ऑयल इंडिया लिमिटेड
(भारत सरकार का उद्यम)
Oil India Limited
(A Government of India Enterprise)

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CORRIGENDUM NO.3 TO OIL e-tender NO.: CQI4810P24

DESCRIPTION OF WORK: Establish a plant of 1 MW capacity in Himachal Pradesh for production of High Purity (99.999%) Green Hydrogen for commercial use

This Corrigendum is issued to notify the following changes in the tender:

1. Annexure – I (Amendments to the Scope of Work) (enclosed)
2. Annexure – II (Amendments to the BEC/BRC) (enclosed)

All others terms and conditions of the Tender remain unchanged.

Sd/-
Jyoti Sarkar
Senior Manager (BD)

Annexure – I
Amendments to the Scope of Work

Sl No.	Corrigendum 1 Clause	Amendment
1.	**3.0** Price Discount due to non-compliance of Guaranteed Performance Parameters during O & M	
	3.1. Lower Supply of Hydrogen: The overall supply of Green Hydrogen will be accounted on quarterly basis vis-à-vis Green Hydrogen Production guaranteed in the offer to calculate the short fall in supply of green hydrogen Price discount @ Rs.350.00/kg will be payable to the owner for the shortfall quantity of Green Hydrogen	. Lower Supply of Hydrogen: The overall supply of Green Hydrogen will be accounted on quarterly basis vis-à-vis Green Hydrogen Production rate accepted after PGTR to calculate the short fall in supply of green hydrogen. Price discount @ 50 % of per kg LCOH price of green hydrogen produced as quoted by bidder will be payable to the owner for the shortfall quantity of Green Hydrogen
	3.2 Excess energy consumption: The price discount due to excess energy (KWh) consumption over the guaranteed values will be 125% of the applicable energy cost of that quarter (Average cost of electricity of 3 month electricity bill of the applicable period). The amount of the both above price discount will be calculated and deducted from the Operation & Maintenance bill payable to contractor on quarterly basis. In case the discount amount is more than quarterly O&M bill then the difference amount shall be reimbursed by the contractor within 15 days of informing about the shortfall.	Hydrogen production shortfalls and excess energy consumption will be assessed quarterly, and the amount of the above price discount will be calculated and deducted from the operation and maintenance bill payable to the contractor on a quarterly basis. subject to a maximum 70% of the annualized O&M cost on annual basis.

<table>
<tr><th>Sl No.</th><th>Corrigendum 1 Clause</th><th>Amendment</th></tr>
<tr><td>2.</td><td>Part -V Scope of Work

• <u>Bidder’s Responsibility:</u>

Two (2) days of Hydrogen Storage at 350 bar including suitable Compressor system</td><td>The Hydrogen Storage system should have a cumulative capacity to store a minimum of two (2) days’ worth of hydrogen production at minimum 350 bar. The total storage requirement shall consist of minimum two or more units of mobile cascade storage system.</td></tr>
<tr><td>3.</td><td>Bidder’s Scope of work for supply of Electrolyser system

Bidder shall supply the mandatory and commissioning spares, consumables as required for Electrolyser system for a minimum period of 3 (three) years. Bidder shall provide the list of the same.</td><td>Deleted</td></tr>
<tr><td>4.</td><td>H = Total Qty. of H2 produced &supplied in 8000 hrs per year x 10 Yrs i.e 80000 hours</td><td>O1 = Cost of total Power consumed in 10 yrs. @ Rs 5.0 per KWh. As detailed in Table 1

Table 1
<table>
<tr><th>Sl. No</th><th>Stream</th><th>UOM</th><th>Estimated Value</th></tr>
<tr><td>i</td><td>Electricity Power consumption by the electrolyser system/s, at guaranteed rate of hydrogen production</td><td>KWh</td><td>To quote in Price Bid</td></tr>
<tr><td>ii</td><td>Electricity Power consumption excluding electrolyser system (BOP), at guaranteed rate</td><td>KWh</td><td>To quote in Price Bid</td></tr>
</table></td></tr>
<tr><td></td><td>O1 = Cost of total electrical energy consumed in 10 yrs. @ Rs 5.0 per KWh.
O2A = Total cost of comprehensive O&M in 10 yrs. as mentioned by bidder for each year in his technical bid.
O2B = Total cost of replacement of stacks in the year as recommended by bidder in his technical bid during 10 years of operation
The total period for PV calculation shall be total 11 years with first year capex and opex in subsequent 10 years

The total O&M costs (O2) shall be considered for 10 yrs, which shall start after the successful SAT.</td><td></td></tr>
</table>

Sl No.	Corrigendum 1 Clause	Amendment
		of hydrogen production
	9. For LCOH calculation, the Hydrogen supply rate shall be considered @ quoted guaranteed rate for all the 10 yrs. Total 8000 operating hrs. shall be considered for each yr. for all the 10 yrs. The quoted guaranteed Hydrogen supply rate shall be within 17 kg/hr (Minimum) to 19 Kg/hr (Maximum) Note: A sample calculation sheet is attached	9. For LCOH calculation, the Hydrogen supply rate shall be considered @ quoted guaranteed rate for all the 10 yrs. Total 8000 operating hrs. shall be considered for each yr. for all the 10 yrs. The quoted guaranteed Hydrogen supply rate shall be minimum 17 kg/hr (Minimum) or more Note: A sample calculation sheet is attached
5.	Addition	Part -V Scope of Work 2.0Scope of Work **Owners Responsibility** • Power cost required for operation of the plant.
6.	The power consumption of the Electrolyser system (Excluding BOP) shall not be more than 60 kWh/ Kg of Hydrogen produced.	The power consumption of the Electrolyser system (Including BOP) shall not be more than 60 kWh/ Kg of Hydrogen produced.
7.	2.2 The capacity of Electrolyser module/s to be supplied shall be minimum 17 Kg/hr and maximum 19 kg/hr.	2.2 The capacity of Electrolyser module/s to be supplied shall be minimum 17 Kg/hr or more. Bidder's to quote the capacity of electrolysers module/s to be supplied.
8.	2.7 The H2 generation capacity offered by the bidder shall be ranging from 17 Kg/hr (min) to 19 kg/hr maximum. Bidder shall select its model/s of its electrolyser or designed it accordingly to meet the guaranteed capacity of Green Hydrogen plant.	2.7 The H2 generation capacity offered by the bidder shall be minimum 17 Kg/hr or more. Bidder shall select its model/s of its electrolyser or design it accordingly to meet the guaranteed capacity of Green Hydrogen plant.

1. Price Discount for not successfully completing PGTR

In case the contractor fails to successfully complete the PGTR within 2 months of site acceptance test, the contractor will be required to modify or add additional equipment required for successful PGTR and offer for second PGTR within 2 months. If the contractor fails again then for every 0.1 shortfall in hydrogen guaranteed supply rate (Kg/hr) below the committed value, a penalty of 1% of the total Contract Value (i.e., total sum of all the Supply and installation) shall be levied. In case the Contract Performance Security has already been encashed on account of any default/delays, the penalty amount will be recovered from any due payments to the contractor~~. In case the hydrogen production shortfall is more than 0.5 kg/hr than the guaranteed value but above 17kg/hr, then the total plant will be accepted on as-is basis & the total Contract Performance Security submitted by the contractor will be forfeited & payments linked to PGTR will not be made. However, In case the Hydrogen production is below 16.5 Kg/hr in case of guaranteed 17 Kg/hr than the plant will be taken over as on as is basis after a price discount of 2% for every shortfall of 0.1% from 17 Kg/hr reference values.~~

In case the hydrogen production shortfall is more than 0.5 kg/hr from the hydrogen guaranteed supply rate than the plant will be accepted as on as is basis after a price discount of 2% for every shortfall of 0.1kg/hr from the hydrogen guaranteed supply rate as quoted by the bidder.

A sample calculation given below:

Sample sheet showing calculations of Bid Evaluation

Bidder					**A**
	PGTR Test results				**Price Discount in CAPEX**
	***x** is quoted hydrogen production rate*				
Guaranteed Supply of Hydrogen Kg/hr	17	18	19	x	
As per PGTR Test Kg/hr	16.9	17.9	18.9	x-0.1	1%
	16.8	17.8	18.8	x-0.2	2%
	16.7	17.7	18.7	x-0.3	3%
	16.6	17.6	17.8	x-0.4	4%
	16.5	17.5	18.5	x-0.5	5%
	16.4	17.4	18.4	x-0.6	12%
	16.3	17.3	18.3	x-0.7	14%
	16.2	17.2	18.2	x-0.8	16%
	16.1	17.1	18.1	x-0.9	18%
	16	17	18	x-1	20%
	<16	**<17**	**<18**	**<(x-1)**	

Note: *Plant with hydrogen production capacity 1.0 kg/hr below the guaranteed value will not be accepted and simply rejected.*

2. O& M Contract

Price Discount for nonperformance during O & M period

If the plant fails to produce hydrogen as per the rate achieved and accepted during PGTR, the O&M contractor is liable to pay the owner the cost of shortfall in hydrogen supply (shortfall quantity in Kg X 50 % of per kg LCOH price of green hydrogen produced as quoted by bidder /-) during the quarter. The amount will be recovered from the quarterly bill payable to contractor.

3. PAYMENT TERMS:

1.1 **Payment Term for Item sl. no. 10 of SOQ:**

Milestone No.	Payment Milestone	% of Lump-Sum Value
1.	After submission of BED, which includes Engg. drawing, finalization of PFD, P&IDs, data sheets for BOP (as required) and approval of drawings by Owner etc.	5%
2.	Site development work/completion of foundation work and completion of entire fencing	10%
3.	Supply of all the Electrolyser system/Containers along with its accessories at designated site.	35%
4.	Completion of Installation, Commissioning and Site Acceptance Test (SAT) of the Electrolyser system.	35%
5.	On successful completion of PGTR of entire Green Hydrogen Plant, as specified, and issuance of Operational Acceptance Certificate	15%

1.2 **Payment Term for Item sl. no. 20 of SOQ:**

Milestone No.	Payment Milestone	% of Lump-Sum Value
1A.	Completion of detailed engineering as per scope of Tender Document (duly approved by Owner)	20%
1B.	Supply of all the Major items of BOP system such as Transformer, HT Switchgear, Compressor, Drier and DM Plant at designated site.	20%
2.	Successful completion of installation & commissioning of all the works in scope of work in all respects (excluding PGTR).	30%
4.	Site Acceptance Test (SAT) of the entire Green Hydrogen Plant.	15%
5.	On successful completion of PGTR of entire Green Hydrogen Plant, as specified, and issuance of Operational Acceptance Certificate	15%

1.3 **Item sl. no. 30 of SOQ:**

Milestone No.	Payment Milestone	% of Lump-Sum Value
1.	For O&M period of the contract (Starts after completion of Item No 4 of Sl. No. 20 of SOQ).	Quarterly

Note:

1. Out of the 15% of the Payment terms for Milestones no. 5 of Item's sl. No. 10 and 20, 10% of lumpsum value will be released after acceptance of successful PGTR and the rest 5 % will be paid 2.5 % annually subsequently in two years.

Annexure – II

(Amendments to the BEC/BRC)

Sl No.	Original	Corrigendum 1	Amendment (Corrigendum 3)
1.	**1.0 Eligibility Criteria** **1.1** Bidder shall be a manufacturer or a channel partner of the manufacturer of Water Electrolyser technology (Alkaline Water Electrolyser (AEL) or Anion Exchange Membrane (AEM) or Proton Exchange Membrane (PEM) or Alkaline Membrane Solid Electrolyser (AMSE) or Solid Oxide Electrolyser (SOE) technology). The Manufacturer or the Channel partner should have supplied at least one unit of electrolyser based on Water Electrolysis technology in India in last 10 years and should have been in successful operation for at least 3 (three) months prior to the original bid closing date.	**1.0 Eligibility Criteria** **1.1** Bidder shall be a manufacturer or a channel partner of the manufacturer of Water Electrolyser technology (Alkaline Water Electrolyser (AEL) or Anion Exchange Membrane (AEM) or Proton Exchange Membrane (PEM) or Alkaline Membrane Solid Electrolyser (AMSE) or Solid Oxide Electrolyser (SOE) technology). The Manufacturer or the Channel partner should have supplied at least one unit of electrolyser of minimum 50 KW capacity based on Water Electrolysis technology in last 10 years and should have been in successful operation for at least 3 (three) months prior to the original bid closing date.	**1.0 Eligibility Criteria** **1.1** Bidder shall be a manufacturer or a channel partner of the manufacturer of Water Electrolyser technology (Alkaline Water Electrolyser (AEL) or Anion Exchange Membrane (AEM) or Proton Exchange Membrane (PEM) or Alkaline Membrane Solid Electrolyser (AMSE) or Solid Oxide Electrolyser (SOE) technology). The Manufacturer or the Channel partner should have supplied at least one unit of electrolyser of minimum 500 KW capacity based on Water Electrolysis technology in last 10 years and should have been in successful operation for at least 3 (three) months prior to the original bid closing date. "Manufacturer" refers to an entity which is an original equipment manufacturer/Technology owner or authorized to manufacture electrolysers through a valid technology licensing or sublicensing arrangement with the technology owner. The qualifications of the manufacturer's technology owner or any entity associated with such technology owner shall also be considered.