CO2 PRODUCT.JSC	**CO2 PRODUCT JSC**
PROJECT	**CO2 PRODUCTION PLANT**
PACKAGE	**ENGINEERING, PROCUREMENT, CONSTRUCTION AND INSTALLATION**

TECHNICAL REQUISITION DOCUMENT FOR

PURCHASE PRESSURE VESSEL (CO2 LIQUID TANK)

B1	03/Jun/26	Issue For Bidding	NHK	PAD	DVB	VLT
A1	20/Apr/26	Issue For Review	NHK	PAD	DVB	VLT
Rev	Date	Purpose	Prepared	Checked	Reviewed	Approved

EPC VENDOR: PTSC THANH HÓA	**Document No:** CO2-PTH-MEC-TRD-010

REVISION RECORD SHEET

No	Content of Revision	Rev	Date (dd/mm/yyyy)
1	Issue For Review	A1	20/Apr/26
2	Issue For Bidding	B1	03/Jun/26

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1. INTRODUCTION

1.1. PROJECT BACKGROUND

Project	CO2 PRODUCTION PLANT
Owner	CO2 PRODUCT JSC
EPC	PTSC THANH HÓA

CO2 PRODUCT Joint Stock Company has selected a production capacity of approximately 100.000 tons/ 300 day of high-purity liquid CO_2 and 2,000 tons per year of CO_2 dry ice.

The products of the project include high-purity liquid CO_2 (≥ 99.995%) for use in the food and beverage industry, as well as the electronics sector (such as beverage production, semiconductor manufacturing, and electronic device fabrication). CO_2 dry ice is produced for applications in food preservation, healthcare, household goods manufacturing, and various industrial fields.

All impurity components of the products comply with ISBT (International Society of Beverage Technologists) standards, as shown in the following table:

Table 1.1: International Society and Beverage Technologists (ISBT Standard)

No.	Quality Parameter	Guideline Impurity Limit
1	Moisture (H2O)	≤ 20ppm v/v
2	Oxygen	≤ 30 ppm v/v
3	CO	≤ 10 ppm v/v
4	Oxides of Nitrogen (NO_x)	≤ 5,0 ppm v/v
5	Nitrogen Monoxide (NO)	≤ 2,5 ppm v/v
6	Nitrogen Dioxide (NO_2)	≤ 2,5 ppm v/v
7	Non-volatile Residue (NRV)	≤ 10 ppm w/w
8	Non-volatile Organic Residue (NVOR)	≤ 5,0 ppm w/w
9	Methanol (CH_3OH)	≤ 10 ppm v/v
10	Total Hydrocarbon (as Methane)	≤ 50,0 ppm *(includes 20,0 ppm total non-methane hydrocarbon)*
11	Ammonia (NH_3)	≤ 2,5 ppm v/v
12	Acetaldehyde (C_2H_4O or AA)	≤ 0,2 ppm v/v
13	Aromatic Hydrocarbon (C_6H_6 – Benzene)	≤ 20,0 ppb (0,020 ppm)
14	Total Sulfur – TS (Total sulfur impurities excluding SO_2)	≤ 0,1 ppm v/v
15	Sulfur Dioxide (SO_2)	≤ 1 ppm v/v

1.2. PURPOSE

The scope of this document is limited to the supply of a 200 m^3 Liquid CO_2 Storage Vessel, including all activities related to design, procurement, fabrication, and completion of a double-wall storage system (inner tank and outer tank), ensuring the equipment is ready for installation and operation.

1.3. LANGUAGES

All official project documentation shall be submitted in English or in bilingual format English.

2. SCOPE OF SUPPLY AND WORK

2.1. SCOPE OF SUPPLY AND SERVICE

No.	Description	Unit	Q'ty
1	Supply Liquid CO_2 Storage Vessel package (V301A/B/C; V302A/B/C; V303A/B/C; V304A/B/C; V305A/B/C)	pcs	15
2	Documentation as per VENDOR Data Document requirement List (VDRL)	lot	1

Refer to Attachment #1 for the details.

2.2. SCOPE OF WORK

The BIDDER / MANUFACTURER shall use proven or standard designs to meet the requirements of the specifications, data sheets, and attachments. The scope includes design, manufacture, testing, painting, supply, packing, and delivery of all items in Attachment #1, as well as supervision for erection, testing, commissioning, and performance testing when required.

2.3. OUT OF SCOPE

Installation work is excluded from the SUPPLIER/ BIDDER's scope of work.

2.4. DELIVERY TIME

Two options of delivery:

(1) DDP Site work: Ninh Binh province (including all taxes, duty, fee to deliver the goods to site. Delivery time: 6 months from contract signing. \

(2) DAP Huu Nghi border gate, Vietnam. In this case, the BIDDER shall agree to lend the trailers to the Buyer for the sole purpose of onward inland transportation from the designated border gate to the Buyer's warehouse and return the empty trailer back to the Huu Nghi gate. Free-time: The Buyer is entitled to a free-time period of at least 03 calendar days (not including weekends and public holidays) to use the trailer and return it to the Seller. Delivery time: **5.5 months from contract signing.**

3. DESIGN & OPERATING CONDITIONS

	Design	Operating
Pressure	22 bar(G)	20 bar(G)
Temperature	- 40 ºC	- 20 ºC

4. TECHNICAL REQUIREMENTS

4.1. TECHNICAL DOCUMENTS

The BIDDER shall provide complete technical dossier for imported pressure vessel in compliance with QCVN 01:2008/BLĐTBXH.

Refer to Attachment #4 for the details.

4.2. QUALITY REQUIREMENTS FOR MATERIALS

The 200 m^3 Liquid CO_2 Storage Vessel shall be designed, fabricated, inspected, and tested in accordance with approved international pressure vessel codes for cryogenic service (GB standard or equivalent)

All materials for pressure-retaining parts and supporting structures shall be new, unused, and sourced from qualified manufacturers. Complete material documentation, including manufacturer details, country of origin, material specification, grade, thickness, CO/CQ, MTC EN 10204 3.1, and chemical/mechanical test reports shall be provided. Full material traceability shall be maintained throughout fabrication and delivery.

All fabrication, welding, dimensional tolerances, inspection, and quality control activities shall comply with approved drawings, applicable standards, and project specifications.

4.3. INSPECTION AND ACCEPTANCE

The CO_2 Storage Vessel shall undergo full inspection and testing prior to delivery, including dimensional checks, visual inspection, NDT, hydrostatic and leak testing, weld inspection, and document verification.

PTSC Thanh Hoa / Owner's Representative reserves the right to witness all inspections per approved ITP, perform random third-party testing, and reject any non-conforming materials or workmanship. The BIDDER shall be fully responsible for repair, replacement, or rework at no cost to the Employer.

Minimum acceptance documents include MTCs, CO/CQ, welding records (WPS/PQR and welder qualifications), NDT reports, hydrotest report, dimensional reports, painting report, FAT reports, as-built drawings, and shipping documents.

4.4. DESIGN LIFE, AVAILABILITY AND RELIABILITY

The vessel shall be designed for a minimum service life of **20 years** under specified operating conditions, ensuring structural integrity, cryogenic performance, corrosion resistance, and operational reliability.

Components not meeting the required design life shall be clearly identified with defined service life and replacement strategy. The design shall include provisions for inspection, maintenance, repair, and replacement to ensure safe long-term operation.

4.5. PREPARATION FOR SHIPMENT

Preservation, handling, storage, transportation, and installation shall be in accordance with the Manufacturer's recommendations and procedures.

The vessel shall be properly prepared for transport to prevent mechanical damage, corrosion, and environmental exposure.

It shall be securely supported, braced, and protected with suitable cradles and covers. All openings and nozzles shall be sealed, and all surfaces protected with anti-corrosion coating or wrapping.

Each shipment shall be marked with PO number, item number, description, dimensions, weight, serial number, and destination.

The supplier must provide all documentation, pre-packaging and post-packaging photos, etc., before delivery.

5. GUARANTEE AND WARRANTY

The BIDDER shall guarantee the quality, integrity, and performance of the CO_2 Storage Vessel supplied under this Specification.

The BIDDER shall, at its own cost, repair, replace, or rectify any defects arising from design, material, fabrication, or workmanship within the warranty period.

Warranty Conditions: 24-month overall warranty from the date of acceptance and commissioning, not later than 36 months from the date of delivery. Lifetime warranty on perlite insulation material.

Acceptance of the Purchase Order shall constitute full acceptance of all warranty obligations.

6. INSPECTION AND TESTS

Inspection and testing shall be carried out by The BIDDER in accordance with applicable codes, standards, project specifications, approved drawings, and all relevant documents for the 200 m^3 CO_2 cryogenic storage vessel.

All inspection and test procedures shall be submitted to the Purchaser for approval prior to execution and implemented under an approved Inspection and Test Plan (ITP) defining Hold (H), Witness (W), and Review (R) points. No activity shall proceed beyond any Hold Point without written approval.

The Purchaser / Owner's Representative may witness, audit, or verify any stage of design, procurement, fabrication, insulation, inspection, and testing at any facility.

Inspection and testing shall include material traceability (MTC), visual and dimensional checks, welding inspection (WPS/PQR and welder qualifications), NDT (RT, UT, MT, PT), hydrostatic and leak testing, vacuum testing (if applicable), and insulation system verification.

All testing shall be performed at approved independent laboratories and include chemical, mechanical, impact, and weld testing in accordance with ASTM, EN, ASME, or equivalent standards.

Sampling shall be fully traceable and subject to witnesses where required.

All inspection and test results shall be reviewed and approved by the Purchaser prior to acceptance. Any non-conforming items shall be repaired or replaced by The BIDDER at no cost.

Shipment shall only be released after completion of all inspections and tests, closure of all NCRs, and issuance of an Inspection Release Note (IRN).

All records shall be compiled into a complete Data Book (VDR), including QA/QC documents, test reports, traceability records, and as-built documentation for final acceptance.

7. BIDDER DOCUMENT REQUIREMENT

The BIDDER shall complete all technical information in Attachment #3.

In particular, Attachment #3 is mandatory. Failure to complete this form shall render the bid invalid.

Bidder must submit documents, certificates, and drawings as listed in Vendor Data Documents Requirement List (VDRL).

8. ATTACHED DOCUMENTS

STT	Attachment	Document No	Remark
1	Attachment #1	Scope of Work & Supply	
2	Attachment #2	Technical Support Document	
3	Attachment #3	Technical Bid Proposal	
4	Attachment #4	Vendor Data Requirement List	

9. APPLICABLE DOCUMENTS/STANDARDS

STT	Document No	Title / Description
1	GB 150	Pressure Vessels
2	GB/T 18442	Cryogenic Pressure Vessels
3	NB/T 47013	Nondestructive Testing of Pressure Equipment
4	TSG 21	Stationary Pressure Vessel Safety Technical Supervision Regulation
5	GB/T 6052	Industrial Liquid Carbon Dioxide
6	QCVN: 01 - 2008/BLĐTBXH	Quy chuẩn kỹ thuật quốc gia về an toàn lao động nồi hơi và bình chịu áp lực
7	TCVN 5370: 2009	Kho chứa dầu mỏ và sản phẩm dầu mỏ
8	API 650	Welded Tanks for Oil Storage
9	API 2000	Venting Atmospheric and Low-pressure Storage Tanks
10	ASME section II	Material Specification.
11	ASME section IX	Welding and Brazing Qualifications.
12	ASME section V	Non-destructive Testing.
13	ASTM Standards	American Society for Testing Materials
14	ASME Section VIII Division 1	Rules for Construction of Pressure Vessels

15	ASME Section VIII Division 2	Alternative Rules for Pressure Vessels
16	EN 13445	Unfired Pressure Vessels
17	PED 2014/68/EU	Pressure Equipment Directive
18	AD 2000 Merkblatt	Pressure vessel rules (Germany)
19	API 510	Pressure Vessel Inspection Code
20	NACE MR0175 / ISO 15156	Materials for H_2S / sour service

ATTACHMENT #1

SCOPE OF WORK & SUPPLY

SCOPE OF WORK

Project: **HIGH TECHNOLOGY CO2 PRODUCTION PLANT**

TRD no. **TRD - 010**

Date: 6/3/2026

Rev: 1

SCOPE OF WORK

No	Description	Remark
1	Supply of CO_2 Storage Vessel: Design, procurement, fabrication, testing and inspection of a 200 m^3 Liquid CO_2 double-wall storage vessel in accordance with technical requirements, specifications, and applicable project documents.	*completed set*
2	Preservation, handling, storage, transportation, and installation shall be in accordance with the Manufacturer's recommendations and procedures.	
3	Two options of delivery: (1) DDP Site work: Ninh Binh province (including all taxes, duty, fee to deliver the goods to site. Delivery time: 6 months from contract signing. (2) DAP Huu Nghi border gate, Vietnam. In this case, the BIDDER shall agree to lend the trailers to the Buyer for the sole purpose of onward inland transportation from the designated border gate to the Buyer's warehouse and returning the empty trailer back to the Huu Nghi gate. Free-time: The Buyer is entitled to a free-time period of at least 03 calendar days (not including weekends and public holidays) to use the trailer and return it to the Seller. Delivery time: 5.5 months from contract signing.	
4	Training: Providing technical assistants during installation, commissioning, and training for operation & maintenance.	
5	Warranty: 24-month overall warranty from the date of acceptance and commissioning, not later than 36 months from the date of delivery. Lifetime warranty on perlite insulation material.	
6	Spare part: Providing spare parts for the commissioning and initial start-up phases.	
7	Recomment Spare part List For 2 years of operation	
8	Documents to be provided: The Vendor shall provide the documents as per VRDL.	*Refer to Attachment #4*

SCOPE OF SUPPLY

Project: **HIGH TECHNOLOGY CO2 PRODUCTION PLANT**

TRD no. **TRD - 010**

Date: 6/3/2026

Rev: 1

SCOPE OF SUPPLY

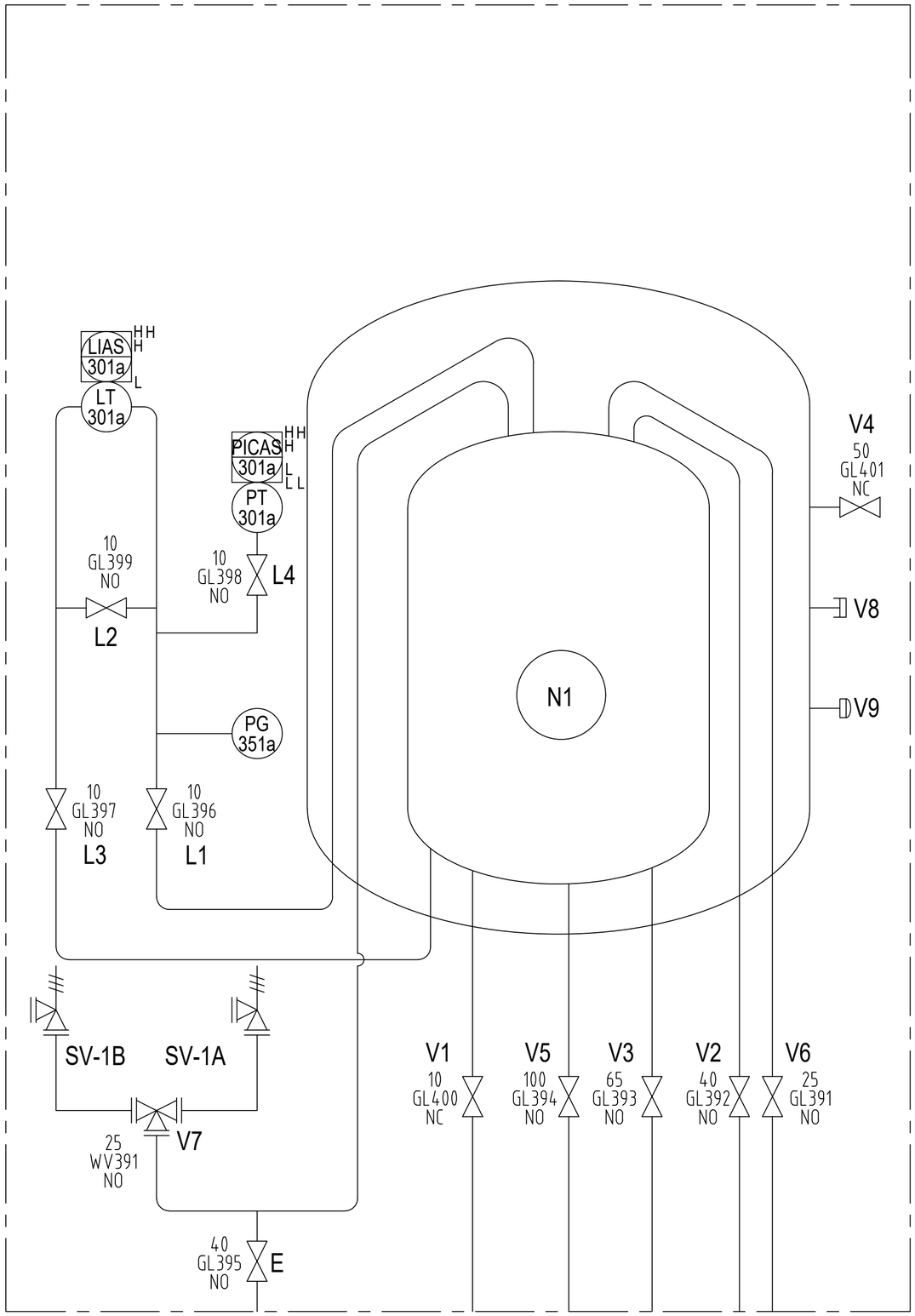
No	Tag#	Scope of Supply	Description	Material	Unit	QTY	Remark
1	***V301A/B/C; V302A/B/C; V303A/B/C; V304A/B/C; V305A/B/C***	**Completed set**	**Liquid CO_2 Storage Vessel, 200m3, double-wall tank**	**16MnDR (low alloy steel)**	**lot**	**15**	
1.1	*VTA*	*Completed set*	*Liquid CO_2 Storage Vessel, 200m3* *- Design/Operating Pressure: 22 bar(G)/20 bar(G)* *- Design/Operating Temperature: -40/-20 ° C* *- Vacuum insulated double-wall tank* *- Standard: GB 150, GB/T 18442 or equivalent*	*Inner Tank: 16MnDR (low alloy steel)* *Outer Tank: VTA*	*set*	*VTA*	*Refer to Attachment #2*
1.2	*VTA*		*Manual valves*	*VTA*	*lot*	*VTA*	
1.3	*VTA*		*Three way valves, if any*	*VTA*	*lot*	*VTA*	
1.4	*VTA*		*Safety Valves*	*VTA*	*lot*	*VTA*	
1.5	*VTA*		*Nozzles*	*VTA*	*lot*	*VTA*	
1.6	*VTA*		*Piping & fitting and acccessories*	*VTA*	*lot*	*VTA*	
1.7	*VTA*		*Spare parts for commissioning & initial start-up, if any*	*VTA*	*lot*	*VTA*	
2	***VTA***	**Completed set**	**Vacuum pump**	***VTA***	**set**	**1**	*for maintenance purpose*

Note:

VTA: Vendor to Advise

ATTACHMENT #2

TECHNICAL SUPPORT DOCUMENT



NOZZLE SCHEDULE

No.	Q'ty	Size (mm)	Flange Rating	Description
N1	1	VTA	VTA	Manhole
V5	1	DN65	VTA	Liquid inlet
V3	1	DN 100	VTA	Liquid outlet
E	1	DN 40 (VTA)	VTA	Vent
V1	1	DN 10 (VTA)	VTA	Drain
V4	1	DN 10 (VTA)	VTA	Vaccum Gauge
V8	1	VTA	VTA	Vaccum Valve
V9	1	VTA	VTA	External explosion-Proof Device
L1	1	DN 10	VTA	Globe valve
L2	1	DN 10	VTA	Globe valve
L3	1	DN 10	VTA	Globe valve
L4	1	DN 10	VTA	Globe valve
V7	1	DN 10	VTA	3-way valve
SV-1A/B	2	VTA	VtA	Safety valve

PTSC – THANH HOA

ISSUED
FOR REFERENCE

DATE: 03 Jun 2026 REV: A1

GHI CHÚ:

LẦN	NGÀY	MỤC ĐÍCH
A1	03/06/2026	ISSUE FOR REFERENCE

CHỦ ĐẦU TƯ

CÔNG TY CỔ PHẦN CO2 PRODUCT

TỔNG THẦU EPC

CÔNG TY CỔ PHẦN DỊCH VỤ
KỸ THUẬT ĐẦU KHÍ PTSC THANH HÓA

PHÊ DUYỆT	Vũ Lê Tuấn	
RÀ SOÁT	Đỗ Văn Bắc	
KIỂM TRA	Phạm Anh Duy	
THỰC HIỆN	Nguyễn Hữu Khánh	

TÊN DỰ ÁN

NHÀ MÁY SẢN XUẤT CO2 CÔNG NGHỆ CAO

ĐỊA ĐIỂM XÂY DỰNG

LÔ B2.3, KHU CÔNG NGHIỆP KHÁNH PHÚ,
PHƯỜNG ĐÔNG HOA LƯ, TỈNH NINH BÌNH

HẠNG MỤC

CƠ KHÍ

TÊN BẢN VẼ

BẢN VẼ TỔNG THỂ BỒN 02 LỚP
CO2 LỎNG

GIAI ĐOẠN: T.K.K.T	TỶ LỆ: 1/1.000	TỜ/SỐ TỜ: 01/01

SỐ BẢN VẼ	KHỔ	LẦN
N/A	A2	A1

ELECTRONIC FILE: BẢN VẼ BỒN VÀ LIST VAN.DWG

BẢN VẼ NÀY THUỘC BẢN QUYỀN SỞ HỮU CỦA CÔNG TY CỔ PHẦN DỊCH VỤ KỸ THUẬT PTSC THANH HÓA, NGHIÊM CẤM SAO CHÉP DƯỚI MỌI HÌNH THỨC.

ATTACHMENT #3

TECHNICAL BID PROPOSAL

FORM T1 - TECHNICAL PROPOSAL (UNPRICE)

Project: HIGH TECHNOLOGY CO2 PRODUCTION PLANT

TRD no. TRD - 010

Date: 6/3/2026

Rev: 1

SCOPE OF SUPPLY

No	Tag#	Scope of Supply	Description	Material	Unit	QTY	Remark
1	***V301A/B/C; V302A/B/C; V303A/B/C; V304A/B/C; V305A/B/C***	**Completed set**	**Liquid CO_2 Storage Vessel, 200m3, double-wall tank**	**16MnDR (low alloy steel)**	**lot**	**15**	
1.1	*VTA*	*Completed set*	*Liquid CO_2 Storage Vessel, 200m3* *- Design/Operating Pressure: 22 bar(G)/20 bar(G)* *- Design/Operating Temperature: -40/-20 ° C* *- Vacuum insulated double-wall tank* *- Standard: GB 150, GB/T 18442 or equivalent*	*Inner Tank: 16MnDR (low alloy steel)* *Outer Tank: VTA*	*set*	*VTA*	*Refer to Attachment #2*
1.2	*VTA*		*Manual valves*	*VTA*	*lot*	*VTA*	
1.3	*VTA*		*Three way valves, if any*	*VTA*	*lot*	*VTA*	
1.4	*VTA*		*Safety Valves*	*VTA*	*lot*	*VTA*	
1.5	*VTA*		*Nozzles*	*VTA*	*lot*	*VTA*	
1.6	*VTA*		*Piping & fitting and acccessories*	*VTA*	*lot*	*VTA*	
1.7	*VTA*		*Spare parts for commissioning & initial start-up, if any*	*VTA*	*lot*	*VTA*	
2	***VTA***	**Completed set**	**Vacuum pump**	***VTA***	**set**	**1**	*for maintenance purpose*

Note: *VTA: Vendor to Advise*

UNPRICED SCHEDULE OF PRICES

Description	Brand	Model	Origin	Unit	Q'ty	Remark
BIDDER to specify	BIDDER to specify	BIDDER to specify	BIDDER to specify	lot	15	
BIDDER to specify	BIDDER to specify	BIDDER to specify	BIDDER to specify	set	VTA	
BIDDER to specify	BIDDER to specify	BIDDER to specify	BIDDER to specify	lot	VTA	
BIDDER to specify	BIDDER to specify	BIDDER to specify	BIDDER to specify	lot	VTA	
BIDDER to specify	BIDDER to specify	BIDDER to specify	BIDDER to specify	lot	VTA	
BIDDER to specify	BIDDER to specify	BIDDER to specify	BIDDER to specify	lot	VTA	
BIDDER to specify	BIDDER to specify	BIDDER to specify	BIDDER to specify	lot	VTA	
BIDDER to specify	BIDDER to specify	BIDDER to specify	BIDDER to specify	lot	VTA	
BIDDER to specify	BIDDER to specify	BIDDER to specify	BIDDER to specify	set	1	
BIDDER to specify	BIDDER to specify	BIDDER to specify	BIDDER to specify	0	0	

Form T2 Deviation from Purchaser's Specification	**Project**	HIGH TECHNOLOGY CO2 PRODUCTION PLANT	**Vendor**			
	PTSC Project No.		**Vendor Project No.**			
	Item No.		**Contract No.**			
	Service					

Spec. No.	Paragraph No.	Deviation	PTSC Justification	Client Conclusion	Remarks	Cost Effect When Deviation is Applied

Form T3 - LIST OF SUBCONTRACTOR(S) AND COUNTRY OF ORIGIN

No.	Material/ Equipment/ Component / Activities	Supplier /Manufacturer/ Subcontractor	Location / Country of Origin
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
10			
11			
12			
13			

[*Depending on the nature of the Goods, Buyer to list out the material / equipment / major components / activities that require Bidder to advise the details of suppliers / manufacturer / sub-contractor and location / country of origin*]

FORM T4 SPARE PARTS LIST FOR INSTALLATION, COMMISSIONING	**Project**	HIGH TECHNOLOGY CO2 PRODUCTION PLANT	**Vendor**						
	PTSC Project No.		**Vendor Project No.**						
	Item No.		**Contract No.**						
	Service								

Item no.	Part name	Drawing no.	Part no.	Spec (material)	Installed Q'ty per unit	Recommended Q'ty	Sketch	Unit price	Total price

FORM T5 SPECIAL TOOL LIST	**Project**	HIGH TECHNOLOGY CO2 PRODUCTION PLANT	**Vendor**		
	PTSC Project No.		**Vendor Project No.**		
	Item No.		**Contract No.**		
	Service				

No.	Tool name	Q'ty	Sketch	Unit price	Total price

Project:	**HIGH TECHNOLOGY CO2 PRODUCTION PLANT**			**TBC No.:**	-
Tag No.:	-			**Date of Issued:**	-
Bidder Name:	-			**Date of Response:**	-
Bidder Signature:	-				

Note:
BIDDER shall CONFIRM COMPLIANCE to all requirements in these Technical Bid Clarifications (TBC). If BIDDER is unable to meet any requirements, BIDDER shall provide sufficient reasoning for NOT COMPLYING to the requirements. BIDDER may provide COST or SCHEDULE IMPACT if any for meeting requirements (BIDDER to furnish additional details wherever required). BIDDER shall NOT use replies like "O.K", "FOLLOW", etc.
Where the cost impact is involved, the price information shall be submitted after all clarifications closed and upon receipt of Buyer's request.

ITEM NO.	Classify	Title	TECHNICAL QUERY_M	BIDDER'S CONFIRMATION / CLARIFICATION	COST IMPACT (YES/NO)	SCHEDULE IMPACT (YES/NO)	STATUS (OPEN/CLOSED)
GE- GENERAL							
G001							
G002							
PRO - PROCESS							
PRO1							
PRO2							
PRO3							
PRO4							
PRO5							
IN - INSTRUMENT							
INS000							
INS001							
INS002							
INS003							
INS004							
INS005							
PP - PIPING & LAYOUT							
PP1							
PP2							
PP3							
PP4							
PP5							
ELE - ELECTRICAL							
ELE1							
ELE2							
STR - STRUCTURE							
STR1							
STR2							
PRE - PRECOMMISSIONING AND COMMISSIONING							
PRE1							
PRE2							
QC - QUALITY CONTROL							
QC1							
QC2							
QC3							
OTHER							
OT1							
OT2							
OT3							

ATTACHMENT #4

VENDOR DATA REQUIREMENT LIST

VENDOR DATA REQUIREMENT LIST (VDRL)

No.	Document	Submit with Tender	Submit after PO	Remarks
1	Manufacturer company profile	x	x	Vessel manufacturer qualification
2	Mechanical Datasheet for CO2 liquid storage tank	x	x	Design pressure, volume
3	General Arrangement for CO2 liquid storage tank	x	x	Tank layout, nozzle orientation
4	Design calculation report		x	GB Standard or equivalent
5	Shell & Head Development Drawing For CO2 liquid storage tank		x	Shell, head, nozzle, manhole materials/drawings
6	Details of the tank accessories		x	Anchor Bolt, Skirt/Support/Saddle materials/drawings, etc.
7	P&ID (if in system)	x	x	Integration with CO2 system
8	List of Manual Valves; Pipe & Pipe fitting; Safety devices, etc.	x	x	
9	Safety devices datasheet		x	Relief valve, burst disk
10	Welding procedure (WPS / PQR / WPQ)		x	Fabrication qualification
11	Inspection & Test Plan (ITP)		x	
12	NDT plan		x	RT / UT / PT as applicable
13	Insullation Specification		x	
14	Painting / Coating specification	x	x	Anti-corrosion system
15	Hydrostatic / Pneumatic test procedure		x	
16	Material Certificate type 3.1		x	
17	NDT report		x	RT / UT / PT as applicable
18	Hydrostatic / Pneumatic test report		x	Pressure test certificate
19	Painting / Coating Report		x	
20	FAT Report (witness if required)		x	
21	Third party inspection certificate		x	BV / DNV / TPI (if required)
22	CO / CQ (issue by manufacture)		x	Certificate of origin / quality
23	CO (issue by Chamber of Commercial)		x	
24	Nameplate & stamping details		x	
25	Operation & Maintenance manual (O&M)		x	Operation & safety guideline
26	Recommendation Spare parts list	x	x	Gaskets, safety valve kit
27	As-built drawings		x	Final approved drawings