

# Sun Petrochemicals Private Limited

(SunPetro)

**Commercial & Supply Chain Management**

8<sup>th</sup> Floor, ATL Corporate Park, Opp. L&T Gate no. 7,

Saki Vihar Road, Chandivali, Powai

Andheri (E), Mumbai – 400072, Maharashtra [INDIA]

[www.sunpetro.com](http://www.sunpetro.com)

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**No. SunPetro/NGC with AGT Facility/2023-24/SPPL-166/Bulletin-3**

**Date:26.04.2024**

## BULLETIN #3

**Sub: Natural Gas Compression with Associated Gas Treatment Facility in Bhaskar-I field in Gujarat.**

**Ref: Tender No.: SunPetro/NGC with AGT Facility/2023-24/SPPL-166**

**Sun Petrochemicals Private Limited (SunPetro)**, hereby authorized following amendment / clarification in the above referred Tender:

Sr. No.	Spec No.	Page No.	Clause No.	Clause Requirement	Bidder Query / Clarification	SunPetro Response
1	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	4 of 84	1.1 5)	Bid security	We understand that bid security is not required from bidders having turnover of more than INR 500 Crore as per the norms of PSU's.	Bid security required as per tender.
2	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	5 of 84	1.1(10)	Tender Closing / Submission Date & Time : 30/04/2024 at 1500 Hrs. IST	Please note that, vendor quotes for various major items require more time. To enable us to submit our competitive offer, We request you to extend the same up to 20-06-2024.	<b>Bid submission date is extended up to 15<sup>th</sup> May 2024 at 1500 Hrs IST.</b>
3	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	5 of 84	1.1(10)	Completion Period :Twelve Months from date of LOI / LOA	Considering long delivery period of major equipment's, we request for minimum 18 months time.	Completion period as specified.

4	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	21 of 84	3.2.1	The time period for completion of scope of work in the Contract will be 12 months from the date of issue of LOI hence Primary term of this contract will be 1 (One) year, subject to the provisions of Warranty.	The time period for completion of scope of work in the Contract shall be 18 months from the date of receipt of advance.	Completion period as specified.
5	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	26 of 84	3.8.2.5	Hazardous Waste shall be sorted out & disposed as per the Pollution Control Board norm as applicable.	Hazardous Waste like Used oil etc. will be handed over to client for disposal as per PCB Norms.	Any hazardous waste generated during execution, sorting and disposal will be in the scope of the Bidder. 'agreed for used oil.
6	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	44 of 84	Scope Of Work 3.	At the CPF the Well Fluid undergoes phase separation in HP separator, LP separator and Vapor recovery unit and gas produced will be routed to the proposed natural gas compression & treatment facility. After gas compression & treatment, sales gas will be routed & hooked up to the CTM. Part of gas, at low pressure (About 1 barg), may also be supplied to the local consumers. Recovered liquid during compression & treatment of gas and after stabilisation shall be injected in the existing CPF stream.	Kindly specify the gas quantity to be supplied to local consumers at 1 barg pressure.	~25,000 SCMD

7	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	44 of 84	3	At the CPF the Well Fluid undergoes phase separation in HP separator, LP separator and Vapor recovery unit and gas produced will be routed to the proposed natural gas compression & treatment facility. After gas compression & treatment, sales gas will be routed & hooked up to the CTM. Part of gas, at low pressure (About 1 barg), may also be supplied to the local consumers. Recovered liquid during compression & treatment of gas and after stabilisation shall be injected in the existing CPF stream.	Please confirm scope of supply for HP and LP Separator	HP & LP separator is part of SunPetro's existing facility and is not in scope of Bidder. However, all liquid & gas to be routed upto the tie-in point at battery limit will be in the scope of the Bidder.
8	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	44 of 84	3	all heat exchangers shall be Air cooled.	please confirm maximum and minimum ambient condition for air cooler design	Minimum ambient condition : 8 deg. C maximum ambient condition: 45 deg. C.
9	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	44 of 84	3.0	Description of Facility:	Please confirm availability of utilities like, air, power, water, space etc	Servo gas for instrumentation, Fire water are available in Plant for use by Contractor. Instrument/plant air and utility water are not available. Power supply at 3.3/6,6 KV (Voltage rating to be informed by bidder) will be available. Downstream electrical system will remain unchanged. Indicative SLD is attached for better understanding.
10	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	44 of 84	3	Plant is equipped with other facilities like Firefighting system, Servo gas system (for operating pneumatically operated valves, there is not instrument/utility air in the plant), Fire and Gas Detection system, Flare system, Distributed control system etc. There is no utility /cooling water system in the plant. Hence , all heat exchangers shall be Air cooled.	Details of availability fire fighting system, Servo gas system for utilisation of this LSTK work is requested.	Fire header available at 8 barg (Fire network to be designed and installed by the Bidder within this plant) Dry Servo gas at 5 barg (shall be sourced from the proposed plant) and shall be brought to battery limit with a valve & blind flange.

11	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	45 of 84	3.1	Inlet Q:- 2.0 LSCMD	The facility will be designed considering the gas flow at "inlet" of each compressor as 100000 SCMD. Gas flow at discharge of compressor and thereafter treatment unit will be less based on condensation of water and moderate and heavy hydrocarbon components from the gas. We will confirm the exact quantity of gas after treatment during detail engineering phase.	Bidders understanding is correct
12	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	45 of 84	3.1	Offsite requirements Future provision / space for 3 compressors.	Please confirm whether below work is part of bidders scope: 1) Foundation for future 2 compressors 2) Extended Shed with other accessories considered for two compressors (which are part of base scope) to accommodate future three compressors 3) Extended Suction and discharge headers, utility headers, along with valves, electrical system (incoming transformer, PCC, MCC etc.) for future three compressors	Point wise reply is as follows: 1. Foundations for future 2 compressors are not in the scope of the Bidder. 2. Shed is not required for future compressors. 3. Gas and utility headers shall be provided with valve and blind flange and No extension of headers to be carried out for future compressors. However, PCC/MCC room to be designed & engineered considering future compressor requirements also.
13	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	45 of 84	3.1	Molecular weight :-32.945	Molecular weight as per our calculation even after considering the gas as saturated is coming as 32.	Bidder to Consider Gas composition as governing factor for design and engineering with provided inputs data.

14	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	45 of 84	Drawing	Plot plan with proposed location	During the site visit, it was observed that proposed location is very near to boundary wall and not as per DGMS/OISD requirements. Please provide new location. Please also provide AUTOCAD copy of Plot plan.	PI refer attached updated Plot plan, Required space shall be available ~220 x 160 m , However , bidder to develop the plot plan for present & future compressors & associated facilities in most optimised way complying to OISD-118.
15	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	46 of 84	3.1	Tentative Process Flow Diagram placed below-	Please confirm the expected temperature at compressor suction after gas treatment in DPCU.	As per standard design & engineering practices.
16	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	46 of 84	3.1	Tentative Process Flow Diagram placed below- Gas to local consumer after DPCU, considered 25000 m3	We understand that, 25000 m3 is 25000 SCMD.	Understanding is correct.
17	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	46 of 84	3.1	Tentative Process Flow Diagram placed below- Station bypass control valve	Bypass control valve will be separate for each compressor.	Bypass control shall be provided for plant shut down, ESD & partial shutdown. 'Bidder to design & engineer as per best industry practices.
18	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	46 of 84	3.1	Tentative Process Flow Diagram placed below- 2nd stage suction - 24 barg.	We understand that, inlet pressure to Dew point control unit can be decided by bidder though it is mentioned as 24 bar g.	Understanding is correct. Discharge data mentioned in PFD is indicative.
19	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	46 of 84	3.1	Tentative Process Flow Diagram placed below- Valves at battery limit	Please confirm whether all battery limit valves, compressor package suction and discharge valves will be manual valves or automatic shutdown valves?	Suction & discharge SDV shall be automatic as per good engineering practices.  Blowdown & shutdown philosophy to be followed and accordingly SDV & BDVs to be provided at appropriate locations.
20	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	46 of 84	3.2	3.2 Battery Limit conditions: Outlet temperature: 40 deg C	Possible outlet temperature will be maximum ambient air temperature plus 10 Deg C.	Understanding is correct.

21	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	46 of 84	3.2	3.2 Battery Limit conditions: Outlet water /HC dew point: 0 dec.C.	We understand that, water dew point and HC dew point of 0 Deg C is at operating pressure.	Understanding is correct.
22	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	46 of 84	3.2	3.2 Battery Limit conditions: Power supply 11 KV, bidder to consider electrical equipment like transformer, VCB, HT cable etc for required power to run compressors etc.	Please confirm whether these electrical equipments are also in bidders scope for future 2# compressors?	Understanding is correct.
23	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	46 of 84	3.2	3.2 Battery Limit conditions: Existing Control Room of SunPetro shall be used for DCS.	Please provide gas composition and available pressure for servo gas. If the servo gas to be used instead of instrument air then minimum 5 kg/cm <sup>2</sup> g pressure is required.	Servo gas at 5 barg will be available at battery limit. However, tie in point for Dry gas after DCPU shall be provided with required pressure reduction provision & routed to battery limit.
24	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	46 of 84	3.2	Flow variation min 30000 SCMD	Please confirm if this is a turndown flow requirement	Understanding is correct
25	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	46 of 84	3.2	Outlet water /HC dew point: 0 dec.C.	at what pressure 0 deg.C dew point is required,	At Operating Sale Gas Pressure of 95 barg
26	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	46 of 84	3.2	Existing Control Room of SunPetro shall be used for DCS.	as per spec, PLC is required for compressor and dew point control unit. please check with client if PLC is to be installed in filed or control room.	PLC to be installed in field.

27	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	46 of 84	3.3. b)	DCS control cable from existing control room apx. 350 m.	<p>please check with client if Dew point control unit to be operated with existing DCS/ESD system or new PLC is required and to be interfaced with existing DCS</p>	<p>Hybrid PLC to be provided for overall plant.          'No new PLC is required for DPCU, it will be interfaced with PLC of compressor and to be interfaced with existing DCS.          An indicative Architecture of PLC is attached for reference. Further the following should also be considered in scope of supply by the bidder:          1. Additional 20 % I/O Tag licenses for Hybrid PLC system          2. Additional 20 % Zener Isolators each for AI,DO and AO cards          3. Addition 20 % spare I/O Peripherals cards for Hybrid PLC system including mounting plate accessories if any</p>
28	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	46 of 84	3.2 and 3.3 (b)	<p>Power supply 11 KV, bidder to consider electrical equipment like transformer, VCB, HT cable etc for required power to run compressors etc</p>	<p>Please note that, to estimate the work and cost, details like existing power, availability of required space in substation room, detail specification of all HT and LT panels, Transformer etc required. During the site visit it was observed that there is no space available in existing Substation room or Control room. Distance between the 4 pole to substation, substation to Control room, substation to Proposed compressor shed, control room to Proposed compressor shed etc is required for estimation of electrical and instrumentation work. Availability of existing UPS power and location is also required.          Type of starter for main HT</p>	<p>-Power supply at 3.3/6,6 KV (Voltage rating to be informed by bidder) will be available.          - VCB &amp; transformers (11 KV to 3.3/6.6KV) in the proposed MCC/ Substation shall be in the scope of company.          -Electrical system from transformers to proposed MCC room is in bidder scope. Bidder to design the substation in such a way that the space is available for the company to accommodate 2 HT transformers, 1 LT transformer &amp; 3 VCBs.          -However design &amp; engineering for above shall be remain in scope of bidder. Rest of the electrical scope of work remains unchanged.          -Facility to Control room ~500 m.          -UPS power of 25 KVA,          -NGR required (02 Nos)          -VFD considered (refer SoW Clause 4.3)</p>

					motors to be specified. NGR requirement to be specified.	
29	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	47 of 84	3.4	Gas compressors (motor Driven): Capacity: 50,000 SCMD each (1+1) with space for 3 more compressors of the same capacity each to be installed in future.	Electric motor will be with Ex-n protection which will be suitable for natural gas hazardous area application i.e. Zone 2, Gas group IIA/IIB, Temperature class T3	Ex-d protection, motor suitable for Zone-1 configured for VFD operation (continuous)
30	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	47 of 84	3.4	Recovered liquid (condensate) shall be stabilised and Hook up at battery limit.	This require stabilization column to meet the RVP and stabilized the condensate. please also check with client if hydrocarbon gas from stablizer column need to be recovered and sent back to pipeline or to be flared. compressor is required for compressing low pressure gas	The total liquid along with the gas to be routed at battery limit. Normal Flaring of gas is not allowed.
31	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	47 of 84	3.4	PESO	Please confirm if PESO is applicable for this project	It will depend on design & engineering of the facility by the bidder. Accordingly approval as applicable may be taken by bidder.
32	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	48 of 84	4.2.1	All controls shall operate in a fail-safe mode i.e. failure of any control shall not lead to running of equipment in unsafe mode. Fail safe control shall be available through both software and hardware for all trips.	Please clarify whether PLC panel required fro compressor package shall be fully redundant i.e. redundancy for I/o's, communication module, power supply mudule. Please confirm the location of PLC panel (on compressor skid or in control room).	Unit control panel of the compressors shall have redundancy & common hybrid PLC at field (cool environment /MCC room) to be interfaced with existing DCS system /Control room required.
33	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	48 of 84	4.1	New Plant Safety Integration.	Please confirm New Fire pump shed required or not.?	Not required.



34	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	48 of 84	4.1	New Plant Safety Integration.	Please confirm Existing fire water pump capacity and Head.	210 m3/hr (2 + 1), 80m head.
35	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	48 of 84	4.1	New Plant Safety Integration.	Please confirm Existing fire water reservoir capacity.	System is already designed for two fires case.
36	SunPetro/NGC with AGT Facility/2023-24/SPPL-189	48 of 84	4.1	New Plant Safety Integration.	7. We understand that the current firefighting system (reservoir and pumps) are adequate to handle the capacity requirements of the new MVWS and hydrant systems upcoming in the gas compressor plant.	Understanding is correct.
37	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	49 of 84	4.2.2	Negative tolerances on capacity shall not apply to any specified operating points.	Compressor capacity is guaranteed at suction of each compressor.	Understanding is correct.
38	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	49 of 84	4.2.2	Combined rod loading shall not exceed 80% of MANUFACTURER maximum allowable continuous combined rod loading for compressor running at any specified operating points and relief valve set point plus accumulation.	Compressor is rated for gas rod loads and not combined rod loads. Compressors are designed to run upto 100% of rated gas rod loads and combined rod loads (compression+tension) are always less than the gas rod loads due to their opposite action. So kindly accept rod loads upto 95% for worst operating case.	Rod loading shall not exceed 80%.
39	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	49 of 84	4.2.2	e) For variable speed motor, the bidder shall perform a response analysis of the rotating system during all possible resonance conditions which may occur during run-up and within the complete operating speed range. All possible excitation frequencies and	We understand that, variable speed drive is not required for compressor motor.	As per SOW, VFD is required for motor speed variation /load variation of compressor.

				consequent torques shall be considered.		
40	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	49 of 84	4.2.2	g) Cylinders shall be thick enough to provide for re-boring to a total of 3.0 mm (1/8 in) increase over the original diameter.	Cylinders will not have liners and internal surfaces are ion-nitrided to provide the sufficient hardness. Reboring allowance will be 0.05 inch.	To be followed as per SoW 4.2.2 (f) (g)
41	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	49 of 84	4.2.2	l) Control operation shall be automatic. Five-step unloading shall provide nominal capacities of 100%, 75%, 50%, 25% and 0%. Capacity control on variable-speed units is usually accomplished by speed control, but this can be supplemented by one or more of the control methods. (Suction valve unloading, clearance pockets (Fixed) or bypass).	Required capacity steps will be achieved with the help of bypass control valve and variable volume clearance pockets.	To be followed as per SoW 4.2.2 (l)
42	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	49 of 84	4.4.	a. The bidder shall be responsible for integration of DCS /ESD and F&G system to our existing DCS system (Installed M/s Emerson system Delta V) in control room approximately 350 away from this proposed facility. Integration of following for control & monitoring at control room.	Kindly specify the make of F&G system.	'DCS controller is MX (Make: DELTA V from M/s Emerson) 1. DCS Controller -1 controller(1+1) hot standby 2. DCS Controller -2 ,controller(1+1) hot standby. 3. 'F&G system: SIS controller SIL3 (1+1) hot standby model is SZ It has 07 nos of sub controller each controller(1+1) hot standby. RS 485 module is available in existing DCS system. Local Operator console to be provided at Field PLC room and HMI shall be provided in existing control room. Note; New hybrid PLC system communication link between new hybrid system and new HMI in DCS room shall be redundant.  An indicative Architecture of PLC is attached for reference. Further the following should also be considered in

						scope of supply by the bidder: 1. Additional 20 % I/O Tag licenses for Hybrid PLC system 2. Additional 20 % Zener Isolators each for AI, DO and AO cards 3. Addition 20 % spare I/O Peripherals cards for Hybrid PLC system including mounting plate accessories if any
43	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	49 of 84	4.3	Electrical System	Please confirm Spare/Redundancy philosophy for electrical system.	Refer Sr No 28.
44	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	49 of 84	4.3	Electrical System	Please confirm the requirement of standby transformer.	Refer Sr No 28.
45	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	49 of 84	4.3	Electrical System	Kindly confirm HT Cable laying will be underground or above ground ?	All the cables shall be laid in the trench on GI coated cable tray.
46	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	49 of 84	4.3	Electrical System	Kindly provide Available space for new HT panel, MCC panel, Transformer, VFD in substation room.	Space shall be provided for new Substation near to proposed facility.
47	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	49 of 84	4.3	Electrical System	Kindly provide Available space for new PLC panel in control room.	New hybrid PLC Panel shall be installed in proposed new Substation in cool environment in the field.
48	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	49 of 84	4.3	Electrical System	Please confirm the New UPS requirement.	Required UPS shall be provided.
49	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	49 of 84	4.3	Electrical System	Please confirm Space for new UPS, battery and battery charger in control room (If new system required)	NA

50	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	49 of 84	4.3	Electrical System	Please confirm Existing UPS capacity and current connected load (If new system is not required)	Rating of UPS - 25 KVA. Bidder to design & engineer required UPS for proposed facility.
51	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	49 of 84	4.3	Electrical System	Please confirm Expected base fault level at 4-pole structure.	to be designed by bidder. (existing structure Base fault level 50KA)
52	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	49 of 84	4.3	Electrical System	Please confirm Type of transformer (Oil/Dry)?	Oil type transformer is required.
53	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	49 of 84	4.3	Electrical System	Please confirm the Requirement of LT (415V) transformer for LT loads.	HT & LT transformer shall be provided by sunpetro, Refer Sr No 28.
54	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	49 of 84	4.3	Electrical System	Please confirm Any hot tapping required or check feasibility of Shut down	Not Applicable
55	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	49 of 84	4.3	Electrical System	Please confirm Requirement of standby VFD.	Not required.
56	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	49 of 84	4.3	Electrical System	Please confirm Requirement of power back-up.( DG set)	Not required
57	SunPetro/NGC with AGT Facility/2023-24/SPPL-170	49 of 84	4.3	Electrical System	Please specify the spare/redundancy philosophy for electrical system (Feeders, VFD, Transformers, etc.)	Refer Sr No 28 and attached SLD for bidder reference.
58	SunPetro/NGC with AGT Facility/2023-24/SPPL-171	49 of 84	4.3	Electrical System	Please specify the requirement of LT transformer for LT loads of proposed facility. Also specify the	Refer Sr No 28 and attached SLD for bidder reference.

					requirement of standby HT or LT transformer.	
59	SunPetro/NGC with AGT Facility/2023-24/SPPL-172	49 of 84	4.3	Electrical System	During site visit, it was informed that, there is no space available in existing electrical substation, so we understand that new substation is to be build for new HT Panel, MCC panel, Transformers, Main lighting distribution box, etc. Client to confirm.	Understanding is correct.
60	SunPetro/NGC with AGT Facility/2023-24/SPPL-173	49 of 84	4.3	Electrical System	During site visit, it was informed that, there is no space available in existing control room, so we understand that new control room is to be build for new PLC panels. Client to confirm.	Understanding is correct.
61	SunPetro/NGC with AGT Facility/2023-24/SPPL-174	49 of 84	4.3	Electrical System	Please specify the capacity and connected load details of existing UPS system.	Repeated Point.
62	SunPetro/NGC with AGT Facility/2023-24/SPPL-175	49 of 84	4.3	Electrical System	Please specify the expected base fault level at 4-pole structure.	Repeated Point.
63	SunPetro/NGC with AGT Facility/2023-24/SPPL-176	49 of 84	4.3	Electrical System	Please specify the type of transformer. (Dry type / Oil type)	Repeated Point.
64	SunPetro/NGC with AGT Facility/2023-24/SPPL-177	49 of 84	4.3	Electrical System	Please specify the requirement of power backup.	Repeated Point.
65	SunPetro/NGC with AGT Facility/2023-24/SPPL-178	49 of 84	4.3	Electrical System	We understand that power source provided of 11kV state grid (4-Pole) will feed only new proposed facilities.	Understanding is correct.
66	SunPetro/NGC with AGT Facility/2023-24/SPPL-180	49 of 84	4.3	Electrical System	Please specify the laying of cables. (Underground / Above ground)	Repeated Point.

67	SunPetro/NGC with AGT Facility/2023-24/SPPL-181	49 of 84	4.3	Electrical System	Please specify maximum power supply at 11kV state grid (4-Pole).	Refer point 28.
68	SunPetro/NGC with AGT Facility/2023-24/SPPL-183	49 of 84	4.3	Electrical System	1. Kindly provide the voltage ratings for the main HT motor (3.3kV/6.6kV or 11kV).	to be designed by bidder
69	SunPetro/NGC with AGT Facility/2023-24/SPPL-184	49 of 84	4.3	Electrical System	2. Kindly provide the following details for the transformers - Type of cooling (ONAN/ANAN), Transformer type (Dry type or Oil Type), Type of tap changer(On Load or Off Load) and the Tap Range.	-As per design & engineering and transformer rating. -Oil type, -On load , -Tap Range as per design & engineering provided by OEMS
70	SunPetro/NGC with AGT Facility/2023-24/SPPL-185	49 of 84	4.3	Electrical System	3. Kindly confirm whether the existing plant is to be connected to the new VCB Panels. If so, kindly provide the existing SLDs and load details.	Existing VCB will not be connected.
71	SunPetro/NGC with AGT Facility/2023-24/SPPL-186	49 of 84	4.3	Electrical System	4. Kindly confirm whether power factor compensation panels are required for HT or LT loads? If yes, then what is the target power factor.	HT & LT side Power Factor Panel required.
72	SunPetro/NGC with AGT Facility/2023-24/SPPL-187	49 of 84	4.3	Electrical System	5. Kindly confirm whether separate transformers for lighting are required. If so will it be a single transformer or on a 1W+1SB philosophy? (Datasheet required). Or will the lighting load be taken from an available breaker in the existing lighting system.	-Lighting Transformer required for new facility. -Stand by lighting transformer is not required, -Power shall be sourced from new electrical system (refer Sr No 28)
73	SunPetro/NGC with AGT Facility/2023-24/SPPL-188	49 of 84	4.3	Electrical System	6. We understand that since this is an independent area, the earthing systems need not be connected to the	Earthing system should be separate.

					earthing system of the existing plant.	
74	SunPetro/NGC with AGT Facility/2023-24/SPPL-190	49 of 84	4.3	Electrical System	8. Kindly confirm the MoC and specifications of the power cables to be used in the project.	Bidder to follow DGMS requirements and cables to be DGMS approved.
75	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	49 of 84	4.4	ESD System, DCS system	please confirm if plant emergency shutdown will be from existing plant ESD system or new ESD to be supplied.	PLC system which is to be provided at field shall cater to ESD/ F&G and process system. This PLC system shall be further integrated with existing available Emerson delta -V make DCS system. 'Refer Sr No 42.
76	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	49 of 84	4.4 (a)	The bidder shall be responsible for integration of DCS /ESD and F&G system to our existing DCS system (Installed M/s Emerson system Delta V) in control room approximately 350 away from this proposed facility. Integration of following for control & monitoring at control room. · Gas Detection System, · ESD System, · DCS system.	Details of existing DCS system required.	Refer Sr No 42.
77	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	50 of 84	4.4	f. Additional Operator console identical/compatible to existing system shall be provided	Kindly provide details of operator console required.	Monitor size 24" LED HD. Workstation CPU to be compatible with New PLC system.
78	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	50 of 84	4.4	i. Providing adequate mandatory spare including consumable to meet the requirement of project.	Kindly provide the list of mandatory spares to be considered.	As per design & engineering of equipment & suggested by OEMs
79	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	50 of 84	6	6.0 Codes, Standards & Regulations	Please confirm OISD-118 std. is required for this project.	Yes , OISD-118 std applicable.

80	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	50 of 84	4.4 (f)	Additional Operator console identical/compatible to existing system shall be provided	Please provide details of existing Operator Console.	Repeated Point.
81	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	50 of 84	5.0	e) Insurance spares	Please provide list for insurance spares.	Bidder to share list of standard insurance spares along with prices. 'For evaluation purpose price to be considered in scope.
82	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	53 of 84	6.0	6.0 Codes, Standards & Regulations API 618, ISO 13631-2002: Petroleum and natural gas industries packaged reciprocating gas compressors PNGRB regulations.	API 618 followed only for pulsation study. Compressor package will comply to ISO 13631 standards as the compressors are required for oil and gas production service. As per Note 1 under clause 1.scope of API 618, "Requirements for packaged high-speed reciprocating compressors for oil and gas production services are covered in ISO 13631". So as we understand that required compressors are required for oil and gas production services, compressors complying ISO13631 std. are also acceptable	Bidder understanding is ok.
83	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	56 of 84	SECTION-5 RESPONSIBILITY MATRIX	3. o. List of recommended spares for 2 years operation & maintenance (O&M) with cost list shall be supplied. Insurance spares with cost list.	We Understand that these spares are not part of base scope.	For evaluation purpose price to be considered in scope.



84	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	56 of 84	SECTION-5 RESPONSIBILITY MATRIX	5 DGMS Approval Preparation with submission of documents to DGMS to obtain the NOC for all equipment. Preparation of Hazards Area Classification Drawing.	We will facilitate purchaser for DGMS approval. However, application to DGMS to be submitted by purchaser.	Contractor's to submit the required application/documents on behalf of the owner and get required NOC for installation. However, company will provide all required assistance to the bidder in obtaining the statutory clearances.
85	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	57 of 84	SECTION-5 RESPONSIBILITY MATRIX	2. Plant performance test run shall be carried out continuously for 72 hours for acceptance. OEM Services required, if any, is in the scope of the bidder	Any stoppage due to process upset conditions shall be not considered as stoppage.	Bidder understanding is correct.
86	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	63 of 84	SECTION – 7 PRICE SCHEDULE	C. O&M Charges for 6 months of operation of plant	We understand that O&M changes are required only for manpower. Please confirm the number of shifts (1/2/3) for which O&M services are required.	Correct. (A/B/C shifts to cater 24x7 hrs run scenario)
87	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	63 of 84	SECTION – 7 PRICE SCHEDULE	D. Training of Client personnel by OEM	Training will be provided in house at our factory for 4 days and at site for 2 days. Number of trainees will be 10.	Training to be provided to 10 persons -4 days at factory and 4 days at site.
88	SunPetro/NGC with AGT Facility/2023-24/SPPL-166	64 of 84	SECTION – 7 PRICE SCHEDULE	1. Price shall be inclusive of all taxes and duties except GST/IGST which will be paid extra as applicable. Company will help Contractor in obtaining Essentiality Certificate for availing duty benefit for the eligible items.	Purchaser to confirm whether the project comes under the PEL/PLM area. Kindly confirm whether to consider customs duty for imported items in the price.	Company is eligible for custom duty exemption hence EC shall be provided directly to contractor as per notification.
89	SunPetro/NGC with AGT Facility/2023-24/SPPL-168	-	-	General Query	Please provide soft copies of Existing SLD, Load details, P&IDs, Plot plan.	Proposed SLD and revised Plot plan attached for reference

90	SunPetro/NGC with AGT Facility/2023-24/SPPL-169	-	-	General Query	During the site visit, it was informed that, there is no requirement of HOT TAPPING . Please confirm.	Understanding is Correct.
91	SunPetro/NGC with AGT Facility/2023-24/SPPL-182	-	-	General Query	Please specify plant zero level , top od road level and mean sea level.	Top level of existing RCC road in CPF will be benchmark as 0.00 m Top of grade slab in process area - 0.00m with respect to benchmark. Top of equipment foundations - 0.30m/300mm above the benchmark. MSL is not relevant here as benchmark is defined above.
92	TD-SPPL-166-NGC with AGT Facility-290324f Pg 46 of 84 Scope of Work for Natural Gas Compression units & Associated gas treatment facility.	-	-	Clause No.3.3 Hook Up Strategy with existing plant set-up.	Kindly provide the P&ID & technical documents of existing facility and tie-in point details/tie-in list/tie-in schedule for better understanding.	PI refer SOW clause no 3.3 tie in list at battery limit.
93	TD-SPPL-166-NGC with AGT Facility-290324f Pg 46 of 84 Scope of Work for Natural Gas Compression units & Associated gas treatment facility.	-	-	4.1 New Plant Safety Integration	Kindly Provide Existing DCS System Details as well as existing fire water network layout for better understanding.	Refer Sr No 42. For fire water network suitable tapping shall be provided at the facility battery limit
94	TD-SPPL-166-NGC with AGT Facility-290324f Pg 49 of 84 Scope of Work for Natural Gas Compression units & Associated gas treatment facility.	-	-	4.3 Electrical System	Kindly provide load list of existing equipment's.	Not required.

95	TD-SPPL-166-NGC with AGT Facility-290324f Scope of Work for Natural Gas Compression units & Associated gas treatment facility.	-	-	GENERAL	Bidder request to provide scope of demolition works if any.	Not applicable.																												
96	TD-SPPL-166-NGC with AGT Facility-290324f Pg 50 of 84 Scope of Work for Natural Gas Compression units & Associated gas treatment facility.	-	-	4.4 DCS/ESD & F&G System Integration	Provide additional hardwires viz I/O cards AI, AO, DO/DI /driving relays/Zener isolators etc its mounting backplane, including central controllers for DCS(MX) (1+1 hot standby) as well as for SIS (CHARMS)system(1+1 hot standby).required for complete and successful integration / operation of the existing DCS system shall be part of the scope. kindly provide details.	<p>Not relevant here as new hybrid PLC system in field MCC room to be provided &amp; required to integrate existing DCS system (soft tags) with separate operator console with all required graphics. However, below information provided is just for reference pl.</p> <table border="1" data-bbox="1577 690 2001 950"> <thead> <tr> <th>Assign Licence</th> <th>Feature</th> <th>capacity</th> <th>#configured</th> </tr> </thead> <tbody> <tr> <td>system size</td> <td></td> <td>2500 DSTs</td> <td>994</td> </tr> <tr> <td>DeltaV Version</td> <td></td> <td>13</td> <td>13</td> </tr> <tr> <td>Discrete I/P Softwar</td> <td></td> <td>500 DSTS</td> <td>308</td> </tr> <tr> <td>Analog I/P Software</td> <td></td> <td>1300 DSTs</td> <td>223</td> </tr> <tr> <td>Analong O/P Software</td> <td></td> <td>75 DSTs</td> <td>45</td> </tr> <tr> <td>Controller redundancy</td> <td></td> <td>1</td> <td></td> </tr> </tbody> </table>	Assign Licence	Feature	capacity	#configured	system size		2500 DSTs	994	DeltaV Version		13	13	Discrete I/P Softwar		500 DSTS	308	Analog I/P Software		1300 DSTs	223	Analong O/P Software		75 DSTs	45	Controller redundancy		1	
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97	TD-SPPL-166-NGC with AGT Facility-290324f Pg 45 of 84 Scope of Work for Natural Gas Compression units & Associated gas treatment facility.	-	-	3.0 Description of facility Plot Plan: Tentative location of sale gas compression facility	As mentioned in plot plan, proposed natural gas compression unit & treatment facility 56x39 (Approx) But in another point it will be mentioned as 55mx32m. Kindly confirm the plot plan area for better understanding.	Refer Sr no 14.																												

98	TD-SPPL-166-NGC with AGT Facility-290324f Pg 45 of 84 Scope of Work for Natural Gas Compression units & Associated gas treatment facility.	-	-	3.0 Description of facility Plot Plan: Tentative location of sale gas compression facility	As per the tender document Space/plot size details is in EPCM Contractor scope but as per the details shared by SunPetro there is difference in approx and proposed area for better understanding kindly provide details	refer above point. (point repeated).
99	TD-SPPL-166-NGC with AGT Facility-290324f Pg 47 of 84 Scope of Work for Natural Gas Compression units & Associated gas treatment facility.	-	-	3.4 (B) Gas Compressor (Motor Driven)	Kindly Provide Relative humidity of gas for proper understanding of requirement of Gas compressors	Gas is saturated.
100	TD-SPPL-166-NGC with AGT Facility-290324f Pg 47 of 84 Scope of Work for Natural Gas Compression units & Associated gas treatment facility.	-	-	Compressor Capacity : 0.1 MMSCMD	We understand that compressor capacity of 0.1 MMSCMD is required at compressor inlet conditions. Please confirm.	Understanding is correct
101	TD-SPPL-166-NGC with AGT Facility-290324f Pg 47 of 84 Scope of Work for Natural Gas Compression units & Associated gas treatment facility.	-	-	Compressor Capacity : 0.1 MMSCMD	Please confirm if compressor capacity of 0.1 MMSCMD is required on wet basis / dry basis.	Wet basis.

102	TD-SPPL-166-NGC with AGT Facility-290324f Pg 47 of 84 Scope of Work for Natural Gas Compression units & Associated gas treatment facility.	-	-	Inlet gas composition	We understand that inlet gas composition is dry i.e. relative humidity of the inlet gas is 0%. Please confirm.	No. Inlet gas is wet.
103	TD-SPPL-166-NGC with AGT Facility-290324f Pg 47 of 84 Scope of Work for Natural Gas Compression units & Associated gas treatment facility.	-	-	Maximum ambient temperature	Please provide maximum ambient temperature.	Maximum ambient Temperature 45 deg. C
104	TD-SPPL-166-NGC with AGT Facility-290324f Pg 47 of 84 Scope of Work for Natural Gas Compression units & Associated gas treatment facility.	-	-	Type of motor	Please provide the type of main motor to be considered. If any kindly provide details	Bidder to decide as per design & engineering.
105	TD-SPPL-166-NGC with AGT Facility-290324f Pg 55 of 84 Scope of Work for Natural Gas Compression units & Associated gas treatment facility.	-	-	Clause No 3.(d) Compressor Shed (1+1) and 3Future Compressors	As per bidder's understanding Shed for 2 Compressors is in bidder's scope for future compressor requirement is SunPetro Scope. Kindly confirm.	Shed for 2 compressors packages shall be provided by the bidder.

106	TD-SPPL-166-NGC with AGT Facility-290324f Pg 56 of 84 Scope of Work for Natural Gas Compression units & Associated gas treatment facility.	-	-	Clause No 4. (F) Electrical system supply /Installation, Installation of lighting pole /lighting arrestor(Area illumination)	Kindly provide the Lux level for better understanding	To follow IS standard.
107	TD-SPPL-166-NGC with AGT Facility-290324f Pg 56 of 84 Scope of Work for Natural Gas Compression units & Associated gas treatment facility.	-	-	Clause No.3(I) Section-5 (Responsibility matrix) DCS & ESD System Supply & hook-up Integration existing system	Kindly Provide Existing DCS & ESD System, I/O Details for better understanding	Refer sr no 42
108	TD-SPPL-166-NGC with AGT Facility-290324f Pg 49 of 84 Scope of Work for Natural Gas Compression units & Associated gas treatment facility.	-	-	Clause No 4.3 (i) The bidder shall be provided power source of 11KV state grid.	As per bidder's understanding Is there any requirement of metering unit at both end, kindly confirm.	No, Metering is not envisaged in bidder scope.
109	TD-SPPL-166-NGC with AGT Facility-290324f Pg 49 of 84 Scope of Work for Natural Gas Compression units & Associated gas treatment facility.	-	-	Clause No 4.3 (ii) The bidder shall be provided power source of 11KV state grid.	Kindly provide working philosophy of transmission line (1 Way or 2 Way)	Plant may have on grid solar power generation system.

110	TD-SPPL-166-NGC with AGT Facility-290324f Pg 49 of 84 Scope of Work for Natural Gas Compression units & Associated gas treatment facility.	-	-	Clause No 4.3 (ii) The bidder shall be provided power source of 11KV state grid.	State grid connection where transmission line starts, Is there any requirement of breakers, kindly confirm & provide details.	Yes required, Pls refer attached SLD for bidder reference.
111	TD-SPPL-166-NGC with AGT Facility-290324f Pg 50 of 84 Scope of Work for Natural Gas Compression units & Associated gas treatment facility.	-	-	Clause 5.0 Scope of service Civil services associated with project requirement as per scope	Kindly provide the details for better understanding of project requirements.	Please refer Responsibility Matrix, SI No. 1 (b, d, o etc) and 3 (p, f, q etc)
112	Scope of Work 'Clause No:3 "Tentative Plot Plan 'Page No. 45 of 84	-	-	Proposed Natural Gas 'Compression Unit & treatment facilities mentioned in the plot plan: 56"x39"	The location marked in the plot 'plan appx. area available mentioned is 56m x 39m and below the plot plan it is mentioned 55m x 32m. 'Please confirm the available area of installation of 'Compression unit and treatment facility.	PI refer Sr No 14.
113	Scope of work 'Clause no. 3.1 'Design consideration	-	-	Design basis consideration: Consumer-1: Gas Sales at 95 'barg Consumer-2: Gas Sales at 1 barg	We request you to kindly specify the Hydrocarbon dew 'point pressure and temperature of the gas.	Dew point of compressed gas shall be as per sales gas specification of PNGRB for natural gas pipelines.
114	"Scope of work 'Clause no. 3.2 'Battery Limit conditions	-	-	Outlet Pressure: 40 Deg C	We propose the outlet pressure be considered as 55 'Deg C as per the PNGRB 'Guidelines.	PI refer- BULLETIN #1 dated 04.04.24 Sr No.5. i.e ""Outlet temperature: Maximum ambient temperature + 10 deg C", Maximum ambient temperature to be considered as 45 deg. C

115	Scope of Work 'Clause no. 3.2 'Battery Limit conditions	-	-	Sparing philosophy of compressor (1+1) with a provision of space for installation of 3 more 'compressors in future	Please confirm the requirement of separate panel for each compressor.	Yes , each compressor shall be complete package itself including LCP 'PI refer- BULLETIN #1 dated 04.04.24 Sr No.8. i.e " Sparing philosophy of compressor (1+1) with a provision of space for installation of 2 more compressors in future. "
116	Scope of Work 'Clause no. 3.4 'Gas Treatment Unit	-	-	Recovered liquid (condensate) 'shall be stabilized and Hook up at a battery Limit	We understand that no stabilization unit is envisaged 'in the Tender. Please confirm our understanding.	Understanding is correct, however, all liquid/condensate generated in the system shall be collected at one location and shall be routed to Battery limit of the plant with tie-in point. This shall be further routed by COMPANY for processing at appropriate location.
117	Scope of Work 'Clause no. 3.4	-	-	While establishment of the above facilities following minimum 'requirement should be met: ' All Statutory/legal requirements to be complied to like PESO, OMR, OISD etc. associated with Oil & gas plant.	The required Statutory 'Approvals form (DGMS/PESO/District authority/CFO/OISD is granted by the Statutory authority to the owner and not the Contractor. Contractor's role will be limited to submission of the application on behalf of the owner and providing assistance to owner in obtaining the statutory clearances. Please confirm.	Yes understanding is correct However, all electrical equipment to be installed in Plant shall have DGMS approval. For approval from other regulatory authorities required assistance and documentation shall be provided by contractor.
<b>Scope of Work 'Clause no. 4.2.2</b>						



118		-	-	b) The maximum calculated discharge temperature shall not exceed 140°C.	We propose that the maximum calculated temperature shall not exceed 150°C as per the ISO 13631.	Yes agreed , however, ISO13631 is providing limiting condition and Bidder to optimize.
119		-	-	c) Combined rod loading shall not exceed 80% of MANUFACTURER maximum allowable continuous combined rod loading for compressor running at any specified operating points and relief valve set point plus accumulation.	We propose that the combined rod loading shall not exceed '90% of manufacturer maximum allowable 'continuous Combined rod loading for compressor running at any specified operating 'point and relief valve set point 'plus accumulation as per ISO 13631	As per SoW, Combined rod loading shall not exceed 80% of MANUFACTURER maximum allowable continuous combined rod loading for compressor running at any specified operating points and relief valve set point plus accumulation. Ref. ISO 13631
<b>'GENERAL CONDITIONS OF THE CONTRACT (GCC)</b>						
120	3.7 / 3.7.1 /A. Termination for Non- Mobilization or Non-commencement of Work	-	-	If the Contractor fails to timely mobilize the Materials or Equipment required to perform the work or having mobilized, fails to timely commence the work in accordance with the terms of the Contract, it would amount to material breach under the Contract and in such event, the Company shall have right to terminate the Contract immediately upon expiry of such specified time, unless otherwise provided or agreed by the Company.	Please provide clarification. 'Termination for mobilization will not be affected, If company not be able to provide the access to the location or the civils are not ready.	Understanding is correct.

121	3.7 / 3.7.1 /D. Termination for Convenience	-	-	Company shall have a right to terminate the Contract in whole or in part, at any time with fifteen (15) days prior written notice thereof to the Contractor. Upon any such termination the Contractor irrevocably agrees to waive any and all claims for damages, compensations, including loss of anticipated profits, on account thereof, and as the sole right and remedy of the Contractor, Company shall pay the Contractor in accordance with Price Schedule mentioned in the Contract for the work / services performed by the Contractor till the date of such termination.	Please amend the clause:  'Contractor financial model take account of the overall all project delivery and timelines, hence upon the termination remaining amount of pending duration after termination as per schedule to be paid.	Bid condition to be followed.
<b>SCOPE OF WORK</b>						
122	3.2 Battery Limit conditions:	-	-	Flow: Max volume for Gas treatment 2.0 Lakh SCMD '(Flow variation min 30000 SCMD to 2.0 Lakh SCMD)	Bidder requests Company to share the gas oil ratio.	GOR Not relevant, 'PI refer- BULLETIN #1 dated 04.04.24 Sr No.2. "Gas Flow rate – 0.3 MMSCMD. (instead of 0.2 MMSCMD)"

123	3.4 Gas compressors (motor Driven):	-	-	<p>Capacity: 50,000 SCMD each (1+1) with space for 3 more compressors of the same capacity each to be installed in future.</p> <p>'The gas compressors for boosting the pressure from 0.8-0.9 barg to 95 barg (on single shaft) with associated auxiliary system and gas treatment unit meeting sale gas Water Dew Point &amp; Hydrocarbon Dew Point (DPCU).</p> <p>'Feed Gas to DPCU unit shall be from the compressor 2nd Stage discharge and Heat/Cold duties of the system shall be optimally utilized in interstage exchangers etc. and the associated equipment like heat exchanger, cooling fans, regeneration system etc. to be designed skid based.</p> <p>'Low pressure gas supply tie-in point to local consumer shall be given from final discharge &amp; or after intermediate discharge after DPCU unit with pressure reducing system.</p>	<p>'Kindly clarify:</p> <p>'1. Can Gas driven compressor can be used as we have sufficient gas.</p> <p>'2. This motor driven will consume a lot of power. Have that be been considered.</p> <p>3. Total Gas is 7.1 MMSCFD, please clarify 50,000 SCMD each (1+1) is for the first phase which is 50% of overall 7.1 MMSCFD or we can model the compressor units as per the sparing philosophy of 1X100% or 2X100%.</p>	<p>1. As per SOW (motor driven compressors are required</p> <p>'2. Yes,</p> <p>'3. PI refer- BULLETIN #1 dated 04.04.24 Sr No.4 &amp; 2.</p> <p>'(Compressor capacity (ea)- 0.1 MMSCMD (1+1) &amp; space for future hook up 2 no's). ([instead of 50,000 SCMD + 3 no's future space.]</p> <p>'(Gas Flow rate – 0.3 MMSCMD. (instead of 0.2 MMSCMD)"</p> <p>'Total gas flow- 0.3 MMSCMD i.e. 10.6 MMSCFD)</p> <p>'For Bidder understanding compressor shall be</p> <p>Initial 1 W+1 S for (0.1 mmscmd i.e 3.53 MMSCFD</p> <p>' Future 3 W+1 S for 0.3 mmscmd i.e 10.6 MMSCFD)</p>
124	General	-	-	-	<p>Bidder requests Company to exempt the bid bond requirement for this tender considering the time line. However we shall submit the PBG at the time of award of contract.</p>	<p>Bid bond &amp; PBG both are required as per tender.</p>

125	General	-	-	-	Per the tender contractor need to submit a bank guarantee which is justifiable looking at the CAPEX investment. On the same note the contractor will be spending a huge and substantial amount of CAPEX hence we would request a bank guarantee from Company for securing the capital.	Bidder proposal is not acceptable. Please go as per tender.
126	-	-	-	-	Please confirm, as mentioned 2 stage compressors however based on pressure data provided, 2 stage compressors will have high interstage discharge temperature (in range of ( ~ 150 -170 deg C) due to which we are anticipating min 3 stage design, please confirm your acceptance. If not please confirm discharge temperature upto 170 deg. C is acceptable.	Bidder shall design the number of stages as per ISO 13631. The maximum calculated temperature shall not exceed 150°C as per the ISO 13631.
127	-	-	-	-	Hazardous area class Zone 2, Gas group II B, temperature class T 3 to be considered.	Bidder to consider Hazardous area class Zone-1.
128	-	-	-	-	MDMT to be defined. There is no Input we shall Consider 10° C as MDMT, Please Confirm	MDMT to be considered as 8 Degc
129	-	-	-	-	Please Confirm Max oil PPM acceptable value in discharge Gas?	HCDP & WDP shall meet as per PNGRB gas pipeline specification.
130	-	-	-	-	Reciprocating Compressors are considered, not centrifugal. Please Confirm	Reciprocating compressor is specified.

131	-	-	-	-	Page 26 of 84 - Hazardous waste like used oil etc will be handed over to client for disposal. Please confirm.	Yes
132	-	-	-	-	Please Confirm Ambient Conditions for designing of Air cooler.	PI refer sr no-8
133	-	-	-	-	Gas Compressors shall be designed for 100000 SCMD Gas Flow at discharge of Compressor.	Suction capacity of compressor shall be 0.1 mmcmd.
134	-	-	-	-	Molecular weight as per calculation is (32.94) to (29.08) from 1 <sup>st</sup> to 2 <sup>nd</sup> stage Please Confirm.	Gas composition is provided, bidder to design & engineer accordingly
135	-	-	-	-	Please Confirm all Battery Line Values Can Manual Valves.	PI refer sr no-19
136	-	-	-	-	Please Confirm at what Pressure 0° C dew Point is required.	at Operating pressor of compressor.
137	-	-	-	-	Please Confirm local PLC at Compressors is in scope of EPC Contractor.	Yes
138	-	-	-	-	Please Confirm, if any hot tapping required?	Not required.
139	-	-	-	-	Please Confirm, HT/LT transforms are not is scope of EPC Contractor.	Yes
140	-	-	-	-	Please Confirm whether Power factor Compensation Panel are required for HT or LT loads?	Yes, required for HT & LT as per system requirements.
141	-	-	-	-	Please provide existing Operator Console.	Question is not clear.
142	-	-	-	-	Please Confirm DGMS approval Assistance only is in EPC Contractor Scope.	PI refer Sr No 117

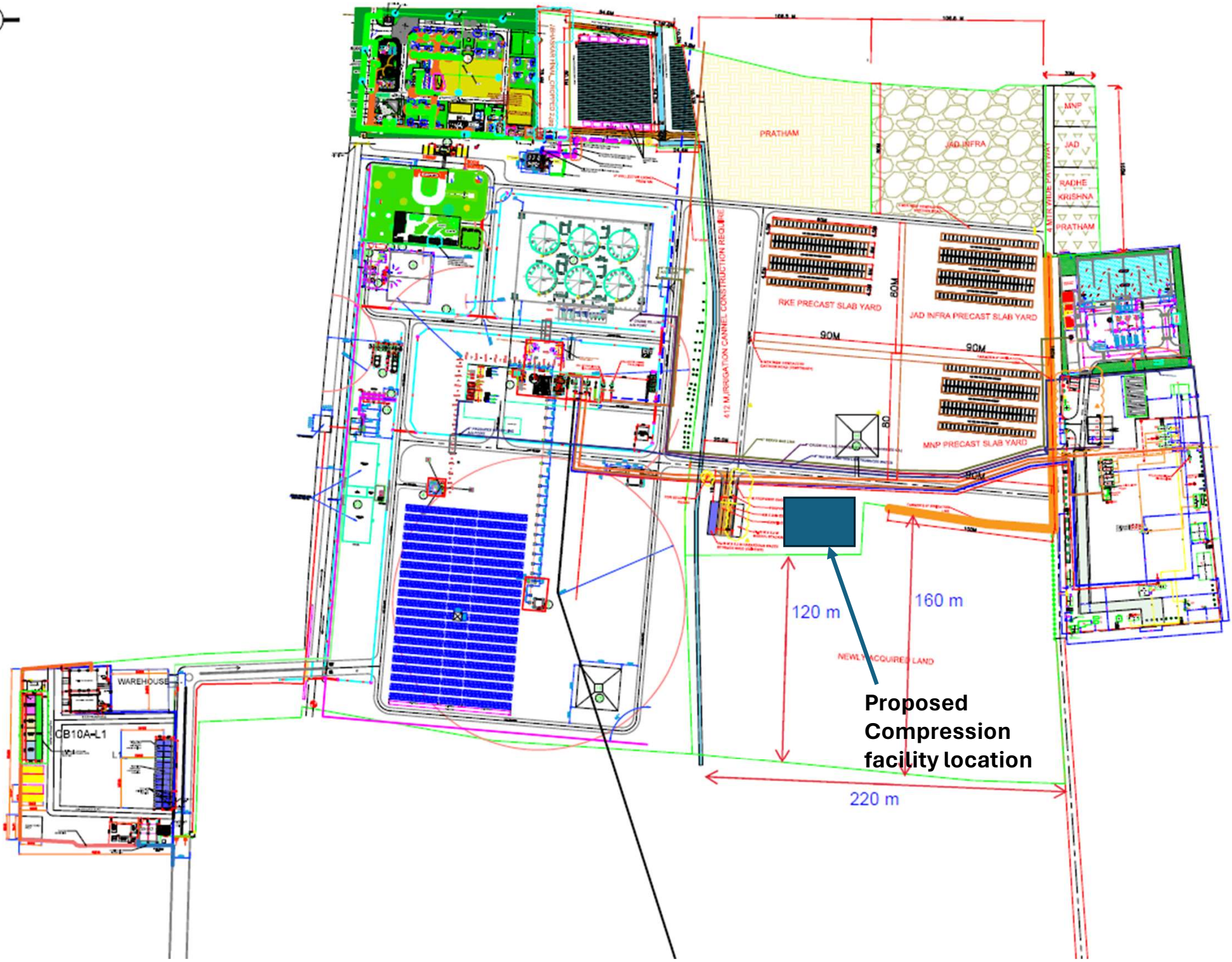
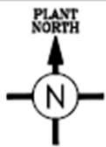
143	-	-	-	-	Training shall be provided by Compressor Supplies at their works.	PI refer Sr No 87.
144	-	-	-	-	Please provide Soft Copies of Existing SLD, Load List, P&ID, Plot Plan etc	Plot Plan is attached. Other information is not relevant.

All other terms and conditions of the tender remain unchanged.

**Regards,**

**Sun Petrochemicals Pvt. Ltd.**





**Proposed  
Compression  
facility location**

120 m

160 m

220 m

NEWLY ACQUIRED LAND

412 IRRIGATION CHANNEL CONSTRUCTION RESERVE

PRATHAM

JAD INFRA

RKE PRECAST SLAB YARD

JAD INFRA PRECAST SLAB YARD

MNP PRECAST SLAB YARD

WAREHOUSE

CB10A-L1

MNP

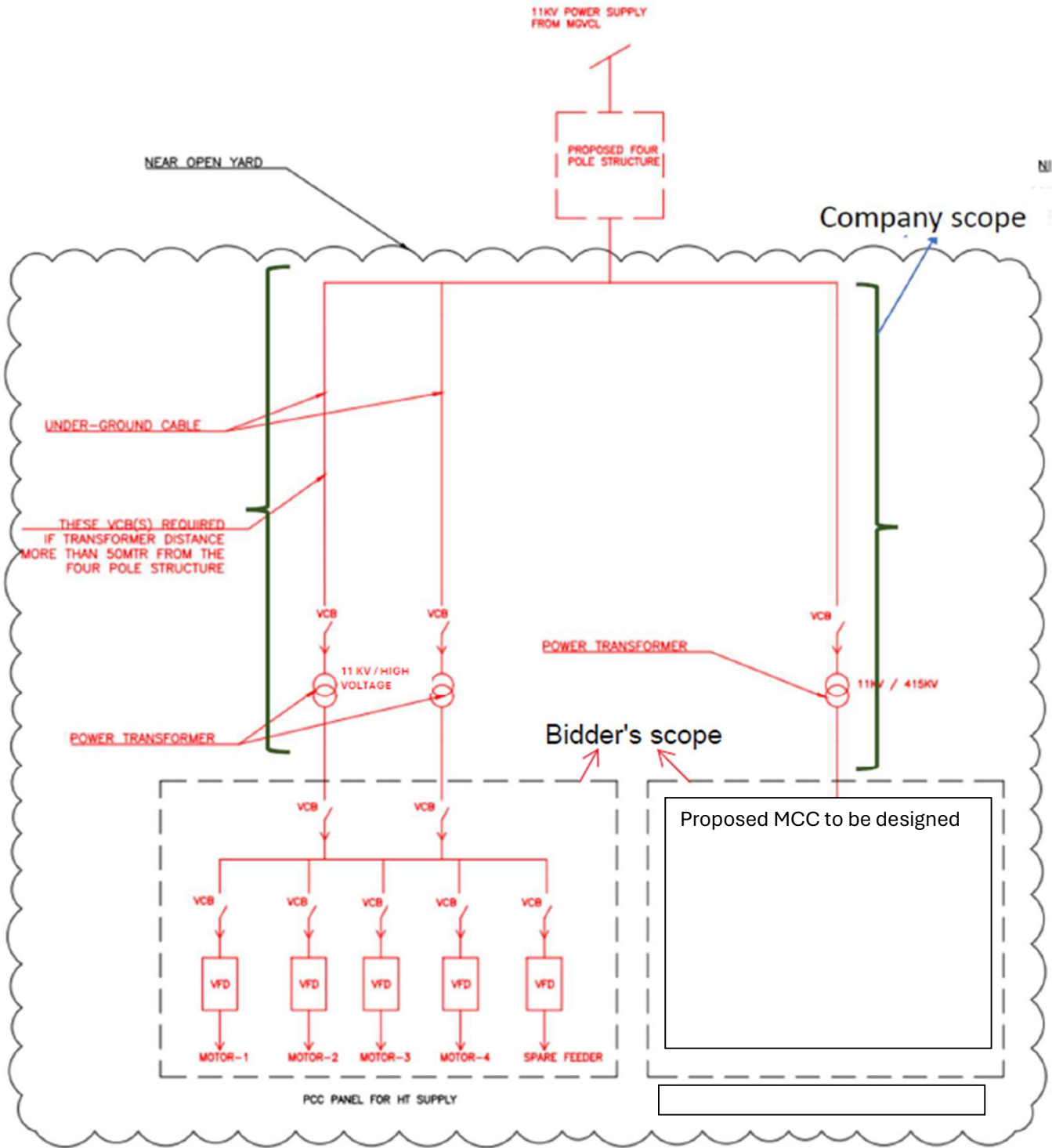
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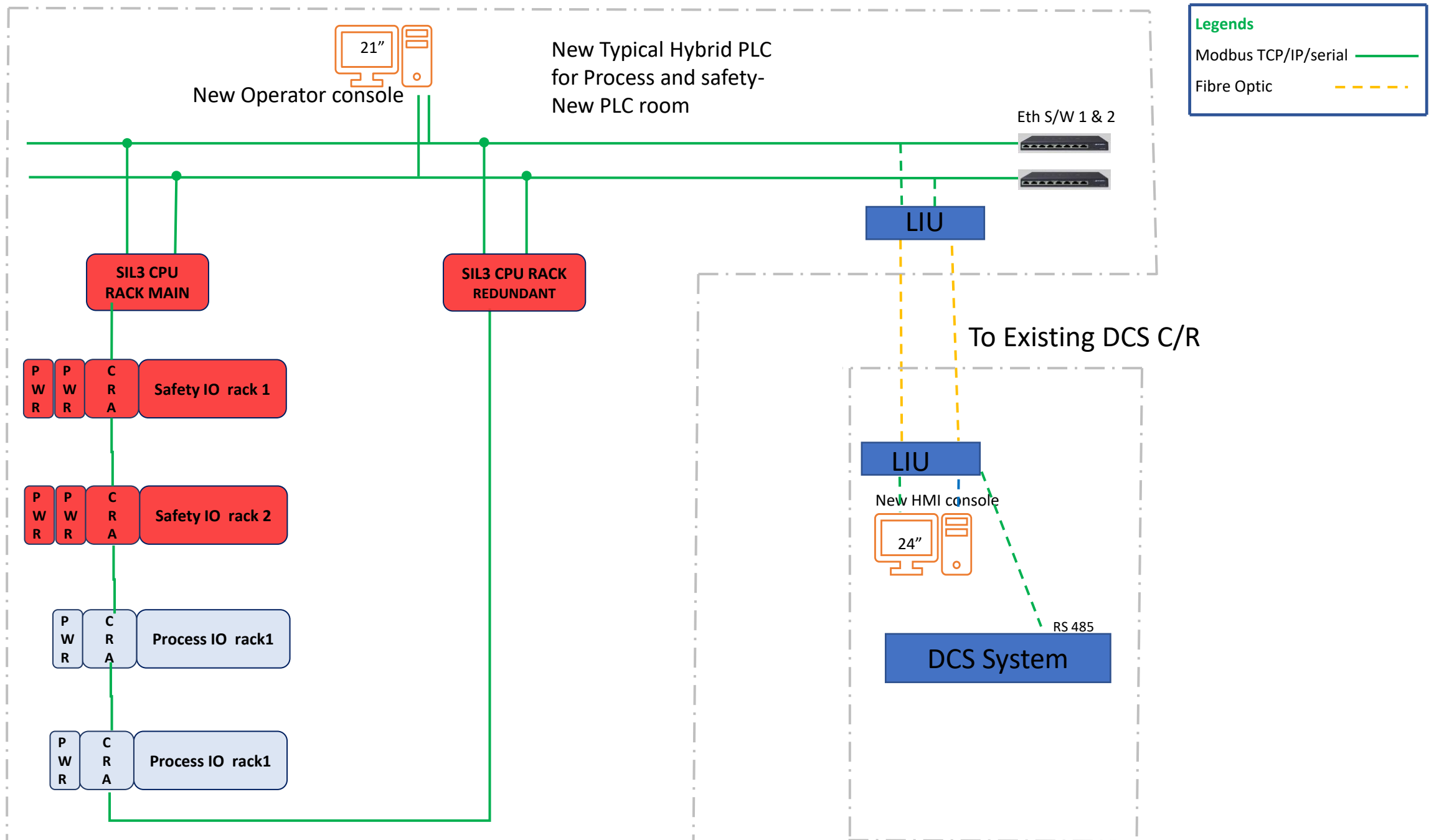
PRATHAM

4 METRE WIDE PAVEMENT





# Typical architecture for connectivity of new Hybrid system to existing system



**Legends**

Modbus TCP/IP/serial ————

Fibre Optic - - - - -

- Note: 1. The communication link between New PLC room and existing DCS Control Room shall be full redundant (primary and secondary full duplex)  
 2. The existing DCS system has spare RS 485 card  
 3. All soft I/O Tags of hybrid PLC –New shall be imported to existing Delta V DCS system including creation of Graphics in existing DCS system, new operator console in New PLC room as well as new HMI (to be installed in Existing DCS control room)  
 4. The above proposed Architecture is only indicative. The bidder may propose any other suitable architecture as per good engineering practices.