

## Tender Details

**Tender No:** SCL/PS5/2018E0110601

**Tender Date:** 31/07/2018

**Purchase Entity:** Pur\_Entity5

## Tender Notice

E-Procurement Tender No. SCL/PS5/2018E0110601 dated 31.07.2018 SEMI-CONDUCTOR LABORATORY [SCL] invites ONLINE offers in TWO part system through e-tender portal <https://eprocure.isro.gov.in> for Supply, Installation and Commissioning of Two Cylinder Gas Cabinets with automatic Purge . Tender documents can be downloaded from 01.08.2018 - 1201 hrs. to 28.08.2018- 1030 hrs. The vendors need to get enrolled in the e-tender portal to access tender and submit their offer online. Vendors need to have Digital Signature Certificate as detailed on our e-portal and corporate e-mail ID to register on the above portal. Only online tenders will be accepted. No Manual/Postal/ courier/ e-mail/fax tender will be entertained. Please note Tender fee shall not be applicable for tenders submitted on-line through this portal. Vendors interested to participate in this e-Tender are required to register themselves as vendors, if not already registered, in our e-procurement portal <https://eprocure.isro.gov.in> by downloading plug-in and help demos listed on the home page of the e-procurement link mentioned above to complete the vendor registration process. They can seek help from help desk 020 25315555 / 9167969601 (Email: [support.isro@nextenders.com](mailto:support.isro@nextenders.com)) also the home page of e-procurement portal may be accessed for any technical help for registration and subsequent process. Vendors may please note that without registering in our E-procurement portal they will not be able to quote for this tender.

## **Tender Attachments**

### **Technical Write-up/Drawings**

#### **Attachment - I:**

IDT001843000000000000isro05401.pdf

#### **Attachment - II:**

#### **Attachment - III:**

#### **Attachment - IV:**

#### **Attachment - V:**

### **Instructions to Tenderers (PT)**

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1. Interested Tenderers may, login to <http://eprocure.isro.gov.in> and submit offers as per details in the tender notification.

2. Bid /Open Authorization shall be submitted on-line only complying specified schedule and complete in all respects with technical specifications, including pamphlets and catalogues.

3. This being a two part tender-Technical and Commercial part separate, the Technical part should not contain pricing information. The tenders containing Price details in technical part will be treated as unsolicited offers and rejected. Prices should be indicated in the Price Bid format only.

4. In this tender either the Indian Agent on behalf of the Principal/OEM or the Principal/OEM itself can bid, but both cannot bid simultaneously for the same item. Indian agents while quoting on behalf of their principals shall provide necessary latest authorization letter obtained from their Principal/manufacturers in their bid.

- 5.If an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the tender for the same item. If submitted, all offers submitted by the said agent shall be excluded from the procurement process.
- 6.Request for the extension of the due date will not be considered.
- 7.SCL reserves the right to accept or reject any / or all the tenders in part or full without assigning any reasons thereof. The bidder is at liberty to seek information related to bidding conditions, bidding process and/or rejection of its bid.
- 8.Bids submitted other than the EGPS mode shall not be considered.
- 9.SCL reserves the right to verify all claims made by the bidder.
- 10.SCL reserves the right to change any milestone date of the tendering activity / tender schedule.
- 11.Tender which is not submitted in terms of instructions mentioned herein is liable to be rejected.
- 12.If tender opening date happens to be a public holiday, tender will be opened on the next working day and interested bidders may depute their representatives to attend the tender opening, with proper authorization.
- 13.The purchaser shall be under no obligation to accept the lowest or any tender and reserves the right of acceptance of the whole or any part of the tender or portions of the quantity offered and the tenderer shall supply the same at the rates quoted.
14. It is expressly agreed that the acceptance of the Stores Contracted for is subject to final approval in writing by the Purchaser.
- 15.It is to be noted that the drawings, specifications, end-use etc. given by the purchaser, are confidential and shall not be disclosed to any third party.
- 16.Prices are required to be quoted according to the units indicated in the tender. Where quotations are given in terms of units other than those specified in the tender form, relationship between the two sets of units must be furnished.
17. The quote should indicate quantity wise unit rate separately which have to be filled online. The Prices are to be mentioned both in figures as well as in words. The taxes, duties etc. are to be calculated and indicated in the column provided in online forms explicitly.
- 18.Bidders are expected to comply with commercial and other terms and conditions given in Vendor Specified Terms of this tender. In case of any deviation, the reasons thereof should be clearly specified in the vendor specified terms column.
- 19.All available technical literature, catalogues and other data in support of the specifications and details of the items should be furnished along with the offer.

20. Specifications: Stores offered should strictly conform to our specifications. Deviations, if any, should be clearly indicated by the tenderer in their bid. The tenderer should also indicate the Make/Type number of the stores offered and provide catalogues, technical literature and samples wherever necessary along with the quotations. Test certificates wherever necessary should be forwarded along with supplies. Whenever options are called for in our specifications, the tenderer should address all such options. Wherever specifically mentioned by us, the tenderer could suggest changes to specifications with appropriate response for the same.

21. The approximate net and gross weight and dimensions of the items offered shall be indicated in your offer. If dimensional details are available, the same should also be indicated in your offer.

22. The Tenderer would provide, the name of his banker as well as latest income tax clearance certificate duly counter signed by the income tax officer of the circle concerned under the seal of his office, if required by the purchaser duly evaluation of the tender.

23. Subletting and Assignment: The contractor/supplier cannot sublet, transfer or assign the order/Contract or any part thereof or interests therein or benefit or advantage thereof in any manner whatsoever, to any other party save with the previous written consent of the purchaser. Such consent by the purchaser, however, shall not relieve or discharge the contractor/supplier from any obligation, duty or responsibility under the Purchase Order/Contract.

24. The contractor/supplier shall indemnify the purchaser against Workmen Compensation Act.

25. The bids shall be opened on 1st day of opening schedule as indicated in the Tender in the presence of the bidders/their authorized representatives who may like to attend the tender opening against presentation of Authorization letter.

Due to any breakdown in Server/Link bid opening will be continued on the following dates. The schedule of opening of Price bids shall be intimated separately to the technically qualified bidders only.

#### 26. PROCEDURE FOR EVALUATION OF TENDERS:

Technical Evaluation Criteria :

Vendor meeting the eligibility criteria and basic technical specifications mentioned in SCL Tender shall be considered to be technically qualified.

Evaluation of Price Bids:

The following elements shall be considered for evaluation of Priced Commercial offer: a. Price quoted by the bidder in the price bid template for meeting the functionalities given in the Tender and Technical Specifications sheet.

b. Bid shall be evaluated on overall cost basis.

c. AMC charges, recommended spares and consumable charges, if sought in this tender shall not be taken into account for evaluation of price bid.

d. Compliance with the Payment Terms prescribed in this tender document. In the event, the bidder offers Payment Terms stringent than SCL prescribed Payment Terms, the bid of the bidder shall be loaded suitably.

e. In the event of the bidder seeking a confirmed Letter of Credit, the bidder's bid shall be loaded at the rate of 0.5 percent of the LC value towards confirmation charges.

f. In the event of the bidder requiring SCL to bear bank charges outside India (foreign bank charges), the bidder's bid shall be loaded at the rate 0.5 percent of the quoted value towards bank charges outside India.

27. The bid should contain the following information:

28.a. Agency Commission:

Bidders are required to provide the following information in respect of their authorised Indian Agent, if any, along with bid as the same is mandatory as is required for consideration of the bid. Name, Address, Telephone no., fax no., email of the Indian Agent including the contact person. A letter from the Manufacturer/supplier in the current date certifying that the said Indian Agent is their authorised Indian Agent and also indicating the responsibilities/role of the Indian Agent under the proposed purchase. Renumeration/service charges payable to the Indian Agent under the proposed purchase. The amount of agency commission included in the price and payable to Indian Agent of the contractor shall be paid directly to the Indian Agents by the Purchasers in equivalent in Indian rupees on the basis of an invoice from him applying TT buying rate of exchange ruling on the date of placement of the Purchase Order and which shall not be subject to any further exchange variations. The payment will be released to the Indian Agents within 30 days from the date of acceptance of the goods.

b. Details of any technical service, if required for installation and demonstration.

29. Part shipment is not allowed unless specifically agreed to by us.

30. All documents/correspondence should be in English Language only.

## **Standard Terms and Conditions**

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1. DEFINITIONS:

a) The term Purchaser shall mean the President of India or his successors or assignees.

b)The term Contractor shall mean, the person, firm or company with whom or with which the order for the supply of stores is placed and shall be deemed to include the Contractors Successors, representatives, heirs, executors and administrators unless excluded by the Contract.

c)The term Purchase Order shall mean the communication signed on behalf of the Purchaser by an officer duly authorised intimating the acceptance on behalf of the Purchaser on the terms and conditions mentioned or referred to in the said communication accepting the Tender or offer of the Contractor for supply of stores of plant, machinery or equipment of part thereof.

d)The term Stores shall mean what the Contractor agrees to supply under the Contract as specified in the Purchase Order.

## 2.PRICES:

Tenders offering firm prices will be preferred. Where a price variation clause is insisted upon by a tenderer, quotations with a reasonable ceiling should be submitted. Such offers should invariably be supported by the base price taken into account at the time of tendering and also the formula for any such variations.

## 3.DEMURRAGE:

Supplier shall bear demurrage charges, if any, incurred by the purchaser due to delayed presentation of shipping documents as prescribed in para 3.2 to the bankers within a reasonable time (say within 10-12 days) from the date of bill of lading for sea consignments and within 3-4 days from the date of Air Way Bill for air consignments.

## 4.GUARANTEED TIME DELIVERY:

The time for and the date of delivery stipulated in the Purchase Order shall be deemed to be the essence of the Contract. Delivery must be completed within the date specified therein.

## 5.INSPECTION AND ACCEPTANCE TEST:

5.1. The Purchasers representatives shall also be entitled at all reasonable times during manufacture to inspect, examine and test on the Contractors premises the material and workmanship of all stores to be supplied under this Contract and if part of the said stores is being manufactured on other premises, the Contractor shall obtain for the purchasers representative permission to inspect, examine and test as if the equipment were being manufactured on the Contractors premises. Such inspection, examination and testing shall not release the Contractor from the obligations under this Contract.

5.2 For tests on the premises of the Contractor or of any of his sub-Contractors, the Contractor shall provide free of cost assistance, labour, material, electricity, fuel and instruments as may be required or as may be reasonably needed by the purchasers representative to carry out the tests efficiently.

5.3 When the stores have passed the specified test, the purchasers representative shall furnish a certificate to the effect in writing to the Contractor. The Contractor shall provide copies of the test/s certificates to the purchaser as may be required.

6.PORT OF ENTRY:

New Dekhi (for air shipment) / Mumbai (for sea shipment)

7.CONSIGNEE:

Purchase and Stores Officer, Stores,

8.SHIPPING MARKS:

The mark on the shipping documents such as invoice, bill of lading and on the packages should be as follow:

PURCHASE ORDER NO.

DATED

GOVERNMENT OF INDIA

DEPARTMENT OF SPACE

Semi-Conductor Laboratory

Sector 72, SAS Nagar ( Mohali), Punjab-160071

Near Chandigarh

Destination:

9.Port of Entry:

10.CONTRACTORS DEFAULT LIABILITY:

The purchaser may upon written notice of default to the Contractor terminate the Contract in whole or in part in circumstances detailed hereunder:a)If in the judgement of the Purchaser the Contractor fails to make delivery of Stores within the time specified in the Contract/agreement or within the period for which extension has been granted by the Purchaser to the Contractor.

b)If in the judgment of the Purchaser the Contractor fails to comply with any of the other provisions of this Contract.

11.In the event the Purchaser terminates the Contract in whole or in part as provided in Contractor Default Liability, the Purchaser reserves the right to Purchase , upon such terms and in such a manner as he may deem appropriate, stores similar to that terminated and the Contractor shall be liable to the Purchaser for any additional costs for such similar stores and/or for liquidated damages for delay as defined in LD Clause until such reasonable time as may be required for the final supply of stores.

11.1 If this Contract is terminated as provided in Clause Contractor Default Liability, the Purchaser in addition to any other rights provided in this Article, may require the Contractor to transfer title and deliver to the Purchaser under any of the following clauses in the manner and as directed by the Purchaser:

a. Any completed stores.

b. Such partially completed stores, drawing, information and Contract rights (hereinafter called manufacturing material) as the Contractor has specifically produced or acquired for the performance of the Contract as terminated. The Purchaser shall pay to the Contractor the Contract price for completed stores delivered to and accepted, by the purchaser and for manufacturing material delivered and accepted.

11.2 In the event the Purchaser does not terminate the Contract as provided in Contractor Default Liability, the Contractor shall continue the performance of the Contract in which case he shall be liable to the purchaser for liquidated damages for delay as set out in LD Clause until the stores are accepted.

## 12. REJECTION :

In the event that any of the stores supplied by the Contractor is found defective in material or workmanship or otherwise not in conformity with the requirements of the Contract specifications, the purchaser shall either reject the stores or request the Contractor, in writing, to rectify the same. The Contractor, on receipt of such notification, shall either rectify or replace the defective stores free of cost to the purchaser. If the Contractor fails to do so, the purchaser may at his option either

a. replace or rectify such defective stores and recover the extra cost so involved from the Contractor, or

b. terminate the Contract for default as provided under Contractor Default Liability, above, or

c. acquire the defective stores at a reduced price considered equitable under the circumstances. The provision of this article shall not prejudice the Purchaser's rights under LD Clause

## 13. EXTENSION OF TIME:

If the completion of supply of stores is delayed due to reason of force majeure such as acts of god, acts of public enemy, acts of Government, fires, floods, epidemics, quarantine restriction, strikes, freight embargoes, etc., the Contractor shall give notice within 15 days to the purchaser in writing of his claim for an extension of time. The purchaser on receipt of such notice after verification, if necessary, may agree to extend the Contract delivery date as may be reasonable but without prejudice to other terms and conditions of the Contract.

## 14. GUARANTEE AND REPLACEMENT:

a. The Contractor shall guarantee that the stores supplied shall comply fully with the specifications laid down for material, workmanship and performance.



b. For a period of twelve months after the acceptance of the stores, if any defects are discovered therein or any defects therein are found to have developed under proper use arising from faulty materials, design or workmanship, the Contractor shall remedy such defects at his own cost provided he is called upon to do so within a period of 14 months from the date of acceptance thereof by the Purchaser who shall state in writing in what respect the stores or any parts thereof are faulty.

c. If in the opinion of the purchaser it becomes necessary to replace or renew any defective stores, such replacements or renewals shall be made by the Contractor free of all costs to the purchaser provided the notice informing the Contractor of the defect is given by the purchaser in this regard within the said period of 26 months from the date of acceptance thereof. d. Should the Contractor fail to rectify the defects, the purchaser shall have the right to reject or repair or replace at the cost of the Contractor the whole or any portion of the defective stores.

e. The decision of the Purchaser, notwithstanding any prior approval or acceptance or inspection thereof on behalf of the purchaser, as to whether or not the stores supplied by the Contractor are defective or any defects has developed within the said period of 24 months or as to whether the nature of the defects requires renewal or replacement shall be final, conclusive and binding on the Contractor.

f. To fulfill guarantee conditions outlined in Guarantee and Replacement above, the Contractor shall, at the option of the purchaser, furnish a Bank Guarantee (as prescribed by the purchaser - Bank Guarantee format enclosed) from a Bank approved by the purchaser for an amount equivalent to 10% of the value of the Contract along with first shipment documents. On the performance and completion of the Contract in all respects, the Bank Guarantee will be returned to the Contractor without any interest.

g. All the replacement stores shall also be guaranteed for a period of 12 months from the date of arrival of stores at purchaser's site.

h. Even while the 24 months guarantee applies to all stores, in case where a greater period is called for by our specifications, then such a specification shall apply, and in such cases, the period of 26 months referred to in Guarantee and Replacement shall be asked for guarantee period plus two months.

#### 15. REQUIREMENT OF ADDITIONAL NUMBERS OF THE STORES/SPARE PARTS ORDERED:

The Contractor shall also undertake the supply of additional number of items covered by the order as considered necessary by the purchaser at a later date, the actual price to be paid shall be mutually agreed to after negotiations.

#### 16. PACKING:

a. The Contractor wherever applicable shall pack and crate all stores for sea/air shipment as applicable in a manner suitable for export to a tropical humid climate, in accordance with internationally accepted export practices and in such a manner so as to protect it from damage and deterioration in transit by road, rail or sea for space qualified stores. The Contractors shall be held responsible for all damages due to improper packing.

b. The Contractor shall ensure that each box / unit of shipment is legible and properly marked for correct identification. The failure to comply with this requirement shall make the Contractor liable for additional expenses involved.

c. The Contractor shall notify the purchaser of the date of shipment from the port of embarkation as well as the expected date of arrival of such shipment at the designated port of arrival.

d. The Contractor shall give complete shipment information concerning the weight, size, content of each packages, etc.

e. Transshipment of equipment shall not be permitted except with the written permission of the purchaser.

f. Apart from the despatch documents negotiated through Bank, the following documents shall also be airmailed to the purchaser within 7 days from the date of shipment by sea and within 3 days in case of air-consignments:

a. Commercial Bill of Lading / Air Way Bill / Post parcel Receipt (Two non-negotiable copies) b. Invoice (3 copies)

c. Packing List (3 copies)

d. Test Certificate (3 copies)

e. Certificate of Origin.

The Contractor shall also ensure that one copy of the packing list is enclosed in each case.

#### 17. LANGUAGE AND MEASURES:

All documents pertaining to the Contract including specification, schedule, notice, correspondence, operating and maintenance instructions, drawings or any other writings shall be written in English language. The metric system of measurement shall be used exclusively in the Contract.

#### 18. INDEMNITY:

The Contractor shall warrant and be deemed to have warranted that all Stores supplied against this Contract are free and clean of infringement of any patent, copyright or trade mark and shall at all times indemnify the purchaser against all claims which may be made in respect of stores for infringement of any right protected by Patent, Registration of design or Trade Mark, and shall take all risk of accident or damage which may cause a failure of the supply from whatever cause arising and the entire responsibility for the sufficiency of all the means used by him for the fulfillment of the Contract.

#### 19. COUNTER TERMS AND CONDITIONS OF SUPPLIERS:

Where counter terms and conditions/printed or cyclostyled conditions have been offered by the supplier, the same shall not be deemed to have been accepted by the purchaser unless specific written acceptance thereof is obtained.

#### 20.SECURITY INTEREST:

On each item to be delivered under this Contract, including an item of work in progress in respect of which payments have been made in accordance with the terms of the Contract, purchaser shall have a security interest in such items which shall be deemed to be released only at the time when the applicable deliverable item is finally accepted and delivered to the purchaser in accordance with the terms of the Contract. Such security interest of the purchaser shall constitute a prior charge as against any other charge or interest created in respect of such items by any entity.

#### 21.TRAINING:

The Contractor shall, if required by the purchaser, provide facilities for the practical training of Purchasers engineering / technical personnel from India and for their active association on the manufacturing processes throughout the manufacturing period of the Contract / stores, number of such personnel to be mutually agreed upon.

#### 22.RECOVERY OF SUM DUE:

Whenever any claim for the payment of, whether liquidated or not, money arising out of or under this Contract against the Contractor, the purchaser shall be entitled to recover such sum by appropriating in part or whole, the security deposited by the Contractor, if a security is taken against the Contract. In the event of the security being insufficient or if no security has been taken from the Contractor, then the balance or the total sum recoverable as the case may be shall be deducted from any sum then due or which at any time thereafter may become due to the Contractor under this or any other Contract with the purchaser. Should this sum be not sufficient to cover the full amount recoverable, the Contractor shall pay to the purchaser on demand the remaining balance due. Similarly, if the purchaser has or makes any claim, whether liquidated or not, against the Contractor under any other Contract with the purchaser, the payment of all moneys payable under the Contract to the Contractor including the security deposit shall be withheld till such claims of the purchaser are finally adjudicated upon and paid by the Contractor.

#### 23.SECURITY FOR PURCHASE OF MATERIALS:

Successful tenderer will have to furnish in the form of a bank guarantee or any other form as called for by the purchaser towards adequate security for the materials and properties provided by the Purchaser for the due execution of the Contract.

## Bid Templates

### Two Cylinder Gas Cabinets

#### Item Specifications -I

Sl. No	Specifications	Compliance (Yes /No)	Offered Specifications	Remarks
1	[1.00.00]:SCOPE OF WORK Vendor's scope of work shall cover Supply, Installation & Commissioning of Gas Cabinets for supplying ultra pure gases viz. Silane- Hydrogen mix (2% SiH <sub>4</sub> in H <sub>2</sub> ), Silane Hydrogen mix (200 ppm SiH <sub>4</sub> in H <sub>2</sub> ), Hydrogen Chloride gas (HCl) and Forming gas (5% H <sub>2</sub> in N <sub>2</sub> ) to wafer processing facility. The scope of work shall include the following:-> Detailed engineering and Supply of Specialty gas equipment as			

	<p>per the required specifications.-&gt; Installation and Commissioning of the gas equipment supplied.-&gt; On-site training to concerned SCL personnel on Operations, Cylinder change &amp; Troubleshooting of the gas equipment. It is not the intent of this document to completely specify all details of design and construction. Nevertheless the systems shall conform in all respects to high standards of engineering, design and workmanship and shall be capable of performing the operations in a safe and efficient manner as per industry codes. The equipment shall meet all SEMI regulations and must be SEMI complied.</p>			
2	[1.01.00]SCOPE OF SUPPLY(1) Vendor shall supply following Specialty			

	gas equipment as per the Technical Specifications (refer clause 3.00.00):Two cylinders Gas cabinet, with automatic purge, for supplying high purity Silane-Hydrogen mix (2% SiH4 in H2) gas, Quantity- 1 No.			
3	Two cylinders Gas cabinet, with automatic purge, for supplying high purity Silane -Hydrogen mix (200 ppm SiH4 in H2) gas, Quantity - 1 No.			
4	Two cylinders Gas cabinet, with automatic purge, for supplying high purity Hydrogen Chloride gas (HCl) gas. Quantity-1 No.			
5	Two cylinders Gas cabinet, with automatic purge, for supplying high purity Forming gas (5% H2 in N2). Quantity - 1 No.Any items not specifically mentioned in the specifications but required for safe and			

	<p>efficient operations of the system shall deemed to be included in the scope of supply of the vendor unless explicitly indicated in the bid by the vendor.</p>			
6	<p>[1.02.00]SCOPE OF INSTALLATION and COMMISSIONING[1.02.01] Vendor shall provide guidelines for installation of the Gas Cabinets. Utility connections (Electrical, N2 purge, CDA, Sprinkler line &amp; Exhaust) and final connection of supply line to the gas cabinet shall be provided by SCL. It will be responsibility of the vendor to ensure proper installation &amp; commissioning of the gas cabinets.[1.02.02] Vendor shall Commission the system with the respective process gas and demonstrate functionality of the equipment</p>			

	supplied, at site. Process gas cylinders and purge gas cylinders for respective gas cabinets shall be provided by SCL.			
7	[1.03.00]TRAINING[1.03.01]During commissioning of the equipment vendor shall provide on-site hands-on training to the concerned SCL personnel on Operations, troubleshooting and Preventive Maintenance of the gas cabinet.			
8	[2.00.00]ACCEPTANCE PROCEDURE:[2.01.00]Vendor shall demonstrate, at site, the functionality of the equipment supplied at site based on which the system / cabinet would be accepted. [2.02.00]Equipment Qualification Testing shall include the following: (1) He Leak Test- In board He leak test shall be carried			



	<p>out for leak rate better than <math>2 \times 10^{-9}</math> atm cc/min. (2) Pressure test- Pressure test shall be carried out for 24 hours upstream 3000 psi max. 2000 psi min (for high pressure systems). Downstream 100 psi max. 90 psi min. with Ar/N2 grade 6. System shall also be pressure tested to 1.1 of design pressure for a minimum of 12 hours with no pressure drop. (3) Purity Tests: Moisture, Trace oxygen &amp; particle tests shall be carried out for: Moisture &lt; 10 ppb. Oxygen &lt; 10 ppb. Particles &lt; 5 particles/ft<sup>3</sup> @ 0.1µm. Manufacturer shall submit records and test method for all the above-mentioned tests and results conducted at their works during fabrication of the gas cabinet. Helium leak integrity test</p>			
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	procedure shall comply with the Semi standard (F1-96).			
9	[3.00.00]:TECHNICAL SPECIFICATIONS - GAS CABINET:[3.01.00]:APPLICATIONAuto- purge two cylinder gas cabinets (one process and one purge cylinder) are required for supplying specialty process gases viz. Silane- Hydrogen mix (2% SiH <sub>4</sub> in H <sub>2</sub> ), Silane Hydrogen mix (200 ppm SiH <sub>4</sub> in H <sub>2</sub> ), Hydrogen Chloride gas (HCl) and Forming gas (5% H <sub>2</sub> in N <sub>2</sub> ) for wafer fabrication facility at SCL.			
10	[3.02.00]:SYSTEM REQUIREMENTEach gas cabinet shall house two cylinders i.e. one process gas cylinder and one cylinder for purge gas (with purifier). The fully automatic gas cabinet shall facilitate the plant			

	<p>operators to perform the purge sequences - pre purge and post purge for replacing the exhausted cylinder and shall perform automatic leak test after replacement of process cylinder. The gas cabinet shall be fabricated as per the applicable UBFC, NFPA, &amp; SEMI Standards and shall meet at least the following features</p> <p>ENCLOSURE /CABINET:(1) Cabinet/Enclosure shall be of cold rolled steel (min 12 gauge UK BG), all welded construction with white / Grey polyurethane paint for superior corrosion resistance. Cabinet Protective Edge shall prevent water penetration in case of water flooding.(2) The Cabinet shall be fitted with wall-mounted kits including bracket and chrome steel safety strap to</p>			
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	<p>accommodate process gas cylinder. (3) Cabinet floor shall be corrosion proof, non-skid type and shall allow easy installation and removal of gas cylinders</p> <p>(4) Cabinet shall be fitted with self-closing and self-latching door fitted with enclosure gasket. Opening angle of the door shall be 120 deg (minimum).(5) The cabinet shall also be fitted with a self-closing viewing window for quick view/access to the purge panel. Window shall be fitted with wire-reinforced safety glass.(6) Cabinet shall have a provision for vertically adjustable shelf for cylinders up-to 34-inch height for proper alignment of cylinder valves connection and pig-tail. User should have the ability to change Cylinder shelf height when needed according to the application(7) Door</p>			
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	louvers shall be fitted with removable air-filters.			
11	(8) UL approved bee-waxed coated fire sprinkler head; with 155° F (68°C) actuation shall be mounted.(9) UV/IR sensor shall be provided in Gas Cabinet of 2% Silane, 200 ppm Silane and Forming Gas.(10) Exhaust port to be provided for maintaining at least 250 scfm (425 m3/h) air flow along the length of the cylinder. Vendor to determine the flowrate based on cabinet size and gas type.(11) Cabinets shall be fitted with weighing scale for process gas cylinder.(12) Z purge for controller enclosure shall be provided.(13) Labeling– all specific gas labels and hazardous labels shall be put on the front door. Labels shall be according to the applicable			

	standards and Label content per MSDS.			
12	<p>PURGE/ GAS PANEL:(1)  The cabinet shall house:-•  Fully automatic process gas panel each with 5-valve auto purge capability, Vacuum venturi/generator, Excess flow protection, Emergency shutoff valve, final metal filter of 0.003μ rating and He leak check port with manual valve•  Purge panel (1 no.) with He leak check port and N2 purifier cartridge.(2) A provision for a separate input line (from external source) of GPN2 with a Pneumatic valve (controlled by the software on all sequences when required) for Vacuum Generator shall be made. (3) Gas panel shall be designed for efficient internal flow path &amp; minimum dead spaces</p>			

	<p>for high purity applications and shall be capable of hooking cylinders with pneumatic shut-off valves. (4) Pressure regulator shall be selected to suit the gas and flow requirements. Pressure transducer(s) be provided before and after the pressure regulator for reliable pressure monitoring.(5) Pressure transmitter shall be of suitable range i.e. compatible for the available pressure (max.) for the process gas cylinder.</p>			
13	<p>(6) All the components of the gas panel shall be SS 316L electro-polished with internal surface finish of 10 Ra max. (7) Gas panel shall be fabricated using orbital welding and VCR® type fittings and shall be Helium leak tested for &lt; 1x 10<sup>-9</sup> atm cc/s leak rate. (8) Gas panel shall have</p>			

	<p>Check valves at both purge inlet and vent inlet to prevent cross flow to the Nitrogen source. (9) Vent lines of gas panel of Silane gas cabinet shall have back flash arrester. (10) Pigtail for Purge Gas Panel shall be fitted with DISS718 connection.</p>			
14	<p>(11) Pigtails for Process Gas Panels shall be fitted with the DISS connections suitable for the respective gas. (12) Pigtail shall be fitted with opposing brackets to prevent the transmission of torque to the mechanical connections. (13) The pigtail shall have a provision for trickle purge of inert gas during the cylinder replacement when these are disconnected from the process gas cylinder. (14) Gas panel shall be clearly labeled and easily</p>			



	accessible from the front for ease of maintenance.			
15	<p>CONTROLLER:(1) In view of the safety involved vendor shall ensure that controller hardware, software, logic control &amp; control philosophy be fail-safe.(2) Entire purge sequence, vacuum /pressure lock tests etc. required to be performed during cylinder replacement as well as for component/filter replacement shall be carried out automatically through a PLC/microprocessor based controller.(3) Controller shall have provision for selecting different purge options e.g. cylinder purge, etc. and shall also enable manual sequencing of valves (password protected) for troubleshooting and maintenance, if required.(4) System</p>			

	<p>controller/software should support auto operations/purge sequences for process and purge panel/stick.(5) Fully automatic purge sequence (for each process panel) shall include: -&gt;Purge before and after cylinder change.-&gt;Cylinder/bottle replacement (before disconnecting the DISS connection the system should allow N2 trickle flow out of the pigtail /DISS connection to prevent contamination of the pig tail/ panel).-&gt; Purge for the entire gas panel (low and high pressure sides) for maintenance propose.-&gt; Purge for the process line for maintenance propose.-&gt; In manual purge mode user should have the ability to control all the valves.-&gt;Number of the purge cycles shall be user selectable and should be</p>			
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	supported by the software.			
16	<p>(6) In board leak check should be part of any purge sequence and should be fully supported by the software. (in board leak check should automatically open the leak test course).(7) Pressure test should be part of any purge sequence and should be fully supported by the software/controller. Controller shall enable user to select/set pressure test duration.(8) All the purge sequence should include vacuum generator that shall create vacuum better than -9 psig.(9) Engineering units: Controller shall enable the user to select an engineering unit (PSI – Bar; Kg – Lb; oC or oF) via the controller software.(10) Controller</p>			

	shall have a provision for alarm inputs (at least 4 nos.) e.g. Fire alarm, Gas leak alarm, Evacuation alarm, seismic activity alarm etc. and shall shut the gas cabinet in the event of activation of any of the alarms.			
17	<p>COMMUNICATION:(1) System should have 5 selectable digital outputs and inputs alarms (dry contacts) and 5 analog outputs and inputs supported by the software (Alarms menu should include all the system alarms and the user should have the ability to use each alarm from this screen as an output).(2) Potential free contacts for remote sensing of alarms (2 NO + 2 NC). Rating 230 V, 1 Amp. shall also be provided.(3) System should include communication to a</p>			

	<p>Cimplicity based monitoring system (MODBUS / MODBUS+) and all necessary hardware and software to support full data transfer with the system (SCL HMI system) . Supplier will be responsible for updating and providing any software upgrade / update to enable the communication between the supplied system and the Facility monitoring system.(4) Communication with SCL gas monitoring system (Cimplicity based) Supplier should provide all hardware and software required to support full data transfer with SCL facility monitoring system (SCL HMI system). The FMCS should receive all the information available from each unit of equipment including for e.g. Cylinder Pressure and scale level, leaks status,</p>			
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	<p>pressure status, valve position, alarms generated by the equipment, Mode status (Manual, purge – all types, service and stand by etc). Any alarm available from each unit should be transferred/ logged on into the system. (e.g. – system status, low purge pressure, low cylinder pressure etc). All the information must be available for the monitoring system in all modes of operation.</p>			
18	<p>DISPLAY:A suitable Human Machine Interface via touch screen panel (minimum 7”) is required for the following: •Selecting purge sequences –cylinder purge or gas panel purge. •Changing set values for pressures, weight etc. •Display valve status, gas panel (left-right) status, etc. •Warning</p>			

	<p>and alarm status,</p> <ul style="list-style-type: none"> <li>•Cylinder pressure and weight.</li> <li>•Process gas pressure.</li> <li>•Gas consumption and gas supply interruption histogram date/day wise.</li> </ul>			
19	<p>SAFETY WARNING AND SHUTDOWN:Gas cabinet shall include but not limited to the following alarms/shutdown conditions:(1) Low cylinder/bottle pressure/weight – alarm.(2) Low purge gas pressure – alarm.(3) Pressure/vacuum lock test fail – alarm.(4) Exhaust failure – alarm with shut down(5) Low pneumatic air pressure – alarm with shut down.(6) High Process gas Flow – alarm with shut down.(7) Alarm inputs from other sources - alarm with shut down(8) Manual Emergency shut off button –alarm with</p>			

	shut down.			
20	[4.00.00]APPROVED MANUFACTURERS:Norcim bus/ Semi-Gas/ Air-products/ Matheson/ Air Liquide			
21	[5.00.00]FACILITIES TO BE PROVIDED BY PURCHASER / SCL.[5.01.00]Free electric Power 230V ± 10%, 1 Phase or 415V ± 10%, 3 Phase, at 50 Hz will be provided for welding and other purposes.[5.02.00]Utility connections (Electrical, N2 purge, CDA, Sprinkler line & Exhaust) and final connection of supply line to the gas cabinet shall be provided by SCL.[5.03.00]Process gas cylinders and purge gas cylinders for respective gas cabinets shall be provided by SCL.			
22	[6.00.00]SUBMITTALS BY THE			



	<p>VENDOR[6.01.00]Vendor shall provide 'Two copies' of the documents indicating the following:(1) Instruction Manual/Operation Manual and Maintenance manual including instructions for trouble shooting, safety procedures including Dos and Don'ts, Cylinder change procedure etc. for each type of gas cabinet.(2) Detailed electrical and instrumentation circuit diagrams with pin configurations, for each type of gas cabinet.(3) 'As-built' drawing(s) of the system and components with complete dimension details shall be provided.(4) Detailed specifications including makes of the components to be used in the gas cabinet. (5) Leak Test Certificates for the Gas panels of the cabinet.(6)</p>			
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	<p>Indicate the proposed set-value for the excess flow switch. Exact values can be decided at the time of release of PO.(7) Technical write up to illustrate the fabrication, quality assurance and commissioning procedures.(8) Detail of facilities required for commissioning of the gas cabinets.(9) Vendor shall provide list of recommended spares (with item wise price) keeping in view the need that may arise during next 2 years of continuous operation of the gas cabinet. Vendor to include the items at S.No. 4, 6, 7, 8 and 9 in the technical offer.</p>			
23	<p>[7.00.00] DELIVERY &amp; ERECTION SCHEDULE[7.01.00]Time of completion shall be regarded as per the</p>			

	<p>essence of the contract. The supply, installation and commissioning shall be completed within a period of 10 weeks from the date of issue of Purchase Order. Material shall be supplied within 9 weeks from the date of P.O. Upon receipt of the gas cabinets at site, SCL will hookup the required utilities and process gas supply lines. Two weeks prior intimation of expected date of completion of installation by SCL will be given to the vendor. Vendor shall complete the commissioning within 1 week from the date of installation.</p>			
24	<p>[8.00.00]SHIPMENT:(1) Equipment should be shipped in a wood crate with moisture absorbers.(2) Cabinet should be covered with</p>			

	<p>sealed double bagging.(3)  All Panels shall be pressurized with Ar /N2 grade 6 before shipment and pressure value shall be recorded and sent with the system. Do not use He for pressurizing or purging the system.</p>			
25	<p>[9.00.00]WARRANTYVend or shall provide comprehensive warranty covering parts and labour for a period of 2 Years after successful commissioning and acceptance of the system. Vendor shall provide 2 preventive maintenance visits during warranty period. Vendor to submit a written guarantee from the manufacturer of the equipments for availability of spare parts for at least 15 years of operation.</p>			

**Vendor Specified Terms**

Description	Vendor Terms
<p>1.Delivery Terms:</p> <p>For imported stores, prices shall be quoted on FOB/FCA nearest International/Gateway airport basis inclusive of all taxes, levies, duties arising in the tenderer country.</p> <p>For Indigenous stores, prices shall be quoted on F.O.R. destination basis i.e. SCL, S.A.S. Nagar, Mohali, Punjab exclusive of GST as may be applicable.</p>	
<p>2.Goods and Service Tax (GST) :</p> <p>Purchaser is entitled to concessional CGST of 2.5 % and IGST of 5 % as per Ministry of Finance, Department of Revenue, Notification Nos. 45/2017 Central Tax (Rate) and 47/2017 Integrated Tax (Rate) both dated 14th November, 2017 respectively and would accordingly issue Exemption Certificate in favour of the contractor quoting in Indian Rupees. The bidder should take note of the same while quoting the prices in Indian Rupees.</p>	
<p>3.For imported materials :</p> <p>Purchaser is entitled to issue Customs duty exemption certificate (CDEC) to the contractor under customs notification no.51/96 dated 23.07.1996 and subsequent amendments to enable the contractor to avail off the benefit of concessional rate of customs duty under this notification. CVD under this notification is nil. In addition to the above</p>	

<p>CDEC, any documentary support requested by the contractor from the purchaser for customs clearance of goods against the above CDEC shall be provided by the purchaser. (Purchaser will provide Customs Duty Exemption Certificate in case of Import Orders/ imported supplies/ High Sea Sales).</p>	
<p>4.DELIVERY &amp; ERECTION SCHEDULE :</p> <p>Time of completion shall be regarded as per the essence of the contract. The supply, installation and commissioning shall be completed within a period of 10 weeks from the date of issue of Purchase Order. Material shall be supplied within 9 weeks from the date of P.O. Upon receipt of the gas cabinets at site, SCL will hookup the required utilities and process gas supply lines. Two weeks prior intimation of expected date of completion of installation by SCL will be given to the vendor. Vendor shall complete the commissioning within 1 week from the date of installation.</p>	
<p>5.Security Deposit (SD):</p> <p>On acceptance of the tender, the Contractor shall submit security deposit for ten percent (10 percent) value of the Purchase Order (PO) within 15 days from the date of PO towards successful execution of the PO. Security Deposit shall be submitted through Demand Draft / Bankers Cheque/ fixed deposit receipt or Bank Guarantee from any of the Scheduled Banks executed on non-judicial stamp paper of appropriate value, and shall be valid for a period of sixty (60) days</p>	

<p>beyond the date for completion of the Purchase Order.</p> <p>(This will be returned by SCL immediately on execution of the PO satisfactorily as per order terms. If not, the amount will be forfeited)  Central PSUs/PSEs/PSEs/Autonomous Bodies/MSEs shall be exempted from the payment of Security Deposit, and instead, an Indemnity Bond shall be secured from them in lieu of the Security Deposit.</p>	
<p>6. Terms of Payment in case of overseas supplier(s):</p> <p>Being a Department of the Government of India, the normal terms of payment are by Sight Draft. The payment shall be remitted as Under:</p> <p>90% of the PO value shall be paid within 30 days of receipt of material at Purchaser site against presentation of shipping documents to SCL banker routed through contractor bank and the balance 10% amount shall be payable on successful installation, commissioning and acceptance of the entire project at Purchasers site against a Performance Bank Guarantee.</p> <p>In the event of the contractor not being able to provide the Performance Bank Guarantee the payment of balance 10% amount shall be made after the expiry of the warranty period.</p> <p>All bank charges outside India related to the payment shall be borne by the Contractor and all bank charges in India shall be borne by the purchaser .</p> <p>Indian agent remuneration/service charge shall be payable by the Purchaser directly to the Indian agent in Indian Rupees based on T.T</p>	

<p>buying rate of exchange prevailing on the date of placement of purchase order within 30 days of acceptance of material at purchaser site.</p>	
<p>7. Terms of payment in case of indigenous supplier(S):</p> <p>The payment shall be remitted as under:</p> <p>90% of the PO value shall be paid within 30 days of the receipt of the materials at purchaser site and the balance 10% amount shall be payable on successful installation, commissioning and acceptance of the entire project at Purchasers site against a Performance Bank Guarantee.</p> <p>In the event of the contractor not being able to provide the Performance Bank Guarantee the payment of balance 10% amount shall be made after the expiry of the warranty period.</p>	
<p>8. Performance Bank Guarantee (PBG):</p> <p>The Contractor shall furnish a Bank Guarantee (as per format given by purchaser) from any nationalized/scheduled bank for an amount equivalent to 10% of the value of the Contract and shall be valid for a period of 60 days beyond the expiry date of warranty period. On the performance and completion of the Contract in all respects, the Bank Guarantee will be returned to the Contractor without any interest.</p>	



<p>9.Warranty:</p> <p>9.1. The Contractor shall provide for the tendered equipment comprehensive warranty for parts as well as labour for a period of 24 months from the date of successful commissioning and acceptance of the equipment at Purchaser site at no extra charges against any manufacturing defect/faulty workmanship. In case any defect/faulty workmanship arises during warranty period, the Contractor should replace/rectify the same at its own cost at site/works.</p> <p>9.2 During warranty vendor shall provide 02 preventive maintenance visits during warranty period.</p> <p>9.3. All expenses on the visit(s) of the contractor engineer such as To and Fro travel costs, local transportation, boarding and lodging etc. during warranty shall be borne by the contractor.</p> <p>9.4. Vendor to submit a written guarantee from the manufacturer of the equipments for availability of spare parts for at least 15 years of operation after expiry of warrantee period.</p>	
<p>10.Warranty Replacements:</p> <p>If in the opinion of the purchaser it becomes necessary to replace or repair defective equipment during the warranty period, such replacement or repair shall be made by the Contractor free of all costs to the Purchaser provided the notice informing the Contractor of the defect is given by the Purchaser in this regard, within period of 26months from the date of acceptance thereof.</p>	

<p>All replacement parts during the warranty period shall be supplied by the Contractor, free-of-cost on DDP (Delivery Duty Paid) basis with freight and insurance upto Purchaser site at S.A.S. Nagar, Punjab and customs duty applicable in India to the Contractor account including compliance with the customs procedure in India. The indigenous replacement parts, if any, shall be supplied by the Contractor free of cost on F.O.R. Purchaser site at SAS Nagar, Punjab basis.</p> <p>All defective parts including the imported parts shall be returned by Purchaser to the Contractor, if requested, on Freight to pay basis.</p>	
<p>11.Replacement:</p> <p>If the stores or any portion thereof is damaged or lost during transit, the Purchaser shall give notice to the Contractor setting forth particulars of such stores damaged or lost during transit. The replacement of such stores shall be effected by the contractor within a reasonable time to avoid unnecessary delay in the intended usage of the Stores. In case the purchaser agrees, the price towards replacement items shall be paid by the purchaser on the basis of original price quoted in the tender or as reasonably worked out from the tender.</p>	
<p>12.Validity:</p> <p>The offer should be valid for a minimum period of 120 from the date of opening of Tehno-Commercial bid and 90 days after opening of</p>	

Price Bid.	
<p>13. Installation and Commissioning:</p> <p>Installation, commissioning, and demonstration of performance of the tendered stores as per Purchaser tendered specifications shall be carried out by the Contractor at Purchaser's site at S.A.S. Nagar, Punjab, India.</p> <p>The contractor shall provide in advance guidelines for preparation of installation site and list of items to be supplied by Purchaser during installation.</p> <p>On receipt of intimation from the Purchaser, the Contractor shall depute its engineer to the Purchaser site within two weeks to carry out installation and commissioning and will demonstrate the functionality of the tendered equipment to Purchaser specifications as per mutually agreed acceptance procedure. The Contractor shall be responsible for any loss/damages sustained due to delay on the part of the Contractor to send its engineer for installation and commissioning.</p> <p>Failure to commission the tendered equipment successfully shall entitle Purchaser to full refund of the payment made and the interest thereon. Decision regarding successful installation and commissioning shall rest solely with the Purchaser.</p>	
<p>14. Liquidated Damages (LD):</p> <p>If the Contractor fails to deliver the stores within the time specified in</p>	

<p>the contract or any extension thereof, the purchaser shall recover from the Contractor as liquidated damages a sum of one-half of one percent (0.5 percent) of the Contract price of the undelivered stores for each calendar week of delay. The total liquidated damages shall not exceed ten percent (10 percent) of the Contract price.</p>	
<p>15.Mode of Despatch:</p> <p>In case of foreign orders, stores should be despatched by Indian Flag Vessels/Air India or through any Agency nominated by us whose contact details shall be indicated in the purchase order.</p>	
<p>16.Insurance of Stores:</p> <p>Insurance wherever necessary, will be arranged by the Purchaser. The necessity or otherwise of insurance will be as indicated in the Purchase Order/Contract.</p>	
<p>17.Packing &amp; Forwarding:</p> <p>The Contractor shall pack and crate all stores for air/sea/road shipment as applicable in a manner suitable for export to a tropical humid climate, in accordance with internationally accepted export practices and in such a manner so as to protect it from damage and deterioration in transit by road, rail, air or sea. The Contractors shall be responsible for all damages due to improper packing. Vendor shall also</p>	

<p>confirm the following:</p> <ol style="list-style-type: none"> <li>1. Equipment should be shipped in a wood crate with moisture absorbers.</li> <li>2. Cabinet should be covered with sealed double bagging.</li> <li>3. All Panels shall be pressurized with Ar /N2 grade 6 before shipment and pressure value shall be recorded and sent with the system. Do not use He for pressurizing or purging the system.</li> </ol>	
<p>18.Arbitration:</p> <p>If at any time any question, dispute or difference whatsoever shall arise between the purchaser and the Contractor upon or in connection with this Contract, either party may forthwith give to the other notice in writing of the existence of such question, dispute or difference and the same shall be referred to the adjudication of two arbitrators, one to be nominated by purchaser, other by a Contractor and in the event of any difference of opinion, the arbitrators will refer the matter to the umpire. The arbitration shall be conducted in accordance with the rules and procedure for arbitration of the International Chamber of Commerce at Paris. The expenses of the arbitrators and umpire shall be paid as may be determined by them. However, the venue of such arbitration should be in India. In case of dispute arises with domestic/Indian suppliers, the applicable Arbitration procedure shall be as per Indian Arbitration &amp; Conciliation Act, 1996.</p>	

19.Applicable Law:  The Contract shall be interpreted, construed and governed by the laws of India.	
20.Address if Indian Agent, if any:	
21. Any other terms	

**Supporting Documents from Vendor**

**Attachment - I:**

**Attachment - II:**

**Price Bid Form**

Item Description	Slab Range	Qty	UOM	Currency	Unit Price	Total Price
Supply of Two Cylinder Auto Gas cabinet with automatic purge (as per technical	-	1	No.	-	-	-

specifications at Annex-1) for supplying high purity process gas Hydrogen Chloride (HCl)(SCL Material Code 411517362)						
Installation of Two Cylinder Auto Gas cabinet : Installation, Startup & Commissioning of Two Cylinder Gas Cabinet with automatic purge (as per technical specifications at Annex-1) for supplying high purity process gas Hydrogen Chloride (HCl). Note:- Installation of utility connections & supply line is in SCL scope. Vendor	-	1	No.	-	-	-

to provide only guidelines for installation of utility connections. (SCL Material Code 411517362)						
Supply of Two Cylinder Auto Gas cabinet with automatic purge (as per technical specifications at Annex-1) for supplying high purity Silane-Hydrogen mix (2%SiH4 in H2) gas. (SCL Material Code 411517363)	-	1	No.	-	-	-
Installation of Two Cylinder Auto Gas cabinet: Installation, Startup & Commissioning of Two Cylinder Gas Cabinet with	-	1	No.	-	-	-



<p>automatic purge (as per technical specifications at Annex-1) for supplying high purity Silane-Hydrogen mix (2%SiH4 in H2) gas. Note:- Installation of utility connections &amp; supply line is in SCL scope. Vendor to provide only guidelines for installation of utility connections. (SCL Material Code 411517363)</p>						
<p>Supply of Two Cylinder Auto Gas cabinet with automatic purge (as per technical specifications at Annex-1) for supplying high purity Silane-</p>	-	1	No.	-	-	-

Hydrogen mix (200 ppm SiH4 in H2) gas. (SCL Material Code 411517364)						
Installation of Two Cylinder Auto Gas cabinet : Installation, Startup & Commissioning of Two Cylinder Gas Cabinet with automatic purge (as per technical specifications at Annex-1) for supplying high purity Silane- Hydrogen mix (200 ppm SiH4 in H2) gas. Note:- Installation of utility connections & supply line is in SCL scope. Vendor to provide only guidelines for installation of	-	1	No.	-	-	-

utility connections. (SCL Material Code 411517364)						
Supply of Two Cylinder Auto Gas cabinet with automatic purge (as per technical specifications at Annex-1) for supplying high purity Forming gas (5% H2 in N2)(SCL Material Code 411517365)	-	1	No.	-	-	-
Installation of Two Cylinder Auto Gas cabinet : Installation, Startup & Commissioning of Two Cylinder Gas Cabinet with automatic purge (as per technical specifications at Annex-1) for	-	1	No.	-	-	-

supplying high purity Forming gas (5% H2 in N2). Note:- Installation of utility connections & supply line is in SCL scope. Vendor to provide only guidelines for installation of utility connections. (SCL Material Code 411517365)						
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Break-up of other taxes and other costs should be specified in respective narration columns.

Sum of these Break-up values should be specified in respective value columns.