier' subject to matching the L1 price. In case such lowest eligible 'Class-I local supplier' fails to match the L1 price or accepts less than the offered quantity, the next higher Class-I local supplier' within the margin of purchase preference shall be invited to match the L1 price for remaining quantity and so on, and contract shall be awarded accordingly. In case some quantity is still left uncovered on Class-I local suppliers, then such balance quantity may also be ordered on the L1 bidder.

(c) In the procurements of goods or works, which are covered by para 3(b) of Order no.P-45021/2/2017-PP (BE-II) dated 16th September 2020 of Ministry of Commerce and Industry, Government of India and which are not divisible in nature, and in procurement of services where the bid is evaluated on price alone, the 'Class-I local supplier' shall get purchase preference over Class-II local supplier as well as 'Non-local supplier', as per following procedure. **This tender is not divisible in nature.**

i. Among all qualified bids. the lowest bid will be termed as L1 . If L1 is 'Class-1 local supplier', the contract will be awarded to L1.



ii. If L1 is not 'Class-I local supplier', the lowest bidder among the 'Class-I local supplier', will be invited to match the L1 price subject to Class-I local supplier's quoted price falling within the margin of purchase preference and the contract shall be awarded to such 'Class-I local supplier' subject to matching the L1 price.

iii. In case such lowest eligible 'Class-I local supplier' fails to match the L1 price, the Class-I local supplier' with the next higher bid within the margin of purchase preference shall be invited to match the L1 price and so on and contract shall be awarded accordingly. In case none of the Class-I local supplier' within the margin of purchase preference matches the L1 price, the contract may be awarded to the L1 bidder.

(d) "Class-II local supplier" will not get purchase preference in any procurement, undertaken by procuring entities.

(e) Margin of Purchase Preference will be as per Order no.P-45021/2/2017-PP (BE-II) dated 16th September 2020 of Ministry of Commerce and Industry, Government of India

1.32.4 Further, In tender, where the items are divisible, the participating Micro and Small Enterprises(MSE) quoting price within price band of L1+15 (fifteen) per cent shall also be allowed to supply a portion of requirement by bringing down their price to L1 price in a situation where L1 price is from someone other than a MSE and such MSE shall be allowed to supply up to 25 (twenty) per cent of total tendered value. The 25 (twenty) per cent quantity is to be distributed proportionately among these bidders, in case there are more than one MSMEs within such price band.

1.32.5 Within this 25% (Twenty Percent) quantity, a purchase preference of four per cent (that is, 20 (twenty) per cent out of 25 (twenty) per cent) is reserved for MSEs owned by Scheduled Caste (SC)/Scheduled Tribe (ST) entrepreneurs (if they participate in the tender process and match the L1 price). Provided that, in event of failure of such SC/ST MSE to participate in tender process or meet tender requirements and L1 price, four per cent sub-target shall be met from other MSE.

1.32.6 In case the items are not divisible, then the MSE quoting price within price band L1 + 15% may be awarded for full/complete supply of total tendered quantity to MSE, considering the spirit of the policy for enhancing the Government procurement from MSEs. **This tender is not divisible in nature.**

1.32.7

The bids shall be evaluated on the basis of final landing cost which shall be arrived as under:

**For goods manufactured in India**

- (i) The price of the goods quoted ex-works including all taxes already paid.
- (ii) GST and other taxes, if any which will be payable on the goods if the contract is awarded.



- (iii) Charges for inland transportation, insurance and other local services required for delivering the goods at the desired destination.
- (iv) Wherever applicable, the cost towards the installation, commissioning, spares, extended warranty, AMC/CMC, site preparation and training including any incidental services, if any.

**For goods manufactured abroad**

- (i) The price of the goods, quoted on FCA (named place of delivery abroad) or FOB (named port of shipment), as specified in the bidding document.
- (ii) The charges for insurance and transportation of the goods to the port/place of destination.
- (iii) The agency commission etc., if any.
- (iv) Wherever applicable, the cost towards the installation, commissioning, spares, extended warranty, AMC/CMC, site preparation and training including any incidental services, if any.

**1.32.8**

The comparison between the indigenous and the foreign offers shall be made on FOR destination basis and CIF/CIP basis respectively. However, the CIF/CIP prices quoted by any foreign bidder shall be loaded further as under:

- (a) Towards customs duty and other statutory levies—as per applicable rates.
- (b) Towards custom clearance, inland transportation etc. - 2% of the CIF/CIP value.

The bidder should give a clear cut breakup of EXW, FOB/FCA, CIF/CIP prices to facilitate proper comparison with the purchaser reserving the right to order on either basis, failing which the bid would be summarily ignored.

**Note: Where there is no mention of packing, forwarding, freight, insurance charges, taxes etc. such offers shall be rejected as incomplete.**

**1.32.9** Orders for imported stores need not necessarily be on FOB/FCA basis rather it can be on the basis of any of the incoterm specified in ICC Incoterms 2010 as may be amended from time to time by the ICC or any other designated authority and favourable to the purchaser.

**1.32.10** Wherever the price quoted on FOB/FCA and CIF/CIP basis are the same, the Contract would be made on CIF / CIP basis only.

**1.32.11** The GCC and the SCC shall specify the mode of transport i.e., whether by air/ocean/road/rail.

**1.32.12** There is no provision to purchase optional items. The specifications embodied in the tender documents would be the basis of evaluating the responsiveness of bids

received.

1.32.13 The Purchaser shall compare all substantially responsive bids to determine the lowest valuated bid, in accordance with ITB Clause 1.32.

### **1.33 Contacting the Purchaser**

#### **1.33.1**

Subject to ITB Clause 1.25, no Bidder shall contact the Purchaser on any matter relating to its bid, from the time of the bid opening to the time the Contract is awarded.

#### **1.33.2**

Any effort by a Bidder to influence the Purchaser in its decisions on bid evaluation, bid comparison or contract award may result in rejection of the Bidder's bid.

### **1.34 Post qualification**

1.34.1 In the absence of pre-qualification, the Purchaser will determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated responsive bid is qualified to perform the contract satisfactorily, in accordance with the criteria listed in ITB Clause 1.14.

1.34.2 The determination will take into account the eligibility criteria listed in the bidding documents and will be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, as well as such other information as the Purchaser deems necessary and appropriate.

1.34.3 An affirmative determination will be a prerequisite for award of the contract to the Bidder. A negative determination will result in rejection of the Bidder's bid.

## **F. AWARD OF CONTRACT**

### **1.35 Negotiations**

1.35.1 Normally, there shall not be any negotiation. Negotiations, if at all, shall be an exception and only in the case of items with limited source of supply. Negotiations shall be held with the lowest evaluated responsive bidder. Counter offers tantamount to negotiations and shall be treated at par with negotiations in the case of one time purchases.

### **1.36 Award Criteria**

1.36.1 Subject to ITB Clause 1.39, the Purchaser will award the contract to the successful Bidder whose bid has been determined to be substantially responsive and has been determined to be the lowest evaluated bid, provided further that the Bidder is determined to be qualified to perform the contract satisfactorily. The details of the award would be hosted on the website of the Purchaser.

**1.37 Purchaser's right to vary Quantities at Time of Award**

1.37.1 The Purchaser reserves the right at the time of Contract award to increase or decrease the quantity of goods and services originally specified in the Schedule of Requirements to the extent of 25% without any change in unit price or other terms and conditions.

**1.38 Option Clause**

1.38.1 The Purchaser reserves the right to increase or decrease the quantity of the required goods up to 25% (Twenty-Five) per cent at any time, till final delivery date (or the extended delivery date of the contract), by giving reasonable notice even though the quantity ordered initially has been supplied in full before the last date of the delivery period (or the extended delivery period)

**1.39 Purchaser's right to accept Any Bid and to reject any or All Bids**

1.39.1 The Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or Bidders.

**1.40 Notification of Award****1.40.1**

Prior to the expiration of the period of bid validity, the Purchaser will notify the successful bidder in writing by registered letter or by cable or telex or fax or e mail that the bid has been accepted and a separate purchase order shall follow through post.

**1.40.2**

Until a formal contract is prepared and executed, the notification of award should constitute a binding contract.

**1.40.3**

Upon the successful Bidder's furnishing of the signed Contract Form and performance security pursuant to ITB Clause 1.43, the Purchaser will promptly notify each unsuccessful Bidder and will discharge its bid security.

**1.41 Signing of Contract**

1.41.1 Promptly after notification, the Purchaser shall send the successful Bidder the Agreement/Purchase Order.

1.41.2 Within twenty-one (21) days of date of the Purchase Order, the successful Bidder shall sign, date, and return it to the Purchaser.

**1.42 Order Acceptance**

1.42.1 The successful bidder should submit Order acceptance within 14 days from the date of issue of order/signing of contract, failing which it shall be presumed that the vendor is not interested and his bid security is liable to be forfeited pursuant to

clause 1.16.9 of ITB.

1.42.2 The order confirmation must be received within 14 days. However, the Purchaser has the powers to extend the time frame for submission of order confirmation beyond the original date. Even after extension of time, if the order confirmation is not received, the contract is liable to be cancelled provided that the purchaser, on being satisfied that it is not a case of cartelization and the integrity of the procurement process has been maintained, may, for cogent reasons, offer the next successful bidder an opportunity to match the financial bid of the first successful bidder, and if the offer is accepted, award the contract to the next successful bidder at the price bid of the first successful bidder.

### **1.43 Performance Security**

1.43.1 Within 21 days of receipt of the notification of award/PO, the Supplier shall furnish performance security (PS) in the amount specified in SCC, valid till 60 days after the warranty period.

1.43.2 The proceeds of the performance security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.

1.43.3 The Performance Security shall be denominated in Indian Rupees for the offers received for supplies within India and denominated in the currency of the contract in the case of offers received for supply from foreign countries or in equivalent Indian rupees in case the performance security is submitted by the Indian Agent.

1.43.4 In the case of imports, the PS may be submitted either by the principal or by the Indian agent and, in the case of purchases from indigenous sources, the PS may be submitted by either the manufacturer or their authorized dealer/bidder.

1.43.5 The Performance security shall be in one of the following forms:

- (a) A Bank guarantee or stand-by Letter of Credit issued by a Nationalized/ Scheduled bank located in India or a Foreign bank with preferably its operating branch in India in the form provided in the bidding documents. Or
- (b) A Banker's cheque or Account Payee demand draft in favour of the purchaser. Or,
- (c) A Fixed Deposit Receipt pledged in favour of the Purchaser.

1.43.6 The performance security will be discharged by the Purchaser and returned to the Supplier not later than 60 days following the date of completion of the Supplier's performance obligations, including any warranty obligations, unless specified otherwise in SCC, without levy of any interest.

1.43.7 In the event of any contract amendment, the supplier shall, within 21 days of receipt of such amendment, furnish the amendment to the performance security, rendering the same valid for the duration of the contract, as amended for further period of 60 days thereafter.

1.43.8 The performance security must be received within 21 days. However, the Purchaser has the powers to extend the time frame for submission of Performance Security (PS). Even after extension of time, if the PS is not received, the contract is liable to be cancelled provided that the purchaser, on being satisfied that it is not a case of cartelization and the integrity of the procurement process has been maintained, may, for cogent reasons, offer the next successful bidder an opportunity to match the financial bid of the first successful bidder, and if the offer is accepted, award the contract to the next successful bidder at the price bid of the first successful bidder.

1.43.9 Whenever, the bidder chooses to submit the Performance Security in the form of Bank Guarantee, then he should advise the banker issuing the Bank Guarantee to immediately send by Registered Post (A.D.) an unstamped duplicate copy of the Guarantee directly to the Purchaser with a covering letter to compare with the original BG for the correctness, genuineness, etc.

#### 1.44.0 Pre-bid Conference (PBC)

##### 1.44.1A

Pre-bid Conference shall be held as indicated in invitation to bid, if any. All prospective bidders are requested to kindly attend the Pre-bid Conference. In order to facilitate the purchaser the proper conduct of the Pre-bid Conference, all prospective bidders are requested to kindly submit their queries (with envelope bearing Tender No. and Date on top and marked "Queries for Pre-bid Conference") so as to reach the purchaser as indicated in invitation to bid. The purchaser shall answer the queries during the pre-bid conference, which would become a part of the proceedings of the Pre-bid Conference. The proceeding of the Pre Bid Conference would be hosted on the website of the purchaser. Before formulating and submitting their bids, all prospective bidders are advised to surf through the purchaser's website after the Pre-bid Conference, in order to enable them take cognizance of the revised tender conditions.

#### 1.45 Integrity Pact

1.45.1 Integrity Pact binds both buyers and sellers to ethical conduct and transparency in all activities from pre-selection of bidders, bidding and contracting, implementation, completion and operation related to the contract.

1.45.2 The Integrity pact essentially envisages an agreement between the prospective vendors/bidders and the buyer, committing the persons/officials of both sides, not to resort to any corrupt practices in any aspect/stage of the contract. Only those vendors/bidders, who commit themselves to such a Pact with the buyer, would be considered competent to participate in the bidding process. In other words, entering into this Pact would be a preliminary qualification. The essential ingredients of the Pact include:

- i) Promise on the part of the Purchaser to treat all bidders with equity and reason and not to seek or accept any benefit, which is not legally available;
- ii) Promise on the part of bidders not to offer any benefit to the employees of the Purchaser not available legally and also not to commit any offence under Prevention of Corruption Act, 1988 or Indian Penal Code 1860;

- iii) Promise on the part of bidders not to enter into any undisclosed agreement or understanding with other bidders with respect to prices, specifications, certifications, subsidiary contracts; etc.
- iv) Undertaking (as part of Fall Clause) by the bidders that they have not and will not sell the same material/equipment at prices lower than the bid price;
- iv) Foreign bidders to disclose the name and address of agents and representatives in India and Indian Bidders to disclose their foreign principals or associates;
- v) Bidders to disclose the payments to be made by them to agents/brokers or any other intermediary;
- vi) Bidders to disclose any past transgressions committed over the specified period with any other company in India or Abroad that may impinge on the anti-corruption principle;
- vii) Integrity Pact lays down the punitive actions for any violation.

1.45.3 Each page of such Integrity pact proforma would be duly signed by Purchaser's competent signatory. All pages of the Integrity Pact are to be returned by the bidder (along with the technical bid) duly signed by the same signatory who signed the bid, i.e. who is duly authorized to sign the bid and to make binding commitments on behalf of his company. Any bid not accompanied by Integrity Pact duly signed by the bidder shall be considered to be a non-responsive bid and shall be rejected straightway.

1.45.4 The SCC shall specify whether there is a need to enter into a separate Integrity pact or not.

1.45.5 The Integrity Pact would be effective from the date of invitation of bids till complete execution of the contract.

1.45.6 The names and contact details of the Independent External Monitors (IEM) on the event of the need of IP is as detailed in the SCC.

1.45.7 The modal format of IP is at Chapter-8.

**Special Instructions to the Bidders for the e-submission of the bids online through the e-Procurement Portal etenders.gov.in**

- a) Bidder should do Online Enrolment in this Portal using the option Click Here to Enroll available in the Home Page. Then the Digital Signature enrollment has to be done with the e-token, after logging into the portal. The e-token may be obtained from one of the authorized Certifying Authorities such as eMudhraCA/GNFC/IDRBT/MtnITrustline/SafeScript/TCS.
- b) Bidder then logs into the portal giving user id / password chosen during enrollment.
- c) The e-token that is registered should be used by the bidder and should not be misused by others.
- d) DSC once mapped to an account cannot be remapped to any other account. It can only be Inactivated.

- e) The Bidders can update well in advance, the documents such as certificates, purchase order details etc., under My Documents option and these can be selected as per tender requirements and then attached along with bid documents during bid submission. This will ensure lesser upload of bid documents.
- f) After downloading / getting the tender schedules, the Bidder should go through them carefully and then submit the documents as per the tender document, otherwise, the bid will be rejected.
- g) The BOQ template must not be modified /replaced by the bidder and the same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for that tender. Bidders are allowed to enter the Bidder Name and Values only.
- h) If there are any clarifications, this may be obtained online through the e-Procurement Portal, or through the contact details given in the tender document. Bidder should take into account of the corrigendum published before submitting the bids online.
- i) Bidder, in advance, should prepare the bid documents to be submitted as indicated in the tender schedule and they should be in PDF/XLS/RAR/DWF formats. If there is more than one document, they can be clubbed together.
- j) Bidder should arrange for the EMD as specified in the tender. The original should be posted/couriered/given in person to the Tender Inviting Authority, within the bid submission date and time for the tender.
- k) The bidder reads the terms and conditions and accepts the same to proceed further to submit the bids
- l) The bidder has to submit the tender document(s) online well in advance before the prescribed time to avoid any delay or problem during the bid submission process.
- m) There is no limit on the size of the file uploaded at the server end. However, the upload is decided on the Memory available at the Client System as well as the Network bandwidth available at the client side at that point of time. In order to reduce the file size, bidders are suggested to scan the documents in 75-100 DPI so that the clarity is maintained and also the size of file also gets reduced. This will help in quick uploading even at very low bandwidth speeds.
- n) It is important to note that, the bidder has to Click on the Freeze Bid Button, to ensure that he/she completes the Bid Submission Process. Bids Which are not Frozen are considered as Incomplete/Invalid bids and are not considered for evaluation purposes.
- o) In case of Offline payments, the details of the Earnest Money Deposit(EMD) document submitted physically to the Department and the scanned copies furnished at the time of bid submission online should be the same otherwise the Tender will be summarily rejected.
- p) The Tender Inviting Authority (TIA) will not be held responsible for any sort of delay or the difficulties faced during the submission of bids online by the bidders due to local issues.
- q) The bidder may submit the bid documents online mode only, through this portal. Offline documents will not be handled through this system.
- r) At the time of freezing the bid, the e-Procurement system will give a successful bid updation message after uploading all the bid documents submitted and then a bid summary will be shown with the bid no, date & time of submission of the bid with all other relevant details. The documents submitted by the bidders will be digitally signed using the e-token of the bidder and then submitted.
- s) After the bid submission, the bid summary has to be printed and kept as an acknowledgement as



a token of the submission of the bid. The bid summary will act as a proof of bid submission for a tender floated and will also act as an entry point to participate in the bid opening event.

- t) Successful bid submission from the system means, the bids as uploaded by the bidder is received and stored in the system. System does not certify for its correctness.
- u) The bidder should see that the bid documents submitted should be free from virus and if the documents could not be opened, due to virus, during tender opening, the bid is liable to be rejected v) The time that is displayed from the server clock at the top of the tender Portal, will be valid for all actions of requesting bid submission, bid opening etc., in the e-Procurement portal. The Time followed in this portal is as per Indian Standard Time (IST) which is GMT+5:30. The bidders should adhere to this time during bid submission.
- w) All the data being entered by the bidders would be encrypted at the client end, and the software uses PKI encryption techniques to ensure the secrecy of the data. The data entered will not be viewable by unauthorized persons during bid submission and not viewable by any one until the time of bid opening. Overall, the submitted bid documents become readable only after the tender opening by the authorized individual.
- x) During transmission of bid document, the confidentiality of the bids is maintained since the data is transferred over secured Socket Layer(SSL) with 256 bit encryption technology. Data encryption of sensitive fields is also done.
- y) The bidders are requested to submit the bids through online e-Procurement system to the TIA well before the bid submission end date and time (as per Server System Clock)



**CHAPTER 2****CONDITIONS OF CONTRACT****A GENERAL CONDITIONS OF CONTRACT (GCC)****Table of Contents**

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**GENERAL CONDITIONS OF CONTRACT (GCC)****2.1 Definitions****2.1.1**

The following words and expressions shall have the meanings hereby assigned to them:

- (a) "Contract" means the Contract Agreement entered into between the Purchaser and the Supplier, together with the Contract Documents referred to therein, including all attachments, appendices, and all documents incorporated by reference therein.
- (b) "Contract Documents" means the documents listed in the Contract Agreement, including any amendments thereto.
- (c) "Contract Price" means the price payable to the Supplier as specified in the Contract Agreement, subject to such additions and adjustments thereto or deductions there from, as may be made pursuant to the Contract.
- (d) "Day" means calendar day.
- (e) "Completion" means the fulfilment of the Goods and related Services by the Supplier in accordance with the terms and conditions set forth in the Contract.
- (f) "GCC" means the General Conditions of Contract.
- (g) "Goods" means all of the commodities, raw material, machinery and equipment, and/or other materials that the Supplier is required to supply to the Purchaser under the Contract.
- (h) "Related Services" means the services incidental to the supply of the goods, such as transportation, insurance, installation, training and initial maintenance and other such obligations of the Supplier under the Contract.
- (i) "SCC" means the Special Conditions of Contract.
- (j) "Subcontractor" means any natural person, private or government entity, or a combination of the above, to whom any part of the Goods to be supplied or execution of any part of the Related Services is subcontracted by the Supplier.
- (k) "Supplier" means the natural person, private or government entity, or a combination of the above, whose bid to perform the Contract has been accepted by the Purchaser and is named as such in the Contract Agreement.
- (l) The "Council" means the Council of Scientific & Industrial Research (CSIR), registered under the Societies Registration Act, 1860 of the Govt. of India having its registered office at 2, Rafi Marg, New Delhi-110001, India.
- (m) The "Purchaser" means any of the constituent Laboratory/Institute of the Council

situated at any designated place in India as specified in SCC.

(n) "The final destination," where applicable, means the place named in the SCC.

(o) For definitions regarding terms in Make in India please refer to order no. P-45021/2/2017-PP (BE-II) dated 16.09.2020 by Ministry of Commerce and Industry, Government of India and any amendment / revisions thereof.

(p) For definitions regarding terms in MSE refer MSE order 2012 and amendments and revisions thereof.

(q) For registration of bidders quoting for products from countries that share land border with India refer to Order No.P-45021/112/2020-PP(BE-II)(E-43780) dated 24.08.2020 of Ministry of Commerce and Industry, Department for Promotion of Industry and Internal Trade and any amendments thereon.

## 2.2 Contract Documents

2.2.1 Subject to the order of precedence set forth in the Contract Agreement, all documents forming the Contract (and all parts thereof) are intended to be correlative, complementary, and mutually explanatory. The Contract Agreement shall be read as a whole.

## 2.3 Code of Integrity

2.3.1 Without prejudice to and in addition to the rights of the Purchaser to other penal provisions as per the bid documents or contract, if the Purchaser comes to a conclusion that a (prospective) bidder/supplier, directly or through an agent, has violated this code of integrity in competing for the contract or in executing a contract, the Purchaser may take appropriate measures including one or more of the following:

- a) Cancellation of the relevant contract and recovery of compensation for loss incurred by the purchaser;
- b) Forfeiture or encashment of any other security or bond relating to the procurement;
- c) Recovery of payments including advance payments, if any, made by the Purchaser along with interest thereon at the prevailing rate.
- d) Provisions in addition to above:
  - 1) Removal from the list of registered suppliers and banning/debarment of the bidder from participation in future procurements of the purchaser for a period not less than one year;
  - 2) In case of anti-competitive practices, information for further processing may be filed under a signature of the Joint Secretary level officer, with the Competition Commission of India;
  - 3) Initiation of suitable disciplinary or criminal proceedings against any individual or staff found responsible.

**2.4 Joint Venture, Consortium or Association**

- 2.4.1 If the Supplier is a joint venture, consortium, or association, all of the parties shall be jointly and severally liable to the Purchaser for the fulfilment of the provisions of the Contract and shall designate one party to act as a leader with authority to bind the joint venture, consortium, or association. The composition or the constitution of the joint venture, consortium, or association shall not be altered without the prior consent of the Purchaser.

**2.5 Scope of Supply**

- 2.5.1 The Goods and Related Services to be supplied shall be as specified in Chapter 4 i.e. Specifications and allied technical details.

**2.6 Suppliers' Responsibilities**

- 2.6.1 The Supplier shall supply all the Goods and Related Services included in the Scope of Supply in accordance with Scope of Supply Clause of the GCC, and the Delivery and Completion Schedule, as per GCC Clause relating to delivery and document.

**2.7 Contract price**

- 2.7.1 Prices charged by the Supplier for the Goods supplied and the Related Services performed under the Contract shall not vary from the prices quoted by the Supplier in its bid.

**2.8 Copy Right**

- 2.8.1 The copyright in all drawings, documents, and other materials containing data and information furnished to the Purchaser by the Supplier herein shall remain vested in the Supplier, or, if they are furnished to the Purchaser directly or through the Supplier by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party.

**2.9 Application**

- 2.9.1 These General Conditions shall apply to the extent that they are not superseded by provisions in other parts of the Contract.

**2.10 Standards**

- 2.10.1 The Goods supplied and services rendered under this Contract shall conform to the standards mentioned in the Technical Specifications, and, when no applicable standard is mentioned, to the authoritative standard appropriate to the Goods' country of origin and such standards shall be the latest issued by the concerned institution.

**2.11 Use of Contract Documents and Information**

- 2.11.1 The Supplier shall not, without the Purchaser's prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern,

sample or information furnished by or on behalf of the Purchaser in connection therewith, to any person other than a person employed by the Supplier in performance of the Contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far, as may be necessary for purposes of such performance.

2.11.2 The Supplier shall not, without the Purchaser's prior written consent, make use of any document or information enumerated above except for purposes of performing the Contract.

2.11.3 Any document, other than the Contract itself, enumerated above shall remain the property of the Purchaser and shall be returned (in all copies) to the Purchaser on completion of the Supplier's performance under the Contract if so required by the Purchaser.

## **2.12 Patent Indemnity**

2.12.1 The Supplier shall, subject to the Purchaser's compliance with GCC Sub-Clause 2.12.2 Indemnify and hold harmless the Purchaser and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Purchaser may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract by reason of:

(a) the installation of the Goods by the Supplier or the use of the Goods in India; and

(b) the sale in any country of the products produced by the Goods.

2.12.2 If any proceedings are brought or any claim is made against the Purchaser, the Purchaser shall promptly give the Supplier a notice thereof, and the Supplier may at its own expense and in the Purchaser's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.

## **2.13 Performance Security**

2.13.1 Within 21 days of receipt of the notification of award/PO, the Supplier shall furnish performance security in the amount specified in SCC, valid till 60 days after the warranty period.

2.13.2 The proceeds of the performance security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.

2.13.3 The Performance Security shall be denominated in Indian Rupees for the offers received for supplies within India and denominated in the currency of the contract in the case of offers received for supply from foreign countries or in equivalent Indian Rupees in case the Performance Security is submitted by the Indian Agent.

2.13.4 In the case of imports, the PS may be submitted either by the principal or by the Indian agent and, in the case of purchases from indigenous sources, the PS may be submitted by either the manufacturer or their authorized dealer/bidder.

2.13.5 The Performance security shall be in one of the following forms:

- (a) A Bank guarantee or stand-by Letter of Credit issued by a Nationalized/Scheduled bank located in India or a bank located abroad in the form provided in the bidding documents.  
Or
- (b) A Banker's cheque or Account Payee demand draft in favour of the purchaser.  
Or
- (c) A Fixed Deposit Receipt pledged in favour of the Purchaser.

2.13.6 The performance security will be discharged by the Purchaser and returned to the Supplier not later than 60 days following the date of completion of the Supplier's performance obligations, including any warranty obligations, unless specified otherwise in SCC, without levy of any interest.

2.13.7 In the event of any contract amendment, the supplier shall, within 21 days of receipt of such amendment, furnish the amendment to the performance security, rendering the same valid for the duration of the contract, as amended for further period of 60 days thereafter.

2.13.8 The order confirmation must be received within 14 days. However, the Purchaser has the powers to extend the time frame for submission of order confirmation and submission of Performance Security (PS). Even after extension of time, if the order confirmation /PS are not received, the contract shall be cancelled provided that the purchaser, on being satisfied that it is not a case of cartelization and the integrity of the procurement process has been maintained, may, for cogent reasons, offer the next successful bidder an opportunity to match the financial bid of the first successful bidder, and if the offer is accepted, award the contract to the next successful bidder at the price bid of the first successful bidder.

2.13.9 Whenever, the bidder chooses to submit the Performance Security in the form of Bank Guarantee, then he should advise the banker issuing the Bank Guarantee to immediately send by Registered Post (A.D.) an unstamped duplicate copy of the Guarantee directly to the Purchaser with a covering letter to compare with the original BG for the correctness, genuineness, etc.

## 2.14 Inspections and Tests

2.14.1 The inspections & test, training required would be as detailed in Chapter-4 of the Bidding Document relating to Specification and Allied Technical details.

## 2.15 Packing

2.15.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination as indicated in the Contract. The packing shall be sufficient to withstand, without limitation, rough

handling during transit and exposure to extreme temperatures, salt and precipitation during transit and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.

2.15.2 The packing, marking and documentation within and outside the packages shall comply strictly with such special requirements as shall be provided for in the Contract including additional requirements, if any, specified in SCC and in any subsequent instructions ordered by the Purchaser.

## **2.16 Delivery and Documents**

2.16.1 Delivery of the Goods and completion and related services shall be made by the supplier in accordance with the terms specified by the Purchaser in the contract. The details of shipping and/or other documents to be furnished by the supplier are specified in SCC.

2.16.2 The terms FOB, FCA, CIF, CIP, etc. shall be governed by the rules prescribed in the current edition of the Inco terms published by the International Chambers of Commerce, Paris.

2.16.3 The mode of transportation shall be as specified in SCC. In case the purchaser elects to have the transportation done through Air, then air lifting needs to be done through Air India only. In case Air India does not operate in the Airport of despatch, then the bidder is free to engage the services of any other Airlines.

## **2.17 Insurance**

2.17.1 Should the purchaser elect to buy on CIF/CIP basis, the Goods supplied under the Contract shall be fully insured against any loss or damage incidental to manufacture or acquisition, transportation, storage and delivery in the manner specified in SCC.

2.17.2

Where delivery of the goods is required by the purchaser on CIF or CIP basis the supplier shall arrange and pay for Cargo Insurance, naming the purchaser as beneficiary and initiate & pursue claims till settlement, on the event of any loss or damage.

2.17.3 Where delivery is on FOB or FCA basis, insurance would be the responsibility of the purchaser.

2.17.4 With a view to ensure that claims on insurance companies, if any, are lodged in time, the bidders and /or the Indian agent shall be responsible for follow up with their principals for ascertaining the dispatch details and informing the same to the Purchaser and he shall also liaise with the Purchaser to ascertain the arrival of the consignment after clearance so that immediately thereafter in his presence the consignment could be opened and the insurance claim be lodged, if required, without any loss of time. Any delay on the part of the bidder/Indian Agent would be viewed seriously and he shall be directly responsible for any loss sustained by the purchaser on the event of the delay.

## **2.18 Transportation**



2.18.1 Where the Supplier is required under the Contract to deliver the Goods FOB, transport of the Goods, up to and including the point of putting the Goods on board the vessel at the specified port of loading, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract price. Where the Supplier is required under the Contract to deliver the Goods FCA, transport of the Goods and delivery into the custody of the carrier at the place named by the Purchaser or other agreed point shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract Price.

2.18.2 Where the Supplier is required under the Contract to deliver the Goods CIF or CIP, transport of the Goods to the port of destination or such other named place of destination in the Purchaser's country, as shall be specified in the Contract, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract Price.

2.18.3

In the case of supplies from within India, where the Supplier is required under the Contract to transport the Goods to a specified destination in India, defined as the Final Destination, transport to such destination, including insurance and storage, as specified in the Contract, shall be arranged by the Supplier, and the related costs shall be included in the Contract Price.

**2.19 Incidental Services**

2.19.1 The supplier may be required to provide any or all of the services, including training, if any, specified in chapter 4.

**2.20 Spare Parts**

2.20.1 The Supplier shall be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier:

- (a) Such spare parts as the Purchaser may elect to purchase from the Supplier, providing that this election shall not relieve the Supplier of any warranty obligations under the Contract; and
- (b) In the event of termination of production of the spare parts:
  - (i) Advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed requirements; and
  - (ii) Following such termination, furnishing at no cost to the Purchaser, the blueprints, drawings and specifications of the spare parts, if requested.

**2.21 Warranty**

2.21.1 The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.

2.21.2 The Supplier further warrants that the Goods shall be free from defects arising from



any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in India.

2.21.3 Unless otherwise specified in the SCC, the warranty shall remain valid for Twelve (12) months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the SCC, or for Eighteen (18) months after the date of shipment from the port or place of loading in the country of origin, whichever period concludes earlier.

2.21.4 The Purchaser shall give notice to the Supplier stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Supplier to inspect such defects.

2.21.5 Upon receipt of such notice, the Supplier shall, within a reasonable period of time, expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.

2.21.6 If having been notified, the Supplier fails to remedy the defect within a reasonable period of time; the Purchaser may proceed to take within a reasonable period such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

2.21.7 Goods requiring warranty replacements must be replaced on free of cost basis to the purchaser.

## **2.22 Terms of Payment**

2.22.1 The method and conditions of payment to be made to the Supplier under this Contract shall be as specified in the SCC.

2.22.2 The Supplier's request(s) for payment shall be made to the Purchaser in writing, accompanied by an invoice describing, as appropriate, the Goods delivered and the Services performed, and by documents, submitted pursuant to Delivery and document Clause of the GCC and upon fulfilment of other obligations stipulated in the contract.

2.22.3 Payments shall be made promptly by the Purchaser but in no case later than thirty (30) days after submission of the invoice or claim by the Supplier. While claiming the payment, the supplier should certify in the bill/invoice that the payment being claimed strictly in terms of the contract and all obligations on the part of the supplier for claiming the payment have been fulfilled as required under the contract.

2.22.4 Payment shall be made in currency as indicated in the contract.

## **2.23 Change Orders and Contract Amendments**

2.23.1 The Purchaser may at any time, by written order given to the Supplier pursuant to Clause on Notices of the GCC make changes within the general scope of the Contract in any one or more of the following:

- (a) Increase or decrease in the quantity required, exercise of quantity opinion clause;
- (b) Changes in schedule of deliveries and terms of delivery;
- (c) The changes in inspection arrangements;
- (d) Changes in terms of payments and statutory levies;
- (e) Changes due to any other situation not anticipated;

2.23.2 No changes in the price quoted shall be permitted after the purchase order has been issued except on account of statutory variations.

2.23.3 No variation or modification in the terms of the contract shall be made except by written amendment signed by the parties.

## **2.24 Assignment**

2.24.1 The Supplier shall not assign, in whole or in part, its obligations to perform under the Contract, except with the Purchaser's prior written consent.

## **2.25 Subcontracts**

2.25.1 The Supplier shall notify the Purchaser in writing of all subcontracts awarded under this Contract if not already specified in the bid. Such notification, in the original bid or later, shall not relieve the Supplier from any liability or duties or obligation under the contract.

## **2.26 Extension of time.**

2.26.1 Delivery of the Goods and performance of the Services shall be made by the Supplier in accordance with the time schedule specified by the Purchaser.

2.26.2 If at any time during performance of the Contract, the Supplier or its sub-contractor(s) should encounter conditions impeding timely delivery of the Goods and performance of Services, the Supplier shall promptly notify the Purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may, at its discretion, extend the Supplier's time for performance with or without liquidated damages, in which case the extension shall be ratified by the parties by amendment of the Contract.

2.26.3 Except as provided under the Force Majeure clause of the GCC, a delay by the Supplier in the performance of its delivery obligations shall render the Supplier liable to the imposition of liquidated damages pursuant to liquidated damages Clause of the GCC unless an extension of time is agreed upon pursuant to above clause without the application of penalty clause.

## **2.27 Liquidated Damages**

2.27.1 Subject to GCC Clause on Force Majeure, if the Supplier fails to deliver any or all of the Goods or to perform the Services within the period(s) specified in the Contract, the Purchaser shall, without prejudice to its other remedies under the Contract, deduct from the Contract Price, as penalty, a sum equivalent to the percentage

specified in SCC of the delivered price of the delayed Goods or unperformed Services or contract value in case the delivered price of the delayed goods or unperformed services cannot be ascertained from the contract, for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the Percentage specified in SCC. Once the maximum is reached, the Purchaser may consider termination of the Contract pursuant to GCC Clause on Termination for Default.

## **2.28 Termination for Default**

2.28.1 The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the Contract in whole or part

- (a) If the Supplier fails to deliver any or all of the Goods within the period(s) specified in the contract, or within any extension thereof granted by the Purchaser pursuant to GCC Clause on Extension of Time; or
- (b) If the Supplier fails to perform any other obligation(s) under the Contract.
- (c) If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent or collusive or coercive practices etc as defined in GCC Clause and ITB clause on code of integrity in competing for or in executing the Contract.

2.28.2 In the event the purchaser terminates the contract in whole or in part, he may take recourse to any one or more of the following action:

- (a) The Performance Security is to be forfeited;
- (b) The purchaser may procure, upon such terms and in such manner as it deems appropriate, stores similar to those undelivered, and the supplier shall be liable for all available actions against it in terms of the contract.
- (c) However, the supplier shall continue to perform the contract to the extent not terminated.

## **2.29 Force Majeure**

2.29.1 Notwithstanding the provisions of GCC Clauses relating to extension of time, Liquidated damages and Termination for Default the Supplier shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

2.29.2 For purposes of this Clause, "Force Majeure" means an event or situation beyond the control of the Supplier that is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of the Supplier. Such events may include, but not be limited to, acts of the Purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.

2.29.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof within 21 days of its occurrence. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

2.29.4 If the performance in whole or in part or any obligations under the contract is prevented or delayed by any reason of Force Majeure for a period exceeding 60 days, either party may at its option terminate the contract without any financial repercussions on either side.

## **2.30 Termination for Insolvency**

2.30.1 The Purchaser may at any time terminate the Contract by giving written notice to the Supplier, if the Supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy, which has accrued or will accrue thereafter to the Purchaser.

## **2.31 Termination for Convenience**

2.31.1 The Purchaser, by written notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.

2.31.2 The Goods that are complete and ready for shipment within 30 days after the Supplier's receipt of notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect:

- (a) To have any portion completed and delivered at the Contract terms and prices; and/or
- (b) To cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and for materials and parts previously procured by the Supplier.

## **2.32 Settlement of Disputes**

2.32.1 The Purchaser and the supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.

2.32.2 If, after twenty-one (21) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or the Supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given. Any dispute or difference in respect of which a notice of intention to commence arbitration has been given in

accordance with this Clause shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Goods under the Contract.

2.32.3 The dispute settlement mechanism/arbitration proceedings shall be concluded as under:

(a) If any dispute or difference arises between the parties hereto as to the construction, interpretation, effect and implication of any provision of this agreement including the rights or liabilities or any claim or demand of any party against other or in regard to any other matter under these presents but excluding any matters, decisions or determination of which is expressly provided for in this Agreement, such disputes or differences shall be referred to an Arbitral Bench consisting of three Arbitrators, one each to be appointed by each party and the two Arbitrators shall appoint a third Arbitrator who shall be the presiding Arbitrator. A reference to the Arbitration under this Clause shall be deemed to be submission within the meaning of the Arbitration and Conciliation Act, 1996 and the rules framed thereunder for the time being in force. Each party shall bear and pay its own cost of the arbitration proceedings unless the Arbitrators otherwise decides in the Award.

(b) In the case of a dispute between the purchaser and a Foreign Supplier, the dispute shall be settled by arbitration in accordance with provision of sub-clause (a) above. But if this is not acceptable to the supplier then the dispute shall be settled in accordance with provisions of UNCITRAL (United Nations Commission on International Trade Law) Arbitration Rules.

2.32.4 The venue of the arbitration shall be the place from where the purchase order or contract is issued.

2.32.5 Notwithstanding, any reference to arbitration herein,

(a) The parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and

(b) the Purchaser shall pay the Supplier any monies due the Supplier.

## **2.33 Governing Language**

2.33.1 The contract shall be written in English language which shall govern its interpretation. All correspondence and other documents pertaining to the Contract, which are exchanged by the parties, shall be written in the English language only.

## **2.34 Applicable Law**

2.34.1 The Contract shall be interpreted in accordance with the laws of the Union of India and all disputes shall be subject to place of jurisdiction as specified in SCC.

## **2.35 Notices**

2.35.1 Any notice given by one party to the other pursuant to this contract/order shall be

sent to the other party in writing or by cable, telex, FAX, e-mail or and confirmed in writing to the other party's address specified in the SCC.

2.35.2 A notice shall be effective when delivered or on the notice's effective date, whichever is later.

## **2.36 Taxes and Duties**

2.36.1 For goods manufactured outside India, the Supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside India.

2.36.2 For goods Manufactured within India, the Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred till its final manufacture/production.

2.36.3 If any tax exemptions, reductions, allowances or privileges may be available to the Supplier in India, the Purchaser shall make its best efforts to enable the Supplier to benefit from any such tax savings to the maximum allowable extent.

2.36.4 All payments due under the contract shall be paid after deduction of statutory levies (at source) (like IT, etc.) wherever applicable.

2.36.5 **Customs Duty** – If the supply is from abroad this Institute is permitted to import goods as per notification No.51/96 – Customs and pay a concessional duty up to 5% as per notification 24/2002 – Customs on all imports.

## **2.37 Right to use Defective Goods**

2.37.1 If after delivery, acceptance and installation and within the guarantee and warranty period, the operation or use of the goods proves to be unsatisfactory, the Purchaser shall have the right to continue to operate or use such goods until rectifications of defects, errors or omissions by repair or by partial or complete replacement is made without interfering with the Purchaser's operation.

## **2.38 Protection against Damage**

2.38.1 The system shall not be prone to damage during power failures and trip outs. The normal voltage and frequency conditions available at site as under:

- (a) Voltage 230 volts – Single phase/ 415 V 3 phase (+\_ 10%)
- (b) Frequency 50 Hz.

## **2.39 Site preparation and installation**

2.39.1 The Purchaser is solely responsible for the construction of the equipment sites in compliance with the technical and environmental specifications defined by the Supplier. The Purchaser will designate the installation sites before the scheduled installation date to allow the Supplier to perform a site inspection to verify the appropriateness of the sites before the installation of the Equipment, if required. The supplier shall inform the purchaser about the site preparation, if any, needed for installation, of the goods at the purchaser's site immediately after notification of

award/contract.

## **2.40 Import and Export Licenses**

2.40.1 If the ordered materials are covered under restricted category of EXIM policy in India the Vendor / Agent may intimate such information for obtaining necessary, license in India.

2.40.2 If the ordered equipment is subject to Vendor procuring an export license from the designated government agency / country from where the goods are shipped / sold, the vendor has to mention the name, address of the government agency / authority. The vendor must also mention the time period within which the license will be granted in normal course.

## **2.41 Risk Purchase Clause**

2.41.1 If the supplier fails to deliver the goods within the maximum delivery period specified in the contract or Purchase Order, the purchaser may procure, upon such terms and in such a manner as it deems appropriate, Goods or Services similar to those undelivered and the Supplier shall be liable to the purchaser for any excess costs incurred for such similar goods or services.

## **2.42 Option Clause**

2.42.1 The Purchaser reserves the right to increase or decrease the quantity of the required goods up to 25% (Twenty-Five) per cent at any time, till final delivery date (or the extended delivery date of the contract), by giving reasonable notice even though the quantity ordered initially has been supplied in full before the last date of the delivery period (or the extended delivery period)

## **2.43 Integrity Pact**

2.43.1 The SCC shall specify whether there is a need to enter into a separate Integrity pact or not.

2.43.2 The names and contact details of the Independent External Monitors (IEM) on the event of the need of IP is as detailed in the SCC.

## **2.44 Order Acceptance**

2.44.1 The successful bidder should submit Order acceptance within 14 days from the date of issue of order/signing of contract, failing which it shall be presumed that the vendor is not interested and his bid security is liable to be forfeited pursuant to clause 1.16.9 of ITB.

**B SPECIAL CONDITIONS OF CONTRACT****Table of Contents**

| Sl. No. | GCC Clause    |
|---------|---------------|
| 01.     | GCC 2.1.1 (m) |
| 02.     | GCC 2.1.1 (n) |
| 03.     | GCC 2.13.1    |
| 04.     | GCC 2.15.2    |
| 05.     | GCC 2.16.1    |
| 06.     | GCC 2.16.3    |
| 07.     | GCC 2.17.1    |
| 08.     | GCC 2.21.3    |
| 09.     | GCC 2.22.1    |
| 10.     | GCC 2.27.1    |
| 11.     | GCC 2.27.1    |
| 12.     | GCC 2.34.1    |
| 13.     | GCC 2.35.1    |
| 14.     | GCC 2.43.1    |
| 15.     | GCC 2.43.2    |



**Special conditions of contract (SCC)**

The following Special Conditions of Contract (SCC) shall supplement and / or amend the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

| S.N. | GCC Clause Ref | Condition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1    | GCC 2.1.1(l)   | The Purchaser is: <b>Director, CSIR –CECRI, Karaikudi</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 2    | GCC 2.1.1(m)   | The Final Destination is: <b>CSIR-CECRI, CECRI Chennai unit, Taramani, Chennai 600113.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 3    | GCC 2.13.1     | The amount of the Performance Security shall be 3 % of the contract value.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 4    | GCC 2.15.2     | <p>The marking and documentation within and outside the packages shall be:</p> <p>(a) Each package should have a packing list within it detailing the part No(s), description, quantity etc.</p> <p>(b) Outside each package, the contract No., the name and address of the purchaser and the final destination should be indicated on all sides and top.</p> <p>(c) Each package should be marked as 1/x, 2/x, 3/x.....x/x, where “x” is the total No. of packages contained in the consignment.</p> <p>(d) All the sides and top of each package should carry an Appropriate indication/ label/ stickers indicating the precautions to be taken while handling/storage.</p>                                                                                                                                                                                                                                                                |
| 5    | GCC 2.16.1     | <p>Details of Shipping and other Documents to be furnished by the Supplier are :</p> <p><u>For goods manufactured within India</u></p> <p>Within 24 hours of dispatch, the supplier shall notify the purchaser the complete details of dispatch and also supply following documents by registered post / speed post and copies thereof by FAX/Email.</p> <p>(a) Two copies of Supplier’s Invoice indicating, <i>inter-alia</i> description and specification of the goods, quantity, unit price, total value;</p> <p>(b) Packing list;</p> <p>(c) Certificate of country of origin;</p> <p>(d) Insurance certificate, if required under the contract;</p> <p>(e) Railway receipt/Consignment note;</p> <p>(f) Manufacturer’s guarantee certificate and in-house inspection certificate;</p> <p>(g) Inspection certificate issued by purchaser’s inspector, if any; and</p> <p>(h) Any other document(s) as and when required in terms of</p> |

|   |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|   |            | <p>the contract.</p> <p>Note:</p> <p>01. The nomenclature used for the item description in the invoices(S), packing list(s) and the delivery note(s) etc. should be identical to that used in the contract. The dispatch particulars including the name of the transporter should also be mentioned in the Invoice(s).</p> <p>02. The above documents should be received by the Purchaser before arrival of the Goods and, if not received, the Supplier will be responsible for any consequent expenses.</p> <p><u>For goods manufactured abroad</u></p> <p>Within 24 hours of dispatch, the supplier shall notify the purchaser the complete details of dispatch and also supply following documents by Registered Post/courier and copies thereof by FAX/Email.</p> <p>(a) Two copies of supplier's Invoice giving full details of the goods including quantity, value, etc.;</p> <p>(b) Packing list;</p> <p>(c) Certificate of country of origin issued by supplier;</p> <p>(d) Manufacturer's guarantee and Inspection certificate;</p> <p>(e) Inspection certificate issued by the Purchaser's Inspector, if any;</p> <p>(f) Insurance Certificate, if required under the contract;</p> <p>(g) Name of the Vessel/Carrier;</p> <p>(h) Bill of Lading;</p> <p>(i) Any other document(s) as and when required in terms of the contract.</p> <p>Note:</p> <p>01. The nomenclature used for the item description in the Invoices (s), packing list(s) and the delivery note(s) etc. should be identical to that used in the contract. The dispatch particulars including the name of the transporter should also be mentioned in the Invoice(s).</p> <p>02. The above documents should be received by the Purchaser before arrival of the Goods and, if not received, the Supplier will be responsible for any consequent expenses.</p> |
| 6 | GCC 2.16.3 | <p>In case of supplies from within India, the mode of transportation shall be by <b>Road. (retain one only)</b></p> <p>In case of supplies from abroad, the mode of transportation shall be <b>by Road / Ocean.</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 7 | GCC 2.17.1 | <p>The Insurance shall be for an amount equal to 110% of the CIF value of the contract from within "warehouse to warehouse (final destination)" on "all risk basis" including strikes, riots and civil commotion.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

|    |            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8  | GCC 2.21.3 | The period of validity of the Warranty shall be <b>12 (twelve) months from the date of acceptance.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 9  | GCC2.22.1  | <p>The method and conditions of payment to be made to the Supplier under this Contract shall be as follows:<br/> <u>Payment for Goods supplied from abroad: Foreign LC</u><br/>           Payment of foreign currency portion shall be made in currency of the Contract in the following manner:<br/>           (a) On Shipment: Ninety percent ( 90 %) of the Contract Price of the Goods shipped shall be paid through irrevocable letter of credit opened in favour of the Supplier in a bank in its country, upon submission of documents specified in GCC Clause 2.16.</p> <p>(b) On Acceptance: Ten percent ( 10 %) of the Contract Price of Goods received shall be paid within thirty (30) days of receipt of Goods and successful installation &amp; commissioning upon submission of claim supported by the acceptance certificate issued by the Purchaser along with the Performance security, if any.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|    | GCC 2.22.1 | <p>The L/C will be confirmed at the suppliers cost, if requested specifically by the supplier. All bank charges abroad shall be to the account of the beneficiary i.e. supplier and all bank charges in India shall be to the account of the opener i.e. purchaser. If L/C is requested to be extended/ reinstated for reasons not attributable to the purchaser, the charges thereof would be to the suppliers' account. Payment of local currency portion shall be made in Indian Rupees within thirty (30) days of presentation of claim supported by a certificate from the Purchaser declaring that the Goods have been delivered and that all other contracted Services have been performed. The LC for 100% value of the contract shall be established after deducting the agency commission payable if any, to the Indian agent from the FOB/FCA value.</p> <p><u>Payment for Goods and Services supplied from India:</u><br/>           The payment shall be made in Indian Rupees, as follows:<br/>           Indian LC<br/>           (a) After shipment : Ninety percent ( 90 %) of the Contract Price shall be paid on receipt of the Goods in good condition and upon submission of the documents specified in GCC Clause 16.1</p> <p>(b) On Acceptance: The remaining Ten percent ( 10 %) of the Contract value shall be paid to the Supplier within thirty (30) days after the date of the acceptance certificate issued by the Purchaser subject to submission of performance security, if any.</p> <p><b>Note:</b><br/> <b>All payments due under the Contract shall be paid after deduction of statutory levies at source (like ESIC, Income Tax, etc.), wherever applicable.</b></p> |
| 10 | GCC 2.27.1 | The penalty shall be 0.5% per week or part of a week towards late delivery and towards delay in installation and                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

मिसिल संख्या

File No. CECRI / 2021 / 5739

दिनांक : 05.03.2021

Date 05.03.2021.

|    |            |                                                                                                                                                                                                 |
|----|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    |            | commissioning.                                                                                                                                                                                  |
|    | GCC 2.27.1 | The maximum amount of penalty shall be 10%                                                                                                                                                      |
| 11 | GCC 2.34.1 | The place of jurisdiction is Karaikudi                                                                                                                                                          |
| 12 | GCC 2.35.1 | For notices, the Purchaser's address is<br>The Director, CSIR-CECRI, Karaikudi 630003<br>Attention: stores and Purchase Officer                                                                 |
| 13 | GCC 2.35.1 | Telephone: :+91-4565 - 241226, 241217<br>Electronic mail address <a href="mailto:spo@cecri.res.in">spo@cecri.res.in</a> and<br><a href="mailto:purchase@cecri.res.in">purchase@cecri.res.in</a> |
| 14 | GCC 2.43.1 | <b>The integrity pact is to be signed.</b>                                                                                                                                                      |
| 15 | GCC 2.43.2 | <i>The name and contact details of the IEMs are as under:<br/>Shri Anand Deep, 117/363,, H-I, Next to Gurudwara Pandu<br/>Nagar, Kanpur, 208005 Uttar Pradesh.</i>                              |

### **CHAPTER 3**

#### **Schedule of Requirements**

*(Notes for internal use only)*

- 3.1** *The Schedule of Requirements shall be included in the bidding documents by the Purchaser, and shall cover, at a minimum, a description of the goods and services to be supplied.*
- 3.2** *The objective of the Schedule of Requirements is to provide sufficient information to enable bidders to prepare their bids efficiently and accurately, in particular, the Price Schedule, for which a form is provided in Chapter 5. In addition, the Schedule of Requirements, together with the Price Schedule, should serve as a basis in the event of quantity variation at the time of award of contract pursuant to ITB Clause 1.37.*

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File No. CECRI / 2021 / 5739

दिनांक : 05.03.2021

Date 05.03.2021.

**CHAPTER 3**

(To be filled by the bidder as appropriate and enclosed with the Technical Bid)

**SCHEDULE OF REQUIREMENT**

| Sl. No. | Brief Description of Goods & Services | Quantity | Physical Unit | Final destination/ Place | Delivery Schedule (to be filled by the bidder) | Time frame required for conducting installation, commissioning of the eqpt., acceptance test, etc. after the arrival of consignment (to be filled by the bidder) |
|---------|---------------------------------------|----------|---------------|--------------------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |                                       |          |               |                          |                                                |                                                                                                                                                                  |

Term of delivery: FOB / FCA / CIF / CIP \_\_\_\_\_ (named port of shipment or named place of delivery)  
(retain only one)

Period of delivery shall count from : \_\_\_\_\_

(to be filled by the bidder)

Scope of Supply : \_\_\_\_\_

Training requirement: \_\_\_\_\_

(Location, no. of persons, period of training, nature of training)

Date : .....

Place : .....

Signature of the Bidder

**Notes for Bidders:**

- (1) The delivery schedule shall clearly indicate the time period within which the successful bidder must deliver the consignment in full from the date of establishment of LC or from the date of contract or from the date of advance payment etc. It should also indicate separately the time period desired for installation and commissioning of the equipment after arrival of the consignment at the premises of the Purchaser.
- (2) The date or period for delivery should be carefully specified, taking into account
  - (a) The implications of delivery terms stipulated in the Instructions to Bidders pursuant to the Incoterms rules (i.e., EXW, or CIF, CIP, FOB, FCA terms—that “delivery” takes place when goods are delivered to the carriers), and
  - (b) The date prescribed herein from which the delivery obligations start (i.e., notice of award, contract signature, opening or confirmation of the letter of credit, date of releasing advance payment etc.).

## Chapter 4

### Specifications and Allied Technical Details

#### 4.1 End Use: and 4.2 Specifications

## 100 MWh LITHIUM ION BATTERY PLANT ON TURNKEY BASIS

### A. General Requirement:

**Fully automatic Lithium Ion battery plant** of production capacity of 100 MWh/Annum for producing 26650 cylindrical cells and 20 Ah prismatic cells; 3 shifts per day; 8 hours per shift and 24 working days in a month; production capacity 5000 cylindrical cells / shift and 500 prismatic cells / shift.

The plant includes:

- space for raw material storage (separate space for 3 months and daily storage), cell formation, testing, aging, grading
- Plant area containing:
  - Manufacturing line machinery from slurry making to cell assembly (Area: )
  - Auxiliary support and service

### B. Cell Chemistry

Anode: MCMB

Cathode: NMC (532)

### C. Cell Configurations

#### i. Cylindrical Cell

|              |   |       |
|--------------|---|-------|
| Size         | : | 26650 |
| Cell Voltage | : | 3.6 V |
| Capacity     | : | 5 Ah  |

#### ii. Prismatic Cell (Stacked electrodes)

|              |   |                 |
|--------------|---|-----------------|
| Cell Voltage | : | 3.6 V           |
| Capacity     | : | 20 Ah and 50 Ah |

### D. Location of the proposed plant:

CSIR – Central Electrochemical Research Institute, CSIR – Madras Complex (CMC), Tharamani, Chennai (Site layout shown below)

|         |   |                            |
|---------|---|----------------------------|
| Length  | : | 71 m                       |
| Breadth | : | 58 m                       |
| Area    | : | 4118 ~ 4000 m <sup>2</sup> |

**E. Scope of CECRI - BRIEFLY GIVEN BELOW. DEFINED MORE IN 4.3 / 4.4.**

- a. Hand-over of site
- b. Furnishing certificates like GST concessional, Customs duty exemption (whichever applies) etc.
- c. Direct payment of customs duty etc. for any imported items
- d. Regular review of the project

**F. Stores and Purchase Officer (SPO) will be the single point contact with CSIR-CECRI throughout.****G. Vendor's Scope:****1. Plant design and Construction**

Design of plant lay out should consist of a civil structure with foundation level to sustain future expansion (four floors) detailed as follows:

- a. Should consist of Ground floor, mezzanine floor and First floor.  
Should contain mezzanine walkways throughout the floor for emergency exit, necessary ramps, industrial lift, external staircase, fire hydrants, etc. All floor space should bear the maximum load (weight of the heaviest machine supplied by the firm)

Ground Floor:

- Plant Area (unit operation 2 – 16, 21 – 28 and 30), Raw material storage (unit operation 1), fire hydrants, loading/unloading bay, necessary ramps, Forklift parking space etc. Utility space and other amenities as specified.

First Floor:

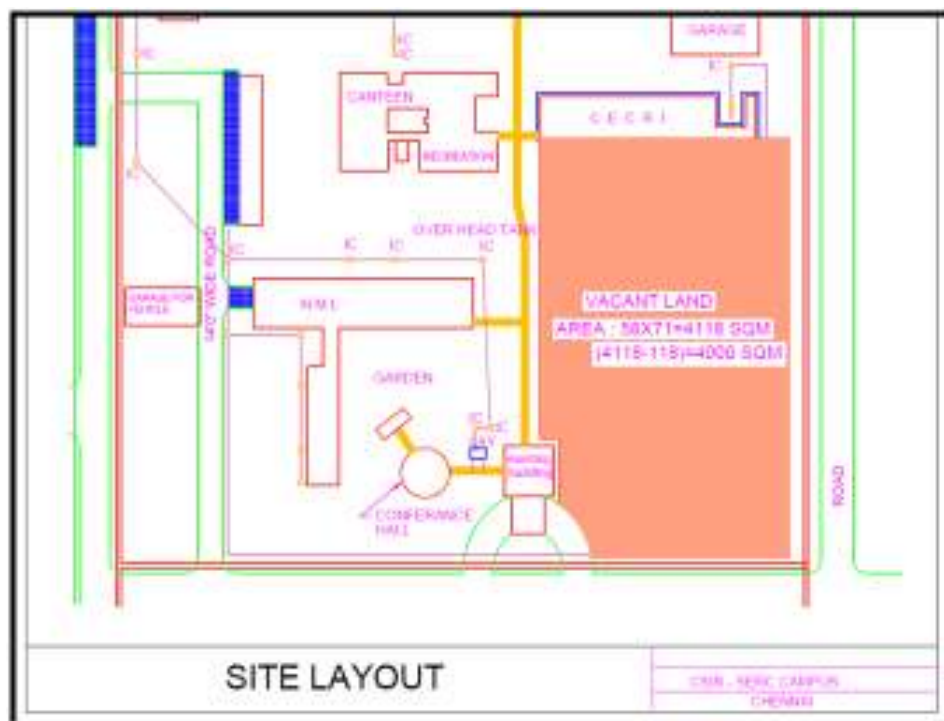
- Office space, Control room, Utility space, quality control lab and other amenities as specified.
- b. Area for Cell formation, aging, grading, finished product storage, (Unit operations 17-20), fire hydrants, loading/unloading bay, necessary ramps, Forklift parking space etc. This area for cell formation, aging, storage etc. should be contained in fire proof enclosure with all safety norms / requirements for such area.

Other amenities:

- 1) Water supply
- 2) Wash rooms
- 3) Lounge etc.
- 4) Cylinder house (Argon, helium)
- 5) Nitrogen plant
- 6) Dry compressed air plant (< 0.5% RH)
- 7) Cooling water plant
- 8) DI water plant
- 9) Vacuum plant
- 10) Gas lines
- 11) DI water lines



- 12) Compressed air line
- 13) Vacuum line
- 14) Cooling water line
- 15) De-humidifier plant, Air-handling facility, chiller unit
- 16) Electrical sub-station
- 17) Captive power gen-set (Wattage/rating to be indicated)
- 18) Intercom facility – wall mounted telephones with caller id to be provided and fixed – 50 lines approx.
- 19) CCTV – minimum 15 – Camera should be capable of focusing at least 15 meters distance
- 20) ABC Fire extinguisher (100 numbers)
- 21) Overhead water tank
- 22) Security room
- 23) Fenced boundary
- 24) Face detection access control
- 25) Store (Delivery & Supply)
- 26) Elevator (8 Feet x 8 Feet)
- 27) Vessels cleaning room to be near mixing room
- 28) Quality control room - Room temperature:  $25 \pm 3$  degree C, Relative humidity: < 70%
- 29) Well-furnished incubation space – at least 4 rooms
- 30) Well-furnished meeting space – one room
- 31) Office space for CSIR employees – 4 rooms
- 32) Locker space and changing area for workers – 40 workers
- 33) One Ton Hydraulic fork lift – 2 Number; appropriate HDPE plastic pallet for one ton capacity – 10 Number; Material movement trolleys - 10 Number
- 34) Small workshop
- 35) Electrical & mechanical maintenance room
- 36) Personal Protective Equipment vending station
- 37) Electrical control room
- 38) Plant Control Room cum Plant Manager Room -
  - i. Central display system for integration and cumulative data logging through Networking of HMI interfaces of all assembly line machineries with regard to date & time, run time, down time, setting parameters, safety alarm, defect notification, batch number etc.
  - ii. CCTV monitoring room: LED 45" console to be provided at control room; 4 channel digital video recorder (or similar/better system); Suitable sized (> 5 TB) HDD for data back-up and spare to replace
- 39) Office space (cabin for 20 members, 10 m X 20 m)
- 40) Quality control laboratory
- 41) Worker rest hall with locker facility (30 members)
- 42) Smart meeting room (20 number capacity, fully furnished, VC and slide projection, mic and audio system)
- 43) Incubation centre (4 rooms; size:30 feet X 20 feet)



## 2. Technical aspects:

- List of major Unit Operations and the detailed sub unit operations involved in the manufacturing process to be provided.
- The line machinery required to cover all unit operations starting from slurry making to cell assembly, ageing, formation, grading, storage, packaging and delivery, material movement between unit operations etc. Provide foot print, weight, production capacity / shift, Power rating of each unit operation and the machinery involved, environment required (RH and Temperature).
- All software required for plant operation needs to be certified and accessible for minimum of 5 years and upgradable if required
- Certification on no design controversy
- List of quality control points and the measurement details in the automatic manufacturing line explicitly indicating in-line and off line measurement.
- Design and supply of required dehumidifying plant to maintain the required RH and Dew point for the different unit operations.
- Waste management and disposal protocol.
- Details regarding number of man power requirement in each shift. Clear indication of manual intervention points in the list of unit operations.
- Building Construction – Reputed Architecture Company as consultant; Structural testing and Proof test to be obtained from SERC, Chennai or any IITs.; Building Construction to be complied with Indian Standard Code and National Building code. Earthquake resistant building with Lightning arrester.
- Nature of Site: Clay Soil, Water logging area – site specific construction plan is required based on the soil test.

- Arrangement plans and positioning of equipment at specific location.
- Plant design should be made such that any material transporting requirements are met
- Detailed time line / GANT chart for the entire project from the date of Purchase order / contract to hand over of the plant to CECRI.
- Percentage of rejection for each unit operation and overall should be brought out.
- All auxiliary support and service equipment
  - **Design, supply and construction of required electrical infrastructure** including Transformers, sub-station, EB power supply, stabilized power supply, plant lighting, power back up facilities like diesel generator, diesel sump, UPS etc.
  - **Design and construction of the required civil infrastructures like** office room, Quality control laboratory, plant control room, security monitoring room, small meeting room, intercom facility, incubation centre, plant safety, overhead water tank and other amenities like water supply, wash rooms, lounge etc.
  - **Design and supply of all other relevant utilities** like dry air compressor, air conditioners, Nitrogen plant, gas manifolds, gas bank / gas cylinders, all piping.
  - **Water supply**, water sump, distribution, drainage etc. from and to the plant etc.
  - **Quality control:** All the internal quality controls available for each unit operation. The number of QC points, and number of QC steps should be brought out.

### 3. Plant Safety Protocols:

- Plant layout needs to be approved for safety by a competent authority
- Third party plant safety audit and fire safety system report are required
- **Plant safety:** (CCTV, access control, emergency exit and luminous pathways, alarm systems)
- Fire alarm system
- Fire safety (smoke and fire detection, automatic fire fighting)
- Personal Protective Equipment Vending station at appropriate places
- Ample spacing around the equipment for operation and maintenance
- Safety equipment, safety sign boards, fire extinguishers, large water storage, sprinkler and pumping system for emergency firefighting.
- Emergency Showers

### 4. CAD drawings and layouts should be submitted for:

- a. Plant lay out
- b. Dry room layout
- c. Plant design showing all unit operations, sub unit operations including zone wise
- d. Electrical layout
- e. Water line layout

- f. Gas line layout
- g. CCTV layout
- h. Fire safety layouts (extinguishers, alarms, sensors etc.)

#### 5. Statutory Approvals

- a. CMDA Approval
- b. Approval from Municipal corporation
- c. Electricity Board approval
- d. Fire and safety approval
- e. Pollution Control board approval
- f. Environmental Impact Assessment (EIA) Approval
- g. Any other necessary approvals  
(Anything to be added)

#### 6. Miscellaneous:

- Operation and maintenance for 5 years after the date of commissioning.
- Overall Insurance coverage including transportation, storing, construction and erection (Equipment & Building)
- Accidental insurance coverage (Manpower)
- Storing of equipment to accommodate any delay in construction
- All other miscellaneous services like customs clearance, project implementation supervision, site supervision, liaison with all authorities, loading, unloading, movement of men and materials at site etc.
- Vendor should conduct daily review, weekly review, monthly review of the progress vis a vis the committed time line. Weekly and monthly progress reports to be done jointly with CECRI and furnish reports.
- Inclusive of Onsite project engineer, material storage yard
- Any other equipment / supplies/ conditions required for the successful implementation of the projects not stated above may also be included.
- Virtual tour or a video of a model plant and its unit operations

| <b>H. Dry room specifications of 1% RH area for Lithium-Ion Battery Fabrication and Assembly</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>S. No</b>                                                                                     | <b>Detailed Specifications</b>                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 1                                                                                                | Area of dry room: Sufficient to accommodate the number of unit operations to be housed in the 1% dry room                                                                                                                                                                                                                                                                                                                                                              |
| 2                                                                                                | Inside Dry room Temperature: below 23 degree C $\pm$ 2                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 3                                                                                                | <ul style="list-style-type: none"> <li>➤ Dew point inlet (Supply Air): Minus 60 degree C <math>\pm</math> 5 degree C &amp; RH at inlet supply air less than 0.5%</li> <li>➤ Dew point outlet (Return Air): Minus 35 degree C <math>\pm</math> 2 degree C &amp; RH at outlet return air less than 1%</li> </ul> Air change rate: More than 60 air changes per hour (ACPH) with maintenance of minimum fresh air introduction for positive room pressure and ventilation |
| 4                                                                                                | Dry room Structure <ul style="list-style-type: none"> <li>➤ Stable and rigid structure</li> <li>➤ Ensure no air leak and</li> </ul>                                                                                                                                                                                                                                                                                                                                    |

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|    | ➤ Thermally insulated                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 5  | Air leakage in Ducts / plenum: Ensure no air leakage, tolerable limit is less than 1 %<br>MOC for duct and insulation: GI for supply air, SS 304 for Return air and both ducting should be insulated with aluminiumfoil-based nitrile rubber with minimum insulation thickness 25 mm and as per dry room conditions.                                                                                                                                                                                 |
| 6  | No of persons in dry room when working: at least 8 (to be determined by supplier)                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 7  | PLC based control panel for monitoring temperature and humidity                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 8  | Sensors, Alarms and Digital display for high / low temperature and humidity with digital dew point sensor with calibration details                                                                                                                                                                                                                                                                                                                                                                   |
| 9  | Sensors for monitoring humidity of air at supply and exhaust points<br>With calibration detail                                                                                                                                                                                                                                                                                                                                                                                                       |
| 10 | Dew point sensor with accuracy ( $\pm 3$ degree C)                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 11 | Quick response time (for 50 % within 2min) This is related to dew point sensor.                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 12 | Dew point sensor repeatability (better than $\pm 0.5$ degreeC) in the broad dew point range $-60$ degree C to $-20$ degree C and temperature range up to $40$ degree C                                                                                                                                                                                                                                                                                                                               |
| 13 | Exhaust air out of dry room should be more than 400 CFM and a higher fresh air intake so that dry room can be adequately pressurized. Ducting dimensions: as per requirements.                                                                                                                                                                                                                                                                                                                       |
| 14 | Number of Compartments: 2 compartments in the airlock room space                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 15 | Doors/windows<br>➤ Air lock room and dry room connected through self-closing single door<br>➤ One emergency double door with glass vision window.                                                                                                                                                                                                                                                                                                                                                    |
| 16 | Mechanical system<br>Dehumidifier and refrigeration system can be placed at the skid room. Plan diagram attached for skid room. Ducting, piping etc. must be taken via the available space in the terrace area. Please see drawing in the civil scope of work.                                                                                                                                                                                                                                       |
| 17 | Dehumidifier: Desiccant wheel based (or equivalent / better system)<br>The rotor in the dehumidifier must be made of pH neutral and chemical resistant material. The rotor should also have inertness to gases released during the production of lithium batteries.                                                                                                                                                                                                                                  |
| 18 | Air cooled refrigeration condensing system: Condensing units must include scroll compressors (or better system) that should be air cooled. Each unit should contain moisture indicating sight glass, magnetic contractors of three phase units, water regulating valve, suction line filter, vibration eliminating device, and control devices.<br>The outdoor units of the refrigeration system must be kept on skid room. The distance involved for piping, ducting etc. may be taken into account |

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|    | for load calculation. The refrigerant used must be CFC, HCFC free and as per the latest Indian environmental norms for refrigerant. The energy usage also must be energy saving, efficient and as per BEE / BIS standards. Ducting, piping etc. must be taken via the available space in the terrace area. Please see drawing in the civil scope of work.                                                                                                                                                                                                                                                                                                                        |
| 19 | Refrigeration: Pre- cooling and post cooling type<br>Seasonal temperature can be maximum 45 Degree C and humidity can be at a maximum of 80% to 90% at Chennai.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 20 | Electrical Dehumidifier reactivation: The process dry air fans and reactivation fans of the dehumidifiers must be of centrifugal airfoil design. All the fans must be mounted on vibration insulators                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 21 | Since most of the machines are pneumatic operated provision for supply of compressed air, and nitrogen in dry room should be arranged. Number of points to be provided is provided in Annexure II.                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 22 | Direct digital control (control room situated outside dry room facility) <ul style="list-style-type: none"> <li>➤ Computer with Ethernet and USB interfaces - 1 no.</li> <li>➤ software for view &amp; export profiles/ alarms related to dehumidifier and dry room / data log files from the HMI interface</li> <li>➤ CCTV with cabling and intercom (wiring to be done by vendor). Jack provision to be given inside the dry room</li> <li>➤ Touch screen graphical user interface (HMI) with dew point of intake and return air &amp; humidity of intake and return air.</li> <li>➤ Digital display of dew point and temperature of dry room - inside the dry room</li> </ul> |
| 23 | AC main line supply: 400 V $\pm$ 10 %, 3 phase, 50 $\pm$ 1 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 24 | Heat load and electrical load (to be calculated by supplier) should be taken into account while designing the equipment and control levels.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 25 | <ul style="list-style-type: none"> <li>➤ Dry room and its mechanical system must be reliable, rigid, safe and easy to maintain</li> <li>➤ Doors and windows should ensure airtight and sturdy</li> <li>➤ The room must be constructed entirely with metal with HEPA filters in it.</li> </ul> The panels in the room should be insulated and fire redundant                                                                                                                                                                                                                                                                                                                      |
| 26 | Wall panel and ceiling panel- insulation thickness should be 4 "thick for wall thickness, 2" thickness and Galvanized iron claddings should be anti-static. Color of panel: off white interior, insulation material PUF (Poly Urethane).                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 27 | Works such as roof panel installation, doors, airlocks, glass windows, emergency door, airtight sealing are included.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 28 | Interior room work <ul style="list-style-type: none"> <li>➤ Epoxy based conductive, moisture barrier system, chemical and abrasion resistant coatings</li> <li>➤ Flooring: Anti-static and High-performance amide-cured epoxy coating as mentioned in Annexure II</li> <li>➤ Water inlet and outlet lines should be provided for the slurry mixers (both anode and cathode), cell roll baking and laser</li> </ul>                                                                                                                                                                                                                                                               |



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|    | welding machine (wherever needed). Deionized water from the chiller will be circulated into the welding head through this water line.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 29 | <p>Electrical work</p> <ul style="list-style-type: none"> <li>➤ All the electrical requirements for equipment including wiring, sockets, power rating etc. need to be taken note. Additional number of 4 multi-point 3 pin sockets per wall.</li> <li>➤ LED lamps &amp; Emergency lighting</li> <li>➤ All electrical fixtures / lighting must be replaceable from inside the dry room.</li> <li>➤ For lightings and sensors</li> <li>➤ Light illumination 400 lux near the working environment</li> <li>➤ Includes Installation of MV Panel, control panels, switch boards, power connection for dry room facility, mechanical &amp; refrigeration systems as well as for battery assembly line equipment</li> <li>➤ Room exterior &amp; interior finishing work neat and appealing</li> <li>➤ Including necessary piping and insulation, refrigerant filling, drain line piping and leak tests</li> <li>➤ Power ports, plugs and sockets for equipment should be fixed as per Indian standards and rating.</li> </ul> |
| 30 | <p>Other facilities</p> <ol style="list-style-type: none"> <li>1. CCTV – Details given in annexure I</li> <li>2. Intercom – Details given in annexure I</li> <li>3. Fire extinguishers – appropriate numbers (at least 4) wall mounted. Appropriate specifications. (Cannot be liquid based).</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 31 | Project management/ pre-construction co ordination                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 32 | Engineering documentation for electrical and mechanical drawings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 33 | <p>O &amp; M manual</p> <ul style="list-style-type: none"> <li>➤ Service and operational manuals with all relevant details for all individual units</li> <li>➤ Operating manual must contain step by step procedure in elaborative manner.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 34 | <p>Cost quoted</p> <ul style="list-style-type: none"> <li>➤ Inclusive of total scope of work viz., Dry room materials, ducting, dehumidifier, refrigeration, piping, civil work, electrical work, installation etc.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 35 | Installation and commissioning by the manufacturer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 36 | Start up, test, training and service by manufacturer to be provided                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 37 | All requirements for complete installation of the facility need to be quoted together.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 38 | <p>Warranty: 3 years comprehensive for the facility</p> <p>10 year for dry room panels</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 39 | Service & repair must be available in India                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 40 | Clean room classification: 10000 class                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 41 | Provide details of recent installation by the supplier and performance certificate from suppliers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| <b>I. <u>Dry room specifications for 15% RH area of Lithium-ion Battery Fabrication</u></b> |                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>S. No</b>                                                                                | <b>Detailed Specifications</b>                                                                                                                                                                                                                                                                                                                                                                     |
| 1                                                                                           | Area of dry room: Sufficient to accommodate the number of unit operations to be housed in the 15% dry room                                                                                                                                                                                                                                                                                         |
| 2                                                                                           | Inside Coating room Temperature: below 23 degree C $\pm$ 2                                                                                                                                                                                                                                                                                                                                         |
| 3                                                                                           | <ul style="list-style-type: none"> <li>➤ Relative humidity: &lt; 15.00 %</li> <li>➤ Air change rate: More than 60 air changes per hour (ACPH) with maintenance of minimum fresh air introduction for positive room pressure and ventilation</li> </ul>                                                                                                                                             |
| 4                                                                                           | Coating room Structure <ul style="list-style-type: none"> <li>➤ Stable and rigid structure</li> <li>➤ Ensure no air leak and</li> <li>➤ Thermally insulated</li> </ul>                                                                                                                                                                                                                             |
| 5                                                                                           | Air leakage in Ducts / plenum: Ensure no air leakage, tolerable limit is less than 1 %<br>MOC for duct and insulation: GI for supply air, SS 304 for Return air and both ducting should be insulated with aluminium foil-based nitrile rubber with minimum insulation thickness 25 mm and as per dry room conditions.                                                                              |
| 6                                                                                           | No of persons in dry room when working: at least 8 (to be determined by supplier)                                                                                                                                                                                                                                                                                                                  |
| 7                                                                                           | PLC based control panel for monitoring temperature and humidity                                                                                                                                                                                                                                                                                                                                    |
| 8                                                                                           | Sensors, Alarms and Digital display for high / low temperature and humidity with digital dew point sensor with calibration details                                                                                                                                                                                                                                                                 |
| 9                                                                                           | Sensors for monitoring humidity of air at supply and exhaust points<br>With calibration detail                                                                                                                                                                                                                                                                                                     |
| 10                                                                                          | Quick response time (for 50 % within 2min) This is related to dew point sensor.                                                                                                                                                                                                                                                                                                                    |
| 11                                                                                          | Air shower / curtain at the entry of Airlock room.                                                                                                                                                                                                                                                                                                                                                 |
| 12                                                                                          | Mechanical system <ul style="list-style-type: none"> <li>➤ Dehumidifier and refrigeration system should be placed on the skid room in the first floor of the building nearer to coating room facility.</li> </ul>                                                                                                                                                                                  |
| 13                                                                                          | NMP vapor exhaust System with duct may be fixed before paneling of coating room.<br>A movable flexible suction hood should be provided over the slurry coating area of the coating machine. This exhaust system should be positioned outside the coating room with necessary ducting for negative draught                                                                                          |
| 15                                                                                          | Dehumidifier: Desiccant wheel based (or equivalent / better system)<br>The rotor in the dehumidifier must be made of pH neutral and chemical resistant material. The rotor should also have inertness to gases released during the production of lithium batteries. Ducting, piping etc. must be taken via the available space in the terrace area. Please see drawing in the civil scope of work. |



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| 16 | <p>Air cooled refrigeration condensing system: Condensing units must include scroll compressors (or better system) that should be air cooled. Each unit should contain moisture indicating sight glass, magnetic contractors of three phase units, water regulating valve, suction line filter, vibration eliminating device, and control devices.</p> <p>The outdoor units of the refrigeration system must be kept on skid room in first floor of the building adjacent to the facility. The distance involved for piping, ducting etc. may be taken into account for load calculation. The refrigerant used must be CFC, HCFC free and as per the latest Indian environmental norms for refrigerant. The energy usage also must be energy saving, efficient and as per BEE standards / BIS standards. Ducting, piping etc. must be taken via the available space in the terrace area. Please see drawing in the civil scope of work.</p> |
| 17 | <p>Refrigeration: Pre- cooling and post cooling type</p> <p>Seasonal temperature can be maximum 45 Degree C and humidity can be at a maximum of 80% to 90% at Chennai.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 18 | <p>Electrical Dehumidifier reactivation: The process dry air fans and reactivation fans of the dehumidifiers must be of centrifugal airfoil design. All the fans must be mounted on vibration insulators</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 19 | <p>Direct digital control (control room situated outside dry room facility)</p> <ul style="list-style-type: none"> <li>➤ Common Computer with Ethernet and USB interfaces for dry room and coating room facility.</li> <li>➤ software for view &amp; export profiles/ alarms related to dehumidifier and dry room / data log files from the HMI interface</li> <li>➤ CCTV and intercom (wiring to be done by vendor). Jack provision to be given inside the coating room</li> <li>➤ Touch screen graphical user interface (HMI) with dew point of intake and return air &amp; humidity of intake and return air.</li> <li>➤ Digital display of dew point and temperature of dry room - inside the coating room</li> </ul>                                                                                                                                                                                                                   |
| 20 | AC main line supply: 415 V $\pm$ 10 %, 3 phase, 50 HZ $\pm$ 03 %                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 21 | <ul style="list-style-type: none"> <li>➤ Coating room and its mechanical system must be reliable, rigid, safe and easy to maintain</li> <li>➤ Doors and windows should ensure airtight and sturdy</li> <li>➤ The room must be constructed entirely with metal with HEPA filters in it.</li> <li>➤ The panels in the room should be insulated and fire redundant</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 22 | <p>Wall panel and ceiling panel- insulation thickness should be 4 inch thick for wall panel, 2 inch thick for ceiling panel and Galvanized iron claddings should be anti-static. Color of panel: off white interior, insulation material - PUF.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 23 | Heat load and electrical load should be taken into account while designing the equipment and control levels.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 24 | <p>Safety devices – smoke detectors / alarm systems should be provided.</p> <p>Appropriate numbers of fire extinguishers (at least 4) of appropriate</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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|    | specifications to be fixed in the wall.<br>CCTV to be fixed and Intercom – wall mounted. Details given later.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 25 | Interior room work <ul style="list-style-type: none"> <li>➤ Antistatic Epoxy Floor, moisture barrier system, chemical and abrasion resistant coatings</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 26 | Since most of the machines are pneumatic operated provision for supply of compressed air in coating room may be arranged. Details mentioned in Annexure II                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 27 | Electrical work <ul style="list-style-type: none"> <li>➤ All the electrical requirements for equipment including wiring, sockets, power rating etc. need to be taken note. Additional number of 2 multi-point 3 pin sockets per wall.</li> <li>➤ LED lamps &amp; Emergency lighting</li> <li>➤ All electrical fixtures / lighting must be replaceable from inside the dry room.</li> <li>➤ Power ports, plugs and sockets for equipment should be fixed as per Indian standards and rating.</li> <li>➤ For lightings and sensors</li> <li>➤ Light illumination 400 lux near the working environment</li> <li>➤ Includes installation of MV Panel, control panels, switch boards, power connection for dry room facility, mechanical &amp; refrigeration systems as well as for battery assembly line equipment</li> <li>➤ Room exterior &amp; interior finishing work neat and appealing</li> </ul> Including necessary piping and insulation, refrigerant filling, drain line piping and leak tests |
| 28 | Project management/ pre-construction co ordination                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 29 | Engineering documentation for electrical and mechanical drawings                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 30 | O & M manual <ul style="list-style-type: none"> <li>➤ Service and operational manuals with all relevant details for all individual units</li> <li>➤ Operating manual must contain step by step procedure in elaborative manner.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 31 | Cost quoted<br>Inclusive of total scope of work viz., Dry room materials, ducting, dehumidifier, refrigeration, piping, civil work, electrical work, installation etc.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 32 | Installation and commissioning by the manufacturer                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 33 | Start up, test, training and service by manufacturer to be provided                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 34 | All requirements for complete installation of the facility need to be quoted together.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 35 | Warranty: 3 years comprehensive for the facility 10 year for dry room panels                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 36 | Service & repair must be available in India                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 37 | Clean room classification: 100000 class                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 38 | Provide details of recent installation by the supplier and performance certificate from suppliers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

**J. Specifications for dry air compressor**

Capacity should be sufficient to meet the production requirements

**K. Specifications for DI water plant**

Capacity should be sufficient to meet the production requirements

**L. Specifications for Nitrogen generator plant**

Capacity should be sufficient to meet the production requirements

**M. Specifications for Lithium-ion battery assembly line equipment to produce 5 Ah Cylindrical cells(26650 type 5000 cells/Shift) and 20 Ah Prismatic cells (500 cells/Shift)**

The following details for all the equipment are to be given by bidder/supplier:

- SOP
- Operational video
- Manpower requirements
- Power rating
- Footprint and weight
- Consumable requirements and spares
- Inspection/maintenance/repair protocols
- Fire safety (detection and automatic fire fighting)
- Equipment safety protocol
- Storage and integration module for all HMI settings
- HMI interface of all machineries should have a provision to store the setting parameters for multiple protocols
- Coating and slitting pattern for both 26650 cylindrical cells and prismatic cells need to be provided by bidder/supplier

Facility and power requirements (3 phase power denotes 400 V  $\pm$  10%, 50 $\pm$  1Hz in Chennai) for all operations to be satisfied by supplier in their design

**The cell production assembly line should have the following unit operations situated in the corresponding dry room conditions:**

| S. No                                    | Unit operation                    | RH requirements |
|------------------------------------------|-----------------------------------|-----------------|
| <b>Raw Material Storage and Handling</b> |                                   |                 |
| 1                                        | Large scale storage               | < 70% RH        |
| 2                                        | Daily storage                     | < 15% RH        |
| 3                                        | Raw Material handling and feeding | < 15% RH        |

| <b>Electrode Roll Making</b>        |                                                                             |          |
|-------------------------------------|-----------------------------------------------------------------------------|----------|
| 4                                   | Cathode and Anode Slurry Mixer                                              | < 15% RH |
| 5                                   | Slurry Feeder                                                               | < 15% RH |
| 6                                   | Slurry Coating Machine                                                      | < 15% RH |
| 6.5                                 | Oven space for coating                                                      | Ambient  |
| 7                                   | NMP Recovery                                                                | Ambient  |
| 8                                   | Vacuum Oven for cathode and anode Roll Baking                               | < 15% RH |
| 9                                   | Calendering Machine for cathode and anode Roll                              | < 15% RH |
| 10                                  | Slitting Machine for cathode and anode rolls                                | < 15% RH |
| <b>26650 Assembly Line</b>          |                                                                             |          |
| 11                                  | Electrode sheet making and Winding for 26650                                | < 15% RH |
| 12                                  | Vacuum oven for Baking of jelly rolls (26650) / electrode stack (prismatic) | < 15% RH |
| 13                                  | 26650 Cell Assembly Machine                                                 | < 1 % RH |
| 14                                  | Automatic Electrolyte Filing and Crimping machine for 26650 cells           | < 1 % RH |
| <b>Post Production Processing</b>   |                                                                             |          |
| 15                                  | Water Cleaning Machine for cylindrical and prismatic cells                  | < 70% RH |
| 16                                  | Coding and sleeving for Cylindrical and Prismatic cells                     | < 70% RH |
| 17                                  | Aging for Cylindrical and Prismatic cells                                   | < 70% RH |
| 18                                  | Formation and Grading of Cylindrical and Prismatic cells                    | < 70% RH |
| 19                                  | Cell sorting machine (IR and OCV measurement)                               | < 70% RH |
| 20                                  | Product Storage for Cylindrical and Prismatic cells                         | < 70% RH |
| <b>Prismatic Cell Assembly Line</b> |                                                                             |          |
| 21                                  | Cathode and anode                                                           | < 15% RH |

|    |                                                                               |          |
|----|-------------------------------------------------------------------------------|----------|
|    | electrode Cutting Machine for Prismatic Cells                                 |          |
| 22 | Electrode Stacking Machine for Prismatic Cells                                | < 15% RH |
| 23 | Baking of stacked prismatic rolls                                             | < 15% RH |
| 24 | Tab welding of electrode stack                                                | < 1 % RH |
| 25 | Anodization of Aluminium container                                            | < 1 % RH |
| 26 | Electrode assembly in to the container and Laser Welding of lid and container | < 1 % RH |
| 27 | Helium Leak Detection of prismatic cells                                      | < 15% RH |
| 28 | Electrolyte Filling Machine for Prismatic Cells                               | < 1 % RH |
| 29 | Formation of Prismatic Cells                                                  | < 1 % RH |
| 30 | De-gassing and Ball welding (Laser) for Prismatic Cells                       | < 1 % RH |
| 31 | Formation and grading of prismatic cells                                      | < 70% RH |

**Note:** The number of unit operations is not limited to the above and may be added for ensuring better cell quality and production efficiency. Any unit operations may be combined according to OEM design. The production capacity/specification of the unit equipment should meet the minimum production target/specification given below. The OEM/bidders should quote for minimum requirement or slightly higher as per OEM design.

**Minimum Man Power Requirement:** To be indicated in the following format:

| S. No | Unit Operation | Number of Operators |
|-------|----------------|---------------------|
| 1     |                |                     |
| 2     |                |                     |

**Per shift production efficiency spread sheet** for all unit operations to meet the plant capacity of 5000 cylindrical cells and 500 prismatic cells / shift to be indicated in the following format:

| S. No | Unit Operation | Quantum of production / PPM |
|-------|----------------|-----------------------------|
|-------|----------------|-----------------------------|

|   |  |  |
|---|--|--|
| 1 |  |  |
| 2 |  |  |

**Quality Control** for all unit operations to meet the plant capacity of 5000 cylindrical cells and 500 prismatic cells / shift to be indicated in the following format:

| S. No | Unit Operation | Quality control required (Inline/Offline) |
|-------|----------------|-------------------------------------------|
| 1     |                |                                           |
| 2     |                |                                           |

### 1. Unit operation: Large scale storage

#### **Requirement:**

For storing all the raw materials/consumables required for 3 months production capacity in a Compartmentalized manner.

#### **Specific Parameters:**

- Ventilated facility to prevent powder build-up (Exhaust system)
- A/C compartment for storage of solvent and electrolyte - calculated to be approx. 170 sq. m. Relative humidity < 70%
- Video monitoring to prevent security issues
- Segregation – Separated (partitioned) area for different powders, 5 compartments – NMC, MCMB, Super-P carbon, PVDF, CMC and final compartment for storing cylindrical cell components, prismatic components, separator for cylindrical and separator for prismatic – calculated to be approx. 400 sq. m

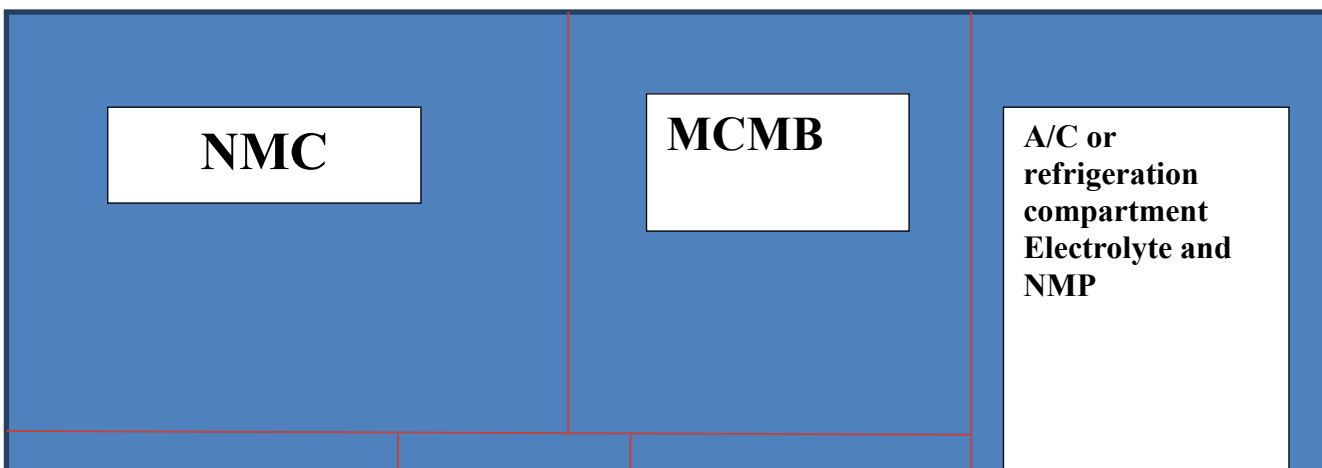
**Transfer mechanism:** Using hydraulic fork lifting, HDPE Plastic pallet

#### **Conditions for Alarm:**

Flame detection, Smoke detection, Temperature detection

#### **Foot print:**

Should include space for easy access of bags



**Supporting Facility:** Digital Weighing machine (0-1000 kg, 100g accuracy)

## **2. Unit operation: Daily storage**

### **Requirement:**

Vacuum dryer with a hexa-agitator for storing raw materials (powder) required for one day production capacity.

### **Specific Parameters:**

- Separate equipment for the different powders – 300 kg of NMC, 150 kg of MCMB, 30 kg of Super P Carbon, 15kg of Binder for Cathode, 10kg of powder Binder for anode.
- Temperature: 80 – 120 degree C, maintained for 8 hours to prevent moisture and then allowed to cool without external stimuli

### **Transfer mechanism:**

**Input material:** Material transferred from large scale storage using hydraulic fork lifting, HDPE Plastic pallet

**Output material:** Powder handling systems

### **Conditions for Alarm:**

Flame detection, Smoke detection, Temperature detection

**Remarks:** No separate storage required for solvent and electrolyte for daily production needs

**Supporting Facility:** Vacuum line, compressed air line, weighing machine (0-10 kg, 1 g accuracy)

## **3. Unit operation: RawMaterial handling and feeding**

### **Requirement:**

- Raw Material handling from daily storage and automatic feeding to the slurry mixer in metered quantity
- Diameter Screening: Pneumatic type or sieves along with air handling to prevent clogging
- Type of powder handling: Pneumatic/Screw-type
- Separate powder handling systems capable of handling 300 kg of NMC, 150 kg of MCMB, 30 kg of Super P Carbon
- Screening particles above 20 microns and below 1 micron for each powder
- Wastage during handling should be minimal

**3a. Unit operation: Glue Making****Requirement:**

2 separate glue making tanks to make binder solutions to cathode and anode

**Specific Parameters:**

- Glue making tanks with pump:
- Capacity: 300 L
- Stirring: > 120 RPM (Disperser type) along with wall Paddles to prevent settling
- Pump: Displacement of at least 10 litre/min
- Filter: 80 micron mesh

**Transfer mechanism for 3 and 3a:** Suitable mechanism to be provided by bidder to feed raw material in to the slurry mixer

**Conditions for Alarm:** Blockage or interruption in the supply of raw materials in to the slurry mixer

**Conditions for emergency stop:** Blockage or interruption in the supply of raw materials in to the slurry mixer

**4. Unit operation: Cathode and Anode Slurry Mixer****Requirement:**

- Separate Planetary Vacuum Mixers for cathode and anode slurry preparation
- Volume of Slurry mixers: 200 Litre for anode, 400 Litre for cathode
- Separate pumping system (cathode and anode) to transport slurry to the slurry feeder

**Specific Parameters:**

- Type of shaft and impeller: 2-axis twist type for planetary, 2 dispersion disc type shaft and impeller
- **Mixing Parts -**
  - a) Working frequency : 5-50 Hz
  - b) Mixing power: >5 kW
  - c) Mixing/rotation speed : 10-80 rpm
  - d) Planetary box speed: 5-50 rpm
  - e) Mixing blade diameter : ~18 to 20 cm
  - f) Mixing line speed : 0.09-0.8m/s
  - g) 2-axis twist type impellers, Number: 2?(to be discussed in pre-bid)
- **Dispersion Parts -**
  - a) Working frequency: 5-50hz
  - b) Dispersing power: >5kw
  - c) Dispersing rotate speed: 600-6000rpm
  - d) Dispersing plate diameter: ~18 to 20cm
  - e) Dispersing model: Serrated
  - f) Dispersing plate material: 304 stainless steel



- g) Dispersing line speed: 1.6 -16 m/s
- h) Dispersing number per shaft: 2pcs (to be discussed in pre-bid)
- i) Dispersing shaft number: 2pcs
- Chiller should be supplied as per bidder requirements - Water circulation lines to be provided along with chiller
- Provision for powder feeding, solvent feeding, Viewing and Sampling
- Base and Lifting Parts - materials: High rigidity structural carbon steel
- Lifting way: Electric/Pneumatic
- All wet-able parts and jackets to be made from Stainless Steel SS 316 (BIS)
- Facility needed: Vacuum enabled, Jacket enabled for water cooling
- Wall temperature sensor
- Materials: no rubber components or low density plastics – only Silicone seals where in contact with slurry
- Vessel scraping mechanism to be provided to minimize wastage

**Setting and operation:** Intelligent HMI INTERFACE for setting the parameters with maintenance/defect notification

**Settable parameters:** Dispersion speed, planetary mixer speed, Vacuum setting etc.,

**Transfer mechanism:**

**Input material:** Raw materials from 3 & 3a

**Output material:** Separate pumping system (cathode and anode) to transport slurry to the slurry feeder.

**Conditions for Alarm:** Flame detection, over temperature (45 degree C)

**Conditions for emergency stop:** Flame detection alarm, lack of pneumatic operation pressure, over temperature (60 degree C)

**Supporting Facility:** Vacuum line, compressed air line, DI water line, cooling water line, slurry tank transfer trolley, cleaning yard with water jet, Nitrogen line

### **5. Unit operation: Slurry Feeder**

**Requirement:**

1. Separate Slurry filter and feeder for cathode and anode slurry
2. Magnetic filtration
3. Multiple view windows
4. Feedback loop to control the feeding speed of the pump
5. Sufficient transport capacity to meet coating requirement – 200 Litre for anode and 400 Litre for Cathode

**Specific Parameters:**

- Filter element: 100-250 mesh
- Pressure gage: 60 – 1MPa

- Stirring of vessel: paddle type with >30 RPM to prevent settling
- Feeding rate: 50 ml/min to 1.5 Litre/min (setting)
- All wet-able parts and jackets to be made from Stainless Steel SS 316 (BIS)
- Materials: no rubber components or low density plastics – only Silicone seals where in contact with slurry

**Productivity and efficiency:** Minimize wastage during transfer

**Transfer mechanism:**

**Input Material:** Pumped slurry from slurry mixer

**Output Material:** To feed slurry to coating machine

**Conditions for Alarm:** Slurry clogging, tank empty, tank full

**Conditions for emergency stop:** Slurry clogging

**Supporting Facility:** Compressed air line, DI water line, cleaning yard with water jet

## **6. Unit operation: Slurry Coating Machine**

**Requirement:**

- Slurry coating with adjustable width suitable for cylindrical (56 – 60 mm) and prismatic (110 – 130 mm) cells
- Separate Slot die coating machine -2 Nos (Cathode and Anode)
- Single side or Double side?
- Active Coating width should be 650 mm or more and it should enable intermittent coating
- Should be capable of doing both continuous coating and intermittent coating
- Automatic tracking of coating on first side to be implemented on second side
- 26650 electrodes diagram and prismatic electrodes diagram are attached as annexure
- Coating pattern for both 26650 cylindrical cells and prismatic cells need to be provided by bidder/supplier
- Suitable slot die should be provided matching to the coating pattern

**Specific Parameters:**

- Al foil thickness: 12 - 20 micron
- Cu foil thickness: 6 to 10 micron
- Max. Roll dimension (Max. 400 mm diameter) and weight to be given by bidder
- Bobbin size? (should be uniformly adopted)
- Metallic bobbins spares should be supplied
- Coating speed 1-10 m/min (2-20 m/min if single side coating)
- Knife shaft straightness/smoothness: <2 micron?
- Single sided dry thickness: 50 – 150 microns without substrate
- Roller roughness: < 30 microns

- Coating error: <2 micron single side
- Length error: < 1 mm
- Front back alignment error: < 1 mm
- Edge position sensor required for both sides of coating
- Heating zone dimensions: As is suitable (more than 20 m long and accommodate foil width of 650 mm)
- Multi-Zone heating – up to 4 zones?
- Zone temperature: up to 200 degree C with  $\pm 1$  degree C accuracy
- Tension parameter setting and automatic tension control
- Feedback loop to slurry feeder
- Control and monitoring system needed
- Coating thickness inline measurement required – more specifics to be discussed?
- Edge position sensors to verify edge positions across coating area
- Leak proof duct system for NMP vapour collection
- NMP vapour leakage sensor outside heating zones
- Slot-die head details:
  - a) Tungsten carbide (> 90 HRA) (or equivalent) lip for slot-die to facilitate shim less coating
  - b) High wear resistance of lip of slot-die
  - c) Straightness of upper coating lip of slot-die should be ~ 2 micron/meter
  - d) Micro-level edge sharpness of slot-die lip
  - e) Dual lip system for slot-die to ensure accuracy and uniformity of coating
  - f) Automatic adjustment of lip of slot-die controlled by actuators
  - g) Micro-meter assisted manual control of lip of slot-die to facilitate sub-micron level adjustments
  - h) Hydraulic system for controlling slot-die
  - i) Quantitative process control of slot-die
  - j) Uniformity of coating should be down to 1%
  - k) Slot-die head preferably from reputed companies such as Panasonic, Mitsubishi etc.

**Setting and operation:** Intelligent HMI INTERFACE with maintenance/defect notification

**Setting parameters:**

Coating thickness(Knife slit width adjustment), Single coating length, width between coating length, Coating width

**Transfer mechanism:**

**Input material:**Slurry from Slurry feeder

**Output material:**Handling and Movement method for coated foil to unit operation 8 (electrode roll transfer cart)

**Conditions for Alarm:**

NMP vapour leakage, edge position error, lack of pneumatic operation pressure, lack of hydraulic pressure, broken web, roll emptiness indication

**Conditions for emergency stop:**

Manual emergency stop, broken web, lack of pneumatic operation pressure, lack of hydraulic pressure

**Supporting Facility:** Compressed air line

### **7. Unit operation: NMP Recovery**

**Requirement and specific parameters:**

- > 95% NMP needs to be recovered
- In-situ storage capacity for recovered NMP should be greater than 500 Litre
- Storage level indicator
- Ability to pump recovered liquid to fill up to 500 Litre barrels
- Recovered NMP purity should be greater than 80%
- Concentration of NMP at the exhaust < 10 ppm
- 24 hours continuous operation
- NMP recovery deterioration rate should be less than 1% peryear
- Leak proof duct system for NMP vapor – No condensation at duct

**Transfer mechanism:** Suitable transfer mechanism to be provided

**Input material:** NMP vapour collected from coating machine through ducts

**Output material:** Recovered NMP to collection tank

**Conditions for Alarm:** NMP vapor leakage, full tank indication, lack of circulating water, failure of vapor suction, overheating

**Conditions for emergency stop:** Manual emergency stop, lack of circulating water, overheating of tower

### **8. Unit operation: Vacuum Oven for cathode and anode Roll Baking**

**Requirement:**

- Automatic temperature and vacuum controlled oven
- All internal body, trays are to be made of anti-corrosive SS 316
- Separate vacuum ovens for cathode and anode rolls
- Able to hold 4 rolls of 125 kg each per oven
- Separate cathode and anode roll transfer cart for easy and defect free handling

**Specific parameters:**

- Vacuum: Air load cavity vacuum level  $\geq 50$  Pa, full load cavity
- vacuum: 50 – 100 Pa
- Air leakage: 24 hours  $\leq 500$  Pa
- Heating mode: electric heating control
- Cooling mode: cold air system
- Temperature range: RT+10 degree C to 150 degree C
- Heating temperature control: accuracy  $\pm 1.0$  degree C
- In-body temperature error:  $\pm 2$  degree C (empty box),  $\pm 3$  degree C (full load) at constant temperature state

- Heating rate: 30 – 40 min to reach RT to 85 degree C
- Temperature stabilization time: 50 – 100 min (full load)
- Surface temperature of the cabinet: if oven temperature at 120 degree C, surface temp.  $\leq$  RT + 15 degree C

**Setting and operation:** PLC program control for temperature and vacuum setting, automatic/manual operation can be switched

**Setting parameters:** Vacuum level, heating rate, nitrogen flow

**Transfer mechanism:** Roll transferring mechanism / cart

**Input material:** Electrode rolls from coating machine

**Output material:** Baked rolls to calendaring machine

**Conditions for Alarm:** Abnormal heating rate, over temperature, Vacuum level  $\leq$  50 Pa

**Conditions for emergency stop:** Manual emergency stop, over temperature

**Supporting Facility:** Compressed air line, vacuum line, nitrogen line, cooling water line, cart parking

### **9. Unit operation: Calendaring Machine for cathode and anode Roll**

#### **Requirements:**

- Separate calendaring machine for cathode and anode roll.
- Calendaring machine should consist of the following
  - a. Splicing unit
  - b. Trimming unit
  - c. Dust Removal and Electrode Cleaning
  - d. Programmable main Pressing unit
  - e. CCD Inspection
  - f. Laser Thickness tester

#### **Specific parameters:**

**a. Splicing Unit:** To splice the broken electrode in the pressing process

Splice Width: Max: 950 mm

Safety: Interlock with main presser

**b. Trimming Unit:** To cut the edge of electrode before pressing

Trimming Width: 200 – 750 mm; step-less adjustment of two lower cutters; easy adjustment of trimming width; the cutter position of both sides to be adjusted with hand wheel.

Speed: Frequency regulated and synchronous with press speed

**c. Dust Removal and Electrode Cleaning:** Clean the powder with brush after trimming; dust removal guard and pipe fitting

**d. Programmable main pressing unit:**

- Roll size: Dia. 700 mm x Width 700 mm for both rollers
- Effective useful width of roll surface: 650 mm
- Roll Speed: 2 to 30 rpm
- Roll Material: Cr3 series high alloy steel, hard Cr plating  $\geq 0.1$  mm
- Roll hardness: HRC  $\geq 65$
- Roller Roughness:  $R_a \leq 0.2$
- Max. Rolling force: 6000 kN
- Two roller pressure: 0.45 to 4.5 t/cm
- Roller adjustment range: 0 to 2 mm
- Roll gap adjusting accuracy: 0.001 mm
- Roll carrying capacity: 300 kg
- Tension controller: 0 to 25 Nm (adjustable)
- Roller Temperature: 50 – 200 degree C (adjustable), temperature deviation:  $\pm 0.5$  degree C;
- Heating Speed: 1 – 15 degree C/min (adjustable) and temperature stability  $\geq 20$  min
- Safety Guard plate: On the electrode feeding side to ensure the safety of operator
- Roller cleaning provision

**e. CCD Inspection:** To inspect the surface defects**f. Laser thickness tester:**

- Inline dynamic testing
- Test head scan along the moving direction of electrode repeatedly with scan speed of 0-18m/min (adjustable)
- Test accuracy:  $\pm 0.5 \mu\text{m}$
- Test range and width: Thickness 0.01 – 1 mm and Max width 950 mm

**Setting and operation:** Intelligent HMI INTERFACE with maintenance /defect notification

**Setting parameters:** Roller speed, temperature and pressure, tension control, heating rate, laser parameters, space between rollers

**Transfer mechanism:** Roll transferring mechanism / cart

**Input material:** Electrode rolls from vacuum oven

**Output material:** Calendared rolls to slitting machine

**Conditions for Alarm:** Broken web, low / high tension on electrode, over heating of rollers

**Conditions for emergency stop:** Manual emergency stop, Broken web, low / high tension on electrode

**Supporting Facility:** Compressed air line, cooling water line, cart parking, provision for handling calendaring rollers

### **10. Unit operation: Slitting Machine for cathode and anode rolls**

#### **Requirement:**

- Separate slitting machine with adjustable slit width for cathode and anode rolls
- Slitting of electrodes is followed by vacuum dust removal system machine consists
- Slitting, vacuuming and burr removal: After the slitting, the electrode roll is subjected to brushing and vacuuming for dust removal: the dusting cover is arranged above the slitting machine to absorb the dust generated with cleaning efficiency above 99 %
- Adjustable setting of shear cutter as per the requirement
- \_\_\_ number of slits ( $57 \pm 2$  mm) for anode - 26650 cells
- \_\_\_ number of slits ( $57 \pm 2$  mm) for cathode - 26650 cells
- \_\_\_ number of slits ( $130 \pm 2$  mm) for anode - prismatic cells
- \_\_\_ number of slits ( $130 \pm 2$  mm) for cathode - prismatic cells
- Separate slitting horn for 26650 and prismatic cells
- Easy and fool proof mechanism for change of horn
- Provision for winding the slitted electrode rolls separately
- Easy mechanism for collection of slitted rolls
- 26650 electrodes diagram and prismatic electrodes diagram are attached as annexure
- Slitting pattern for both 26650 cylindrical cells and prismatic cells need to be provided by bidder/supplier
- Spare shear cutters for each slit pattern are to be provided as per the requirement (24 No)
- Life of the shear cutter should be reasonably high (quantified?)

#### **Specific parameters:**

- Process-able width: Roller width: > 750 mm, coating width: 350 to 700mm
- Weight of Coated electrode roll: Max. 300 kg
- Roll tension: 0 to 500 N
- Electrode slitting width accuracy:  $\pm 0.05$  mm
- Shear speed: 0 to 50 m/min
- Shear thickness: 5 to 300  $\mu$ m
- Polar bending: 0.3 mm/1000 mm (Electrode curvature)
- Slitting uniformity:  $\pm 0.2$  mm

**Setting and operation:** Intelligent HMI INTERFACE with maintenance /defect notification

**Setting parameters:** Shear speed, split width, number of slitting

**Transfer mechanism:** Roll transferring cart for electrode roll movement from calendaring machine to slitting and slitted rolls to electrode sheet making

**Input material:** Electrode rolls from calendaring machine / vacuum oven

**Output material:** Slitted electrode rolls to electrode sheet making for 26650 / prismatic cells

**Conditions for Alarm:** Overtension of web, broken web, control unit failure, roll emptiness indication

**Conditions for emergency stop:** Manual emergency stop, broken web, over tension of web

**Supporting Facility:** Compressed air line, cart parking, provision for handling slitted rolls etc.

### **11. Unit operation: Electrode sheet making and Winding for 26650**

**Requirement:** Multifunctional equipment capable of executing the following functions:

- Ultrasonic welding of aluminium/nickel tabs on to the aluminium/copper foils
- Number of tabs: one or two per electrode
- Protective tape fixing on welded area of electrodes: Both sides
- Slicing of anode and cathode to the required length for 26650
- Positioning of anode, cathode and separator and winding to form jelly roll
- Fixing of end tape covering the full length of free end
- Short circuit test function of jelly roll and separation of faulty jelly rolls
- Collection of jelly roll in a suitable tray so as to match with the next unit operation

#### **Specific parameters:**

- Production speed: > 50 PPM or as required to meet the plant capacity
- Product qualification rate:  $\geq 98\%$
- **Electrode (cathode and anode) roll Dimension**  
Sliced electrode roll OD: Max. 400 mm
- **Electrode (cathode and anode) Dimension**  
Width: 50 – 75 mm  
Length: 300 – 2500 mm  
Thickness – 60 – 300  $\mu\text{m}$
- **Nickel and Aluminium tab Dimension**  
width: 3 – 5 mm  
Length: 40 – 70 mm  
Thickness: 60 – 100  $\mu\text{m}$   
Ni / Al Tab roll OD: Max. 400 mm
- **Separator Dimension**  
Width: 40 – 70 mm  
Length: 1000 – 2900 mm  
Thickness: 15 -50  $\mu\text{m}$   
Separator roll OD: Max. 300 mm
- **Protective Tape Dimension**  
Width: 5 – 10 mm  
Length: 50 – 80 mm



Thickness: 20 – 50  $\mu$ m

Protective tape roll OD: 200 mm

- Tab length accuracy:  $\pm 0.3$  mm
- Tab position accuracy:  $\pm 0.5$  mm
- Tab leakage accuracy:  $\pm 0.5$  mm
- Protective tape length and position accuracy:  $\pm 0.5$  mm
- Welding time: 0.2 – 0.8 s (Adjustable precession: 0.01 s)
- Welding material: Cu, Al, Ni, Ag
- Weld area: 4 mm x 4 mm
- Weld head surface: Knurled and plain
- Welding point size: 3\*3\*4 points
- Total length: 25 mm
- Winding diameter: 24 – 32 mm
- Number of extreme tabs: 1 or 2
- Projected tab length: 8 – 25 mm
- Cathode and Anode alignment:  $\pm 0.5$  mm
- Two layer separator alignment:  $\pm 0.5$  mm
- Parameters connected to short circuit testing

**Setting and operation:** Intelligent HMI INTERFACE with maintenance/defect notification

**Setting parameters:** Electrode width, Tab width, separator width, protective tape width, winding speed, number of turns, number of welding points, welding parameters, number of jelly rolls, parameters connected to short circuit testing

**Transfer mechanism:** Roll transferring cart for input and trays containing jelly rolls

**Input material:** Electrode rolls from slitting machine / vacuum oven, separator roll, protective tape roll, aluminium / nickel tab roll, end tape roll

**Output material:** Jelly rolls of 26650 cells arranged in trays to suite the next unit operation

**Conditions for Alarm:** misalignment in winding more than the accuracy set level, lack of pneumatic operation pressure, electrode roll empty, separator roll empty, Protective tape roll empty, broken web, jam or interruption in any feed line

**Conditions for emergency stop:** Manual emergency stop, electrode roll empty, separator roll empty, protective tape roll empty, broken web, jam or interruption in any feed line

**Supporting Facility:** Compressed air line, cart parking, provision for handling slitted rolls, collection trays for jelly rolls and tray stand (Number of jelly rolls per tray) etc.

**12. Unit operation: Vacuum oven for Baking of jelly rolls (26650) / electrode stack (prismatic)**

**Requirement:** To bake the jelly rolls (26650) prepared from electrode sheet making and winding machine.

To bake the electrode stack prepared for prismatic cell

- Separate ovens for baking jelly roll and electrode stacks prepared for prismatic cell
- All internal body, trays are to be made of anti-corrosive SS 316
- Each oven should have 3 chambers with separate temperature and vacuum controls
- Chamber Volume: Sufficient to accommodate minimum of 3500 jelly rolls per chamber and minimum 350 electrode stacks per chamber for prismatic cells

**Specific parameters:**

- Temperature up to 200 degree C; Continuous use
- Low decibel oil free vacuum pump should be provided
- Vacuum: Vacuum level  $\geq 20$  Pa with full load in the chamber
- Vacuum range: 10 – 50 Pa
- Air leakage: 24 hours  $\leq 100$  Pa
- Provision to accommodate the trays from Electrode sheet making and winding machine
- Built-in over temperature protection
- PID precise temperature control: Accuracy  $\pm 1$  degree C
- Temperature uniformity should be achieved throughout the chamber by multiple sensing (Temperature variation:  $\pm 3$  degree C @ 100 degree C)
- Suitable display unit ascertaining the temperature uniformity

**Setting parameters:** Temperature and Vacuum

**Transfer mechanism:**

Should include a means of transporting jelly roll trays and electrode stack of prismatic cells

**Input material:** Electrode jelly rolls from electrode sheet making and winding machine, electrode stacks for prismatic cells from electrode stacking machine

**Output material:** Jelly rolls of 26650 cells arranged in trays and electrode stacks for prismatic cells to suite the next unit operation

**Conditions for emergency stop:** Manual emergency stop

**13. Unit operation: 26650 Cell assembly machine**

**Requirement:** Multifunctional equipment capable of assembling jelly roll in to the cell can and perform bottom and cap welding. The detailed sub-functions are as follows:

- Positioning of cell can (CCD assisted)
- Placement of bottom insulation pad
- Positioning of jelly rolls in to the cell can
- Bottom spot welding (welding of negative tab with the bottom of cell can)
- Weld quality assurance test to be indicated

- Short circuit test - method to be indicated
- Placement of top insulation pad
- Grooving or neck formation in the cell can
- Vacuum cleaning and exhaust system for removal of possible metallic spills/dust from the Electrode-Can Assembly
- Positioning of positive tab and cap
- Cap welding
- Cap welding pull test for ensuring the weld quality
- Arrangement of cell assembly suitable for electrolyte filling
- Suitable logic controls to ensure successful progression of events flawlessly
- Product qualification rate:  $\geq 98\%$
- Provision for separation of defective product
- Identical packing/arranging of the Electrode-Can-Cap Assembly suitable for next unit operation
- Production rate: As required to meet 5000 cells per shift (indicate in PPM)
- Technical description of each sub-functions along with setting parameters, quality checks are to be given elaborately

**Specific parameters:**

a. Bottom spot welding: Welding electrode diameter: 2.5 mm

b. **Grooving or neck formation:** Grooving roller material: Carbide alloy.  
Accuracy  $\pm 0.05$  mm; 100 number of spare rollers are to be supplied

c. **Cap welding:**

Welding points: 4-6 points

Point size: 0.6 – 1.1 mm (variable)

Welding pull test: 10 N

**Setting and operation:** Intelligent HMI INTERFACE with maintenance/defect notification

**Setting parameters:** Spot welding parameters, pull test force, short-circuit test parameters, groove depth and height, cap welding parameters, number of cell assembly

**Transfer mechanism:** Input/output cells to be arranged in trays and then be moved in trolley (suitable trays and trolley)

**Input Material:** Method of feeding cans, top and bottom insulating pads, can cap

**Conditions for Alarm:** low pneumatic pressure, abnormal variation in set parameters, short supply of input materials like bottom and top insulation pad, cell can and cap.

**Conditions for emergency stop:** Manual emergency stop, short supply of input materials like bottom and top insulation pad, cell can and cap.

**Supporting Facility:** Compressed air line, collection trays and trolleys, trays stand,

trolley parking,

**Consumables and Spares:** Grooving rollers, welding electrodes, trays

**14. Unit operation: Automatic Electrolyte Filling and Crimping machine for 26650 cells**

**Requirement:** Automatic electrolyte filling and crimping of 26650 Electrode-Can-Cap Assembly from the tray of cell assembly machine. Equipment capacity should be as required to meet the plant capacity of 5000 cells per shift

- Positioning of the cell for electrolyte filling
- Positioning of electrolyte filling head to the respective cell
- Creating partial vacuum
- Filling of electrolyte as per set volume / weight (single step or segmented injection)
- Pressurizing to ensure complete wetting
- May have multiple electrolyte filling heads to meet the plant capacity of 5000 cells per shift
- Automatic transfer of cells to crimping station
- Positioning of cell cap
- Cell crimping
- High pressure airtight test to ensure hermetic sealing
- Packaging/arranging in trays for next unit operation

**Specific parameters:** Electrolyte Filling

- **Electrolyte drum volume:** 100 Litre cylindrical drum with conical bottom to utilize the entire volume
- or to meet the requirement of 5000 cells
- Machine should operate with minimum 2 Litre volume of electrolyte
- **Production capacity:** As required to meet the plant capacity of 5000 cells per shift
- **Electrode filling mode:** selectable one or two step injection
- **Max. filling rate:** 5 ml/s
- **Single filling adjustment range:** 0.1 – 2.5 g (min. adjustment: 0.02 g)
- **Filling accuracy:** 0.1 g
- **Power off protection function:** Device can automatically remember the working state of the device in the case of abnormal power failure, restore power from the memory point of power failure automatically start running
- **Should have a counting function and counting display**

**Specific parameters:** Crimping

- The device adapts to the automated assembly process of cylindrical steel can batteries.
- Efficiency: 50 ppm or as required to meet the plant capacity of 5000 cells per shift
- Product pass rate: >99 %

- Noise: < 65 dB
- Airtight test: 1.0 MPa/3 min. does not leak
- Appearance: After the seal of battery without obvious scratches, card injuries and other bad appearance
- Height accuracy:  $\pm 0.05$  mm
- Outer diameter accuracy:  $\pm 0.05$  mm

**Setting and operation:** Intelligent HMI INTERFACE with maintenance/defect notification

**Transfer mechanism:** Electrolyte drum and input/output cells to be arranged in trays and then be moved in trolley (material movement trolley)

**Input material:** Electrolyte storage and pumping facility to the electrolyte filling machine, tray containing Electrode-Can-Cap Assembly

**Output material:** Tray containing crimped cells to next unit operation

**Conditions for Alarm:** Cell positioning defects, minimum specified volume of electrolyte, defect or interruption in crimping

**Conditions for emergency stop:** Manual emergency stop function, minimum specified volume of electrolyte (2 Liter).

**Supporting Facility:** Compressed air line, electrolyte transfer trolley from store, transfer trolley for crimped cells trays.

### **15. Unit operation: Water Cleaning Machine for cylindrical and prismatic cells**

#### **Requirement:**

- Water cleaning of sealed 26650 cells / prismatic cells
- All internal body, trays are to be made of anti-corrosive material
- Needs to be completely isolated from outside to prevent water vapour from affecting dry room condition
- Wiping mechanism and air-drying (heated air) mechanism - Drying chamber to remove water
- Ability to handle cylindrical and prismatic cells as per designed capacity (PPM to be indicated)
- Qualification rate: > 99.5%
- No bubble, scratch, dirt, damage, unevenness, and oil stain on the surface after cleaning
- Feeding mechanism and conveyor belt for cell movement
- Single machine for both prismatic and cylindrical cleaning or separate machines

**Setting parameters:** Cleaning time, temperature of air, conveyor speed

**Setting and operation:** Intelligent HMI INTERFACE with maintenance/defect notification

**Transfer mechanism: Movement cart**

Input material: Trays containing cells and placing individual cells onto conveyor belt

Output material: Trays containing cells

**Conditions for Alarm:** Lack of water, lack of drying gas, lack of pneumatic operation pressure, chamber open, struck conveyor belt

**Conditions for emergency stop:** Lack of water, lack of drying gas, chamber open, manual emergency stop, struck conveyor belt

**Supporting Facility:** DI water line, compressed air line, nitrogen gas line

**16. Unit operation: Coding and sleeving for Cylindrical and Prismatic cells****Requirement and Specific parameters:**

- Cell feeding
- Bar coding / alpha-numeric coding
- Sleeving and heat shrinking of sleeves
- Coding on the steel body as well as on the sleeve
- Qualification rate: >99.5%
- Production rate: To meet the required production capacity (PPM to be indicated)
- Separate / common machine for cylindrical and prismatic

**Setting and operation:** Intelligent HMI INTERFACE with maintenance/defect notification

**Setting parameters:** Coding text

**Transfer mechanism:** Suitable mechanism for Input/output of cells arranged in trays and moved in trolley (material movement trolley)

**Conditions for Alarm:** Low ink, out of position cell, lack of pneumatic operation pressure, struck transfer / movement mechanism

**Conditions for emergency stop:** Manual emergency stop, out of position cell, struck transfer / movement mechanism

**Supporting Facility:** compressed air line

**17. Unit operation: Aging for Cylindrical and Prismatic cells****Requirement and specific parameters:**

- To age the finished cylindrical / prismatic cells by storing at higher temperatures
- Containment volume should be sufficient to meet the requirement of plant production capacity
- PID precise temperature control
- Temperature uniformity should be achieved throughout the chamber by multiple sensing (Temperature variation:  $\pm 1$  degree C to the set value)

- Suitable display unit ascertaining the temperature uniformity
- Temperature of operation  $\leq 60$  degree C
- Should include trays to be kept inside to arrange the finished cells
- Separated into multiple chambers with separate controls for each chamber
- Able to hold more than 10,000 cylindrical cells and 2000 prismatic cells

**Setting and operation:** Intelligent HMI INTERFACE with maintenance/defect notification

**Setting parameters:** Aging temperature and time duration

**Transfer mechanism:** Input/output cells to be arranged in trays and then be moved in trolley (material movement trolley)

**Conditions for Alarm:** Over temperature

**Conditions for emergency stop:** Manual emergency stop

**Supporting Facility:** Compressed air line, transfer trolley, trolley parking, trays for arranging cells, tray stand

### **18. Unit operation: Formation and Grading of Cylindrical and Prismatic cells**

#### **Requirement:**

- Computerized Formation & Grading unit to perform cycling and cell impedance measurement as required
- Manual cell feeding and bar code scanning
- Automatic data logger / workstation / server with sufficient capability to store large data of formation & grading for one year duration
- Necessary computer interface to program the formation & grading parameters
- 15000 channels for 26650 cylindrical cells with cycling ability (charge and discharge)
- 1500 channels for prismatic cells with cycling ability (charge and discharge)
- Charge/discharge test methods: CC, CV, CC-CV
- 10000 formation channels for 26650 cylindrical cell and 5000 channels for grading
- 1000 formation channels for prismatic cell and 500 channels for grading
- Overcharge protection
- Pneumatic-cum-mechanical device to hold batteries or equivalent
- Energy saving mode: Discharge power back to grid
- Gold-plated cell connectors
- Required PCs and server cluster to effectively manage the data
- Able to record values of Potential and current at end of each charge-discharge event as well as every 3 minutes at other times
- Battery Plugged in light and battery tray in place light to ensure proper contact with probes



- Real time display of the data, channel status display, should be able modify channel inputs at any point of time
- Input commands/display language: English
- Data analysis and plotting software in English
- Temperature protection detection points to be set on each layer at each cell test probe. Probe should be opened automatically when any overheating is detected
- Automatic cell connecting mechanism from the cell tray
- Cell trays made of fire-retardant material
- uniformly distributed fans arranged for heat dissipation or equivalent mechanism
- After the equipment alarm stops, the incomplete process should be continued from the interrupted position
- Cell chamber isolation: the formation cell trays should be in a guarded chamber isolated from the control unit and personnel access
- Connector wire must be fire retardant

**Specific Parameters:**

- Rated @ 0-5V with 0.1mV resolution and  $\pm 2\text{mV}$  accuracy,
- **For Grading:** Rated @  $\pm 5\text{ A}$  with 0.1 mA resolution and  $\pm (0.05\% \text{ of FS} + 0.05\% \text{ of RD})$  with impedance measurement
- **For Formation:** Rated @  $\pm 1\text{ A}$  with 0.1 mA resolution and  $\pm (0.05\% \text{ of FS} + 0.05\% \text{ of RD})$

**Setting and operation:** Intelligent HMI INTERFACE with maintenance/defect notification

**Setting Parameters:** CC mode, CV mode, Voltage range, Current range, Cut-off Voltage, Cut-off Current, Number of cycles, current value, voltage value

**Transfer mechanism:**

**Input material:** Manual cell feeding to tray, automatic cell connecting mechanism from the cell tray

**Output material:** Manual cell feeding from tray to temporary storage tray

**Conditions for Alarm:** Over-Temperature, Fire, Smoke,

**Conditions for emergency stop:** Manual emergency stop

**Supporting Facility:** Fire safety level 2 (fire detection and firefighting), compressed air line, trays and trolley, required UPS support

**19. Unit operation: Cell sorting machine (IR and OCV measurement)**

**Requirement:**

- To measure OCV and IR of fully charged cell instantaneously and sort into 3 different selected IR range piles and one reject pile

**Specific parameters:**



- IR measuring range: 3mΩ to 300mΩ
- OCV measurement accuracy: ±2mV
- IR accuracy: 0.5% reading
- Chance of damage to product < 0.1%
- Equipment speed: > 90 PPM
- Multiple sorting channels: > 5
- Separate sorters for cylindrical (26650) and prismatic cells
- Equipment fail rate < 1%

**Setting and operation:** Intelligent HMI INTERFACE with maintenance/defect notification

**Transfer mechanism:** Input/output cells to be arranged in trays and then be moved in trolley (material movement trolley)

**Conditions for Alarm:** Short circuit

**Conditions for emergency stop:** Manual emergency stop and short circuit

**Supporting Facility:** Compressed air line

## **20. Unit operation: Product Storage for Cylindrical and Prismatic cells**

**Requirement:** A suitable storage infrastructure / trays for systematically storing the cylindrical and prismatic cells manufactured in 3 months duration; Floor space ~ 200 sq. m

### **Specific Parameters:**

- Fire-proof and explosion-proof facility
- Fire safety level 2 (fire detection and firefighting)
- Built in air circulation system for one or more volume air change every hour and temperature 24 degree C
- Video monitoring to prevent security issues
- Maintaining relative humidity below 50%

**Transfer mechanism:** Input/output cells to be arranged in trays and then be moved in trolley (material movement trolley)

**Input material:** Boxes containing trays with finished cells

**Output material:** Boxes containing trays with finished cells

**Supporting Facility:** Hydraulic fork lifting, HDPE Plastic pallet, material movement trolleys, compressed air line

**Conditions for Alarm:** Flame detection, Smoke detection, Temperature detection

## **21. Unit operation: Cathode and anode electrode Cutting Machine for Prismatic Cells**

**Requirement:** Separate machine to blank out rectangular cathode and anode electrodes (115 mm x 68 mm) continuously from the slitted electrode rolls as per the drawing attached as annexure.

**Features:**

- Pneumatically operated
- Burr free blanking
- Electrode roll feeding mechanism
- Roll tension control
- Pulling roll to die cutting station
- Die head (Suitable to handle variable blanking die sets - 50Ah)
- Automatic cutting (to meet the production capacity/shift)
- Suitable electrode holding mechanism for efficient blanking of electrodes
- Electrode surface / blanking station dust removal and exhaust system
- Collection of blanked electrodes in a magazine
- Movement of magazine through conveyer line to stacking machine
- Collection of empty magazines.

**Specific Parameters:**

- Cutting accuracy:  $\pm 0.2$  mm
- Feeding accuracy:  $\leq 0.02$  mm
- Transverse deviation correction accuracy:  $\pm 0.5$  mm
- Position accuracy:  $\pm 0.5$  mm
- Edge powder drop range:  $\pm 0.1$  mm
- Burr length:  $\leq 0.02$  mm
- Knife line distance: 2 mm
- Punching knife life:  $> 150000$  times
- Electrode width:  $\leq 200$  mm
- Electrode thickness: 0.01 – 0.4 mm
- Time required for single blanking? (to be indicated)
- Number of electrodes blanked per stroke: 6
- Blanking scheme: (drawing to be included by bidder/supplier)

**Setting and operation:** Intelligent HMI INTERFACE with maintenance/defect notification

**Setting Parameters:**

- Number of blanking operations per roll (~ 5000 – 7500)
- Electrode roll tension
- Number of electrodes per magazine (~ 4000 – 5000)
- Blanked electrode counter

**Transfer mechanism:** Suitable trays and trolleys

**Input material:** Slitted electrode roll from slitting machine

**Output material:** Electrode magazine consisting of blanked cathode and anode

**Conditions for Alarm:** Broken web, defective alignment, etc.

**Conditions for emergency stop:** Broken web, empty feed stock

**Supporting Facility:** Spare magazines, spare die sets, compressed air line, vacuum line, storage cupboard for spares & tools, etc.

## **22. Unit operation: Electrode Stacking Machine for Prismatic Cells**

**Requirement:** To stack cathode and anode electrodes alternatively along with separator wound continuously, cutting of separator, to fix termination tape

### **Features:**

- Robotic stacking of electrodes
- Separator winding and termination tape fixing
- Automatic tension control
- Automatic Electrode aligning mechanism
- Deviation rectifying mechanism
- Automatic and Manual lay off

### **Specific Parameters:**

- No. of electrodes to be stacked: ~ 50 to 150
- No. of cells to be stacked: 500/shift
- Coated electrode thickness: 0.06 to 0.3 mm
- Stacking Thickness: 25 – 50 mm
- Stack height:  $135 \pm 0.5$  mm (with tab)
- Stack width:  $68 \pm 0.5$  mm
- Tab position (cathode and anode): Same side
- Separator width: 115 – 120 mm
- Separator thickness: 15 – 40 micron
- Stack frequency: Sufficient to meet the production capacity of 500 cells / shift
- Electrode counter & Cell Stack Counter
- Stacking layer number: Should be set within the range of height adaptation
- Appearance: Flat and wrinkle free
- Automatic fixing of termination tape (1-3)

**Setting and operation:** Intelligent HMI INTERFACE with maintenance/defect notification

**Setting Parameters:** Number of anodes, number of cathodes, start with separator/anode/ cathode...../anode/separator end winding (2-3wounds)/termination tape

**Transfer mechanism:** Suitable trays and trolleys

**Input material:** Blanked electrodes from magazine, separator roll and termination tape

**Output material:** Stacked cell for tab welding

**Conditions for Alarm:** Broken lug, defective alignment, improper separator tension, improper stacked electrode holding pressure, etc.

**Conditions for emergency stop:** Empty feed stock, torn separator,

**Supporting Facility:** Spare magazines, spare die sets, compressed air line, vacuum line, storage cupboard for spares & tools, etc.

### **23. Unit operation: Baking of stacked prismatic rolls**

**Covered in unit operation 12 - Vacuum oven for Baking of jelly rolls (26650) / electrode stack (prismatic)**

### **24. Unit operation: Tab welding of electrode stack**

**Requirement:** To weld the cathode and anode lugs to the terminal plates of the container lid (500 cells / shift)

- Grouping of anode and cathode lugs with Nickel and Aluminium strip cladding
- Substrate material of electrodes: Copper (Thickness: 10 – 15  $\mu\text{m}$ ) and Aluminium (Thickness: 15 – 20  $\mu\text{m}$ )
- Trimming of electrode lug to facilitate tab welding
- Removal of trimmed chips
- Short circuit test before and after tab welding
- Tab welding of cathode and anode lugs (preferably with cladding) to the terminal plates
- Insulation taping after welding (optional)
- Weld inspection facility

#### **Features:**

- Jig and fixture for positioning and guiding the welding process
- Setting of welding parameters (power, time etc.)
- Hardware for short circuit measurement and setting of parameters (to be indicated)

#### **Specific Parameters:**

- No. of electrodes: ~ 50 to 150
- No. of cells to be tab welded: 500 / shift
- Coated electrode thickness: 0.06 to 0.3 mm
- Stacking Thickness: 25 – 50 mm
- Stack height:  $135 \pm 0.5$  mm (with tab)
- Stack width:  $68 \pm 0.5$  mm
- Tab position (cathode and anode): Same side
- Output power:  $\geq 15$  KVA
- Welding current: 0 – 99 % adjustable
- Max sheet size to be welded: 2 mm thickness each
- Material to be welded: Al – Al, Cu – Ni
- Welding horn area: 20 mm x 4 mm (Changeable horns)
- Throat depth: 200 – 250 mm
- Cooling transformer: Air cooled
- Range of welding voltage: Rotary switch of 8 steps
- Timer delay relay: To be provided

**Setting and operation:** Intelligent HMI INTERFACE with maintenance/defect notification

**Setting Parameters:**Parameters of tab welding and short circuit test to be indicated

**Transfer mechanism:**Guided manual for fool-proof operation, tray and trolleys

**Input material:** Electrode stacks from stack welding machine, container lid, aluminium tab, nickel tab

**Output material:**Electrode stacks welded with container lid arranged in specifically designed trays for trouble free handling to next unit operation

**Conditions for Alarm:**Improper positioning, Indication of electrical/mechanical faultsetc.

**Conditions for emergency stop:**To be indicated

**Supporting Facility:** Stack inspection table, compressed air line,etc.

### **25. Unit operation: Anodization of Aluminium container**

**Requirement:** Surface preparation,anodization of aluminium containers and drying

- Container size for 20 Ah: 140 mm x 70 mm x 30 mm
- Container size for 50 Ah: 170 mm x 130 mm x 36 mm
- Number of containers per batch
- Capacity: 500 containers/shift

**Setting Parameters:**To be indicated

**Transfer mechanism:** Loading and unloading of containers for anodization

**Input material:** Aluminium containers

**Output material:** Anodized aluminium containers

**Conditions for Alarm:** Anodizingtime

**Conditions for emergency stop:** To be indicated

**Supporting Facility:** Compressed air line, water line, trays and trolleys etc.

### **26. Unit operation: Electrode assembly in to the container and Laser Welding of lid and container**

**Requirement:** To insert the electrode stack-lid assembly in to the container and laser welding of lid-container

- Container and lid material: Aluminium (Thickness: 0.5 – 1.0mm) / SS (Thickness: 0.25 – 1.0 mm)
- CCD-Weld inspection facility

**Features:**

- Jig and fixture for positioning and guiding the welding process
- Capable of welding multiple cells per setting to meet the rated production capacity of 500 cells/shift
- Setting of welding parameters (power, time etc)
- Hardware for short circuit measurement and setting of parameters (to be indicated)
- Programmable weld path way. Licenced software support
- This machine shall be housed in 1% RH dry room and 23 degree C

**Specific Parameters:**

- Maximum laser power: 2000 watts CNC
- Laser Type: Fiber
- Laser Make: SPI/IPG/ROFIN/N-LIGHT/FUJIKURA
- Laser wavelength: 1080 nm
- Minimum laser diode hours: 1 lakh
- Operating mode: CW and Modulated/pulse
- Output range: 5 – 100 %
- Power Stability:  $\pm 2\%$  peak-peak
- Polarization: Unpolarized
- Software (laser): Laser control software (GUI)
- Welding material: Aluminum can & lid; Stainless steel can & lid
- Welding head: Wobbler head with automatic wire feeder – OEM brand
- Welding view: CCTV Camera and Monitor
- Welding gas nozzle: Para gas nozzle/Co-axis gas nozzle (0.5 mm dia.) Capable of changing to 0.2, 0.3 and 0.4 mm dia.
- CNC: 4 axis CNC
- Axis – X, Y, Z and R effective welding area 300 x 300 x 500 mm
- Chuck diameter: 120 mm, Tilting type: Horizontal and Vertical
- Welding head position: Manual angle tilting (0 -45 degree)
- Motor drive: Servo Motor/Reputed brand
- Positional accuracy:  $\pm 0.01$  mm
- Maximum speed: 100 mm/sec
- Rotary speed: 100 rpm
- Fixtures: 5 Nos
- Working Light: Good illumination for laser focus
- Controller: 4 – axis CNC controller (The system should be 4-axis controlled along with wobbler controller)
- Computer: Industrial computer
- Gas/Air valve: SMC Make/Foster
- Laser Production: Fully enclosed, Class – 1
- Safety enclosure door: Automatic door open

- Process operation: Light curtain with two hand push button
- CNC: Covered with Log locking arrangement
- Model creation and machine working languages(G-code, M-code): Supplier should provide suitable model creation packages/arrangement
- Alarm and Warning: Laser/CNC/Chiller/Computer
- Manual and Electrical diagram: 3 sets
- Laser safety window: 200 mm x 200 mm, Class - I
- Weldability: System should be capable to weld with Aluminum wire and Stainless-steel wire with 0.2 mm to 0.5 mm dia.
- Frequency welding depth: Maximum 2 mm
- Minimum Rise/Fall time: 5  $\mu$ s/6  $\mu$ s
- Fiber Core Diameter: 100  $\mu$ m
- Fiber length: 10 m
- Optical Alignment: He-Ne Diode
- Continuous working time:  $\geq$  24 hour
- Working area:Able to weld horizontally and vertically at the minimum of 2Feet x 2 Feet area with single setting
- Fixtures: To hold maximum of two cubic foot of object and adjustable
- Inspection: Real time inspection
- Safety device:
  - EMR Switch, safety cover and door sensor
  - Smoke exhaust system, Argon gas line
- Chiller (if centralized cooling water supply is available chiller is not needed):
  - Laser chiller (Suitable laser with interlock for the supplied Laser, i.e. - SPI/IPG/ROFIN/N-LIGHT/FUJIKURA)
  - Cooling capacity: 1 KW to 100 KW
  - Temperature range: 10 to 30 degree C
  - Refrigerant: R-410a or equivalent
  - Max pump flow rate: 50 L/Min
  - Tank Capacity: 15 L
- Spares:
  - Protective mirror – Top, 10 Nos
  - Protective mirror – Bottom, 20 Nos
  - Fiber Protection mirror, 5 Nos
  - Focus lens, 2 Nos
  - Collimation Lens, 2 Nos
  - Wobbler controller, 1 No.
  - Chiller filter, 6 Nos
  - Wobbler head, 1 No
  - Al wire, 0.3 mm dia., 100 m length, 3Nos
  - Al wire, 0.5 mm dia., 100 m length, 2 Nos
  - SS wire, 0.3 mm dia., 100 m length, 1 No
- Fume extractor: Air flow of minimum 600 cubic meter/hour with filtering efficiency of 0.3  $\mu$ m 99.97% with eight layers of filtering process (1-fire prevention layer, 2-pre-filter cotton, 3-F8 filter, 4-PP filter, 5-Glass fiber filter,6 to 8-Active carbon filter. Noise level: less than 75 dB.

**Setting and operation:** Intelligent HMI INTERFACE with maintenance/defect

notification

**Setting Parameters:** Parameters of laser, programming of welding path way, laser power, welding speed etc.

**Transfer mechanism:** Guided manual for fool proof operation, tray and trolleys

**Input material:** Container and lid stacked with electrodes in specifically designed trays for trouble free handling

**Output material:** Welded prismatic cells to next unit operation

**Conditions for Alarm:** Improper positioning, Indication of electrical/mechanical faults, Short circuit, Laser head overheating, Cooling system failure, Lack of pneumatic pressure

**Conditions for emergency stop:** To be indicated

**Supporting Facility:** Argon gas line, Cooling water line, Inspection table, compressed air line, etc.

### **27. Unit operation: Helium Leak Detection of prismatic cells**

**Requirement:** To perform Helium leak test to ensure sealing of prismatic cells

#### **Features:**

- Jig and fixture for positioning of containers
- Automatic performance of Helium leak test
- Packaging/arranging in trays for next unit operation

#### **Specific parameters:**

- Mass spectrometer type detection
- Helium gas to be introduced into cells through top hole and detected in the vacuum chamber using mass spectrometer
- Detectable gases: Helium and Hydrogen
- Maximum vacuum leak detection:  $\leq 5 \times 10^{-12}$  mbar L/sec for helium  
 $\leq 1 \times 10^{-8}$  mbar L/sec for hydrogen
- Maximum sniffing leak detection:  $\leq 1 \times 10^{-9}$  mbar L/sec for helium  
 $\leq 1 \times 10^{-7}$  mbar L/sec for hydrogen
- Ion source: Yttria coated iridium filament, 2 Nos should be installed
- Detectable mass: Masses = 2,3,4
- Response time: < 1 second
- Turbo molecular pump for vacuum chamber
- Turbo molecular pump: >80 litre/sec air-cooled turbo
- Backing pump: Dry rotary pump having speed of  $\geq 3$  cubic meter/hour
- Maximum inlet pressure: 15mbar
- Pumping speed for He: >3.0 litre/second in high vacuum mode
- Interface: RS 232 and remote interfaces should be available



- Vacuum gauges: Pirani gauge, with mbar l/sec, Pa cubic meter/second, Torr l/s, atm cc/sec selection
- Protection category: IP20
- Sniffer probe: 2 numbers of 3 Meter length per chamber
- Gas spray gun: As per design requirement
- Run up time:  $\leq 120$  sec

**Transfer mechanism:** Guided manual for fool proof operation, tray and trolleys

**Input material:** Prismatic cells in specifically designed trays for trouble free handling

**Output material:** Leak tested prismatic cells to next unit operation

**Conditions for Alarm:** HeliumLeak, Lack of Helium, Lack of pneumatic pressure

**Conditions for emergency stop:** To be indicated

**Supporting Facility:** Helium gas line, Cooling water line, Inspection table, compressed air line, etc.

## **28. Unit operation: Electrolyte Filling Machine for Prismatic Cells**

**Requirement:** Automatic electrolyte filling of prismatic cells through the filling orifice. Equipment capacity should be as required to meet the plant capacity of 500 cells per shift

### **Features:**

- Jig and fixture for positioning and guiding the electrolyte filling process
- Creating partial vacuum
- Filling of electrolyte as per set volume / weight (single step or segmented injection)
- Pressurizing to ensure complete wetting
- Capable of injecting electrolyte for multiple cells per setting to meet the rated production capacity of 500 cells/shift
- Packaging/arranging in trays for next unit operation
- Glue sealing station to seal the orifice

### **Specific parameters:**

- **Electrolyte drum volume:** 50 Litres cylindrical drum with conical bottom to utilize the entire volume
- **Production capacity:** As required to meet the plant capacity of 500 cells per shift
- **Electrode filling mode:** selectable step injection
- **Max. filling rate:** 5 ml/s

- **Single filling adjustment range:** 0.1 – 2.5 g (min. adjustment:0.02 g)
- **Filling accuracy:** 0.1 g
- **Power off protection function:** Device can automatically remember the working state of the device in the case of abnormal power failure, restore power from the memory point of power failure automatically start running
- **Should have a counting function and counting display**

**Setting and operation:** Intelligent HMI INTERFACE with maintenance /defect notification

**Transfer mechanism:** Electrolyte drum and input/output cells to be arranged in trays and then be moved in trolley (material movement trolley)

**Input material:** Electrolyte storage and pumping facility to the electrolyte filling machine, tray containing container-lid assembly

**Output material:** Tray containing electrolyte filled cells to next unit operation

**Conditions for Alarm:** Cell positioning defects, minimum specified volume of electrolyte, defect or interruption in crimping

**Conditions for emergency stop:** Manual emergency stop function, minimum workable volume of electrolyte (2 Liter).

**Supporting Facility:** Compressed air line, electrolyte transfer trolley from store, transfer trolley for crimped cells trays.

### **29. Unit operation: Formation of Prismatic Cells**

**Refer Unit Operation 18**

### **30. Unit operation: De-gassing and Ball welding (Laser) for Prismatic Cells**

**Requirement:** De-gluing in suction chamber for de-gassing followed by ball welding

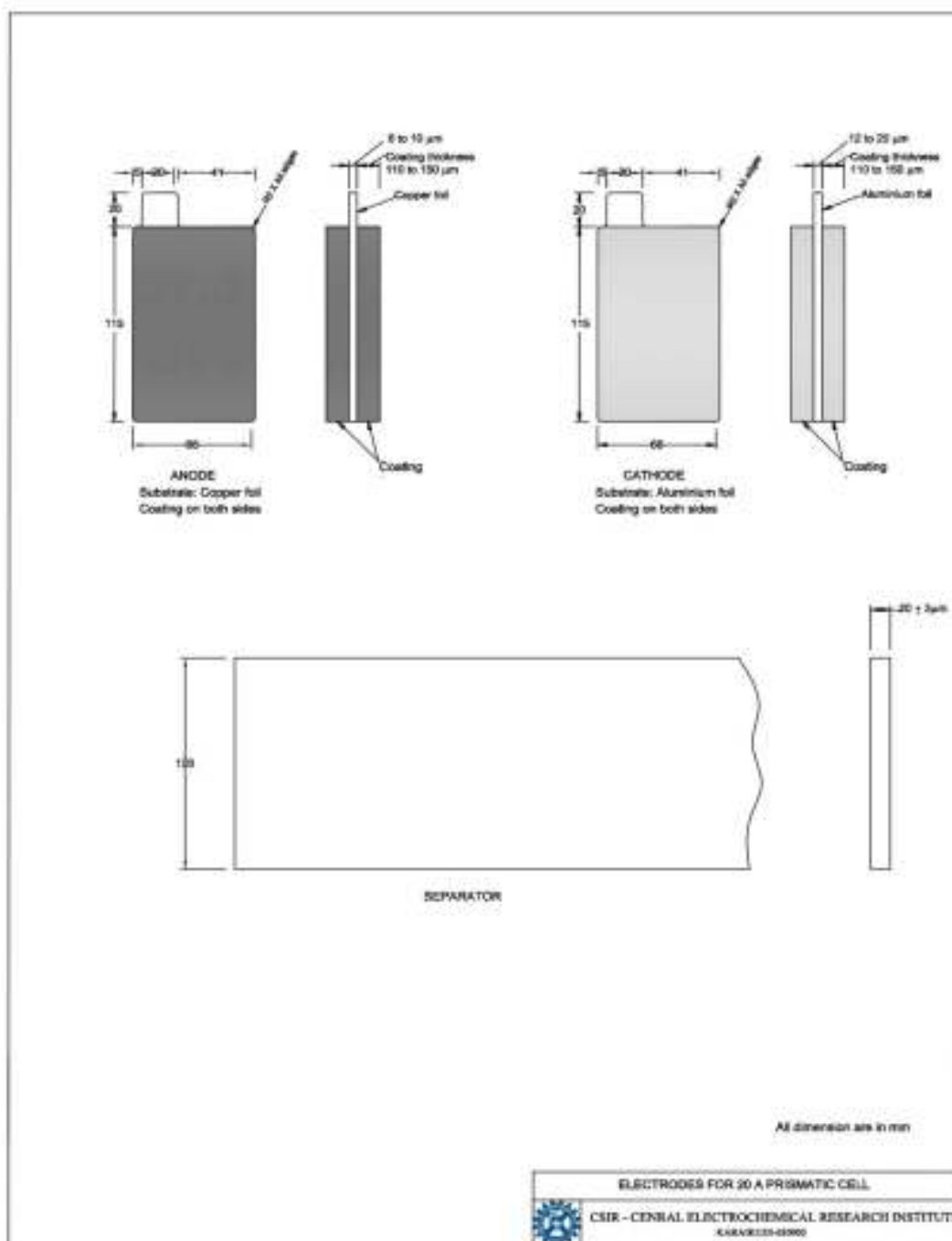
**Features:**

- De-gluing in suction chamber for de-gassing
- Jig and fixture for positioning of container
- Automatic positioning of ball and welding
- Capable of ball welding for multiple cells per setting to meet the rated production capacity of 500 cells/shift
- Packaging/arranging in trays for next unit operation

Other details are same as unit operation 26.

### **31. Unit operation: Formation and grading of prismatic cells**

**Refer Unit operation 18**

**Annexure I – Prismatic electrode design for 20 Ah**

मिसिल संख्या

File No. CECRI / 2021 / 5739

दिनांक : 05.03.2021

Date 05.03.2021.

## 20 Ah PRISMATIC CELL: TARGETTED SPECIFICATION

### Data Sheet

**Prismatic Li-ion NMC Lithium-Ion Cell 3.6 V, 20Ah**

**Model Number: 20AHPRI-CECRI-21**

Brand Name: CSIR-CECRI

Model Number: **20AHPRI-CECRI-21**

Nominal Capacity: 20 Ah

Nominal Voltage: 3.6 V

weight: \_\_\_\_ g max.

Standard charge current: 0.5C

Max.discharge current: 2C

Max charge voltage: 4.2 V

Cut-off voltage: 2.75 V

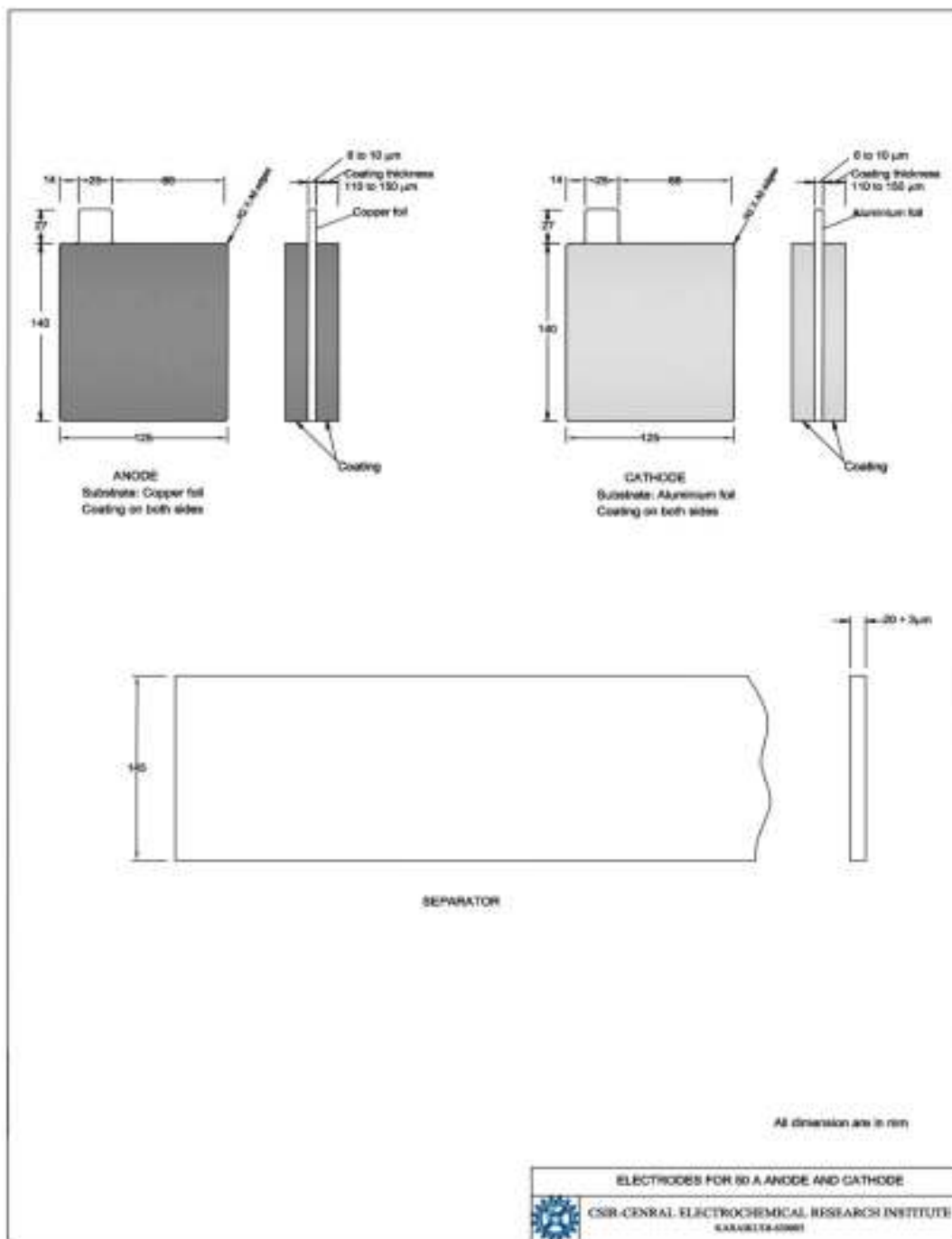
Cycle life:  $\geq$  1000 cycle

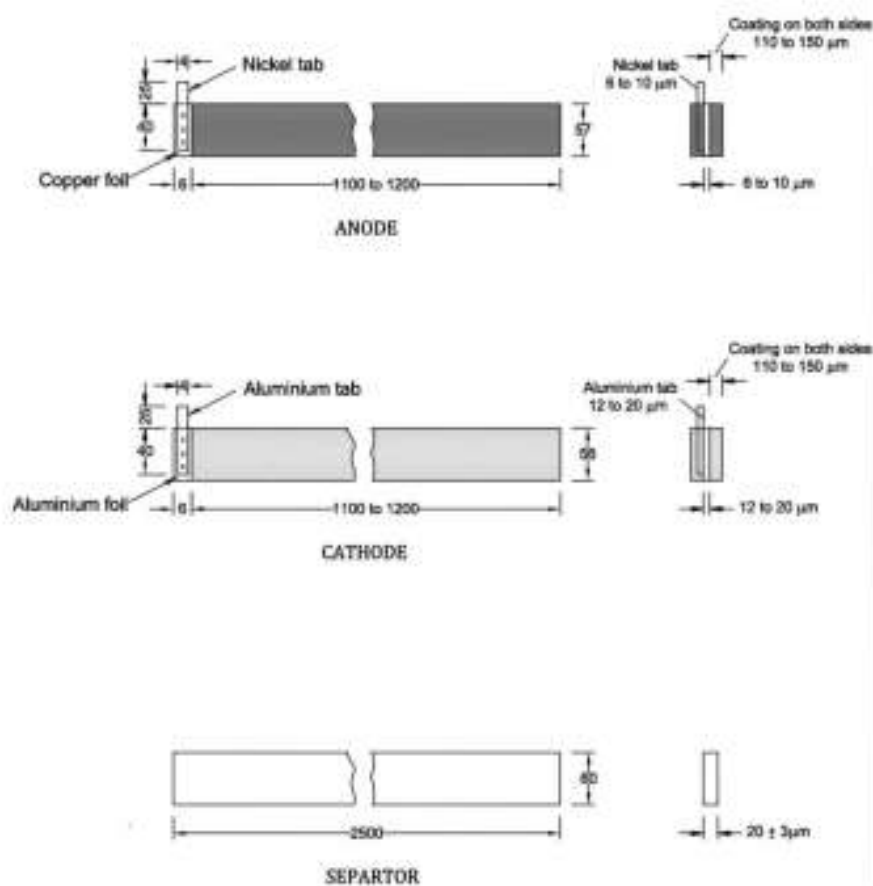
Application: electric tool / motor cycle, scooter

Type: Prismatic Li-ion NMC Lithium-Ion Cell 3.6 V, 20Ah

Rechargeable Lithium NCM Battery Prismatic Battery ForEv / Storage / Solar Power System.

Size: 70 mm (W) 30 mm (B), 140 mm (H)

**Annexure II – Prismatic electrode design for 50 Ah**

**Annexure III – 26650 cylindrical electrode design**

All dimension are in mm

ELECTRODES FOR 26650 CYLINDRICAL CELL

CSIR - CENTRAL ELECTROCHEMICAL RESEARCH INSTITUTE  
KARAKULI-832023

**26650 CELLS: TARGETTED SPECIFICATION****Data Sheet****26650 Lithium-ion Rechargeable battery 3.6V-5000mAh****Model Number: 26650CECRI-21 5000 mAh**

Brand Name: CSIR-CECRI

Model Number: **26650CECRI-21**

Nominal Capacity: 5000 mAh

Nominal Voltage: 3.6 V

weight: 100 ± 5 g max.

Standard charge current: 0.5C

Max discharge current: 2C

Max charge voltage: 4.2 V

Cut-off voltage: 2.75 V

Cycle life: ≥ 1000 cycle

Application: electric tool/motorcycle, scooter

Type: Li-Ion

Size: Diameter-26 mm, Height 65 mm

**Scope of Civil works to be carried out by the Bidder in connection with the ICeNGESS facility.**

| Sl. No | Details to be considered                                                                                                                                                                                                                                                                                                                              | Bidder's specifications/ Compliance | Remarks |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|---------|
| 1      | The work shall be executed on Turnkey (Design & Build) basis & The scope of work includes necessary Geo technical investigation. Further development of detailed architectural design, structural design, masonry design, working drawings for Plumbing & Water Supply design, Sewerage / drainage design, Fire safety/Firefighting arrangements,etc. |                                     |         |
| 2      | The design and working drawings shall comply with all the relevant IS codes, NBC 2016 /GRIHA, latest MoRTH specifications, CPWD specifications 2019, specification for differently abled persons etc. To make the services safe                                                                                                                       |                                     |         |

|   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
|   | and functional. In case, IS codes, NBC 2016, latest MoRTH specifications, CPWD specifications 2019 etc. are not available, the international codes, good engineering practices and the direction of the Engineer-in-Charge shall be followed.                                                                                                                                                                                                                                                     |  |  |
| 3 | The bidder shall get the structural drawings proof checked from any Govt. Institutes like IIT, NIT ,CSIR labs ,etc.                                                                                                                                                                                                                                                                                                                                                                               |  |  |
| 4 | Preparing Power Point Presentation in a professional manner at different stages of the work so that the same can be presented before <b>Senior Officers or Coordinating team</b> as and when required. This presentation must contain proper photographs / video of the building from different angles to have the feeling of the progress of the work.                                                                                                                                           |  |  |
| 5 | All workers of bidder and associate agencies, invariably and at all the times, must follow all safety norms, adopt safe construction practices and use all required safety gadgets in their working throughout the project duration.                                                                                                                                                                                                                                                              |  |  |
| 6 | Existing drains, pipes, cables, over-head wires, sewer lines, water lines and similar services encountered in the course of the execution of work shall be protected against the damage by the bidder at his own expense. Also any trenching and digging for laying sewer lines/water lines/cables etc. shall be commenced by the bidder only when all men, machineries and materials have been arranged and closing of the trench(s) thereafter shall be ensured within the least possible time. |  |  |
| 7 | Before tendering, the bidder shall inspect the site of work and shall fully acquaint himself about the conditions prevailing at site, availability of materials, availability of land and suitable location for construction of godowns, stores, site office, transport facilities, weather condition at site, the extent of leads and lifts involved in execution of work etc., which may affect or influence the tenders. No claim whatsoever on account of above factors shall be entertained. |  |  |
| 8 | The bidder(s) shall take all precautions to avoid accidents by exhibiting necessary caution boards day and night, speed limit boards, red flags, red lights and providing                                                                                                                                                                                                                                                                                                                         |  |  |



|   |                                                                                                                                                                                                                                                                                                                                                                                                         |  |  |
|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
|   | safety nets (Safety to labourers in case of fall from height), safety belts etc and other safety norms as specified in the general conditions of contract. In case of any accident of labourers/ contractual staff/third party, the entire responsibility will rest on the part of the bidder and any compensation under such circumstances, if becomes payable, shall be entirely borne by the bidder. |  |  |
| 9 | Any other works which is not specifically mentioned but actually requires for the satisfactory completion of the above facility are also to be incorporated                                                                                                                                                                                                                                             |  |  |

| Scope of Electrical works to be carried out by the Bidder in connection with the ICeNGESS facility. |                                                                                                                                        |                                      |         |
|-----------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|---------|
| Sl.No                                                                                               | Details to be considered in the LIB project                                                                                            | Bidder's Specification s/ Compliance | Remarks |
| 1                                                                                                   | * Electrical Load towards the <b>process equipment's</b> in KW (380V) .                                                                |                                      |         |
| 2                                                                                                   | Electrical Load towards the <b>Utility equipment's</b> in KW (415V)                                                                    |                                      |         |
| 3                                                                                                   | Total Load in KW                                                                                                                       |                                      |         |
| 4                                                                                                   | Load in kVA(KW/0.8)                                                                                                                    |                                      |         |
| 5                                                                                                   | Diversity Factor(DF) in percentage                                                                                                     |                                      |         |
| 6                                                                                                   | Load in kVA after DF                                                                                                                   |                                      |         |
| 7                                                                                                   | <b>Recommended Transformer capacity in kVA.</b>                                                                                        |                                      |         |
| 8                                                                                                   | <b>Average permitted maximum demand in kVA required to be obtained from the TANGEDCO for this facility in CSIR-CECRI Chennai unit.</b> |                                      |         |
|                                                                                                     | <b>SITC of HT side installations.</b>                                                                                                  |                                      |         |
| 9                                                                                                   | HT cable and laying work from TNEB Metering panel near CMC RMG near gate to CMC SS-1 Distance Approx. 500 Mtrs                         |                                      |         |
| 10                                                                                                  | CMC SS-1 one HT panel to be added to the existing panel including cable trench work                                                    |                                      |         |
| 11                                                                                                  | New Substation building at ICeNGESS facility as per CPWD standards                                                                     |                                      |         |
| 12                                                                                                  | HT cable and laying work from CMC SS-1 to New ICeNGESS Sub Station.                                                                    |                                      |         |

|    |                                                                                                                                                                                                                                                                                                                                 |  |  |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| 13 | 11/0.433 kV OLTC,RTCC, 50 Hz, Dry/oil type Transformers with necessary VCB's and LT ACB's as required as per CPWD/IS/IER standards.                                                                                                                                                                                             |  |  |
| 14 | HT /LT panels at the SS and relevant erections as per standards.                                                                                                                                                                                                                                                                |  |  |
| 15 | Bus trunking and interconnection cables(control and power) for transformers and panels etc. as required                                                                                                                                                                                                                         |  |  |
| 16 | BMS control and associated networks for satisfactory operations for the above SS equipment.                                                                                                                                                                                                                                     |  |  |
| 17 | APFC (Automatic power factor control) panels with suitable reactors for harmonic suppression with necessary protective switchgears suitable for the installed transformer capacity as per standards.                                                                                                                            |  |  |
| 18 | Fire safety equipment's including fire hydrants, associated piping networks, pumps of suitable capacity and fire alarm panels with sensors, associated wirings, communication wiring etc. of suitable capacity as required as per standards for the ICeNGESS facility.                                                          |  |  |
| 19 | Relevant protective equipment's, measuring units, and any other measures required for the satisfactory operations of the installations provided for the ICeNGESS facility as required as per the standards.                                                                                                                     |  |  |
|    | <b>SITC of LT side Installations.</b>                                                                                                                                                                                                                                                                                           |  |  |
| 20 | LT panels with required ACB's/ MCCB's with 25% spares for future use and relevant provisions for essential and non-essential category. Backup power supply provision to the essential panels with fool proof arrangements to prevent any clash over of power supplies as required for satisfactory operations as per standards. |  |  |
| 21 | <b>*Step down transformer 415V/380V of suitable capacity for feeding the process equipment or servo stabilizers having 380V output of suitable capacity as required for the satisfactory operation of process equipment.</b>                                                                                                    |  |  |

|    |                                                                                                                                                                                                                                    |  |  |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| 22 | UPS facilities of suitable capacity and backup hours for the critical equipment's and computers rated in kVA of latest technology, necessary protective switchgears and complying to the standard specifications as per standards. |  |  |
| 23 | LT cables and Cable trays for LT cable laying as per standards as required.                                                                                                                                                        |  |  |
| 24 | Earthing and safety aspects complete to all the equipment's to be erected in the ICeNGESS facility.                                                                                                                                |  |  |
| 25 | Electro static flooring along with earthing as required.                                                                                                                                                                           |  |  |
| 26 | Lighting, Raw power and UPS DB's and its distribution system along with suitable rated bus trunkings, tap-off boxes, cables and wirings etc., for sub main, circuit and power wirings for the entire ICeNGESS facility.            |  |  |
| 27 | LED lighting for the entire ICeNGESS facility including indoor and outdoor area as required.                                                                                                                                       |  |  |
| 28 | Backup power supply for the critical equipment's of ICeNGESS with AMF DG set of suitable capacity or minimum @ 50% of transformer capacity as per standards including manual and bypass operations as required.                    |  |  |
| 29 | Underground diesel tank of 20 Kilo litres capacity with pumping facilities required for the DG set along with necessary civil works, fencing, connecting roads as specified in the standards as required.                          |  |  |
| 30 | <b>Satutatory/ Safety approvals from concerned authorities for all the above installations.</b>                                                                                                                                    |  |  |

|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| 31 | <p>Liasoning charges for co-ordinating with the external agencies such as TANDISCO/TANGEDCO, CEA, Fire safety, Lift licensing authority and any other authority as warrants if any, on behalf of CSIR-CECRI related to ICeNGESS facilities :-</p> <p>1) Strengthening/additional provision of HT feeders and associated equipment's complete in all aspects including erection, as required for metering &amp; protection as per directions of the supply provider, ie. TANGEDCO &amp; other relevant standards etc., from TANGEDCO SS to CMC RMG (Approx. distance is around 1 Kms).</p> <p>2) Enhancement of permitted/sanctioned maximum demand from TANGEDCO by considering the additional load of the ICeNGESS facility with diversity factor.</p> <p>3). Due Charges to be paid in respect of the above facility on behalf of CSIR-CECRI by the vendor to the agencies concerned. <b>The same will be reimbursed by CSIR-CECRI to the vendor after submitting the corresponding bills in original as per actuals.</b></p> <p>4). Necessary applications and other communications corresponding to the above will be duly signed by CSIR-CECRI/CMC and other co-ordinating works to be carried out by the vendor only.</p> <p>5). On completion of the inspections the safety certificates are to be properly handed over to CSIR-CECRI.</p> |  |  |
|    | * Note :-                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |  |
|    | If the vendors supply the process equipment's for 415 V + or - 10% rating the step down transformer or the servo stabilizer (Approx. 2000 kVA) capacity may be avoided.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |  |
|    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |
| A  | <b>General aspects of works :</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |  |
| 1  | Relevant codes of practice such as IS/IEC/IER/CPWD specifications shall be adopted for the works to be executed                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |  |  |

List of Approved Makes for Civil  
materials.

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|          |                                                                                                                                                                                                                                                                                              |  |  |
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|          | in ICeNGESS facility.                                                                                                                                                                                                                                                                        |  |  |
| 2        | The necessary testing's of the electrical equipment's and its accessories shall be carried out as per the CPWD standards/IS/IEC/IER as applicable are to be carried out and the test reports shall be submitted by the vendors .                                                             |  |  |
| 3        | The necessary charges towards the fuel, load and any other works required for the satisfactory completion of load test of DG sets at site as per CPWD standards shall be included.                                                                                                           |  |  |
| 4        | <b>Any other charges which is not specifically mentioned but actually requires for the satisfactory completion of the above facility is also to be incorporated.</b>                                                                                                                         |  |  |
| 5        | Proper handing over of the installations with necessary drawings both in hard and soft copies related to the equipment's, test certificates and documents shall be ensured by the vendors.                                                                                                   |  |  |
| 6        | Necessary training to be provided for minimum six (6) numbers of staff members of CSIR for the Operation and Maintenance of the electrical equipment's installed for the LIB facility shall be carried out by the respective service engineers and the same shall be ensured by the vendors. |  |  |
| <b>B</b> | <b>Existing Facility available in CSIR-CMC.</b>                                                                                                                                                                                                                                              |  |  |
| 1        | From TANGEDCO Substation to CSIR RMG (Metering Unit) HT CABLE, 11 kV, 3 core x 300 sq mm Only (Approximately 1000Mtrs)                                                                                                                                                                       |  |  |
| 2        | Present PMD or Sanctioned MD - 1500 KVA                                                                                                                                                                                                                                                      |  |  |
| 3        | Existing Transformer installed in CSIR Campus of CMC SS-1 is 3 MVA (3x1000 kVA).                                                                                                                                                                                                             |  |  |

|  |  |      |                |
|--|--|------|----------------|
|  |  | BASF | BASF India Ltd |
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| Sl.No         | Material Description                                                   | Material        |                                             |
|---------------|------------------------------------------------------------------------|-----------------|---------------------------------------------|
|               |                                                                        | Brand           | Make                                        |
| MORTAR        |                                                                        |                 |                                             |
| 1             | Ordinary Portland Cement (43 grade ) / Portland Pozzolona Cement (PPC) | ACC             | ACC cements Ltd                             |
|               |                                                                        | Ultra Tech      | Ultra Tech Cement Ltd.                      |
|               |                                                                        | Coromandal      | India Cements Ltd.                          |
|               |                                                                        | Birla           | Birla Corporation Ltd.                      |
|               |                                                                        | Chettinadu      | Chettinadu Cements Corporation Ltd.         |
|               |                                                                        | Bharathi        | Bharathi Cement Corporation Ltd.            |
|               |                                                                        | Dalmia          | Dalmia Cement Bharat Ltd.                   |
|               |                                                                        | Zuari           | Zuari Cement Limited.                       |
|               |                                                                        | JSW             | JSW Cement Ltd.,                            |
|               |                                                                        | Jaypee Cement   | Jaypee Cement Ltd                           |
|               |                                                                        | Maha Cement     | Myhome Industries Pvt. Ltd                  |
|               |                                                                        | J.K Cement      | J.K Cement Pvt. Ltd                         |
|               |                                                                        | Ambuja Cement   | Ambuja Cements Ltd                          |
|               |                                                                        | Penna Cement    | Penna Cement Industries Ltd.                |
|               |                                                                        | Konark Cement   | Konark Cement                               |
|               |                                                                        | Centuary Cement | Birla Gold Cement                           |
|               |                                                                        | Shree Cement    | Shree Cement                                |
|               |                                                                        | Ramco Cement    | Ramco Cement Ltd                            |
|               |                                                                        | Sagar Cement    | Sagar Cements Ltd                           |
|               |                                                                        | Emami Cement    | Emami Cements Ltd                           |
| CONCRETE WORK |                                                                        |                 |                                             |
| 1             | Damp Proof course materials                                            | MAPEI           | MAPEI Construction Products India Pvt. Ltd. |
|               |                                                                        | Impermo         | Snowcem Paints                              |
|               |                                                                        | Duraseal        | Apurva India Pvt. Ltd.                      |
|               |                                                                        | ACCO Proof      | ACC Cement Ltd.                             |
|               |                                                                        | Dr. Fixit       | Pidilite Industries                         |
|               |                                                                        | Ferrous crete   | Ferrous Crete (India) Pvt. Ltd.             |
|               |                                                                        | Fosroc          | Fosroc Chemicals India Pvt. Ltd.            |
|               |                                                                        | CICO            | CICO Industries                             |
|               |                                                                        | SIKA            | Sika India Pvt. Ltd                         |
|               |                                                                        | PIDILITE        | Pidilite Industries Ltd.                    |

|                                 |                                 |                                                 |                                     |
|---------------------------------|---------------------------------|-------------------------------------------------|-------------------------------------|
|                                 |                                 | MYK                                             | MYK LATICRETE India Pvt. Ltd        |
|                                 |                                 | Asian Paints smartcare dampproof                | Asian Paints Ltd                    |
|                                 |                                 | Weather Coat Roof gaurd                         | Berger Paints                       |
|                                 |                                 | Polytancreteiwl                                 | Sunanda Speciality Coatings Pvt,Ltd |
|                                 |                                 | Wallshield 2K                                   | Berger Paints                       |
|                                 |                                 | KCPL                                            | Kunal ConchemPvt. Ltd.,             |
| <b>REINFORCED CONCRETE WORK</b> |                                 |                                                 |                                     |
| 1                               | TMT bars Fe-500D                | SAIL                                            | Steel Authority of India Ltd.       |
|                                 |                                 | TISCO                                           | TATA STEEL Ltd                      |
|                                 |                                 | VIZAG                                           | Rastriya Ispat Nigam Ltd.           |
|                                 |                                 | JSW                                             | JSW Steel Ltd                       |
|                                 |                                 | Shyam Steel                                     | Shyam Steel Industries Ltd.         |
| 2                               | Plasticiser & Super Plasticiser | Contrament ,Power flow                          | MC Bauchemie (India )Pvt. Ltd       |
|                                 |                                 | Sunanda Chemicals                               | Sunanda Chemicals Ltd.              |
|                                 |                                 | Plastiment, Sikament                            | Sika Inida Pvt Ltd.,                |
|                                 |                                 | Conplast SP430                                  | FOSROC India                        |
|                                 |                                 | Chryso-HP / Delta / Optima                      | Chryso India Pvt. Ltd.,             |
|                                 |                                 | MYK Schomburg                                   | MYK Arments range of products       |
|                                 |                                 | BASF                                            | BASF India Ltd                      |
|                                 |                                 | CICO                                            | CICO Industries                     |
|                                 |                                 | Smart Care Techno Plast/Smart Care Maximo Plast | Asian Paints Ltd                    |
|                                 |                                 | Endura                                          | H.R. Jhonsons                       |
|                                 |                                 | KCPL                                            | Kunal ConchemPvt. Ltd.,             |
| 3                               | Expansion Joint Bitumen board   | Dura board HD100                                | Supreme Industries                  |
|                                 |                                 | DURAFILL                                        | Supreme Industries                  |
|                                 |                                 | STP                                             | Shalimar Tar Products               |
| 4                               | Post tensioning System          | CRUX                                            | Crux Processing systems Pvt Ltd.,   |
|                                 |                                 | VSL                                             | VSL India Pvt Ltd.                  |
|                                 |                                 | Ultracon                                        | Ultracon Structural Systems Pvt Ltd |
|                                 |                                 | BBR                                             | BBR (India ) Pvt . Ltd              |

|                                              |            |             |                                     |
|----------------------------------------------|------------|-------------|-------------------------------------|
|                                              |            | TATA wiron  | TATA Steel Ltd.,                    |
|                                              |            | Usha Martin | Usha Martin Ltd                     |
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|                                              |            | Vamorganic  | Vamorganic Ltd.,                    |
|                                              |            | Sika wires  | Sika Wires Pte. Ltd                 |
| 5                                            | PT Strands |             |                                     |

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|                     |                           |          |                     |
|---------------------|---------------------------|----------|---------------------|
|                     | coupler for Reinforcement | Sanfield | Sanfield India Ltd  |
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|   |                     |                             |                                          |
|---|---------------------|-----------------------------|------------------------------------------|
| 6 | Adhesives           | Fevicol                     | Pidilite Industries                      |
|   |                     | Proofex of adhesive         | Fosroc India Ltd                         |
|   |                     | CICO                        | CICO Industries                          |
|   |                     | Kerabond Plus               | MAPEI Construction Products India P Ltd. |
|   |                     | Asian Paints                | Asian Paints                             |
| 7 | Grout               | Ardex                       | Ardex Endura Adhesive India Pvt. Ltd     |
|   |                     | LATA POXY                   | MYK LATICRETE India Pvt. Ltd             |
|   |                     | Fugabella, Porcelana        | Kerakoll IndiaPvt. Ltd                   |
|   |                     | Dr. Fixit                   | Pidilite Industries                      |
|   |                     | Weber                       | Saint-Gobin IndiaPvt. Ltd                |
|   |                     | Ferrous crete               | Ferrous Crete (India) Pvt. Ltd.          |
|   |                     | BASF                        | BASF India Ltd                           |
|   |                     | FosrocGP2                   | Fosroc India Ltd                         |
|   |                     | MYK Schomburg               | MYK Arments range of products            |
|   |                     | Fugabella, Porcelana        | Kerakoll IndiaPvt. Ltd                   |
|   |                     | Kerapoxy                    | MAPEI Construction Products India P Ltd. |
|   |                     | KCPL                        | Kunal ConchemPvt. Ltd.,                  |
|   |                     | Asian paints                | Smart Care SC GP Grout Grey              |
|   |                     | Pidilite                    | Pidilite Industries Ltd.                 |
|   |                     | Care                        | Care                                     |
|   |                     | Mapefill GPIN               | MAPEI Construction Products India P Ltd. |
|   |                     | SIKA                        | SIKA India                               |
|   |                     | Smart Care SC GP Grout Grey | Asian Paints                             |
|   |                     | HomeshieldSupergrout        | Berger Paints                            |
| 8 | Ready Mix Concreate | Ultra Tech                  | Ultra Tech Concrete                      |
|   |                     | ACC                         | ACC Ltd                                  |
|   |                     | RMC (India)                 | RMC (India) Pvt. Ltd.                    |
|   |                     | Lafarge                     | Lafarge India Pvt. Ltd                   |
| 9 | Mechanical          | Dextra                      | Dextra India Pvt., Ltd.                  |

|  |                                      |           |                          |
|--|--------------------------------------|-----------|--------------------------|
|  | and Block boards,<br>BWR Marine Ply, | Archidply | Archidply Industries Ltd |
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|-----------------|---------------------------------------------------------|--------------------------|---------------------------------------------------------|
| 1               | AAC Blocks                                              | Xtralite                 | UITRATECH Cement Ltd                                    |
|                 |                                                         | Areocon                  | HIL                                                     |
|                 |                                                         | Siporex                  | SIPOREX                                                 |
|                 |                                                         | Nucon                    | Green way building materials India Pvt. Ltd             |
|                 |                                                         | Renacon                  | RenaatusProconPvt. Ltd.                                 |
|                 |                                                         | Birla Aerocon            | HIL Ltd (CK Birla Group)                                |
|                 |                                                         | NCL                      | NCL VEKA Ltd.                                           |
| 2               | Adhesive for AAC Block /Tiles                           | Ultrtech                 | Ultratech cements Ltd.                                  |
|                 |                                                         | Ardex Endura/Gold Star   | Ardex Endura                                            |
|                 |                                                         | Ferrous Crete            | Ferrous Crete (India) Pvt. Ltd.                         |
|                 |                                                         | Smart Care Tile Adhesive | Asian Paints                                            |
|                 |                                                         | Tile Adhesive Plus       | Berger Paints                                           |
| WOOD & PVC WORK |                                                         |                          |                                                         |
| 1               | Wooden Flush door shutters                              | Jayna ply                | Jain Wood Industries                                    |
|                 |                                                         | Raavella door            | Raavella Industrials (P) Ltd                            |
|                 |                                                         | Kailash                  | Kailash Hi tech Timber Industries India Pvt. Ltd        |
|                 |                                                         | Shakthi                  | Shree Shakthi Modern Flush doors                        |
|                 |                                                         | Greenlam                 | Greenlam Industries                                     |
|                 |                                                         | Mayur                    | Mayur Plywood                                           |
|                 |                                                         | MP Ply wood products     | MP Wood products                                        |
|                 |                                                         | Archidply                | Archidply Industries Ltd                                |
|                 |                                                         | DEC                      | D.E.C Infrastructure & Project (India) Private Limited. |
|                 |                                                         | Greenpanel               | Greenpanel Industries Ltd.                              |
|                 |                                                         | Jain Doors               | Jain Doors Pvt. Ltd,                                    |
|                 |                                                         | Indian Timber Products   | Indian Timber Products                                  |
|                 |                                                         | Kitply                   | Kitply Industries Ltd.                                  |
|                 |                                                         | DuroFlushdoors           | Duro Ply Industries Ltd.                                |
| Kenwood         | Kenwood Ply & Board                                     |                          |                                                         |
| Century         | Century Flush Doors                                     |                          |                                                         |
| 2               | Water Proof Plywood, Commercial ply, Fire retardant ply | Jayna ply                | Jain Wood Industries                                    |
|                 |                                                         | Greenpanel               | Greenpanel Industries Ltd.                              |

|   |                                                  |                    |                                       |
|---|--------------------------------------------------|--------------------|---------------------------------------|
|   |                                                  | Kitply             | Kitply Industries Ltd.                |
|   |                                                  | Duroply            | Duro ply Industries Ltd.,             |
|   |                                                  | Century ply        | Century Flush Doors                   |
|   |                                                  | Wuudply            | M/s Prime Veneers Ltd                 |
| 3 | Laminates                                        | Green Lam          | Green lam Industries Ltd.             |
|   |                                                  | Centuary           | Centuray laminates                    |
|   |                                                  | Merino             | Merino laminates                      |
|   |                                                  | Royal touche       | Royal touche laminates                |
|   |                                                  | Kitmica            | Kitply Industries Ltd.                |
|   |                                                  | Formica            | Formica Laminates (India) Pvt Ltd.    |
|   |                                                  | Decolam            | Decolam India Pvt Ltd.                |
|   |                                                  | Archidply          | Archidply Industries Ltd              |
|   |                                                  | Sonear             | Sonear Laminates                      |
|   |                                                  | Sunmica            | Sunmica Industries                    |
|   |                                                  | Vidya Ply          | Vidya Ply & Board Pvt.Ltd.            |
| 4 | Prelaminated particle board MDF (Exterior Grade) | Novapan            | GVK Novapan Industries Pvt Ltd.,      |
|   |                                                  | Merino             | Marino laminates                      |
|   |                                                  | Kitlam             | Kit PlyIndustires Ltd,                |
|   |                                                  | Ecoboard           | Ecoboard Industries Ltd.              |
|   |                                                  | Associate          | Associate Décor Limited               |
|   |                                                  | Archid ply         | Archid ply industries Ltd.            |
|   |                                                  | TESA               | Balaji Action Buildwell               |
|   |                                                  | Centuary           | Centuary MDF                          |
|   |                                                  | Green lam          | Green lam industries Ltd.             |
|   |                                                  | Greenpanel         | Greenpanel Industries Ltd.            |
| 5 | Veenering                                        | Greenpanel         | Greenpanel Industries Ltd.            |
|   |                                                  | Centuary           | Centuary MDF                          |
| 6 | FRP Door Frames & Shutter                        | Jain Doors         | Jain Doors Pvt. Ltd,                  |
|   |                                                  | Signum             | Signum Fire Protection India Pvt. Ltd |
|   |                                                  | Meena Fibre Glass, | Meena Fibre Glass                     |
|   |                                                  | Duroplast          | Duroplast extrusion Pvt Ltd           |
|   |                                                  | Cactus             | Cactus                                |
|   |                                                  | Polyline.          | Poluline                              |
| 7 | High Density(HDF) Prelaminated board             | Pergo              | Red Floor India                       |
|   |                                                  | Armstrong          | Armstrong world Industries            |

|                                              |  |                     |                                  |
|----------------------------------------------|--|---------------------|----------------------------------|
|                                              |  | Green ply           | Green ply Industries Ltd.,       |
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|                                              |  | Lafarge             | Lafarge Gypsum India Pvt. Ltd    |

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| 8  | Gypsum board                                   | USG Boral Board | USG Board India (P) Ltd.              |
|    |                                                | Armstrong       | Armstrong wold Industries             |
| 9  | Glass door hardware                            | Dorma           | Dorma India Pvt Ltd                   |
|    |                                                | Kich            | Kich Architectural Products Ltd.      |
|    |                                                | Classic         | Classic hardware                      |
|    |                                                | Hafele          | Hafele India Pvt. Ltd                 |
|    |                                                | Ozone           | Ozone Hardware.                       |
|    |                                                | Geze            | Geze GMBH                             |
|    |                                                | Define          | Define Overseas Pvt. Ltd.             |
|    |                                                | Squash          | Squash glass doors                    |
|    |                                                | Dorset          | Dorset Industries Pvt Ltd             |
|    |                                                | Garg            | D P Garg Pvt Ltd                      |
| 10 | Hydraulic door closers/ Floor springs          | Godrej          | Godrej locking solution & systems     |
|    |                                                | Hardwyn         | Hardwyn hardware                      |
|    |                                                | Dorma           | Dorma India Pvt Ltd.                  |
|    |                                                | Everite         | Everite agencies                      |
|    |                                                | MAGNUM KIT      | Mukund Overseas                       |
|    |                                                | Dorset          | Dorset Industries Pvt Ltd             |
|    |                                                | Geze            | GezeGMBH                              |
|    |                                                | Garg            | D P Garg Pvt Ltd                      |
|    |                                                | Ingersolrand    | Ingersolrand India Pvt Ltd            |
|    |                                                | OZONE           | Ozone Hardware.                       |
| 11 | Locks & Latches                                | Dorset          | Dorset Industries Pvt Ltd             |
|    |                                                | Godrej          | Godrej locking solutions& systems     |
|    |                                                | Harrison        | Harrison locks                        |
|    |                                                | Plaza           | Bharat lock House                     |
|    |                                                | Yale            | ASSA ABLOY India (P) Ltd.             |
|    |                                                | Hitech          | Globe Locks India                     |
|    |                                                | Hafele          | Hafele India Pvt. Ltd                 |
|    |                                                | Link            | Link Locks                            |
|    |                                                | Geze            | GezeGMBH                              |
|    |                                                | Garg            | D.P. Garg Pvt Ltd.,                   |
| 12 | Metalic / Steel Fire Door , frame and shutters | Shakthi Hormann | Shakthi Hormann Pvt Ltd,              |
|    |                                                | Promot          | Promot fire & Insulation (P) Ltd.     |
|    |                                                | Godrej          | Godrej Security solutions             |
|    |                                                | Signum Fire     | Signum Fire Protection India Pvt. Ltd |
|    |                                                | MPP             | MPP Technology Pvt.Ltd.               |

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|    |                                       |              |                                   |
|----|---------------------------------------|--------------|-----------------------------------|
|    |                                       | NAVAIR       | NAVAIR International Pvt Ltd      |
|    |                                       | Sukri        | Sukri Fire doors Pvt.Ltd          |
|    |                                       | Kenwood      | Kenwood Ply & Board               |
| 13 | Fire Smoke Seal                       | Hilti        | Hilti India Pvt Ltd.              |
|    |                                       | Raven        | Raven Global                      |
|    |                                       | Promat       | Promat fire & Insulation (P) Ltd. |
|    |                                       | Atroflame    | Atroflame Ltd.                    |
| 14 | Non Metallic Floor Surface Hardners   | Ironite      | Ironite                           |
|    |                                       | Hardonite,   | Hardonite                         |
|    |                                       | FOSROC       | Fosroc India                      |
|    |                                       | SIKA         | SIKa India                        |
|    |                                       | BASF         | BASF India Ltd.,                  |
|    |                                       | CICO,        | CICO Technologies Ltd.,           |
|    |                                       | Pidilite     | PidiliteIndustries Ltd,           |
| 15 | Fire rated hardware                   | Dorma        | Dorma India Pvt. Ltd              |
|    |                                       | Ingersolrand | Ingersolrand (India) Ltd,         |
|    |                                       | Geze         | GezeGmbH                          |
|    |                                       | Dorset       | Dorset Industries Pvt Ltd         |
|    |                                       | Garg         | D.P. Garg Pvt Ltd.,               |
|    |                                       | Backers FS   | Backers FS                        |
| 16 | Non Metallic Fire door                | NAVAIR       | NAVAIR International Pvt Ltd      |
|    |                                       | Promot       | Promot fire & Insulation (P) Ltd. |
|    |                                       | Godrej       | Godrej Security solutions         |
|    |                                       | Kenwood      | Kenwood Ply & Board               |
| 17 | Stainless steel screws                | Kundan       | Kundan Industries Ltd.            |
|    |                                       | Pooja        | Pooja SteelCorporation            |
|    |                                       | Atul         | Atul fasteners Ltd.               |
|    |                                       | Alloy        | Alloy Ltd                         |
|    |                                       | GKW          | GKW Limited                       |
|    |                                       | Nettlefold   | Nettlefold screws                 |
| 18 | Butt Hinges openable windowshutters   | Hafela       | Hafele India Pvt. Ltd             |
|    |                                       | Alu Alpha    | Alu Alpha India                   |
|    |                                       | Earlt Bihari | EarltBihari India Pvt .Ltd.       |
|    |                                       | Dorma        | DormakabaIndia Pvt. Ltd           |
|    |                                       | Garg         | D.P. Garg Pvt Ltd.,               |
|    |                                       | Dorset       | Dorset Industries Pvt Ltd         |
| 19 | Mild Steel Butt Hinges / Piano hinges | Jolly        | Jolly Engineering works           |
|    |                                       | Garg         | D.P Garg& Company                 |
|    |                                       | Amit         | Lovely metal industries Pvt Ltd.  |
|    |                                       | Jyoti        | Jyoti Architectural Pvt Ltd.      |
|    |                                       | Supreme      | Supreme                           |

|                                              |  |        |                          |
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|                                              |  | Deepak | Deepak                   |
|                                              |  | Swift  | Swift screws             |
|                                              |  | Prayag | Prayag Polymers (P) Ltd. |
|                                              |  | Ozone  | Ozone Hardware.          |

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|  |  | Asahi | Asahi India glass .Ltd. |
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|    |                                        |                   |                                             |
|----|----------------------------------------|-------------------|---------------------------------------------|
| 20 | Stainless steel Butt hinges            | Dorma             | Dormakaba India Pvt Ltd                     |
|    |                                        | Geze              | GEZEGMBH                                    |
| 21 | Concealed towerbolt                    | Dorma             | Dorma India Pvt Ltd                         |
|    |                                        | Ingersolrand      | Ingersolrand (India) Ltd,                   |
|    |                                        | Alu Alpha         | Alu Alpha India                             |
|    |                                        | Garg              | D.P. Garg Pvt Ltd.,                         |
|    |                                        | DORSET            | Dorset Industries Pvt Ltd                   |
| 22 | UPVC doors, frames and window profiles | Fenesta           | Fenesta DCM Shriman                         |
|    |                                        | QUTE              | Qute extrusionPvt. Ltd                      |
|    |                                        | LG                | LG Housys India                             |
|    |                                        | Kommerling        | Profine India Window technology Pvt Ltd.    |
|    |                                        | Duroplast         | Duroplast extrusion Pvt Ltd                 |
|    |                                        | Polyline          | Polyline extrusion Pvt Ltd                  |
|    |                                        | Aparna Venstar    | Aparna Enterprises Ltd.                     |
|    |                                        | AMD               | AMD overseas Impex (India) Pvt. LTD.        |
|    |                                        | SimtaAstrix       | Simta clear coats pvt.Ltd                   |
|    |                                        | Rajshri           | Rajshri Productions Pvt. Ltd.               |
|    |                                        | NCL VEKA          | NCL VEKA Ltd.                               |
|    |                                        | Prominace         | Prominace Window Systems                    |
|    |                                        | Marcolini         | Mathura Polypack(P) Ltd.                    |
|    |                                        | Akshara Polymerss | Akshara Polymerss                           |
|    |                                        | Encraft           | Encraft India Pvt.Ltd.                      |
|    |                                        | Rehau             | Rehau Unlimited Polymer Solutions           |
|    |                                        | Aluplast          | Alu Alpha India                             |
|    |                                        | Shirke            | B.G Shirke Construction Technology Pvt Ltd. |
| 23 | Stainless friction hinges              | Hetich            | HetichIndia Pvt .Ltd.                       |
|    |                                        | Haffle            | Haffle India Pvt .Ltd.                      |
|    |                                        | Securistyle       | Securistyle India Pvt .Ltd.                 |
|    |                                        | Earl Bihari       | Earl Bihari India Pvt .Ltd.                 |
|    |                                        | ROTO              | ROTO Frank Asia                             |
|    |                                        | EBCO              | EBCO                                        |
| 24 | Float Glass                            | Saint Gobain,     | Saint Gobain India Pvt .Ltd. ,              |



|            |                                        |                                      |                                            |
|------------|----------------------------------------|--------------------------------------|--------------------------------------------|
|            |                                        | Pilkinton                            | Pilkinton India Pvt .Ltd.                  |
|            |                                        | Modiguard                            | Gujarat Guardian Ltd.                      |
| 25         | Reflective glass                       | Saint Gobain,                        | Saint Gobain India Pvt .Ltd. ,             |
|            |                                        | Asahi                                | Asahi India glass .Ltd.                    |
|            |                                        | Pilkinton                            | Pilkinton India                            |
|            |                                        | Glaverbel                            | Glaverbel India                            |
|            |                                        | Modifloat                            | Gujarat Guardian Ltd.                      |
| 26         | Tempered reflective/clear glass        | Saint Gobain,                        | Saint GobainIndia Pvt .Ltd.                |
|            |                                        | FUSO                                 | FUSO Glass India Pvt .Ltd.                 |
|            |                                        | Gurind                               | Gurind India                               |
|            |                                        | Impact safety                        | Impact safety glassworkes Pvt Ltd          |
|            |                                        | Asahi                                | Asahi India glass Ltd,                     |
|            |                                        | Modiguard                            | Gujarat Guardian Ltd.                      |
| 27         | Fire rated glass                       | Contra flam/Pyroswiss of SanitGobain | Saint Gobain India Pvt Ltd.                |
|            |                                        | Pyran of Schott                      | Schott glass India Pvt .Ltd.               |
|            |                                        | Pilkinton                            | Pilkinton India                            |
|            |                                        | Promat                               | Promat fire & Insulation (P) Ltd.          |
| 28         | Anchor/ SS Stone Dash fasteners        | Hilti                                | Hilti India Pvt .Ltd.                      |
|            |                                        | Fischer                              | Fischer India                              |
|            |                                        | Anchor                               | Anchor Ltd                                 |
|            |                                        | Kundan                               | Kundan Industires Ltd.                     |
|            |                                        | Nutech                               | Nutech Construction Chemicals              |
|            |                                        | Canon                                | Cannon                                     |
|            |                                        | Wurth                                | Wuerth India Pvt. Ltd                      |
|            |                                        | Trixel                               | Axel India Pvt.Ltd                         |
|            |                                        | Helfen                               | Helfen Anchoring System                    |
|            |                                        | BOSCH                                | BOSCH Ltd                                  |
| STEEL WORK |                                        |                                      |                                            |
| 1          | Structural Steel                       | SAIL                                 | SAIL                                       |
|            |                                        | TISCO                                | TATA STEEL                                 |
|            |                                        | VIZAG                                | RINL                                       |
|            |                                        | JSW                                  | JSW                                        |
|            |                                        | Apollo                               | APL Apollo                                 |
| 2          | M.S.Pipes / Tubes and Hollow sections. | SAIL                                 | SAIL                                       |
|            |                                        | TISCO                                | TATA STEEL                                 |
|            |                                        | METPRO                               | MKK Matel Section Pvt. Ltd.                |
|            |                                        | R.K. Steel                           | R.K. Steel Manufacturing CompnayPvt. Ltd., |
|            |                                        | Apollo                               | APL Apollo                                 |
|            |                                        | Kalinga                              | Kalinga Tubes                              |

|                                              |  |        |                                 |
|----------------------------------------------|--|--------|---------------------------------|
|                                              |  | JINDAL | JSW                             |
|                                              |  | Nezone | Nezone Tubes Limited            |
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|                                              |  | Jindal | JSW Date <b>05.03.2021</b>      |
|                                              |  | SAIL   | SAIL                            |

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|  |  | Anuj | Aravid Ceramic Industries Limited, |
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|----------|------------------------------------------------------------------------|-------------------|-----------------------------------|-------------------------------|--|
| 3        | Stainless steel pipes / sections                                       | KINGSTON          | KINGSTON Brass                    |                               |  |
|          |                                                                        | Connect           | Connect Ltd.                      |                               |  |
|          |                                                                        | Ark               | Ark Product Pvt. Ltd              |                               |  |
| 4        | Stainless steel Bolts, washers, nuts                                   | Kundan            | Kundan Industires Ltd             |                               |  |
|          |                                                                        | Pooja             | Pooja Steel Corporation           |                               |  |
|          |                                                                        | Atul              | Atul fasterners Ltd               |                               |  |
|          |                                                                        | Hilti             | Hilti India Pvt. Ltd              |                               |  |
| 5        | Stainless steel pressure plate screws                                  | Kundan            | Kundan Industires Ltd             |                               |  |
|          |                                                                        | Pooja             | Pooja steel corporation           |                               |  |
|          |                                                                        | Atul              | Atul fasterners Ltd               |                               |  |
| 6        | Welding rods                                                           | Advani            | Advani oerlikon Ltd.              |                               |  |
|          |                                                                        | ESAB              | ESAB India Pvt. Ltd               |                               |  |
| 7        | Metal Deck Sheet                                                       | TATA              | TATA STEEL                        |                               |  |
|          |                                                                        | SAIL              | SAIL                              |                               |  |
| 8        | Steel Windows/Pressed Steel Frames                                     | Madhu Industries, | Madhu Industries, San Harvic, NCL |                               |  |
|          |                                                                        | San Harvic,       | San Harvic                        |                               |  |
|          |                                                                        | NCL               | NCL Industries                    |                               |  |
| FLOORING |                                                                        |                   |                                   |                               |  |
| 1        | Vitrified tiles & Bath room anti-skid tiles/ Glazed Wall Ceramic Tiles |                   | Asian (AGL)                       | Asian Granite India Ltd       |  |
|          |                                                                        |                   | NITCO                             | NITCO Ltd                     |  |
|          |                                                                        |                   | RAK                               | RAK Ceramic India Pvt Ltd.    |  |
|          |                                                                        |                   | Kajaria                           | Kajaria Ceramic Ltd           |  |
|          |                                                                        |                   | Somany                            | Somany Ceramic Ltd            |  |
|          |                                                                        |                   | Jhonson                           | Prism Jhonson Ltd             |  |
|          |                                                                        |                   | Orient Bell                       | Orient Bell Ltd               |  |
|          |                                                                        |                   | Naveen                            | Murudeshwar Ceramics Ltd.,    |  |
|          |                                                                        |                   | Anuj                              | Aravid Ceramic Industries Ltd |  |
| 2        | Cement concrete parking tiles                                          |                   | NITCO                             | NITCO Ltd                     |  |
|          |                                                                        |                   | Eurocon                           | Eurocon tiles India           |  |
|          |                                                                        |                   | Dazzle                            | Dazzle Designer tiles Pvt Ltd |  |
|          |                                                                        |                   | Ultra                             | Ultra tile private Ltd.       |  |

|         |                                            |                         |                                |
|---------|--------------------------------------------|-------------------------|--------------------------------|
|         |                                            | Hindustan tiles         | Hindustan tiles, Ranchi Pune   |
| 3       | White Cement                               | ACC                     | ACC Cements Ltd                |
|         |                                            | Birla                   | Birla Corportion Ltd.          |
|         |                                            | JK White                | JK Cement Ltd.                 |
| ROOFING |                                            |                         |                                |
| 1       | Thermal Insulation treatment               | Elastospray             | BASF                           |
|         |                                            | Pidilite                | Pidilite industries            |
|         |                                            | Rock India Pvt.LTd      | Rock India Pvt.Ltd             |
|         |                                            | Weathercoat Kool & Seal | Berger Paints                  |
| 2       | Acoustic Insulation                        | Twingerinsu l           | U.P.Twigafiber glass Ltd       |
|         |                                            | Lloyd Insulation        | Lloyd Insulation (India ) Ltd  |
|         |                                            | Saint Gobain Gyproc     | Saint GobainGyproc India       |
|         |                                            | Himalyan Acoustics      | Himalyan Acoustics             |
|         |                                            | Knauf                   | Knauf Gypsum India Pvt. Ltd.   |
|         |                                            | Anutone                 | Anutone Acoustics Ltd.         |
| 3       | UPVC Pipes and fittings (Rain water pipes) | Supreme                 | Superme Industries Ltd.        |
|         |                                            | Prince                  | Prince pipes and fittings Ltd. |
|         |                                            | Finolex                 | Finolex Industries Ltd.        |
|         |                                            | Prayag                  | PrayagPolimers (P) Ltd.        |
|         |                                            | Astral                  | Astral polytechnik Ltd.        |
|         |                                            | Ashirwad                | Ashirwad PVC Pipes             |
| 4       | False ceilings                             | Aerolite                | Andhra PolimersPvt. Ltd.       |
|         |                                            | Anutone                 | AnutoneAccoustics Ltd.         |
|         |                                            | Armstrong               | Armstrong World Industries     |
|         |                                            | Ramco                   | Ramco Industries Ltd.          |
|         |                                            | Knauf                   | Knauf Gypsum India Pvt. Ltd.   |
|         |                                            | Himalyan Acoustics      | Himalyan Acoustics             |
|         |                                            | Saint Gobain Gyproc     | Saint GobainGyproc India       |
|         |                                            | Gridsquare              | Gridsquare Ceilings            |
|         |                                            | USG Boral               | USG Boral                      |

|                                                  |  |                                                          |                 |
|--------------------------------------------------|--|----------------------------------------------------------|-----------------|
|                                                  |  | Hunter<br>Dougals                                        | Hunter Dougals  |
| <del>FINISHING</del><br><del>मिनीले रीड्या</del> |  | <del>दिनांक : 05.03.2021</del>                           |                 |
| File No. CECRI / 2021 / 5739                     |  | Date <del>05.03.2021</del><br>Premium<br>gloss<br>enamel | Asian paint Ltd |

|  |  |         |           |
|--|--|---------|-----------|
|  |  | Dulex   | ICI dulex |
|  |  | Nerolac | Nerolac   |

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|   |                                |                                               |                                   |
|---|--------------------------------|-----------------------------------------------|-----------------------------------|
| 1 | Synthetic enamel Paint         | Dulex                                         | ICI dulex Ltd                     |
|   |                                | Nerolac                                       | NerolacPaints Ltd                 |
|   |                                | Berger                                        | Berger Paints                     |
|   |                                | Nippon                                        | Nippon Paint India Ltd.           |
| 2 | Pink primer                    | Wood primer                                   | Asian paint                       |
|   |                                | Dulex                                         | ICI dulex                         |
|   |                                | Nerolac                                       | NerolacKansiaNerolac Paints Ltd., |
|   |                                | Berger                                        | Berger Paints                     |
|   |                                | Nippon                                        | Nippon                            |
| 3 | Red Oxide Zinc Chromate primer | High performanc<br>eyellow<br>metal<br>primer | Asian paint                       |
|   |                                | Dulex                                         | ICI dulex                         |
|   |                                | Nerolac                                       | Nerolac                           |
|   |                                | Berger                                        | Berger Paints                     |
|   |                                | Nippon                                        | Nippon                            |
| 4 | Oil Bound Distemper            | Tractor Aqalock                               | Asian paint                       |
|   |                                | Dulex                                         | ICI dulex                         |
|   |                                | Nerolac                                       | Nerolac                           |
|   |                                | Berger                                        | Berger Paints                     |
|   |                                | Nippon                                        | Nippon                            |
|   |                                | mGPolyplast                                   | Nerolac                           |
| 5 | Acrylic emulsion               | Tractor emulsion (premium)                    | Asian paint                       |
|   |                                | Dulex                                         | ICI dulex                         |
|   |                                | Nerolac                                       | Nerolac                           |
|   |                                | Berger                                        | Berger Paints                     |
|   |                                | Nippon                                        | Nippon                            |
| 6 | Water Proof Cement paint       | Asian exterial wall primer                    | Asian paint                       |
|   |                                | Berger                                        | Berger Paints                     |
|   |                                | Cem Colour                                    | Snowcem Paints                    |
|   |                                | ICI DULUX                                     | ICI DULUX                         |
| 7 | Acrylic smooth exterior paint  | ACE / Apex                                    | Asian paint                       |

|    |                                                              |                              |                                 |
|----|--------------------------------------------------------------|------------------------------|---------------------------------|
|    |                                                              | Berger                       | Berger                          |
|    |                                                              | Nippon                       | Nippon                          |
| 8  | Premium Acrylic smooth exterior paint with silicon additives | ULTIMA                       | Asian paint                     |
|    |                                                              | Dulex                        | ICI dulex                       |
|    |                                                              | Nerolac                      | Nerolac                         |
|    |                                                              | Berger                       | Berger                          |
|    |                                                              | Nippon                       | Nippon                          |
| 9  | Cement based wall putty                                      | J.K.wall putty               | J.K. Cement Ltd.                |
|    |                                                              | Birla wall case              | Birla Cements Ltd.,             |
|    |                                                              | Asian paints                 | Asian paints Ltd                |
|    |                                                              | Altek                        | NCL Alltek&seccold Ltd.         |
|    |                                                              | Birla Hil                    | HIL Ltd (CK Birla Group)        |
|    |                                                              | Berger                       | Berger                          |
|    |                                                              | Ardex Endura                 | Ardex Endura India Pvt. Ltd.    |
|    |                                                              | Ferrous Crete                | Ferrous Crete (India) Pvt. Ltd. |
| 10 | Acrylic texured plaster                                      | Apex Duracast                | Asian paints                    |
|    |                                                              | Spectrum paints              | Spectrum paints Ltd.            |
|    |                                                              | Heritage                     | Heritage Rajkamal Group         |
|    |                                                              | Asian paints                 | Asian Paints                    |
|    |                                                              | Neroloc                      | Neroloc                         |
|    |                                                              | ReadiPlast                   | Ultratech cements Ltd.          |
|    |                                                              | Ramco super plaster melamine | Ramco cementsLtd.               |
|    |                                                              | Gyproc Plasters              | Saint GobainGyproc India        |
|    |                                                              | Ultra tech                   | Ultra tech Cement Ltd.          |
|    |                                                              | Knauf                        | Knauf Gypsum India Pvt. Ltd.    |
| 11 | Melamine Polish                                              | Asian paints                 | Asian paints                    |
|    |                                                              | Polycure                     | Polycuremalaysia                |
|    |                                                              | Melamine Gold wudfin         | Pidilite industries             |
| 12 | Fire retardant paint                                         | Jotun                        | Jotun paints                    |
|    |                                                              | Hilti                        | Hilti India                     |
|    |                                                              | Akzonobel                    | DulexAkzonobel                  |

|              |                              |        |      |              |                          |
|--------------|------------------------------|--------|------|--------------|--------------------------|
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|              |                              |        |      | Asian Paints | Asian Paints             |
|              |                              |        |      | STPL Ltd.    | STPL Ltd.                |
|              |                              |        |      | Berger       | Berger paints India Ltd. |
|              |                              |        |      | 05.03.2021   | 05.03.2021               |



|  |  |             |                         |
|--|--|-------------|-------------------------|
|  |  | Surfa Coats | Surfa Coats, Pvt. Ltd., |
|--|--|-------------|-------------------------|

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|----|---------------------------------|-------------------------|------------------------------------------|
| 13 | Anticorrosive bitumastic paint  | Shalimar                | Shalimar paints India Ltd.               |
|    |                                 | IS 158 bituminous black | Asian Paints                             |
| 14 | Cement Primer                   | Asian paints            | Asian paints                             |
|    |                                 | JK Primaxx              | JK Cement Ltd.                           |
|    |                                 | Berger                  | Berger paints India Ltd.                 |
|    |                                 | Berger                  | Berger paints India Ltd.                 |
|    |                                 | Shalimar                | Shalimar paints                          |
|    |                                 | STP Ltd.                | Shalimar Tar Products                    |
|    |                                 | Ardex Endura            | Ardex Endura India Pvt. Ltd.             |
|    |                                 | Mapecoa tL24            | MAPEI Construction Products India P Ltd. |
|    |                                 | Nerolac                 | Nerolac                                  |
|    |                                 | Sun Epoxy Paint         | Sunanda Speciality Coatings Pvt,Ltd      |
|    |                                 | Fosroc                  | Fosroc India                             |
|    |                                 | Laticrete               | MYK Laticrete India                      |
|    |                                 | Ardex Endura            | Ardex Endura India Pvt. Ltd.             |
|    |                                 | Mapecoa tDW25           | MAPEI Construction Products India P Ltd. |
| 15 | Silicon coating                 | Dow corning             | Dow corning India                        |
|    |                                 | BASF                    | BASF India Ltd.                          |
|    |                                 | GE                      | GE Silicones                             |
|    |                                 | Wacker                  | Wacker silicones.                        |
| 16 | Textured acrylic Exterior Paint | Asian epoxy             | Asian paints                             |
|    |                                 | Berger                  | Berger paints India Ltd.                 |

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|                               |                                    |                  |                                 |
|-------------------------------|------------------------------------|------------------|---------------------------------|
|                               |                                    | Akzonobel        | Akzonobel                       |
|                               |                                    | Ebco             | Ebco                            |
|                               |                                    | Neroloc          | NerolocPaints Ltd               |
|                               |                                    | Gyproc Cute 100  | Gyproc India                    |
|                               |                                    | Ultrtech         | Ultratech cements Ltd.          |
|                               |                                    | Akzonobel        | Akzonobel                       |
|                               |                                    | Asian            | Asian Paints                    |
|                               |                                    | Berger,          | Berger paints India Ltd.        |
|                               |                                    | MRF              | MRF Paints                      |
|                               |                                    | Pidilite         | Pidilite Industries             |
|                               |                                    | BASF             | BASF                            |
|                               |                                    | Fosroc           | Fosroc India                    |
|                               |                                    | SIKA             | SIKA India                      |
|                               |                                    | PURoofcoat       | Berger Paints                   |
|                               |                                    | SKK Brand        | SKK Ltd.                        |
|                               |                                    | Berger           | Berger paints India Ltd.        |
| <b>ROAD WORK</b>              |                                    |                  |                                 |
| 1                             | Interlocking Concrete Paver Blocks | Dazzle           | Dazzle designer tiles (P) Ltd.  |
|                               |                                    | Ultra            | Ultra tiles Pvt Ltd.,           |
|                               |                                    | Shree            | Shree Bharat Paver blocks       |
|                               |                                    | Hindustan tiles  | Hindustan tiles, Ranchi Pune    |
|                               |                                    | Asttra           | Asttra Tile and Pavers Company. |
|                               |                                    | NITCO (ROCKAR D) | NITCO                           |
|                               |                                    | REGENCY          | Regency                         |
| 2                             | Solar studs/ Median markers        | 3M               | 3M Science                      |
|                               |                                    | Avery Dennison   | Avery Dennison India Pvt Ltd.   |
|                               |                                    | Nikkalite        | Nippon carbideIndustires(USA)   |
| <b>SANITARY INSTALLATIONS</b> |                                    |                  |                                 |
| 1                             | Mirrors                            | Modi Guard       | Gujarat Guardian Ltd.           |
|                               |                                    | Saint Gobain     | Saint Gobain Glass India Ltd.,  |
|                               |                                    | AIS mirror       | Asahi India glass Ltd,          |

|                                              |  |                  |                                      |
|----------------------------------------------|--|------------------|--------------------------------------|
|                                              |  | Atul             | Atul glass Industries Ltd.,          |
| गिसिल संख्या<br>File No. CECRI / 2021 / 5739 |  | CERA<br>Hindware | CERA Sanitaryware Ltd.               |
|                                              |  | Roca             | HSIL Ltd,<br>ROCA Bath room products |

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|              |  |           |                              |
|--------------|--|-----------|------------------------------|
| मिसिल संख्या |  | Birla Hil | HIL Ltd (CK Birla Group)     |
|              |  | Astral    | Astral Poly Technik Limited, |

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|   |                                                                     |              |                                    |
|---|---------------------------------------------------------------------|--------------|------------------------------------|
| 2 | Vitreous Commodes/ Washbasin/ Flushing Cistern with EWC/WC/ Urinals | Parryware    | ROCA BathPvt. Ltd.,                |
|   |                                                                     | Kohler       | Kohler world wide                  |
|   |                                                                     | Somany       | Somany Ceramic Ltd,                |
|   |                                                                     | NEYCER       | NEYCER India Ltd.,                 |
|   |                                                                     | CERA         | CERA Sanitaryware Ltd.,            |
|   |                                                                     | Rak Ceramics | RakCeramics IndiaPvt. Ltd          |
|   |                                                                     | Jaquar       | Jaquar Group                       |
|   |                                                                     | Hindware     | HSIL Ltd,                          |
|   |                                                                     | Rak Ceramics | RakCeramics IndiaPvt. Ltd          |
|   |                                                                     | CERA         | CERA Sanitaryware Ltd.,            |
|   |                                                                     | Kohler       | Kohler world wide                  |
|   |                                                                     | Jaquar       | Jaquar Group                       |
|   |                                                                     |              |                                    |
|   |                                                                     | Hindware     | HSIL Ltd,                          |
|   |                                                                     | CERA         | CERA Sanitaryware Ltd.,            |
| 3 | SWR / UPVC Pipes& fittings                                          | Supreme      | SupermeIndustiresLtd.              |
|   |                                                                     | Astral       | Astral polytechnik Ltd.            |
|   |                                                                     | Finolex      | Finolex Industries Ltd.,           |
|   |                                                                     | Ajay         | Ajay Industries Ltd.               |
|   |                                                                     | Vectus       | Vectus Industries Ltd.,            |
|   |                                                                     | Prince       | Prince Pipes and fittings          |
|   |                                                                     | Prayag       | Prayag polymers Pvt Ltd.,          |
|   |                                                                     | Sentini      | SentiniFloppes, India Private Ltd. |

|  |  |       |       |
|--|--|-------|-------|
|  |  | Evoke | Evoke |
|--|--|-------|-------|

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|   |                                                                 |                         |                                           |
|---|-----------------------------------------------------------------|-------------------------|-------------------------------------------|
|   |                                                                 | Flowgard                | Ashirwad PVC Pipes                        |
|   |                                                                 | Truflow                 | HSIL Ltd of Hindware                      |
| 4 | Stainless Steel Kitchen sink                                    | Jhonson                 | PrisionJhonson Ltd.,                      |
|   |                                                                 | Diamond                 | Pheonix Appliances Pvt. Ltd.              |
|   |                                                                 | Jindal                  | Centuarypolytech                          |
|   |                                                                 | Kingston                | Kingston brass India                      |
|   |                                                                 | Nirali                  | Jyoti (India) matel Industries Pvt Ltd.   |
|   |                                                                 | Hindware                | HSIL Ltd                                  |
|   |                                                                 | Silver shine            | Blue stone sanitary Industries Pvt. Ltd.  |
|   |                                                                 | Prayag                  | PrayagPolimers (P) Ltd.                   |
|   |                                                                 | Navkar                  | Shri Navkar Metals Ltd.                   |
|   |                                                                 | Futura                  | Futura Kitchen Sinks India Pvt. Ltd.      |
|   |                                                                 | CERA                    | CERA Sanitaryware Ltd.,                   |
|   |                                                                 | Nilkanth                | Nilkant                                   |
|   |                                                                 | Joyna                   | Joyna                                     |
|   |                                                                 | Franke                  | Franke India Ltd.                         |
| 5 | Sensor Based Auto flush Systems                                 | AOS Systems,,           | AOS Systems                               |
|   |                                                                 | TOTO                    | TOTO Ltd                                  |
|   |                                                                 | Parryware,              | Parryware                                 |
|   |                                                                 | Hindware,               | HSIL Ltd                                  |
|   |                                                                 | Grohe,                  | Grohe                                     |
|   |                                                                 | Jaquar                  | Jaquar Group                              |
|   |                                                                 | Kochier                 | Kochier                                   |
| 6 | Centrifugally Caste (Spun) Iron Soil waste, Pipes and fittings. | Neco                    | JayaswalNeco Ltd                          |
|   |                                                                 | RPMF                    | Raj Pattern Makers and Founders Pvt. Ltd. |
|   |                                                                 | SKF brand               | SKF Industries                            |
|   |                                                                 | HEPCO                   | Hepco                                     |
|   |                                                                 | Bengal Iron Corporation | Bengal Iron Corporation                   |
|   |                                                                 | HIF                     | M/s.Babulal Bajaj Iron Foundry            |
|   |                                                                 | Godrej                  | Godrej & Boyce Co.                        |
|   |                                                                 | Spacewood               | Spacewood                                 |

| WATER SUPPLY |                                |            |                                            |
|--------------|--------------------------------|------------|--------------------------------------------|
| 1            | G I Pipes                      | TATA       | TATA Steel Ltd.,                           |
|              |                                | Zenith     | Zenith Birla (India) Ltd.                  |
|              |                                | Jindal     | Jindal Pipes Ltd.,                         |
|              |                                | R.K. Steel | R.K. Steel Manufacturing CompnayPvt. Ltd., |
|              |                                | HISSAR     | HISSAR                                     |
|              |                                | Apollo     | APL Apollo                                 |
| 2            | G I Pipe fittings              | Zoloto     | Zoloto Industries                          |
|              |                                | Unik       | Unikmalleables                             |
|              |                                | HB         | HB Industries                              |
|              |                                | ICS        | Sgreesamarth Engineers                     |
|              |                                | R.K. Steel | R.K. Steel Manufacturing CompnayPvt. Ltd., |
| 3            | Water supply Valves            | Zoloto     | Zoloto Industries                          |
|              |                                | leader     | leader valves Ltd.,                        |
|              |                                | ARCO       | Arco valves Pvt. Ltd.,                     |
|              |                                | Nanda      | Nanda Miller company                       |
| 4            | CPVC pipes and fittings        | Supreme    | Supreme Industries Ltd.                    |
|              |                                | Finolex    | Finolex Industries Ltd.                    |
|              |                                | Astral     | Astral Polytechnik Ltd.,                   |
|              |                                | Prince     | Prince Pipes andfinttings Ltd.,            |
|              |                                | Ajay       | Ajay Industrial corporation                |
|              |                                | Prayag     | Prayag polymers Pvt Ltd.,                  |
|              |                                | Vectus     | Vectus Industries Ltd.,                    |
|              |                                | Truflo     | HIS Ltd.                                   |
|              |                                | Anil       | Anil Thermoplastics Pvt. Ltd.              |
|              |                                | Birla Hil  | HIL Ltd (CK Birla Group)                   |
|              |                                | Sentini    | SentiniFlopipesIndi a Pvt. Ltd.            |
|              |                                | Astral     | Astral Poly Technik Limited,               |
|              |                                | Ashirwad   | Ashirwad PVC Pipes                         |
|              |                                | Flowgard   | Flowgaurd                                  |
| 5            | PVC / HDPE water storage tanks | Sintex     | Sintexplastic technology Ltd.,             |
|              |                                | Vectus     | Vectus Industries                          |

|                              |        |            |                                   |
|------------------------------|--------|------------|-----------------------------------|
|                              |        |            | Ltd.                              |
|                              |        | Supreme    | Supreme Industries Ltd.           |
| मिसिल संख्या                 | दिनांक | 05.03.2021 | Jaquar Group                      |
| File No. CECRI / 2021 / 5739 | Date   | 05.03.2021 | Roca bath room products Pvt. Ltd, |
|                              |        | Parryware  |                                   |

|  |  |       |                   |
|--|--|-------|-------------------|
|  |  | Zolto | Zolota Industries |
|  |  | Zolto | Zolota Industries |

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|   |                                                                                                                                   |                       |                                |
|---|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------|--------------------------------|
| 6 | Watersupply fixtures like bibcock, Shower panels CP Brass fixtures like bibcock, angle cock , Piler Cock, mixtures, Showers etc., | Metro                 | Metro sanitations Pvt. Ltd.,   |
|   |                                                                                                                                   | Waterman              | Kewal brothers                 |
|   |                                                                                                                                   | Seiko                 | Seiko Sanitations              |
|   |                                                                                                                                   | Prayag                | Prayag polymers Pvt Ltd.,      |
|   |                                                                                                                                   | Kingston              | Kingston brass India           |
|   |                                                                                                                                   | Johnson               | Prism Jhonson Ltd              |
|   |                                                                                                                                   | CERA                  | CERA Sanitaryware Ltd.,        |
|   |                                                                                                                                   | MARC                  | MARK Showers                   |
|   |                                                                                                                                   | HINDWare              | HSIL Ltd.                      |
| 7 | Air release valve                                                                                                                 | Kirloskar             | Kirloskar brothers Ltd.,       |
|   |                                                                                                                                   | RBM                   | AFS Ltd.,                      |
|   |                                                                                                                                   | Kartar                | Kartar valves private Ltd.,    |
|   |                                                                                                                                   | Jindal                | Jindal saw Ltd.                |
|   |                                                                                                                                   | Kesoram               | Kesoram Industries Ltd.        |
|   |                                                                                                                                   | Electrosteel          | Electrosteel castings Ltd.     |
|   |                                                                                                                                   | Kartar                | KartarValves Private Ltd.      |
|   |                                                                                                                                   | Electrosteel          | Electrosteel castings Ltd.     |
|   |                                                                                                                                   | Kapilansh Centrifugal | Kapilansh Dhatu Udyog(P)Ltd.   |
| 8 | CI double flange sluice valve                                                                                                     | SKF brand             | SINGHALIRON FOUNDRY Pvt. Ltd., |
|   |                                                                                                                                   | Kirloskar             | Kirloskar brothers Ltd.,       |
|   |                                                                                                                                   | RBM                   | AFS Ltd.,                      |
|   |                                                                                                                                   | Kartar                | Kartar valves private Ltd.,    |
|   |                                                                                                                                   | IVS                   | Indian valves private Ltd.,    |
|   |                                                                                                                                   | Zoloto                | Zolota Industries              |
|   |                                                                                                                                   | Leader                | Leader valves Ltd.             |
| 9 | CI double flanged non return valve                                                                                                | BURN                  | BURN                           |
|   |                                                                                                                                   | Kirloskar             | Kirloskar Brothers Ltd.,       |
|   |                                                                                                                                   | Fluidtech             | Fluidtech                      |



|          |                                                                                        |                   |                                                       |
|----------|----------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------|
| 10       | Gun metal Valves                                                                       | Leader            | Leader valves Ltd.                                    |
|          |                                                                                        | Sant              | Sant valves Pvt Ltd,                                  |
|          |                                                                                        | Audco             | L&T Valves                                            |
| 11       | PTMT/PVC water supply fittings like bibcocks, pillar cock, Angle valve, Stop Valveetc. | PEARL             | Precision Products                                    |
|          |                                                                                        | Prayag            | Prayag Polymers (P) Ltd                               |
|          |                                                                                        | Supreme           | Supreme Industries                                    |
| 12       | Float Valve (Ball Valve)                                                               | Prayag,           | Prayag Polymers (P) Ltd                               |
|          |                                                                                        | Leader,           | Leader valves Ltd.                                    |
|          |                                                                                        | Zoloto,           | Zolota Industries                                     |
|          |                                                                                        | IBP               | IBP Industries                                        |
|          |                                                                                        | Arco              | Arco valves Pvt. Ltd.,                                |
| DRAINAGE |                                                                                        |                   |                                                       |
| 1        | RCC Pipes                                                                              | Indian Hume Pipe  | Indian Hume Pipe Ltd.,                                |
|          |                                                                                        | Jain & Co         | Jain spun pipes Co.,                                  |
|          |                                                                                        | Lakshmi Sood&Sood | Lakshmi Sood&Sood Pipe Co.                            |
| 2        | CI Manhole cover                                                                       | Neco              | JayaswalNeco Ltd.,                                    |
|          |                                                                                        | BIC               | Bengal iron corporation                               |
|          |                                                                                        | DEC               | DEC Infrastructure & Project (India) Prviate Limited. |
|          |                                                                                        | HEPCO             | Binay Udyog Pvt. Ltd.                                 |
| 3        | SFRC Cover and grating                                                                 | KK                | KK Manhole and gratings Co Pvt Ltd.,                  |
|          |                                                                                        | Advent            | Advent concrete vision                                |
|          |                                                                                        | Nu-TEC            | Nu-Tech concrete products (P) Ltd.,                   |
|          |                                                                                        | Kutty             | Kutty Industries                                      |
|          |                                                                                        | DEC               | DEC I & P India Pvt.Ltd.                              |
| 4        | Plastic Encapsulated Foot Rest                                                         | KK India          | KK Manhole and gratings Co Pvt Ltd.,                  |
|          |                                                                                        | KGM               | KGM Exports .                                         |
|          |                                                                                        | Accurate Buildcon | Accurate Buildcon company.                            |

|                                              |                                  |                          |                                      |
|----------------------------------------------|----------------------------------|--------------------------|--------------------------------------|
| मिसिल संख्या<br>File No. CEERI / 2021 / 5739 | Spun cast iron covers & gratings | Neco                     | JayaswalNeco Ltd                     |
|                                              |                                  | Jagannath                | Sri Jagannath Iron Foundry Pvt. Ltd. |
|                                              |                                  | Kapilansh<br>Centrifugal | Kapilansh Dhatu Udyog(P)Ltd.         |

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|                       |                                                                     |                         |                                         |
|-----------------------|---------------------------------------------------------------------|-------------------------|-----------------------------------------|
|                       |                                                                     | SKF brand               | SINGHALIRON<br>FOUNDARY Pvt.<br>Ltd.,   |
| <b>ALUMINIUM WORK</b> |                                                                     |                         |                                         |
| 1                     | Aluminium doors/windows sections                                    | Hindalco                | Hindalco Industries<br>Ltd.,            |
|                       |                                                                     | jindal                  | jindalAluminium<br>Ltd.,                |
|                       |                                                                     | Bhoruka                 | BhorukaAluminium<br>Ltd.,               |
|                       |                                                                     | Indal                   | Indian Aluminium<br>Ltd.,               |
|                       |                                                                     | Padmavathi<br>Extrusion | Padmavathi<br>Extrusion Private<br>Ltd. |
|                       |                                                                     | Hydro                   | Hydro Extrusion                         |
|                       |                                                                     | Omalco<br>Extrusion     | Omalco Extrusion<br>Pvt. Ltd.           |
|                       |                                                                     | Bhoruka                 | BhorukaAluminium<br>Ltd.,               |
| 2                     | Aluminium systems/ Anodised aluminium<br>fittings for doors/windows | Define                  | Define Overseas<br>Pvt. Ltd.            |
|                       |                                                                     | Schueco                 | SchuecoIndia Pvt.<br>Ltd.,              |
|                       |                                                                     | Bhoruka                 | BhorukaAluminium<br>Ltd.,               |
|                       |                                                                     | Kawneer                 | Kawneer India                           |
|                       |                                                                     | Hardima                 | Hardima sales<br>corporation            |
|                       |                                                                     | Everite                 | Everite Agencies                        |
|                       |                                                                     | Sigma                   | Sigma Corporation                       |
|                       |                                                                     | Jyothi                  | Jyothi Industries                       |
| 3                     | Friction stay hinges                                                | Earl Bihari             | Earl Bihari Pvt.<br>Ltd.                |
|                       |                                                                     | KINLONG                 | Kinlong Industries                      |
| 4                     | EPDM Gaskets                                                        | Anand                   | Anand NVH<br>products (P) Ltd.,         |
|                       |                                                                     | Roop                    | Roop Polymers<br>Ltd.,                  |
|                       |                                                                     | Bohra                   | Bohra rubber Pvt<br>Ltd.,               |
|                       |                                                                     | Hanu                    | Hanu Industries                         |
|                       |                                                                     | Amee<br>Rubber          | Amee Rubber<br>Industries Pvt Ltd.      |
| 5                     | Masking Tapes                                                       | 3M                      | 3M                                      |
|                       |                                                                     | Sun                     | Sun                                     |
|                       |                                                                     | Wonder<br>polymer       | Wonder Tape<br>Industries               |
|                       |                                                                     | Roop                    | Roop Polymers                           |

|                     |                                 |                                        |                                                 |
|---------------------|---------------------------------|----------------------------------------|-------------------------------------------------|
| 6                   | Rockwool/ Glasswool insulation  | Twigaifiber, ,                         | Twigaifiber glass ltd                           |
|                     |                                 | Llyod Insulation                       | Llyod Insulation Ltd.                           |
|                     |                                 | Supereme                               | Supereme Industries ltd                         |
| 7                   | Aluminium Formwork              | MFE(MIVAN)                             | MIVAN                                           |
|                     |                                 | S-Form                                 | S-Form                                          |
|                     |                                 | MFS                                    | MFS                                             |
| WATER PROOFING WORK |                                 |                                        |                                                 |
| 1                   | Water proofing compound         | Fosroc                                 | Fosroc India                                    |
|                     |                                 | Sika                                   | Sika India                                      |
|                     |                                 | Dr. Fixit                              | PidiliteIndustires                              |
|                     |                                 | CICO                                   | CICO Technologies Ltd.,                         |
|                     |                                 | Impermo                                | Snowcem paints                                  |
|                     |                                 | Accoproof                              | ACC cements Ltd.,                               |
|                     |                                 | Ardex Endura                           | Ardex Endura (India) Ltd                        |
|                     |                                 | Alchemica                              | Alchemica Ltd.                                  |
|                     |                                 | Ferrous Crete                          | Ferrous Crete (India) Pvt. Ltd.                 |
|                     |                                 | MYK Schomburg                          | MYK Arments range of products                   |
|                     |                                 | Penetron                               | Penetron India Pvt.Ltd                          |
|                     |                                 | Smart Care                             | Asian Paints                                    |
|                     |                                 | Cementmix Plus/Advanced Latex Plus     | Berger Paints                                   |
|                     |                                 | Shaliplast LW+                         | STP Ltd                                         |
|                     |                                 | Mapecure AS/Mapecure E 30/Mapecure ASE | M/s MAPEI Constructions Product India Pvt. Ltd. |
|                     |                                 | KCPL                                   | Kunal ConchemPvt. Ltd.,                         |
| 2                   | Membarane Water proofing system | BASF                                   | BASF India Ltd.,                                |
|                     |                                 | STP Ltd                                | STP Ltd                                         |
|                     |                                 | Texsa                                  | Texsa India Ltd                                 |
|                     |                                 | WR Grace                               | WR Grace Co India Pvt Ltd,                      |
|                     |                                 | Dr. Fixit                              | PidiliteIndustires                              |
|                     |                                 | Alchemica                              | Alchemica Ltd.                                  |
|                     |                                 | Hydro tech                             | Hydro tech Ltd                                  |

|                                              |  |                       |                                       |
|----------------------------------------------|--|-----------------------|---------------------------------------|
| मिसिल संख्या<br>File No. CECRI / 2021 / 5739 |  | Ferrous<br>Crete      | Ferrous Crete<br>(India) Pvt. Ltd.    |
|                                              |  | MYK<br>:Schomburg     | MYK Arments<br>range of products      |
|                                              |  | Date As on 05.03.2021 | Smart Care Water<br>Proofing products |

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|---|-----------------------------------------------------------|-------------------------------------------|-------------------------------------------------|
|   |                                                           | Ardex Endura                              | Ardex Endura Ltd                                |
|   |                                                           | MapeplanTU S20/Planiseal 88/Planiseak 288 | M/s MAPEI Constructions Product India Pvt. Ltd. |
|   |                                                           | Elastorooft PU/Sunroof PU/Sunkote         | Sunanda Speciality Coatings Pvt,Ltd             |
|   |                                                           | KCPL                                      | Kunal ConchemPvt. Ltd.,                         |
| 3 | Chemical water proofing system                            | BASF                                      | BASF India Ltd.,                                |
|   |                                                           | MC-Bauchemie                              | MS-Bauchemie India Ltd.,                        |
|   |                                                           | Sika                                      | Sika India                                      |
|   |                                                           | Sunanda speciality coating                | Sunanda speciality coating Pvt Ltd.             |
|   |                                                           | Perma construction Aid                    | Perma constructionAid Pvt Ltd,                  |
|   |                                                           | Fosroc                                    | Fosroc India                                    |
|   |                                                           | Dr. Fixit                                 | PidiliteIndustires                              |
|   |                                                           | Ferrous Crete                             | Ferrous Crete (India) Pvt. Ltd.                 |
|   |                                                           | Smart Care                                | Asian Paints                                    |
|   |                                                           | Latexshield 2K/Tankshield PW              | Berger Paints                                   |
|   |                                                           | KCPL                                      | Kunal ConchemPvt. Ltd.,                         |
| 4 | Water stops                                               | Hydrotite                                 | Sika India                                      |
|   |                                                           | BASF                                      | BASF India Ltd.,                                |
|   |                                                           | Dr. Fixit                                 | PidiliteIndustires                              |
|   |                                                           | Hydroswell                                | Sika India                                      |
|   |                                                           | Ardex Endura                              | Ardex Endura Ltd                                |
|   |                                                           | Ferrous Crete                             | Ferrous Crete (India) Pvt. Ltd.                 |
|   |                                                           | Smart Care                                | Asian Paints                                    |
| 5 | Atactic Polypropylene (APP) Modified Water proof Membrane | STP                                       | Shalimar Tar Products                           |
|   |                                                           | Ferrous Crete                             | Ferrous Crete (India) Pvt. Ltd.                 |
|   |                                                           | Bitumat Co. Ltd,                          | Bitumat Co. Ltd,                                |
|   |                                                           | Pidilite                                  | PidiliteIndustries                              |

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|                                   |                                              |                   |                                   |
|-----------------------------------|----------------------------------------------|-------------------|-----------------------------------|
|                                   |                                              | Ardex Endura      | Ardex Endura                      |
|                                   |                                              | Hydrotech Ltd.    | Hydro tech Ltd                    |
|                                   |                                              | Smart Care        | Asian Paints                      |
|                                   |                                              | Proshield         | Berger Paints                     |
|                                   |                                              | IWL India Limited | IWL India Limited                 |
| 6                                 | EPDM Water Proofing Membrane                 | Smart Care        | Asian Paints                      |
|                                   |                                              | Ferrous Crete     | Ferrous Crete (India) Pvt. Ltd.   |
|                                   |                                              | Pidilite          | Pidilite Industries               |
|                                   |                                              | STP               | Shalimar Tar Products             |
|                                   |                                              | Fosroc            | Fosroc India                      |
| <b>ALUMINIUM COMPOSITE PANELS</b> |                                              |                   |                                   |
| 1                                 | Aluminium composite panels                   | Alucobond         | 3A Composites India Pvt.Ltd.      |
|                                   |                                              | Eurobond          | M/S Euro panel products Pvt. Ltd. |
|                                   |                                              | Aludecor          | M/S Aludecor Lamination Pvt. Ltd. |
|                                   |                                              | Reynobond         | Reynobond                         |
|                                   |                                              | Alpolic           | Alpolic                           |
|                                   |                                              | Alstrong          | Alstrong                          |
|                                   |                                              | Hynadecor         | Hynadecor AC Panels, Delhi        |
|                                   |                                              | Alstone           | Alstone, New Delhi                |
| 2                                 | Structural Glazing                           | Modi, ,           | Modi Guard                        |
|                                   |                                              | Saint Gobain      | Saint Gobain Glass India Ltd.,    |
|                                   |                                              | Asahi,            | Asahi India glass Ltd,            |
| 3                                 | Spider Patch Fittings for Structural Glazing | Dorma,,           | Dormakaba India Pvt. Ltd          |
|                                   |                                              | Sevax             | Saint Gobain Glass India Ltd.,    |
|                                   |                                              | ,Kich             | Kich India                        |
|                                   |                                              | ,Ozone            | Ozone Ltd                         |
|                                   |                                              | Hafele            | Hafele Ltd                        |
| <b>MISELLANEOUS ITEMS</b>         |                                              |                   |                                   |
| 1                                 | PVC Perforated Pipes                         | Rex Polyextrusion | Rex Polyextrusion Ltd,            |
|                                   |                                              | Akash Enterprises | Akash Enterprises                 |
|                                   |                                              | Zenplas Pipes     | Zenplas Pipes Pvt. Ltd.,          |
|                                   |                                              | Supreme           | Supreme Industries                |

|                              |  |                   |                         |
|------------------------------|--|-------------------|-------------------------|
|                              |  | Playworld Systems | Playworld Systems India |
| मिसिल संख्या                 |  | Dow               | Dow corning India       |
| File No. CECRI / 2021 / 5739 |  | Wacker            | Wacker Silicones.       |
|                              |  | GE                | GE Silicones            |

दिनांक : 05.03.2021  
Date 05.03.2021.



|  |  |         |             |
|--|--|---------|-------------|
|  |  | Supreme | Supreme ltd |
|--|--|---------|-------------|

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Date **05.03.2021.**

|   |                                      |                  |                                 |
|---|--------------------------------------|------------------|---------------------------------|
| 2 | Structural Sealant                   | Fosroc           | Fosroc India                    |
|   |                                      | BASF             | BASF India Ltd.,                |
|   |                                      | STP Ltd.         | Shalimar Tar Products           |
|   |                                      | Asian paints     | Smart Care Sealant              |
| 3 | Poly-sulphide sealant                | Dr. Fixit        | Pidilite Industries Ltd,        |
|   |                                      | Chemetall-Raj    | BASF India Ltd.,                |
|   |                                      | Fosroc           | Fosroc India                    |
|   |                                      | Techseal         | Choksey Chemical Pvt. Ltd,      |
|   |                                      | Tuff seal        | Bondit construction Chemical    |
|   |                                      | Ferrous Crete    | Ferrous Crete (India) Pvt. Ltd. |
|   |                                      | MYK Schomburg    | MYK Arments range of products   |
|   |                                      | Pidilite         | Pidilite Industries             |
|   |                                      | STP Ltd.         | Shalimar Tar Products           |
|   |                                      | Smart Care       | Asian Paints                    |
|   |                                      | Shalibons        | STP Limited                     |
|   |                                      | CICO Poxxy       | CICO Technologies Ltd.,         |
|   |                                      | Ardex            | ArdexEndura (India) Pvt. Ltd.,  |
|   |                                      | Ferrous Crete    | Ferrous Crete (India) Pvt. Ltd. |
|   |                                      | Asian paints     | Asian Paints                    |
| 4 | Weather / Structural Silicon sealent | Dow corning      | Dow corning India               |
|   |                                      | Momentiv e(GE)   | GE Silicones                    |
| 5 | GRC Jali                             | Terrafirma       | Terrafirma GRC Industries       |
|   |                                      | Ecovision        | Ecovision Industries Pvt. Ltd., |
|   |                                      | Mahesh GRC       | Mahesh Prefab Pvt Ltd.,         |
|   |                                      | Llyod Insulation | Llyod Insulation (India) Ltd.   |
|   |                                      | Fosroc           | Fosroc India                    |
|   |                                      | BASF             | BASF                            |
|   |                                      | Pidilite         | Pidilite Industries Ltd.        |

|   |                                                                                                                  |                    |                                                 |
|---|------------------------------------------------------------------------------------------------------------------|--------------------|-------------------------------------------------|
| 6 | Wood polymer composite materials for Doorframes and shutters, Plain/ pre laminated boards for wall linings etc., | Alstone            | Alstone Industries Pvt. Ltd., Jaipur, Rajasthan |
|   |                                                                                                                  | Ecoste             | Ecoste wood polymer composite, Delhi            |
|   |                                                                                                                  | Echon              | Kumar Arch Tech Pvt. Ltd, Rajasthan.            |
|   |                                                                                                                  | Rajasree           | Rajeswari Products Pvt.Ltd, Madhya Pradesh      |
|   |                                                                                                                  | Qute               | Qute Extrusions Pvt. Ltd., Chennai              |
|   |                                                                                                                  | Prominace          | Prominace Window Systems                        |
|   |                                                                                                                  |                    |                                                 |
|   |                                                                                                                  | Floor India        | Flooring India Company, Panipat Haryana         |
|   |                                                                                                                  | Ecorgreen flooring | Jupiter Traders, Bangalore.                     |
|   |                                                                                                                  | Mygreen Bin        | Mygreen Bin                                     |
|   |                                                                                                                  | Shara Eco Products | Shara Eco Products                              |

## LIST OF APPROVED Makes (E&amp;M)

## Internal Electrical Installations

| S. NO | Name of the Product                                      | Manufactured by                                                                      |
|-------|----------------------------------------------------------|--------------------------------------------------------------------------------------|
| 1     | PVC insulated copper conductor<br>FRLS copper ISI Marked | Anchor/Finolex/Havells/RR Kabel/ Asmon /Mescab /L&T /KEI / Polycab                   |
| 2     | MCB / ELCB/RCCB / DB                                     | Legrand/Siemens/Schneider/ABB/GE/ Hager/ Eaton/ L&T/ Havells/ C&S                    |
| 3     | UTP Cable/ Telephone / Cat 6<br>Cable/TV coaxial cable   | Legrand/Molex/Finolex/Commscope/<br>Havells/BatraHenlay/Delton                       |
| 4     | XLPE UG Aluminium/Copper LT<br>Cable                     | CCI/Gloster/Havell/Universal/Finolex /Torrent/ KEI/ RPG<br>Cables/ RR Kabel/ Polycab |
| 5     | Cable glands and cable lugs                              | Jainsons / Comet / Dowells / Prabath/ Polycab/<br>Gripwel/Raychem.                   |
| 6     | DWC Pipe                                                 | Gemini / Rex /Duraline                                                               |
| 7     | PVC Conduit (ISI Marked)                                 | Avonplast/AKG/Precision/Modi/Anchor/ Polycab/ Finolex/<br>BEC/ Anchor Panasonic      |

|                         |                                                                                               |                                                                                                       |
|-------------------------|-----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| 9                       | Modular Switches & Sockets, Fan Regulator, RJ-45 Data Socket / GI Boxes/ TV/Telephone sockets | Legrand-Myrius/ Crabtree-Athena/MK- LogicPlus /HoneywellBenzPlus/ Anchor(RomaPlus) /Schneider (Livia) |
| मिसिल<br>10<br>File No. | संख्या<br>CECR/2021/5739<br>BLDC Fans (Ceiling Fans /Wall Fans / Ceiling Fans / Exhaust Fans) | दिनांक : 05.03.2021<br>Date: 05.03.2021<br>Atomberg –Efficio /Havells Dimplex, Orient / Superfan      |

|   |         |                                   |
|---|---------|-----------------------------------|
| 8 | GI Pipe | Jindal / TATA/Zenith Birla/ SAIL. |
|---|---------|-----------------------------------|

|                                                                                                        |                                                                                   |                                                                                                                                                                                                          |
|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 11                                                                                                     | Exhaust Fan                                                                       | Crompton/Orient/Havells/Almonard/Bajaj                                                                                                                                                                   |
| 12                                                                                                     | All types of LED Fittings (Indoor / Outdoor Light Fittings)                       | Crompton/Bajaj/Phillips/Wipro/ K-Lite                                                                                                                                                                    |
| 13                                                                                                     | Electrical LT Panel Boards/ Feeder Pillars/ Meter Boards/ Control & Relay Panels. | Manufacturer having in-house 7 tank process, powder coating facility, CNC Machine having CPRI approval for relevant busbar rating (The decision of the Engineer – in- charge will be final and binding). |
| 14                                                                                                     | Change over Switches , SDFU                                                       | L&T / ABB / Schneider/C&S/ Legrand / Havells/ Socomec/ Siemens                                                                                                                                           |
| 15                                                                                                     | Moulded Case Circuit Breaker/Motor protection circuit breaker Electric            | Siemens/ ABB / L & T/C & S /Schneider/ Legrand / Havells/ Eaton.                                                                                                                                         |
| 16                                                                                                     | Phenolic laminated sheet                                                          | 3 mm thick with ISI mark                                                                                                                                                                                 |
| 17                                                                                                     | Ammeter / Voltmeter / CombinedMeters/Analogue panel meters                        | AE / Mecon / L&T / HPL/ C&S / Conserve/ Kaycee / Socomec(Diris) .                                                                                                                                        |
| 18                                                                                                     | Fire Extinguisher (with ISI mark)                                                 | CeaseFire/Safex/Minimax/Agni/Usha Fire Safety                                                                                                                                                            |
| 19                                                                                                     | MS Conduits (ISI Marked)                                                          | AKG/BEC/Zenith – Birla /NIC / Steel Kraft                                                                                                                                                                |
| 20                                                                                                     | Connector/Terminal block                                                          | Wago/Elemac/Phoenix                                                                                                                                                                                      |
| 21                                                                                                     | Rising main, End Feed Unit, Tap Off Box                                           | C&S/Legrand/Schneider/Siemens/L&T/ ABB                                                                                                                                                                   |
| 22                                                                                                     | ACB 415 V, 400 A-2000 A                                                           | ABB/ Siemens/ L&T/ Schneider/ Crompton / Eaton.                                                                                                                                                          |
| 23                                                                                                     | Selector Switch                                                                   | BCH/Rishabh/Conserv/Kaycee/AE/                                                                                                                                                                           |
| 24                                                                                                     | Architectural Lighting Poles& Decorative Brackets (Street Light Poles)            | K-Lite/Philips/Crompton/Bajaj/Wipro                                                                                                                                                                      |
| <b>Fire Alarm System</b>                                                                               |                                                                                   |                                                                                                                                                                                                          |
| <b>All the components of the entire FA system shall be preferably from a single manufacturer only.</b> |                                                                                   |                                                                                                                                                                                                          |
| <b>S. NO</b>                                                                                           | <b>Name of the Product</b>                                                        | <b>Make</b>                                                                                                                                                                                              |
|                                                                                                        | Manual pull box, Control panel, Hooters, Strobe, speaker                          | Honeywell/Bosch/Ravel/Agni/Notifier                                                                                                                                                                      |

| SUB-STATION WORKS |                                       |                                                                                                                                                                 |
|-------------------|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S. NO             | DESCRIPTION OF ITEM                   | APPROVED MAKE                                                                                                                                                   |
| 1                 | Tranformer<br>(Oil Type / Dry Type)   | Crompton Greaves / ABB / AREVA / Prolec GE /ALSTHOM / SIEMENS / BHEL / Wilson / Schneider/ Voltamp.                                                             |
| 2                 | HT Panel                              | ABB / Siemens / Schneider / System Control.                                                                                                                     |
| 2                 | H. T. Cables                          | CCI / UNISTAR / Gloster / Finolex / Havells / KEI                                                                                                               |
| 3                 | H. T. Cables Jointing Kits            | Rayhem / 3M / CCI-Xicon / Denson / M-Seal                                                                                                                       |
| 4                 | Indicating Lamps (LED type)           | Siemens / Teknic / L&T / BCH / C&S / ABB / Schneider / JAI BALAJI / VAISHNO                                                                                     |
| 5                 | Push Buttons                          | Siemens / Teknic / L&T / BCH / C&S / ABB / Schneider / JAI BALAJI / VAISHNO                                                                                     |
| 6                 | Current Transformers for LT panels    | Kappa / AE / BCH / L&T / ABB / Siemens / GE / MECO / Schneider / IMP / PERFECT ELECTRICALS.                                                                     |
| 7                 | Relays                                | SEGC / Crompton / Siemens / GE / ABB / Schneider / L&T                                                                                                          |
| 8                 | Sub Station Fire accessories          | ISI marked (Wherever available) (Note: Where no ISI mark is available, the decision of the Engineer - in - charge shall be binding and final on the contractor) |
| 9                 | First Aid Box                         | As approved by the State Fire Services Department                                                                                                               |
| 10                | Electric insulation mat with ISI mark | Dozz / Padmini / Raychem / Jyoti Rubber Udyog                                                                                                                   |

| <b><u>VRV/VRF AC System, Mechanical Ventilation</u></b> |                                                      |                                                                                                            |
|---------------------------------------------------------|------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <b>S.No.</b>                                            | <b>NAME OF THE PRODUCTS</b>                          | <b>MAKES</b>                                                                                               |
| 1                                                       | VRF/VRV Outdoor and Indoor Units for airconditioning | 1) Hitachi<br>2) Blue Star<br>3) Daikin<br>4) Toshiba<br>5) Mitsubishi<br>6) Voltas<br>7) LG<br>8) Samsung |
| 2                                                       | Aluminium grilles/diffusers                          | Caryaire / Ravi Star / Dynacraft / ARROW/ Airpro                                                           |
| 3                                                       | Pipe Insulation Expanded Polystrene                  | BASF (India) Ltd / Beardsell Armacel/ Aeroflex                                                             |
| 4                                                       | Ducting sheet                                        | SAIL / TATA / Jindal                                                                                       |
| 5                                                       | Exhaust inline fans/ Fresh air fans                  | Kruger / Crompton / Airflow / Comefri                                                                      |
| 6                                                       | Water Coolers                                        | Bluestar/ Voltas/ Usha                                                                                     |

**Note:**

List of Approved Makes - Given above is indicative in nature. However, if imported or higher quality materials offered by the bidder may also be considered and approved by the department, subject to written request along with required supporting documents.

**4.3 Scope of Supply and incidental works:**

**THE CONTRACT IS ON TURNKEY BASIS ONLY.**

**IT INCLUDES DESIGN, MANUFACTURE, SUPPLY, PDI, INSTALLATION, COMMISSIONING, TESTING , DEMONSTRATION AND TRAINING.**

**IT ALSO INCLUDES MISCELLANEOUS SERVICES FOR PERFORMING THE CONTRACT ON TURNKEY BASIS AT SITE AND ALSO MANPOWER DEPLOYMENT (SITE ENGINEER).**

ALL SERVICES / SUPPLY OF ITEMS RELATING TO EXECUTION OF TURNKEY CONTRACT SHALL AT THE SCOPE OF BIDDER (INCLUDING, LIASONING WITH OTHER STATUTORY, GOVERNMENT, UTILITIES AGENCIES OF CENTRAL, STATE, LOCAL BODY ETC., CUSTOMS CLEARANCE WORK, HANDLING ALL LOGISTICS, TEMPORARY SITE, WAREHOUSING, MATERIAL HANDLING EQUIPMENT DEPLOYMENT, SECURITY, SUPERVISION ETC.)

CECRI Scope: The scope of CECRI is limited to the following only.

1. Site hand over to the successful bidder on whom contract has been awarded.
2. Sign application forms / papers / documents relating to execution of the turnkey contract.
3. Make direct payment(s) to ICEGATE portal or other portals for payment of any duties in case of imports.
4. Establish LC and other payment related transactions.
5. CECRI Manpower deployment for PDI .
6. Ensure CECRI manpower for training
7. Sign the acceptance certificate(s) after completion of installation, commissioning, demonstration and training.

#### 4.4 Inspection & Tests

THE CELLS PRODUCED WILL BE CHECKED FOR THEIR PERFORMANCE USING BATTERY CYCLERS BY CECRI.

##### 4.4.1 General

1. The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are specified here.
2. The inspections and tests may be conducted on the premises of the Supplier or its subcontractor(s), at the point of delivery and/or at the Goods final destination.
3. Whenever the Supplier is ready to carry out any such test and inspection, it shall give a reasonable advance notice, including the place and time, to the Purchaser. The Supplier shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.
4. Should any inspected or tested Goods fail to conform to the specifications, the Purchaser may reject the goods and the Supplier shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Purchaser.
5. The Purchaser's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival at final destination shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the Purchaser or its representative prior to the Goods shipment.
6. The Supplier shall provide the Purchaser with a report of the results of any such test and/or inspection.

7. With a view to ensure that claims on insurance companies, if any, are lodged in time, the bidders and /or the Indian agent, if any, shall be responsible for follow up with their principals for ascertaining the dispatch details and informing the same to the Purchaser and he shall also liaise with the Purchaser to ascertain the arrival of the consignment after customs clearance so that immediately thereafter in his presence the consignment could be opened and the insurance claim be lodged, if required, without any loss of time. Any delay on the part of the bidder/ Indian Agent would be viewed seriously and he shall be directly responsible for any loss sustained by the purchaser on the event of the delay.
8. Before the goods and equipment are taken over by the Purchaser, the Supplier shall supply operation and maintenance Manuals together with Drawings of the goods and equipment built. These shall be in such details as will enable the Purchase to operate, maintain, adjust and repair all parts of the works as stated in the specifications.
9. The Manuals and Drawings shall be in the ruling language (English) and in such form and numbers as stated in the Contract.
10. Unless and otherwise agreed, the goods and equipment shall not be considered to be completed for the purposes of taking over until such Manuals and Drawing have been supplied to the Purchaser.
11. On successful completion of acceptability test, receipt of deliverables, etc. and after the Purchaser is satisfied with the working of the equipment, the acceptance certificate signed by the Supplier and the representative of the Purchaser will be issued. The date on which such certificate is signed shall be deemed to be the date of successful commissioning of the equipment.

#### **4.4.2 Manufacturer's Inspection Certificate`**

After the goods are manufactured and assembled, inspection and testing of the goods shall be carried out at the supplier's plant by the supplier, prior to shipment to check whether the goods are in conformity with the technical specifications. Manufacturer's test certificate with data sheet shall be issued to this effect and submitted along with the delivery documents. The purchaser reserves the options to be present at the supplier's premises during such inspection and testing.

#### **4.4.3 Pre Dispatch Inspection.**

**YES. PLEASE SEE THE NIT ON SCOPE.**

#### **4.4.4 Third Party Inspection (delete if not applicable) or elaborate.**

#### **4.4.5 Acceptance Test**

The acceptance test will be conducted by the Purchaser, their consultant or other such person nominated by the Purchaser at its option after the



equipment is installed at Purchaser's site in the presence of supplier's representatives. The acceptance will involve trouble free operation. There shall not be any additional charges for carrying out acceptance test. No malfunction, partial or complete failure of any part of the equipment is expected to occur. The Supplier shall maintain necessary log in respect of the result of the test to establish to the entire satisfaction of the Purchaser, the successful completion of the test specified.

On the event of the ordered item failing to pass the acceptance test, a period not exceeding two weeks will be given to rectify the defects and clear the acceptance test, failing which, the Purchaser reserve the right to get the equipment replaced by the Supplier at no extra cost to the Purchaser.

Successful conduct and conclusion of the acceptance test for the installed goods and equipment shall also be the responsibility and at the cost of the Supplier.

#### 4.5 Training

~~Free training should be imparted to Minimum 2 No. of persons of the purchaser at the purchaser's premises for a minimum period of 5 days on operation, trouble shooting and maintenance of the supplied item.~~ **The period of training should be mentioned in technical bid.**

#### 4.6 Warranty

The warranty of the equipment should be for a period of **12 months** from the date of acceptance. During the warranty period upgrades of the software, if any should be provided free of cost.

**CHAPTER 5****Price Schedule Forms**  
(Notes for internal use only)

*This format may be drawn by the labs as per the tender documents. However, an indicative structure of the Price Schedule Forms is provided hereunder for reference.*

**CHAPTER 5****Price Schedule Forms****Table of Contents**

| Sl. No. | Type of Price Schedule Form                        |
|---------|----------------------------------------------------|
| 01.     | Price schedule for Goods being offered from abroad |
| 02.     | Price schedule for Goods offered from India        |

**Note:** The bidder may fill in the appropriate Price Schedule Form and enclose as per Clause 1.10 and 1.18.3 of the bidding documents.

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File No. CECRI / 2021 / 5739

दिनांक : 05.03.2021

Date 05.03.2021.

**PRICE SCHEDULE FOR GOODS BEING OFFERED FROM INDIA**

Name of the Bidder\_\_\_\_\_

Tender No.\_\_\_\_\_

| 1      | 2                              | 3                 | 4    | 5        | 6                                                                                                        | 7                                                                                                              | 8                                                 | 9                                                     | 10                                                                                                        | 11          | 12                                                       |
|--------|--------------------------------|-------------------|------|----------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-------------|----------------------------------------------------------|
| Sl. No | Item Description With HSN code | Country of origin | Unit | Quantity | Unit Rate Ex-Works, Ex-warehouse, Ex-show room off the shelf price (inclusive of all taxes already paid) | Total price Ex-Works, Ex-warehouse, Ex-show room off the shelf price (inclusive of all taxes already paid) 5x6 | GST & other taxes payable, if contract is awarded | Packing & forwarding up to station of dispatch if any | Charges for inland transportation, insurance up to Lab. / Instt.by <b>air/road/rail (retain one only)</b> | Total Price | Installation, Commissioning and training charges, if any |
|        |                                |                   |      |          |                                                                                                          |                                                                                                                |                                                   |                                                       |                                                                                                           |             |                                                          |

**Note:**

(a) The cost of optional items, if any shall be indicated separately

(b) Cost of Spares, if any

Total Bid price in foreign currency\_\_\_\_\_ in words \_\_\_\_\_

Signature of Bidder \_\_\_\_\_

Name \_\_\_\_\_

Business Address \_\_\_\_\_

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File No. CECRI / 2021 / 5739

दिनांक : 05.03.2021

Date 05.03.2021.

**PRICE SCHEDULE FOR GOODS BEING OFFERED FROM ABROAD**

Name of the Bidder \_\_\_\_\_

TENDER No. \_\_\_\_\_

| 1       | 2                | 3                 | 4    | 5    | 6                                                                                                                           | 7                                                                                                               | 8                                                                    | 9                                                  | 10                                                                                   | 11                                  | 12                                                          |
|---------|------------------|-------------------|------|------|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------------------------------|
| Sl. No. | Item Description | Country of origin | Unit | Qty. | Unit price Indicating currency<br><br>FOB (named port of shipment or FCA (named place of delivery) <i>(retain only one)</i> | Total price (5x6)<br><br>FOB (named port of shipment) or FCA (named place of delivery) <i>(retain only one)</i> | Charges for Insurance & transportation to port//place of destination | Total price <i>CIF/CIP (retain one only)</i> (7+8) | Indian Agents Commission as a percent of FOB /FCA price included in the Quoted price | Approx. Ship-ment weight and volume | Indian Customs Tariff No and HSN No.<br><br>(ICT & HSN No.) |
|         |                  |                   |      |      |                                                                                                                             |                                                                                                                 |                                                                      |                                                    |                                                                                      |                                     |                                                             |

**Note:**

Currency \_\_\_\_\_

Total Bid price in foreign currency \_\_\_\_\_  
in words \_\_\_\_\_

(a) Indian agents name &amp; address \_\_\_\_\_

(b) Installation, commissioning &amp; training charges, if any \_\_\_\_\_

Signature of Bidder \_\_\_\_\_

(c) Cost of Spares, if any \_\_\_\_\_

Name \_\_\_\_\_

(d) The Indian agent's commission shall be paid in Indian Rupees only based on the Exchange Rate prevailing on the date of negotiation of documents in accordance with clause 2.22 of GCC.

Business Address \_\_\_\_\_

(e) The cost of optional items shall be indicated separately.

## **CHAPTER 6**

### **Qualification Requirements**

1. The bidder or bidder's PRINCIPAL shall have experience of having executed at least ONE SUCH MAJOR LITHIUM ION BATTERY FACILITY IN INDIA OR ABROAD. To substantiate the above, documentary evidence shall be submitted along with the offer such as necessary technical details, purchase orders, specification and scope of work, INSTALLATION CERTIFICATE / PERFORMANCE CERTIFICATE etc. Offers without the above are liable for rejection.
2. Bidder should have service centre or authorized service centre with trained service engineers in India preferably in Chennai / Bengaluru. Service centre address, contact person details, phone/fax numbers, email should be provided along with the offer. Proof of service centre is to be attached. If there is no service centre in India, the offer will be rejected. USERS AS PART OF VERIFICATION MAY VISIT SITE TO CHECK THE AVAILABILITY OF ENGINEERS, SERVICE SETUP ETC. ANY FALSE CLAIM OR USERS NOT BEING SATISFIED WITH SUCH CENTRE, BID IS LIKELY TO BE REJECTED AS UNRESPONSIVE.
3. Bidder must comply with Make in India Order No. no.P-45021/2/2017-PP (BE-II) dated 16th September 2020 of Ministry of Commerce and Industry, Government of India and any amendments thereon.
4. Bidder must be comply with OrderNo.P-45021/112/2020-PP(BE-II)(E-43780) dated 24.08.2020 of Ministry of Commerce and Industry, Department for Promotion of Industry and Internal Trade and any amendments thereon

### **ELIGIBILITY CRITERIA FOR CIVIL, ELECTRICAL AND ALLIED WORKS:**

#### **I. General:**

Bidder shall have to fulfil the eligibility criteria given below or he shall associate himself with a composite category contractor or he shall associate himself with specialised contractors of respective field with appropriate registration clause along with specific licence from electricity board and other agencies as required.

One completed work of industrial plant construction (Civil, Electrical & allied works) in India or anywhere else for a **cost not less than 50 Crore.**

The following documents are required to be submitted.

- 1) Complete contract/work order copy with all details, value etc.
- 2) Performance certificate from the customer/client.

**II. Turn over:**

Average annual financial turnover on construction works should be not less than 50 Crores during the immediate last three consecutive financial years (2017-18,2018-19,2019-20). Auditor's certificate in this regard to be enclosed.

**III. Profit Loss:**

The bidder should not have incurred any loss (profit after tax should be positive) in more than two years during available last five consecutive balance sheet, duly audited and certified by the Chartered Accountant.

The following documents are required to be submitted

- 1) Certificate from the auditor.
- 2) Audited balance sheet for the FY 2015-16,2016-17,2017-18,2018-19,2019-20.

**IV. Solvency Certificate:**

Solvency certificate for a sum of Rs.50 Crores to be submitted.

**The above can be furnished by bidder or if it is a consortium, by one of the member (s).**

## CHAPTER 7

### Contract Form

Contract No. \_\_\_\_\_ Date: \_\_\_\_\_

THIS CONTRACT AGREEMENT is made the [ insert: number ] day of [ insert: month ], [ insert: year ].

BETWEEN

(1) The Council of Scientific & Industrial Research registered under the Societies Registration Act 1860 of the Government of India having its registered office at 2, Rafi Marg, New Delhi-110001, India represented by \_\_\_\_\_ [ insert complete name and address of Purchaser (hereinafter called "the Purchaser")], and

(2) [ insert name of Supplier ], a corporation incorporated under the laws of [ insert: country of Supplier ] and having its principal place of business at [ insert: address of Supplier ] (hereinafter called "the Supplier").

WHEREAS the Purchaser invited bids for certain Goods and ancillary services, viz., [insert brief description of Goods and Services] and has accepted a Bid by the Supplier for the supply of those Goods and Services in the sum of [insert Contract Price in words and figures, expressed in the Contract currency(ies) ] (hereinafter called "the Contract Price").

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

01. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.

02. The following documents shall constitute the Contract between the Purchaser and the Supplier, and each shall be read and construed as an integral part of the Contract:

- (a) This Contract Agreement
- (b) Special Conditions of Contract
- (c) General Conditions of Contract
- (d) Technical Requirements (including Schedule of Requirements and Technical Specifications)
- (e) The Supplier's Bid and original Price Schedules
- (f) The Purchaser's Notification of Award
- (g) [Add here any other document(s)]

03. This Contract shall prevail over all other Contract documents. In the event of any discrepancy or inconsistency within the Contract documents, then the documents shall prevail in the order listed above.

04. In consideration of the payments to be made by the Purchaser to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Purchaser to provide the Goods and Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.

05. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Goods and Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of Union of India on the day, month and year indicated above.

For and on behalf of the Council of Scientific & Industrial Research

Signed: *[insert signature]*

in the capacity of *[ insert title or other appropriate designation ]*

in the presence of *[ insert identification of official witness ]*

Signed: *[ insert signature ]*

in the capacity of *[ insert title or other appropriate designation ]*

in the presence of *[ insert identification of official witness ]*

For and on behalf of the Supplier

Signed: *[ insert signature of authorized representative(s) of the Supplier ]*

in the capacity of *[ insert title or other appropriate designation ]*

in the presence of *[ insert identification of official witness ]*



**CHAPTER 8**  
**Other Standard Forms**  
 (To be enclosed as indicated below)  
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**Note :** Please refer clause 1.10.1 of the bidding documents for other documents to be attached with the bids/offers.

documents to be

**Form -1**  
**Bidder Information Form**

- (a) *The Bidder shall fill in this Form in accordance with the instructions indicated below. No alterations to its format shall be permitted and no substitutions shall be accepted. This should be done of the letter head of the firm]*

Date: *[insert date (as day, month and year) of Bid Submission]*

Tender No.: *[insert number from Invitation for bids]*

Page 1 of \_\_\_\_\_ pages

|     |                                                                                                                                                                                                                                                                                                                                                  |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 01. | Bidder's Legal Name <i>[insert Bidder's legal name]</i>                                                                                                                                                                                                                                                                                          |
| 02. | In case of JV, legal name of each party: <i>[insert legal name of each party in JV]</i>                                                                                                                                                                                                                                                          |
| 03. | Bidder's actual or intended Country of Registration: <i>[insert actual or intended Country of Registration]</i>                                                                                                                                                                                                                                  |
| 04. | Bidder's Year of Registration: <i>[insert Bidder's year of registration]</i>                                                                                                                                                                                                                                                                     |
| 05. | Bidder's Legal Address in Country of Registration: <i>[insert Bidder's legal address in country of registration]</i>                                                                                                                                                                                                                             |
| 06  | NAME AND ADDRESS OF BANK:<br>BANK ACCOUNT NUMBER:<br>TYPE OF ACCOUNT:<br>IFSC CODE:                                                                                                                                                                                                                                                              |
| 07. | Bidder's Authorized Representative Information<br>Name: <i>[insert Authorized Representative's name]</i><br>Address: <i>[insert Authorized Representative's Address]</i><br>Telephone/Fax numbers: <i>[insert Authorized Representative's telephone/fax numbers]</i><br>Email Address: <i>[insert Authorized Representative's email address]</i> |
| 08  | COUNTRY OF ORIGIN OF PRODUCT (S):                                                                                                                                                                                                                                                                                                                |
| 09  | ADDRESS OF THE PLACE OF MANUFACTURE / FACTORY / PLACE WHERE LOCAL CONTENT VALUE ADDITION IS DONE BY MANUFACTURER:                                                                                                                                                                                                                                |
| 10  | If item is imported and is from a country sharing land border with India, then Registration certificate details like number, date and validity date:                                                                                                                                                                                             |
| 11  | Are you a MSE registered for the Item under procurement: if Yes then furnish details of the certificate, date and validity along with copy of the same.                                                                                                                                                                                          |

|     |                                                                                                                                                                                                                   |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|     | Do you intend to opt for the purchase preference policies of Government of India as applicable to MSE in this tender?? If So, write Yes::                                                                         |
| 12  | Do you intend to opt for the purchase preference policies of Government of India as applicable by Make in India circular? (if you have said yes to MSE preference above, then you cannot opt for this preference) |
| 13  | Are you Class I Vendor or Class II Vendor as defined by Make In India circular. It is mandatory to attach the certificate from the OEM for Local content percentage and place of value addition.                  |
| 14. | Attached are copies of original documents of: <i>[check the box(es) of the attached original documents]</i><br>Articles of Incorporation or Registration of firm named in 1, above.                               |

Signature of Bidder \_\_\_\_\_

Name \_\_\_\_\_

Business Address \_\_\_\_\_

## Form -2

**MANUFACTURERS' AUTHORIZATION FORM**

*[The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are binding on the Manufacturer and be enclosed with the technical bid.]*

Date: *[insert date (as day, month and year) of Bid Submission]*

Tender No.: *[insert number from Invitation For Bids]*

To: *[insert complete name and address of Purchaser]*

WHEREAS

We *[insert complete name of Manufacturer]*, who are official manufacturers of *[insert type of goods manufactured]*, having factories at *[insert full address of Manufacturer's factories]*, do hereby authorize *[insert complete name of Bidder]* to submit a bid the purpose of which is to provide the following Goods, manufactured by us *[insert name and or brief description of the Goods]*, and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty in accordance with Clause 2.21 of the General Conditions of Contract, with respect to the Goods offered by the above firm.

Signed: *[insert signature(s) of authorized representative(s) of the Manufacturer]*

Name: *[insert complete name(s) of authorized representative(s) of the Manufacturer]*

Title: *[insert title]*

Duly authorized to sign this Authorization on behalf of: *[insert complete name of Bidder]*

Dated on \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ *[insert date of signing]*

**form-3****BID SECURITY FORM**

Whereas \_\_\_\_\_ (hereinafter called the tenderer") has submitted their offer dated \_\_\_\_\_ for the supply of \_\_\_\_\_ (hereinafter called the tender") against the purchaser's tender enquiry No. \_\_\_\_\_

KNOW ALL MEN by these presents that WE \_\_\_\_\_ of \_\_\_\_\_ having our registered office at \_\_\_\_\_ are bound unto \_\_\_\_\_ (hereinafter called the "Purchaser")

In the sum of \_\_\_\_\_ for which payment will and truly to be made to the said Purchaser, the Bank binds itself, its successors and assigns by these presents. Sealed with the Common Seal of the said Bank this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_.

## THE CONDITIONS OF THIS OBLIGATION ARE:

- (1) If the tenderer withdraws or amends or modifies or impairs or derogates from the Tender in any respect within the period of validity of this tender.
- Or
- (2) If the tenderer having been notified of the acceptance of his tender by the Purchaser during the period of its validity:-
- (a) If the tenderer fails to furnish the Performance Security for the due performance of the contract.
- (b) Fails or refuses to accept/execute the contract.

WE undertake to pay the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to it owing to the occurrence of one or both the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including 45 days after the period of tender validity i.e., up to \_\_\_\_\_ and any demand in respect thereof should reach the Bank not later than this date.

\_\_\_\_\_  
(Signature of the authorized officer of the Bank)

Name and designation of the officer  
Seal, Name & Address of the Issuing Branch of the Bank

**Note:** Whenever the bidder chooses to submit the Bid Security in the form of Bank Guarantee, then he should advise the banker issuing the Bank Guarantee to immediately send by Registered Post (A.D.) an unstamped duplicate copy of the Guarantee directly to the Purchaser with a covering letter to compare with the original BG for the correctness, genuineness, etc.

**Form -4**  
**Bid-Securing Declaration Form**

Date: \_\_\_\_\_

Bid No. \_\_\_\_\_

To (insert complete name and address of the purchaser)

I/We. The undersigned, declare that:

I/We understand that, according to your conditions, bids must be supported by a Bid Securing Declaration.

I/We accept that I/We may be disqualified from bidding for any contract with you for a period of one year from the date of notification if I am /We are in a breach of any obligation under the bid conditions, because I/We

- (a) have withdrawn/modified/amended, impairs or derogates from the tender, my/our Bid during the period of bid validity specified in the form of Bid; or
- (b) having been notified of the acceptance of our Bid by the purchaser during the period of bid validity (i) fail or reuse to execute the contract, if required, or (ii) fail or refuse to furnish the Performance Security, in accordance with the Instructions to Bidders.

I/We understand this Bid Securing Declaration shall cease to be valid if I am/we are not the successful Bidder, upon the earlier of (i) the receipt of your notification of the name of the successful Bidder; or (ii) thirty days after the expiration of the validity of my/our Bid.

Signed: (insert signature of person whose name and capacity are shown) in the capacity of (insert legal capacity of person signing the Bid Securing Declaration).

Name: (insert complete name of person signing the Bid Securing Declaration)

Duly authorized to sign the bid for an on behalf of : (insert complete name of Bidder)

Dated on \_\_\_\_\_ day of \_\_\_\_\_ (insert date of signing)

Corporate Seal (where appropriate)

(Note: In case of a Joint Venture, the Bid Securing Declaration must be in the name of all partners to the Joint Venture that submits the bid)

## Form -5

**PERFORMANCE STATEMENT FORM**

(For a period of last 5 years)

Name of the Firm.....

| Order Placed by<br>(full address of Purchaser) | Order No.<br>and date | Description and quantity of ordered equipment | Value of order | Date of completion of delivery as per Contract | Date of actual completion of delivery | Remarks indicating reasons for late delivery, if any | Has the equipment been installed satisfactory ? (Attach a certificate from the purchaser/ Consignee) | Contact person along with Telephone No., FAX No. and e-mail address |
|------------------------------------------------|-----------------------|-----------------------------------------------|----------------|------------------------------------------------|---------------------------------------|------------------------------------------------------|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
|                                                |                       |                                               |                |                                                |                                       |                                                      |                                                                                                      |                                                                     |

Signature and Seal of the manufacturer/Bidder .....

Place :

Date :

## Form -6

**DEVIATION STATEMENT FORM**

| Sl.No. | Name of Specifications / Parts / Accessories of Tender Enquiry | Specifications of Quote Model / Part / Accessory | Compliance Whether Yes or No | Deviation, if any to be indicated in unambiguous terms (The compliance / Deviation should be supported by relevant | Technical justification for the deviation, if any. If specification is superior /inferior than asked for in the enquiry, it |
|--------|----------------------------------------------------------------|--------------------------------------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
|        |                                                                |                                                  |                              |                                                                                                                    |                                                                                                                             |

|  |  |  |  |                       |                                                    |
|--|--|--|--|-----------------------|----------------------------------------------------|
|  |  |  |  | Technical Literature) | should be clearly brought out in the justification |
|--|--|--|--|-----------------------|----------------------------------------------------|

Signature of Bidder

- ✓ If the bidder offers more than one model, then the Compliance Statement must be enclosed for each and every model separately.
- ✓ The technical and commercial deviations should be indicated separately.
- ✓ If the bidder fails to enclose the compliance statement, his bid is likely to be rejected.

Place:

Date:

Signature and seal of the  
Manufacturer/Bidder**NOTE:**

- 1) Where there is no deviation, the statement should be returned duly signed with an endorsement indicating "No Deviations".

**Form -7**  
**SERVICE SUPPORT FORM**

| Sl. No. | Nature of training Imparted | List of similar type of equipment serviced in the past 3 years | Address, Telephone Nos. , Fax Nos. and e-mail address |
|---------|-----------------------------|----------------------------------------------------------------|-------------------------------------------------------|
|         |                             |                                                                |                                                       |

Signature and Seal of the manufacturer/Bidder.....

Place :

Date :



**Form -8****Bid Form**

*[The Bidder shall fill in this Form in accordance with the instructions indicated No alterations to its format shall be permitted and no substitutions shall be accepted.]*

Date: *[insert date (as day, month and year) of Bid Submission]*

Tender No.: *[insert number from Invitation for Bids]*

Invitation for Bid No.: *[insert No of IFB]*

To: *[insert complete name of Purchaser]*

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda No.: *[insert the number and issuing date of each Addenda]*;
- (b) We offer to supply in conformity with the Bidding Documents and in accordance with the Delivery Schedules specified in the Schedule of Requirements the following Goods and Related Services *[insert a brief description of the Goods and Related Services]*;
- (c) The total price of our Bid, excluding any discounts offered in item (d) below, is: *[insert the total bid price in words and figures, indicating the various amounts and the respective currencies]*;
- (d) The discounts offered and the methodology for their application are:  
**Discounts:** If our bid is accepted, the following discounts shall apply. *[Specify in detail each discount offered and the specific item of the Schedule of Requirements to which it applies.]*
- (e) Our bid shall be valid for the period of time specified in ITB Sub-Clause 1.17.1 from the date fixed for the bid opening, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (f) If our bid is accepted, we commit to obtain a performance security in accordance with ITB Clause 1.43 and GCC Clause 2.13 for the due performance of the Contract and also submit order acceptance within 14 days from the date of contract in accordance with ITB Clause 1.42 and GCC Clause 2.44;
- (g) The following commissions, gratuities, or fees have been paid or are to be paid with respect to the bidding process or execution of the Contract: *[insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity]*

Name of Recipient

Address

Reason

Amount

\_\_\_\_\_

Signature and Seal of the manufacturer/Bidder.....

Place :

Date :

**Form -9**  
**PERFORMANCE SECURITY FORM**

**MODEL BANK GUARANTEE FORMAT FOR PERFORMANCE SECURITY**

To,

.....

WHEREAS ..... (name and address of the supplier) (hereinafter called "the supplier") has undertaken, in pursuance of contract No. .... dated .....to supply (description of goods and services) (herein after called "the contract").

AND WHEREAS it has been stipulated by you in the said contract that the supplier shall furnish you with a bank guarantee by a scheduled commercial bank recognized by you for the sum specified therein as security for compliance with its obligations in accordance with the contract;

AND WHEREAS we have agreed to give the supplier such a bank guarantee;

NOW THEREFORE we hereby affirm that we are guarantors and responsible to you, on behalf of the supplier, up to a total of ..... (amount of the guarantee in words and figures), and we undertake to pay you, upon your first written demand declaring the supplier to be in default under the contract and without cavil or argument, any sum or sums within the limits of (amount of guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the supplier before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the contract to be performed there under or of any of the contract documents which may be made between you and the supplier shall in any way release us from any liability under this guarantee and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until the ..... day of ....., 20.....

(Signature of the authorized officer of the Bank)

.....

Name and designation of the officer

.....

Seal, Name & Address of the Issuing Branch of the Bank

**Note: Whenever, the bidder chooses to submit the Performance Security in the form of Bank Guarantee, then he should advise the banker issuing the Bank Guarantee to immediately send by Registered Post (A.D.) an unstamped duplicate copy of the Guarantee directly to the Purchaser with a covering letter to compare with the original BG for the correctness, genuineness, etc.**

Form -10  
**ACCEPTANCE CERTIFICATE FORM**

No. \_\_\_\_\_

Dated: \_\_\_\_\_

M/s. \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Sub: Certificate of commissioning of equipment  
 \_\_\_\_\_

01. This is to certify that the equipment as detailed below has/have been received in good condition along with all the standard and special accessories (subject to remarks in Para 2). The same has been installed and commissioned.

- (a) Contract No. \_\_\_\_\_ Date \_\_\_\_\_  
 (b) Description of the equipment \_\_\_\_\_  
 (c) Name of the consignee \_\_\_\_\_  
 (d) Scheduled date of delivery of the consignment to the Lab./Instts. \_\_\_\_\_  
 (e) Actual date of receipt of consignment by the Lab./Instts. \_\_\_\_\_  
 (f) Scheduled date for completion of installation/commissioning \_\_\_\_\_  
 (g) Training Starting Date \_\_\_\_\_  
 (h) Training Completion Date \_\_\_\_\_  
 (i) Names of People Trained \_\_\_\_\_  
 (j) Actual date of completion of installation/commissioning \_\_\_\_\_  
 (k) Penalty for late delivery (at Lab./Instts. level) ₹ \_\_\_\_\_  
 (l) Penalty for late installation (at Lab./Instts. level ₹ \_\_\_\_\_

Details of accessories/items not yet supplied and recoveries to be made on that account:

| Sl. No. | Description | Amount to be recovered |
|---------|-------------|------------------------|
|         |             |                        |

02. The acceptance test has been done to our entire satisfaction. The supplier has fulfilled his contractual obligations satisfactorily

or

The supplier has failed to fulfil his contractual obligations with regard to the following:

- (a) .....  
 (b) .....  
 (c) .....  
 (d) .....

The amount of recovery on account of failure of the supplier to meet his contractual obligations is as indicated at Sr. No. 3.

For Supplier

Signature .....

Name .....

Designation .....

Name of the firm.....

Date .....

For Purchaser

Signature.....

Name.....

Designation.....

Name of the Lab/Instt.....

Date.....

**Form – 11**  
**Format of Integrity Pact**

**INTEGRITY PACT**

Between

Council of Scientific & Industrial Research (CSIR) a Society registered under the Indian Societies Act 1860 represented by \_\_\_\_\_  
hereinafter referred to as “The Principal”.

And .....herein referred to as “The Bidder/ Contractor.”

**Preamble**

The Principal intends to award, under laid down organizational procedures, contract/s for .....The Principal values full compliance with all relevant laws of the land, rules, regulations, economic use of resources and of fairness/ transparency in its relations with its Bidder(s) and/or Contractor(s).

In order to achieve these goals, the Principal will appoint an Independent External Monitor (IEM), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

**Section 1 – Commitments of the Principal**

- (1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:
  - (a) No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
  - (b) The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential/additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
  - (c) The Principal will exclude from the process all known prejudiced persons.
- (2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the IPC/PC Act, or if there be a substantive suspicion in this regard, the Principal will inform the Chief Vigilance Officer and in addition can initiate disciplinary action.

**Section 2 – Commitments of the Bidder(s)/Contractor(s)**

- (1) The Bidder(s)/Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.
  - (a) The Bidder(s)/Contractor(s) will not, directly or through any other Person or firm,

offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or other benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

- (b) The Bidder(s)/Contractor(s) will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, Certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
- (c) The Bidder(s)/Contractor(s) will not commit any offence under the relevant IPC/PC Act; further the Bidder(s)/Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
- (d) The Bidder(s)/Contractor(s) of foreign origin shall disclose the name and address of the Agents/representatives in India, if any. Similarly the Bidder(s)/Contractors(s) of Indian Nationality shall furnish the name and address of the foreign principals, if any. Further details as mentioned in the "Guidelines on Indian Agents of Foreign Suppliers" shall be disclosed by the Bidder(s)/Contractor(s). Further, as mentioned in the Guidelines all the payments made to the Indian agent/representative have to be in Indian Rupees only. Copy of the "Guidelines on Indian Agents of Foreign Suppliers" is annexed and marked as Annexure.
- (e) The Bidder(s)/Contractor(s) will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.
- (2) The Bidder(s)/Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

### **Section 3 – Disqualification from tender process and exclusion from future Contracts**

- (1) If the Bidder(s)/Contractor(s), before award or during execution has committed a transgression through a violation of Section 2, above or in any other form such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/Contractor(s) from the tender process or take action as per the procedure mentioned in the "Guidelines on Banning of business dealings". Copy of the "Guidelines on Banning of business dealings" is annexed and marked as Annex -"B".

### **Section 4 – Compensation for Damages**

- (1) If the Principal has disqualified the Bidder(s) from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent to Earnest Money Deposit/ Bid Security.
- (2) If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to Section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages of the contract value or the amount equivalent to Performance Bank Guarantee.

**Section 5 – Previous transgression**

- (1) The Bidder declares that no previous transgressions occurred in the last 3 Years with any other Company in any country conforming to the anti-corruption approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.
- (2) If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or action can be taken as per the procedure mentioned in “Guidelines on Banning of business dealings.”

**Section 6 – Equal treatment of all Bidders / Contractors/ Sub-contractors**

- (1) The Bidder(s)/Contractor(s) undertake(s) to demand from all Subcontractors a commitment in conformity with this Integrity Pact, and to submit it to the Principal before contract signing.
- (2) The Principal will enter into agreements with identical conditions as this one with all Bidders, Contractors and Subcontractors.
- (3) The Principal will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

**Section 7 – Criminal charges against violating Bidders / Contractors/ Subcontractors**

- (1) If the Principal obtains knowledge of conduct of a bidder, Contractor or Subcontractor or of an employee or a representative or an associate of a bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the same to the Chief Vigilance Officer.

**Section 8 - Independent External Monitors**

- (1) The Principal appoints competent and credible Independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.
- (2) The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the JS (A), CSIR.
- (3) The Bidder(s)/Contractor(s) accepts that the Monitor has the right to access without restriction to all Project documentation of the Principal including that provided by the Contractor. The Contractor will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/ Contractor(s) / Subcontractor(s) with confidentiality.
- (4) The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.
- (5) As soon as the Monitor notice, or believes to notice, a violation of this agreement, he



will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.

- (6) The Monitor will submit a written report to the JS(A), CSIR within 8 to 10 weeks from the date of reference or intimation to him by the Principal and should the occasion arise, submit proposals for correcting problematic situations.
- (7) Monitor shall be entitled to compensation on the same terms as being extended to/provided to Independent Directors on the CSIR.
- (8) If the Monitor has reported to the JS(A), CSIR, a substantiated suspicion of an offence under relevant IPC/PC Act, and the JS(A), CSIR has not, within the reasonable time taken visible action to proceed against such offence or reported it to the Chief Vigilance Officer, the Monitor may also transmit this information directly to the Central Vigilance Commissioner.
- (9) The word 'Monitor' would include both singular and plural.

## Section 9 – Pact Duration

This Pact begins when both parties have legally signed it. It expires for the Contractor 10 months after the last payment under the contract, and for all other Bidders 6 months after the contract has been awarded.

If any claim is made/lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/determined by JS(A), CSIR.

## Section 10 – Other provisions

- (1) This agreement is subject to Indian Law. Place of performance and Jurisdiction is the Registered Office of the Principal, i.e. New Delhi
- (2) Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.
- (3) If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.
- (4) Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

\_\_\_\_\_  
(For & On behalf of the Principal)

(Office Seal)

Place.....

Date.....

Witness 1:(Name & Address): \_\_\_\_\_

Witness 2:(Name & Address): \_\_\_\_\_

\_\_\_\_\_  
(For & On behalf of Bidder/Contractor)

(Office Seal)

Place.....

Date.....

**FORM - 12****Format for declaration by the Bidder for Code of Integrity & conflict of interest****(On the Letter Head of the Bidder)**

Ref. No: \_\_\_\_\_

Date \_\_\_\_\_

To,

\_\_\_\_\_  
\_\_\_\_\_

(Name &amp; address of the Purchaser)

Sir,

With reference to your Tender No. \_\_\_\_\_ dated \_\_\_\_\_ I/We hereby declare that we shall abide by the Code of Integrity for Public Procurement as mentioned under Para 1.3.0 of ITB of your Tender document and have no conflict of interest.

The details of any previous transgressions of the code of integrity with any entity in any country during the last three years or of being debarred by any other Procuring Entity are as under:

- a
- b
- c

We undertake that we shall be liable for any punitive action in case of transgression/contravention of this code.

Thanking you,

Yours sincerely,

Signature  
(Name of the Authorized Signatory)  
Company Seal

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File No. CECRI / 2021 / 5739

दिनांक : 05.03.2021

Date 05.03.2021.

Form -13

**PRICE SCHEDULE FORM FOR GOODS BEING OFFERED**

Name of the Bidder\_\_\_\_\_

Tender No.\_\_\_\_\_

| 1       | 2                              | 3                 | 4    | 5        | 6                                                                                                        | 7                                                                                                              | 8                                                 | 9                                                      | 10                                                                                                        | 11          | 12                                                       |
|---------|--------------------------------|-------------------|------|----------|----------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|-------------|----------------------------------------------------------|
| Sl. No. | Item Description With HSN code | Country of origin | Unit | Quantity | Unit Rate Ex-Works, Ex-warehouse, Ex-show room off the shelf price (inclusive of all taxes already paid) | Total price Ex-Works, Ex-warehouse, Ex-show room off the shelf price (inclusive of all taxes already paid) 5x6 | GST & other taxes payable, if contract is awarded | Packing & forwarding up to station of dispatch, If any | Charges for inland transportation, insurance up to Lab. / Instt.by <i>air/road/rail (retain one only)</i> | Total Price | Installation, Commissioning and training charges, if any |
|         |                                |                   |      |          |                                                                                                          |                                                                                                                |                                                   |                                                        |                                                                                                           |             |                                                          |

**Note:**

(a) The cost of AMC, if any shall be indicated separately

(b) Cost of Spares, if any

Total Bid price in Indian currency\_\_\_\_\_ in words \_\_\_\_\_

Signature of Bidder \_\_\_\_\_

Name \_\_\_\_\_

Business Address \_\_\_\_\_

## Form -14

**BANK GUARANTEE FORM FOR ADVANCE PAYMENT**

To

\_\_\_\_\_ (name of Purchaser)  
 \_\_\_\_\_ (address of Purchaser)  
 \_\_\_\_\_ (name of Contract)

Gentlemen:

In accordance with the provisions of the Purchase Order no. \_\_\_\_\_, dated \_\_\_\_\_, M/s \_\_\_\_\_, (name and address of Supplier) (hereinafter called "the supplier") shall deposit with \_\_\_\_\_ (name of Purchaser) a bank guarantee to guarantee his proper and faithful performance under the said Clause .... of the Contract in an amount of (amount of guarantee) \* \_\_\_\_\_ (in words).

We, the \_\_\_\_\_ (bank or financial institution), as instructed by the Supplier, agree unconditionally and irrevocably to guarantee as primary obligator and not as Surety merely, the payment to (name of Purchaser) on his first demand without whatsoever right of objection on our part and without his first claim to the Supplier, in the amount not exceeding \_\_\_\_\_ (amount of guarantee)\* \_\_\_\_\_ (in words).

We further agree that no change or addition to or other modification of the terms of the Contract to be performed there under or of any of the Contract documents which may be made between (name of Purchaser) and the Supplier, shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall remain valid and in full effect from the date of the advance payment received by the Supplier under the contract until \_\_\_\_\_.

Yours truly,

Signature and seal:

Name of bank/ financial institution:

Address:

Date:

\_\_\_\_\_ An amount is to be inserted by the bank or financial institution representing the amount of the Advance Payment.

# Form - 15

Format for Affidavit of Self Certification regarding Local Content in a R & D Equipment

TENDER NUMBER:

Date: \_\_\_\_\_

I \_\_\_\_\_ S/o, D/o, W/o \_\_\_\_\_, Resident of \_\_\_\_\_ do hereby solemnly affirm and declare as under:

That I will agree to abide by the terms and conditions of the policy of Government of India issued vide Notification – Public procurement (preference to Make in India) Order No.P-45021/2/2017 - PP (BE-II) dated 16.09.2020

That the information furnished hereinafter is correct to be of my knowledge and belief and I undertake to produce relevant records before the procuring entity or any authority so nominated for the purpose of assessing the local content.

That the local content for all inputs which constitute the said equipment has been verified by me and I am responsible for the correctness of the claims made therein.

That in the event of the domestic value addition of the product mentioned herein is found to be incorrect and not meeting the prescribed value-addition norms, based on the assessment of an authority so nominated for the purpose of assessing the local content, action will be taken against me as per Order No. P-45021/2/2017/-PP( B.E-II) dated 16.09.2020.

I agree to maintain the following information in the Company's record for a period of 8 years and shall make this available for verification to any statutory authority: (Kindly fill up the below mentioned particulars)

**i. Name and details of the PLACE OF LOCATION OF VALUE ADDITION:**

ii. R &D Equipment for which the certificate is produced

iii. Procuring entity to whom the certificate is furnished

**iv. Percentage of local content claimed:**

This is to certify that the information / details given above are true. If it is found at a later stage that any or all of the certification is found to be false or documents establishing value addition is not produced or insufficient I shall be liable for the false declaration. I shall co-operate with the nodal ministry or the procuring entity for verification of records establishing local content.

For and on behalf of (Name of firm/entity)

Authorized signatory (To be duly authorized by the Board of Director / Partner / Proprietor)

**NOTE: AUTHORISED SIGNATORY AS PER THE PPMI ORDER**

**FORM – 16**

(for details refer .P-45021/112/2020-PP(BE-II)(E-43780) dated 24.08.2020 of Ministry of Commerce and Industry, Department for Promotion of Industry and Internal Trade and any amendments thereon.)

**Certificate for subcontracting**

(Applicable and to be provided by bidder in case of subcontracting)

I have read the tender document of tender no. along with clause regarding restriction on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries; I certify that this bidder is not from such a country or, if from a such a country, has been registered with the Competent Authority and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the competent Authority. A valid certificate issued by the competent Authority has been attached with the bid. I hereby certify that this bidder fulfil all requirements in this regard and is eligible to be considered.

Signature of the bidder

Name of the Signatory

**FORM – 17**

(for details refer .P-45021/112/2020-PP(BE-II)(E-43780) dated 24.08.2020 of Ministry of Commerce and Industry, Department for Promotion of Industry and Internal Trade and any amendments thereon.)

**Certificate by bidder for participation**

I have read the tender document of tender no. along with clause regarding restriction on procurement from a bidder of a country which shares a land border with India I certify that this bidder is not from such a country or, if from a such a country, has been registered with the Competent Authority. A valid certificate issued by the competent Authority has been attached with the bid. I hereby certify that this bidder fulfills all requirements in this regard and is eligible to be considered.

Signature of the bidder

Name of the Signatory

**ANNEXURE 1 (NOT PART OF TENDER DOCUMENT)**  
**(FOR ORDER AND ALL SUBSEQUENT AMENDMENTS PLEASE VISIT DOE / DIPP WEBSITES)**

**Public Procurement (Preference to Make in India), Order 2017**No. P-45021/2/2017-PP  
(BE-II Dated: 16th September, 2020)

**Form 18**  
**PRICE SCHEDULE FORM FOR GOODS BEING OFFERED FROM ABROAD**

Name of the Bidder \_\_\_\_\_

TENDER No. \_\_\_\_\_

| 1       | 2                | 3                 | 4    | 5    | 6                                                                                                                           | 7                                                                                                               | 8                                                                    | 9                                                  | 10                                                                                   | 11                                 | 12                                                          |
|---------|------------------|-------------------|------|------|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------|--------------------------------------------------------------------------------------|------------------------------------|-------------------------------------------------------------|
| Sl. No. | Item Description | Country of origin | Unit | Qty. | Unit price Indicating currency<br><br>FOB (named port of shipment or FCA (named place of delivery) <i>(retain only one)</i> | Total price (5x6)<br><br>FOB (named port of shipment) or FCA (named place of delivery) <i>(retain only one)</i> | Charges for Insurance & transportation to port//place of destination | Total price <i>CIF/CIP (retain one only)</i> (7+8) | Indian Agents Commission as a percent of FOB /FCA price included in the Quoted price | Approx. Shipment weight and volume | Indian Customs Tariff No and HSN No.<br><br>(ICT & HSN No.) |
|         |                  |                   |      |      |                                                                                                                             |                                                                                                                 |                                                                      |                                                    |                                                                                      |                                    |                                                             |

**Note:**

Currency \_\_\_\_\_

Total Bid price in foreign currency \_\_\_\_\_  
in words \_\_\_\_\_

(a) Indian agents name &amp; address \_\_\_\_\_

(b) Installation, commissioning &amp; training charges, if any \_\_\_\_\_

Signature of Bidder \_\_\_\_\_

Name \_\_\_\_\_

(c) Cost of Spares, if any \_\_\_\_\_

Business Address \_\_\_\_\_

(d) The Indian agent's commission shall be paid in Indian Rupees only based on the Exchange Rate prevailing on the date of \_\_\_\_\_



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negotiation of documents in accordance with clause 22.1 of GCC.

(e) The cost of optional items shall be indicated separately.

