



☞ If a competitor submits a fresh reduced bid, the field “Leading Bid” for SOR or Non-SOR tenders will show the latest bid. This happens instantaneously and would be visible to all bidders on their screens.

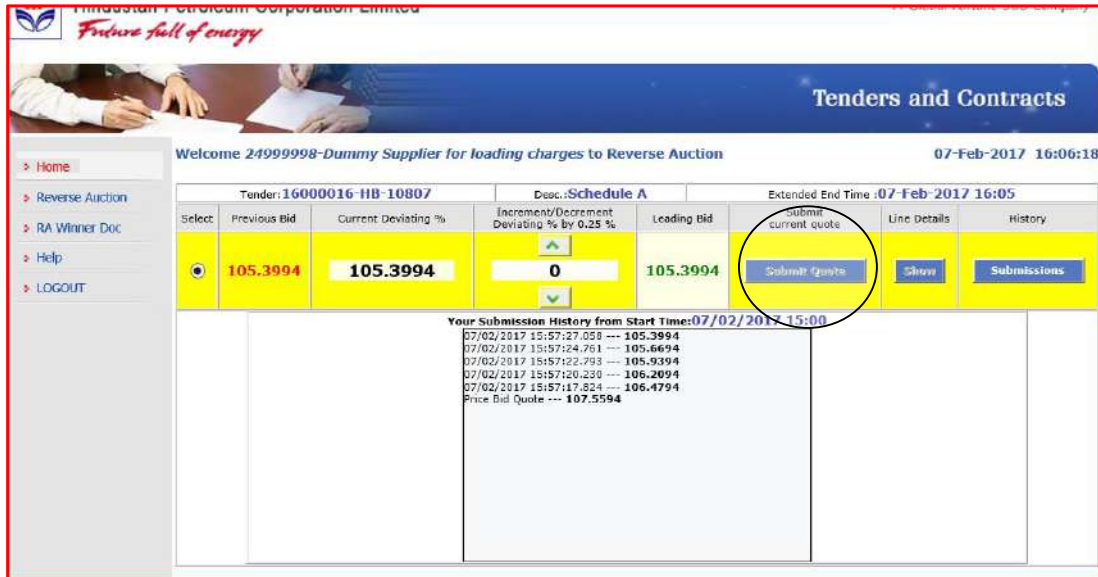
☞ It may be noted that if two bidders submit the quote almost at the same time, the system will consider the bidders rate/quote which hits the system first. This time difference is logged till the mille second. In such a scenario, the system will send the following message to the second bidder cautioning him that the bid submitted is not the lowest bid.



5 Reverse Auction Closure

As explained in section 3 above, the RA process will continue until no bids are received in the last 5 minutes of the basic auction period (60 mins) or extended auction period.

If no bid is received in the last 5 minute period, reverse auction shall get automatically closed. The moment RA is completed, colour of auction line changes to **'yellow'** and submit button will be disabled. This indicates the closure of Reverse Auction.



The screenshot displays the 'Tenders and Contracts' interface for Hindustan Petroleum Corporation Limited. The user is logged in as '24999998-Dummy Supplier for loading charges to Reverse Auction'. The tender details are: Tender: 1G000016-HB-10807, Desc.: Schedule A, and Extended End Time: 07-Feb-2017 16:05. The interface shows a table of bids with the following columns: Select, Previous Bid, Current Deviating %, Increment/Decrement Deviating % by 0.25 %, Leading Bid, Submit current quote, Line Details, and History. The current bid is 105.3994, and the leading bid is also 105.3994. The 'Submit current quote' button is circled in red. Below the table, there is a section for 'Your Submission History from Start Time: 07/02/2017 15:00' with a list of previous bids and their timestamps.

Select	Previous Bid	Current Deviating %	Increment/Decrement Deviating % by 0.25 %	Leading Bid	Submit current quote	Line Details	History
<input checked="" type="radio"/>	105.3994	105.3994	0	105.3994	Submit current quote	Show	Submissions

Your Submission History from Start Time: 07/02/2017 15:00

- 07/02/2017 15:57:27.058 --- 105.3994
- 07/02/2017 15:57:24.761 --- 105.6694
- 07/02/2017 15:57:22.793 --- 105.9394
- 07/02/2017 15:57:20.239 --- 106.2094
- 07/02/2017 15:57:17.824 --- 106.4794
- Price Bid Quote --- 107.5594

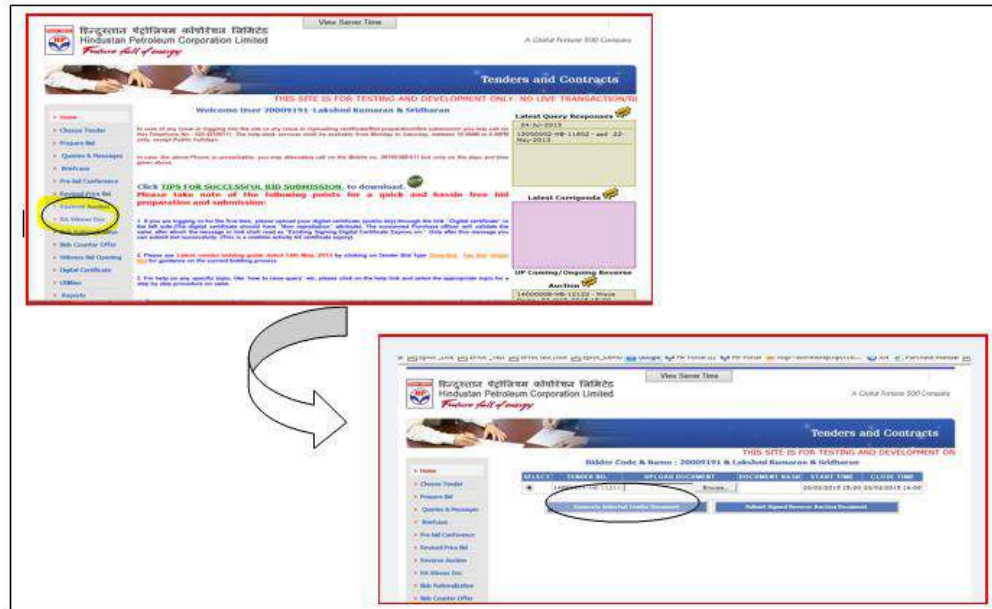
6 Refreshing of screen

Bidders can refresh the screen by clicking on **'Reverse Auction'** menu option in left pane, select the appropriate tender and click on participate in reverse auction button.

7 RA winner document

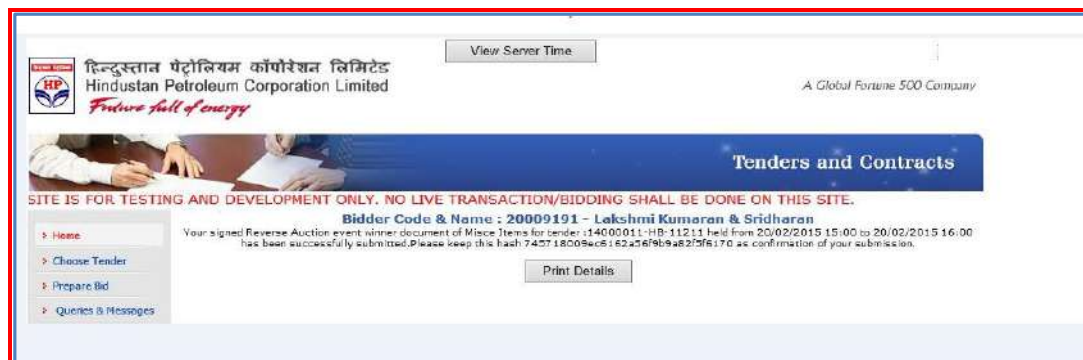
After completion of Reverse Auction, Lowest bidder will get an email intimation to download and submit the RA winner document.

Vendor can download the 'RA winner document' by clicking on the "Generate Browse & submit Winner Document" button available in "RA Winner Document" menu option as shown below.



The successful bidder should -

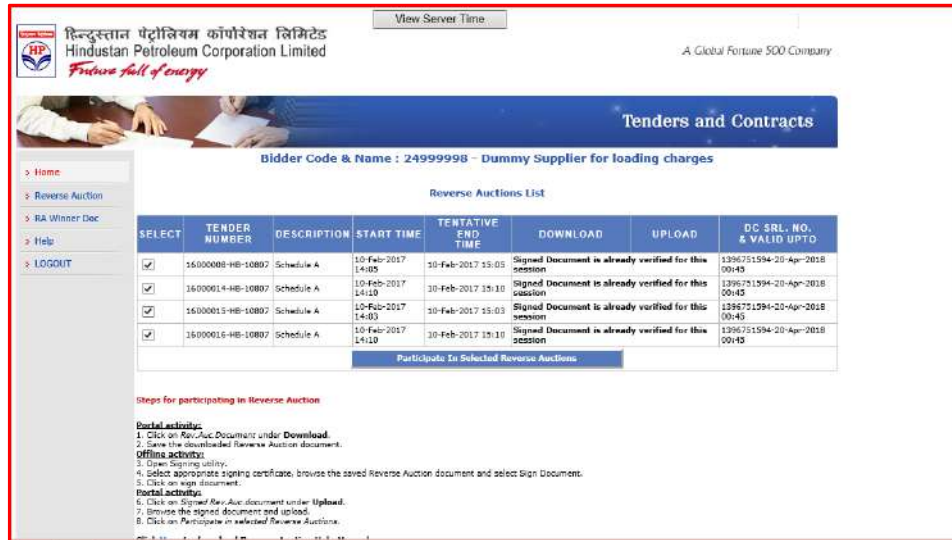
- Select tender and click on 'Generate selected Tender Document'.
- Save the document and sign it using signing utility.
- Select the signed document by browsing
- Submit signed Reverse Auction document.
- Bidder can save the following confirmation message generated by system for records.



8 Multiple Reverse Auctions

If a bidder wishes to participate in more than one RA at the same time, bidder should select all tenders and download and enter passwords for each selected tenders and click on 'participate in selected Reverse Actions' button.

- Please note a bidder can participate in upto 5 Reverse Auctions on the same screen at a time. Also, passwords are different for each of the different Reverse auction on same or different tenders.



Reverse Auctions List

SELECT	TENDER NUMBER	DESCRIPTION	START TIME	TENTATIVE END TIME	DOWNLOAD	UPLOAD	DC SRL. NO. & VALID UPTO
<input checked="" type="checkbox"/>	16000008-HB-10807	Schedule A	10-Feb-2017 14:05	10-Feb-2017 15:05	Signed Document is already verified for this session		1396751594-20-Apr-2018 00:45
<input checked="" type="checkbox"/>	16000014-HB-10807	Schedule A	10-Feb-2017 14:10	10-Feb-2017 15:10	Signed Document is already verified for this session		1396751594-20-Apr-2018 00:45
<input checked="" type="checkbox"/>	16000015-HB-10807	Schedule A	10-Feb-2017 14:00	10-Feb-2017 15:03	Signed Document is already verified for this session		1396751594-20-Apr-2018 00:45
<input checked="" type="checkbox"/>	16000016-HB-10807	Schedule A	10-Feb-2017 14:10	10-Feb-2017 15:10	Signed Document is already verified for this session		1396751594-20-Apr-2018 00:45

[Participate In Selected Reverse Auctions](#)

Steps for participating in Reverse Auction

Postal activity:

1. Click on Rev_Auc Document under Download.
2. Save the downloaded Reverse Auction document.

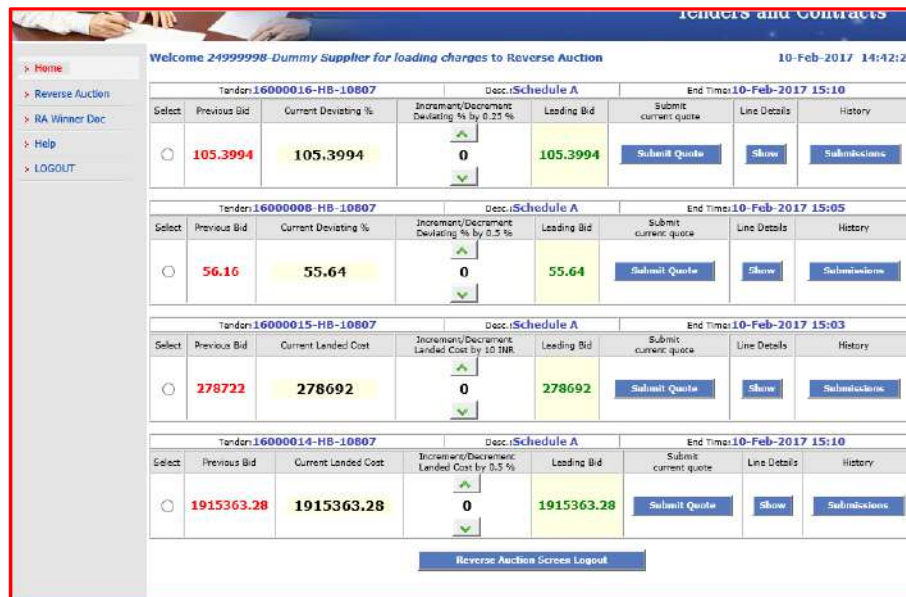
Offline activity:

3. Open Signing utility.
4. Select appropriate signing certificate, browse the saved Reverse Auction document and select Sign Document.
5. Click on sign document.

Postal activity:

6. Click on Signed Rev_Auc document under Upload.
7. Remove the signed document and upload.
8. Click on Participate in selected Reverse Auctions.

On selecting multiple RAs the following screen is displayed.



Welcome 24999998-Dummy Supplier for loading charges to Reverse Auction 10-Feb-2017 14:42:22

Tender:16000016-HB-10807		Desc.:Schedule A		End Time:10-Feb-2017 15:10	
Select	Previous Bid	Current Deviating %	Increment/Decrement Deviating % by 0.25 %	Leading Bid	Submit current quote
<input type="radio"/>	105.3994	105.3994	0	105.3994	Submit Quote
Show Submissions					

Tender:16000008-HB-10807		Desc.:Schedule A		End Time:10-Feb-2017 15:05	
Select	Previous Bid	Current Deviating %	Increment/Decrement Deviating % by 0.5 %	Leading Bid	Submit current quote
<input type="radio"/>	56.16	55.64	0	55.64	Submit Quote
Show Submissions					

Tender:16000015-HB-10807		Desc.:Schedule A		End Time:10-Feb-2017 15:03	
Select	Previous Bid	Current Landed Cost	Increment/Decrement Landed Cost by 10 INR	Leading Bid	Submit current quote
<input type="radio"/>	278722	278692	0	278692	Submit Quote
Show Submissions					

Tender:16000014-HB-10807		Desc.:Schedule A		End Time:10-Feb-2017 15:10	
Select	Previous Bid	Current Landed Cost	Increment/Decrement Landed Cost by 0.5 %	Leading Bid	Submit current quote
<input type="radio"/>	1915363.28	1915363.28	0	1915363.28	Submit Quote
Show Submissions					

[Reverse Auction Screen Logout](#)



The procedure for participating in each of the multiple reverse auctions is same as that of participating in a single reverse auction explained in various sections above.

- **Scrolling Message on Upcoming RA:** If one RA is in progress and another RA is going to start, the eligible bidder will see a scrolling message ‘Upcoming Reverse Auction:Tender no..... start time.....’ on the screen.

HPCL
हिन्दुस्तान पेट्रोलियम कॉर्पोरेशन लिमिटेड
Hindustan Petroleum Corporation Limited
Future full of energy
A Global Fortune 500 Company

Tenders and Contracts

Welcome 24999998- Dummy Supplier for loading charges to Reverse Auction 10-Feb-2017 14:49:57

Select	Previous Bid	Current Landed Cost	Increment/Decrement Landed Cost by 0.5 %	Leading Bid	Submit current quote	Line Details	History
<input type="radio"/>	1915363.28	1915363.28	0	1915363.28	Submit Quote	Show	Submit

Reverse Auction Screen Logout

Reverse Auction currency INR.

If the SUBMIT QUOTE button is not enabled after a few seconds of clicking, please RE-LOGIN to the page.

Yellow color background indicates the due date and time of the respective Reverse Auction is over.

Upcoming Reverse Auctions: Tender: 15000012-HB-10807(TEST TENDER FOR EPROC) Start Time:10/02/2017 14:53

9 Postponement / Cancellation of Reverse Auctions

In case HPCL decides to postpone or Cancel a scheduled Reverse Auction, all eligible bidders will be informed by suitable e-mails well in advance.

In case of RA Cancellation due to RA failure or any other reason, bidders will also be informed by email to witness the price bids on the portal at scheduled date and time. A mail message will be received by eligible bidders towards this.

10 RA extension

- In extreme case of Server outage, network outage or failure of Internet connectivity, (or any other unforeseen conditions) from HPCL’s end, fax/ E-Mail communication shall have to be made immediately, to concerned purchase officer of HPCL. No such request shall be entertained beyond one hour of the RA closing time. To provide equal opportunity, HPCL may decide to extend the Reverse auction at their discretion, but not as the right of the bidder. The vendors participating in Reverse Auction process shall be kept on standby for 1 Hour after RA closing time.



- HPCL shall investigate the above matter and decision for extension of Reverse Auction shall be based on the merit of the issues pointed out and verified by HPCL and same shall be final and binding on the vendor.
- HPCL shall complete the investigation within two working days of receiving complaint from any of the vendor.
- In case of decision to extend Reverse Auction, intimation mail may go out to all vendors within a day of investigation closure. Vendors shall generally be given intimation, a day in advance before extended Reverse Auction is commenced. The Reverse Auction shall commence from the last saved decrement value and shall be open for period of original duration from commencement.

11 Reports:

Bidder can see 'list of Reverse Auctions participated' thru Reports.

By clicking on 'Participated Reverse Auctions' in Reports tab, Bidder can see tender number, tender description, RA start date and End date , Closing Bid value and Bench Mark Price along with their own submitted bids along with date and time.

Participated Reverse Auctions					
TENDER NO.	REVERSE AUCTION FOR	START DATE TIME	END DATE TIME	CLOSING BID VALUE	BENCHMARK PRICE
14000045-HB-12001	Civil Jobs at Sewree Terminal	09-Mar-2015 12:30	09-Mar-2015 13:30	332551.47	369501.6229
		SUBMITTED DATE TIME	YOUR QUOTE		
		09/03/2015 13:21:39.881	332551.47		
		09/03/2015 13:21:21.662	339941.5		
		09/03/2015 13:21:16.896	347331.53		
		09/03/2015 13:17:27.979	354721.56		
		09/03/2015 13:17:18.463	362111.59		
		Price Bid Quote	369501.62		
14000008-HB-11111	SOR tender 1	11-Mar-2015 14:30	11-Mar-2015 15:40	93.2525	100.0025
		SUBMITTED DATE TIME	YOUR QUOTE		
		11/03/2015 15:34:32.563	93.2525		
		11/03/2015 15:33:22.888	93.5025		
		11/03/2015 15:32:52.371	93.7525		
		11/03/2015 15:32:37.558	94.0025		
		11/03/2015 15:32:24.010	94.2525		
		11/03/2015 15:32:16.603	94.5025		
		11/03/2015 15:32:10.181	94.7525		
		11/03/2015 15:31:51.837	95.0025		
		11/03/2015 15:31:36.586	95.2525		
		11/03/2015 15:31:28.711	95.5025		
		11/03/2015 15:31:24.695	95.7525		
		11/03/2015 15:30:48.818	96.0025		
		11/03/2015 15:30:40.115	96.2525		
		11/03/2015 15:30:37.662	96.5025		
		11/03/2015 15:30:34.849	96.7525		
		11/03/2015 15:30:31.161	97.0025		
		11/03/2015 15:30:28.583	97.2525		
		11/03/2015 15:30:23.270	97.5025		



12 Email Messages to Bidders

If eligible bidders will be getting e-mails pertaining to Reverse Auctions from time to time. A list of such e-mails is given below –

- **Email Regarding witnessing of loading factors**

Evaluation has been completed for Tender/Schedules/Lines: 10-02-2016 16:36:25 in the system. Please login to the site <https://etender.hpcl.co.in> and click Witness bid opening tab to witness loading factor if any against above tender. Note: This is system Generated Mail. Pls do not reply to this email.

- **Mail Regarding Reverse Auction date & Time (including Loading factors)**

Reverse Auction has been called for a schedule of above tender. Please login to your account. Go to reverse auction tab. Download RA Document. Sign it with the appropriate certificate and upload it on the same page to proceed for participation in reverse auction.. RA Desc : Schedule A RA Date On: 18-05-2016 16:05:00. Please login to witness your Loading Factors before participating in Reverse Auction on schedule date and time. You may refer the help manual available in portal to understand the RA process.

Please ensure to login on the scheduled date and time to participate in the reverse auction. You may also contact Helpdesk at 022-4114666 between 8.00 AM to 8.00 PM for any kind of support on the RA process.

- **Email regarding Reverse Auction Winner document:**

Reverse Auction has been concluded for a schedule of above Tender. Tender Number: XXXXXXXXX , RA No:356 ,RA Desc: SCHEDULED A ,RA Date:26-MAR-2015:12:00 You are the lowest bidder on the recently concluded RA against subject tender. Please click on RA winner doc tab and submit the digitally signed RA winner document, generated from system as a token of confirmation to the final rate submitted by you. HPCL reserves the right to further negotiate the prices with lowest bidder for reducing the price/cancel the reverse auction process/tender at any time before ordering without assigning any reasons except in cases where tender is required to be cancelled after opening of priced bid and identification of L1 vendor wherein reasons for cancellation are to be conveyed to the L1 vendor.



- **Email Regarding postponement of Reverse Auction**

Reverse Auction for Tender No 15000017-HB-10807 - SOR TENDERS scheduled at 01-May-2015 12:00 is postponed to 01-May-2015 15:00. Please ensure to login on the scheduled date and time at 01-May-2015 15:00 to participate in the reverse auction event. RA slot is not available

- **Email regarding Cancellation of Reverse Auction**

Reverse Auction for Tender No 15000016-HB-10003 - Demo Tenders scheduled at 20-Apr-2015 15:45 is cancelled. Bid opening can be witnessed from 20-Apr-2015 16:00 onwards. RA is cancelled

- **Reverse Auction Extension Mail**

Reverse Auction has been extended for a schedule of above tender scheduled at 22-Apr-2015 14:00 has been extended and new event time is 04-Feb-2016 15:00. We regret the inconvenience caused. Please login to your account in <http://etender.hpcl.co.in> , Click on Reverse Auction tab and participate in Reverse Auction with new decrypted password.

----- *End of document* -----



Technical				
Sl.No.	Description	Attached File	Set Value	Supporting Doc. Req'd
1	Annx-1	Annx-1 SOQ.pdf	-	No
2	Annx-2	Annx-2 Scope of Job.pdf	-	No
3	Annx-3	Annx-3 Special Terms and conditions.pdf	-	No
4	Annx-4	Annx-4 Technical Specifications.pdf	-	No
5	Annx-5	Annx-5 RKPL.pdf	-	No
6	Annx-6	Annx-6 RKPL-IPS-SLD.pdf	-	No
7	Annx-7	Annx-7 Final SLD .pdf	-	No

Solar panel for RKPL SVs

Schedule of Quantity

PR No.- 21000003-HP-11131

Item No	Description	Quantity	Unit
1	Supply 15 kWp solar panel for SV-1	1	EA
2	Supply 15 kWp solar panel for SV-2	1	EA
3	Supply 15 kWp solar panel for SV-3	1	EA
4	Supply 15 kWp solar panel for SV-4	1	EA
5	Supply 15 kWp solar panel for IPS	1	EA
6	Supply 15 kWp solar panel for SV-8	1	EA
7	Supply 15 kWp solar panel for SV-9	1	EA
8	Supply 15 kWp solar panel for SV-10	1	EA
9	Supply 15 kWp solar panel for SV-11	1	EA
10	Installation 15 kWp solar panel for SV-1	1	EA
11	Installation 15 kWp solar panel for SV-2	1	EA
12	Installation 15 kWp solar panel for SV-3	1	EA
13	Installation 15 kWp solar panel for SV-4	1	EA
14	Installation 15 kWp solar panel for IPS	1	EA
15	Installation 15 kWp solar panel for SV-8	1	EA
16	Installation 15 kWp solar panel for SV-9	1	EA
17	Installation 15 kWp solar panel for SV-10	1	EA
18	Installation 15 kWp solar panel for SV-11	1	EA

SCOPE OF JOB

1. General:

- The job involves supply, installation, testing and commissioning of Off-Grid Solar power PV (Photo Voltaic) system of 15 kWp along with charge controllers at all Rewari Kanpur Pipeline (RKPL) Sectionalizing Valve (SV) stations on door delivery basis for which the details of the site address are given below.
- Necessary modifications shall be carried out in existing LT panel for catering to the load through solar power system and same shall be carried out by the vendor at no extra cost, only after getting approval from HPCL.

2. Delivery Address:

Station	Jurisdiction	Village	Tehsil	District	State
SV-01	RKPL-Rewari	Chamroda	Kishangarhbad	Alwar	Rajasthan
SV-02	RKPL-Bharatpur	Mubarikpur	Ramgarh	Alwar	Rajasthan
SV-03	RKPL-Bharatpur	Kutukpur	Nagar	Bharatpur	Rajasthan
SV-04	RKPL-Bharatpur	Sinsini	Deep	Bharatpur	Rajasthan
Intermediate Pugging Station (IPS)	RKPL-Mathura	Sayyadpur Pran	Karhal	Mainpuri	Uttar Pradesh
SV-08	RKPL-Kanpur	Usrai	Saifai	Etawah	Uttar Pradesh
SV-09	RRKPL-Kanpur	Dhakpura	Bharthna	Etawah	Uttar Pradesh
SV-10	RRKPL-Kanpur	Bahlolpur	Divyapur	Auraiyah	Uttar Pradesh
SV-11	RRKPL-Kanpur	Judjemaiyah	Derapur	Kanpur Dehat	Uttar Pradesh

3. Officer In-Charge:

a. SV-1-

Mr Himanshu Meena
Manager- Operations
8226088818
himanshumeena@hpcl.in

SCOPE OF JOB

- b. SV-2, 3 & 4-**
Mr Arvind Kumar Meena
Assistant Manager- Operations
7718001491
arvindkumar.meena2@hpcl.in
- c. IPS-**
Mr Shubham Sharma
Assistant Manager- Operations
9728069063
shubhamsharma@hpcl.in
- d. SV-8, 9, 10 & 11-**
Mr Vikas Anand
Manager-Operations
9978601989
vikasanand@hpcl.in

4. Existing power scheme at SVs/IPS:

1. All SVs/IPS have 415V, 3 Phase, and 50HZ supply from state electricity board (SEB).
2. Battery Banks cater to the load during power failure from SEB.
3. DG set has been supplied to cater the load during power failure condition.

5. Existing Scheme at SVs:

- a. Battery-Bank 1 and Battery-Bank 2 is connected to DC UPS 1 CH1 & DC UPS 1 CH2 respectively for charging banks with Mains and DG supply. The battery bank system voltage is 48 V nominal (24 cells of 2V each). During non-availability of state electricity board power and during night hours, available battery bank feeds DC load (48 Volt load). Battery bank is charged with Mains/DG supply. Loads on UPS1 are Telecom, RTU, PIDS and CO2 flooding system.
- b. Similarly, Battery-Bank 3 and Battery-Bank 4 is connected to DC UPS 2 CH1 & DC UPS 2 CH2 respectively for charging bank with Mains and DG supply. The battery bank system voltage is 48 V nominal (24 cells of 2V cells). During non-availability of state electricity board power and during night hours, available battery bank feeds DC load (48 Volt load). Battery bank is charged with Mains/DG supply. Loads on UPS 2 are CPPSM, MOV.
- c. The Auto Healthy phase selector device selects one healthy phase input supply from state electricity board and connects the same to the existing Bus Bar.
- d. Different feeders are available to feed AC single phase, 50 Hz loads like lighting load, fans, and Hitachi-Hirel chargers etc. from Single phase Bus bar.
- e. Hitachi-Hirel make chargers are used to charge the batteries and feed the DC loads simultaneously when state electricity power is available.

SCOPE OF JOB

- f. When state electricity board power is not available, loads are fed by the Battery Banks.
 - g. SLD of the station is also attached for reference (Attachment V).
- 6. Existing Scheme at IPS:**
- a. Battery-Bank 1 and Battery-Bank 2 is connected to DC UPS 1 CH1 & DC UPS 1 CH2 respectively for charging banks with Mains and DG supply. The battery bank system voltage is 48 V nominal (24 cells of 2V each). During non-availability of state electricity board power and during night hours, available battery bank feeds DC load (48 Volt load). Battery bank is charged with Mains/DG supply. Loads on UPS1 are Telecom, RTU and CPPSM.
 - b. Similarly, Battery-Bank 3 is connected to AC UPS for charging bank with Mains and DG supply. The battery bank system voltage is 288 V nominal (144 cells of 2V cells). During non-availability of state electricity board power and during night hours, available battery bank feeds the load. Battery bank is charged with Mains/DG supply. Loads on UPS 2 are PIDS, Fire Alarm Panel, MOV and Single phase load.
 - c. Hitachi-Hirel make chargers are used to charge the batteries and feed the AC/DC loads simultaneously when state electricity power is available.
 - d. When state electricity board power is not available, loads are fed by the Battery Banks.
 - e. SLD of the station is also attached for reference (Attachment VI).
- 7. Required Scheme:**
- a. Battery-Bank 1 and Battery-Bank 2 shall be charged with Solar Power System with more priority than the SEB mains power.
 - b. Similarly, Battery-Bank 3 and Battery-Bank 4 shall be connected with Solar Power System with more priority than the SEB mains power.

Refer Attachment VII.

8. Existing Site Conditions:

Solar PV (Photo Voltaic) system shall be installed on the rooftop of SV Station while charge controller and inbuilt charger shall be installed in indoor Solar panel room/MCC Room/DG room. The PV system design requirement are as enlisted in Attachment IV of Technical Specifications.

Any excavation required for cable laying or earth connection is also under Vendor's Scope of Job.

9. Existing Battery bank and Charger details:

SCOPE OF JOB

Details of Battery banks available at SV station/IPS:

S.No.	Battery bank	No. of Cells	Type	Charger	Battery Bank (nos.)
1	800 Ah Each at SV 1,2,3,4,8,9,10 & 11 for CPPSM , MOV , PIDS	Make: Exide 24 nos. x 2V. End discharge voltage: 1.85 V 2 Sets connected in Parallel.	VRLA	Make-Hitachi Hirel Automatic Float cum Boost Charger. Input: 240 V AC 50 HZ, Output: 48 V DC, Rating: 7 KW	Total 4 battery banks at each SV. Set of 2 each connected in parallel.
2	800 Ah at IPS for CPPSM	Make: HBL 24 nos. x 2V. End discharge voltage: 1.85 V 3 Sets connected in Parallel.	Lead Acid Tubular Battery	Make-Hitachi Hirel Automatic Float cum Boost Charger Input: 415 V AC 50 HZ. Output: 48 V DC, Rating: 12.5 kW	3 battery banks.
3	800 Ah at IPS for MOV and PIDS	Make: HBL 144 nos. x 2V. End discharge voltage: 1.85 V.	Lead Acid Tubular Battery	Make-Hitachi Hirel Automatic Float cum Boost Charger. Input: 415 V AC, Output: 415V 50Hz, Rating: 12.5 kVA	1 battery bank

10. Third Party Inspection- Party shall get PV modules tested by IEC authorized test centers such as TPL (Tata Projects Ltd), SGS, LLOYD, DNV, RITES, TUV Nord., Bureau Veritas (India) Pvt. Ltd during manufacture and in assembled condition prior to dispatch in accordance with the standard practice/ QAP of the manufacturer and applicable Standards at no cost to HPCL. Copies of test certificates for such inspections in triplicate shall be supplied before dispatch of the equipment to the project site.

11. Submission of following documents, drawings, Datasheets, design and engineering information to HPCL or its authorized representative for approval in 3 copies. Also, any other drawing, document or information, if required for HPCL or Utility approval, shall be submitted at no extra cost.

SCOPE OF JOB

1. Datasheets of all equipment/ components
2. Design calculation for LA, Switchgears, cable, Busbars, Earthing pits selection
3. All Layout drawings
4. Wiring drawings
5. As built SLD for all SVs & IPS
6. PV SYST report
7. Module Mounting structure wind speed calculations approved by Structural engineer.
8. O&M Manuals
9. Test certificates of Solar Modules after Third Party Testing

SPECIAL TERMS AND CONDITIONS

1. The Bidders may visit the locations and note the Electrical load details/specifications and may check for the site condition where solar cells are to be placed, at least once before submitting the bids.
2. It shall be the sole responsibility of the vendor to ensure that they abide by the rules and regulations of the Pipeline Location.
3. The system & components should be of best quality/reputed make (as per International/BIS standards wherever available/applicable & MNRE guidelines).
4. Vendor to use existing Battery Banks for which the details is provided in Attachment –II.
5. Height of roof of building where solar panel is to be installed is 3 meter.
6. All materials required for the job shall be arranged by the contractor meeting the relevant code and specifications. Rate for all the items include supply of all the required materials, labor, lodging & boarding, local transportation, tools & tackles, transportation charges, loading & unloading charges, polishing charges, cleaning etc. as per instructions of HPCL's Officer-In-Charge. No extra charges shall on paid on account of labor transportation, lodging, boarding & food. **Party to note that scope of Supply of HPCL in this job is NIL.**
7. The contractor shall make his own arrangement to transport the required materials outside and inside the working place and shall leave the premises in a neat and tidy condition after the completion of the job to the satisfaction of the HPCL's Officer-In-Charge.
8. The contractor shall arrange for safe keeping of his materials and should provide necessary security arrangements for safe guarding the materials. HPCL shall not be responsible for any claims with regard to this.
9. Party shall make necessary arrangements like cabling / piping etc. for installation & commissioning.
10. The tenderers should study the various tender conditions / documents etc. carefully before submitting their offers.
11. Since the work is to be carried out inside the MCC Room & Battery Room, the party shall carry out the job in such a manner that least disturbance is caused to HPCL's normal operation activity.
12. The workmanship is to be the best available and of a high standard in all aspects of the work.
13. The Materials and items to be provided by the contractor shall be approved by the HPCL's Officer-In-Charge in accordance with any samples which will be submitted for approval by the contractor in accordance with the specifications.
14. HPCL reserves the right to get inspection carried out on any of the supplied items in accordance with applicable Bureau of Indian Standards. The cost of testing if any shall

SPECIAL TERMS AND CONDITIONS

be borne by the Contractor. If the sample items fails to qualify in the desired properties, HPCL reserves the right to get the work done through any other agency at the expense of the contractor.

15. **Completion Period:** Entire work covered under the tender shall be completed within 5 **Months (i.e., 4 months for supply & 1 Month for installation)** from the date of Purchase order. Contractor shall mobilize and commence the work within 14 days from the date of Purchase order. Contractor must note that time is the essence of the contract.
16. **Liquidated Damages Clause:** As per GTC.
17. **Payment:**
 - i) 70% payment shall be released after completion of supply portion. Retention money of 3% shall be kept on hold from this amount if CPBG is not submitted by the party.
 - ii) 30% payment shall be released after completion of installation & commissioning and duly submission of reports/ documents required under documentation clause before release of payment.
18. HPCL reserve the right to add or delete any item of the bill of quantities at later date at its discretion depending on the site requirements. Offer not meeting terms and conditions shall be rejected.
19. HPCL reserve the right to terminate the contract and get the job done by the other party if more than two letters are issued by HPCL regarding unsatisfactory progress of the job.
20. Contractor shall not be entitled to sublet, subcontract or assign the work against order placed without HPCL's consent in writing.
21. **Defect Liability period:** As per GTC & to include Warranty/Guarantee Period as mentioned in Clause 22 of Technical specifications (Attachment IV).
22. The contractor shall keep HPCL indemnified and save HPCL from any and all claims whatsoever inclusive of damage/cost or otherwise arising from injuries or alleged damages to the property. Contractor shall strictly adhere to all safety, security rules and Regulation as applicable in the site. In the event of any damage caused due to non-observance of such rules and regulations, the contractor shall be solely responsible for the same and shall keep HPCL indemnified against all losses & claims.
23. Work Permit on daily basis shall be issued from 0900 hrs to 1700 hrs on all working days. Permit will not be given on Sundays / holidays/Extra hours. However if job demands working on Sundays/Holidays/Extra hours same may be granted under special permission from Location In-Charge only.

TECHNICAL SPECIFICATIONS

DESIGN REQUIREMENTS:

1. The PV (Photo Voltaic) power system design shall be a 15 kWp Off-grid system. Existing battery banks of 800 Ah shall be utilized. Power Control Unit (PCU) shall be provided by the vendor as per design requirement enlisted herein.
2. The Solar Photo Voltaic (PV) system shall be able to feed the DC load with constant voltage output and should have a charge controller to charge the battery bank with Solar/mains as per the requirement. During unavailability of Solar power, Charge controller shall be configured to charge the bank with mains supply also whenever output of PV goes below a certain "PRESET value" (as advised by HPCL).
3. Party shall submit detailed electrical drawing after placement of PO for HPCL Approval within 15 days.
4. System load is critical load and is kept "Powered ON" 24 hrs x 365 days.
5. Existing rooftop area shall be effectively utilized for generating electricity. Vendor is requested to visit the site to measure the same and utilize the area optimally for placing of the PV panels.
6. Design of Solar PV system shall be such so as to utilize solar energy to the maximum possible extent while SEB (Grid) supply shall be used as backup. i.e.,
 - (a) the PV Power Control Unit (PCU) shall operate with priority on Solar for feeding the load and charging the batteries.
 - (b) Stored power from batteries shall be the second priority to feed the load.
 - (c) Grid power shall be the last/least priority to feed the load.
7. The system shall be designed in such a way that when Battery Bank Voltage drops below any set point decided by the user (in order to avoid Deep discharge while solar energy is insufficient / unavailable) then Grid Supply shall be utilized to feed the loads & charge the batteries through existing Battery Chargers .
8. The system shall be designed suitably along with required isolating & protection mechanisms.
9. The PV system shall provide clean regulated power to the load (without voltage fluctuations more than +/-0.5%).
10. **"No – Break"** transfers from renewable energy to battery and battery to grid shall be provided.
11. MPPT (Maximum power point Tracker) solar charge regulators shall be provided with following minimum features:
 - (a) Prevent battery banks from Overcharging and Deep Discharging.
 - (b) Built – in Temperature compensation.
 - (c) Zero drop technology
 - (d) Periodic equalization charging of Battery Bank.

TECHNICAL SPECIFICATIONS

12. MCBs shall be provided at suitable places to isolate power circuits.

13. Following protections shall be provided at DC side:

- (a) Junction Box Metal Oxide Varistor (MOV) & fuses to be provided in JB for surge protection & short circuit protection;
- (b) MPPT;
- (c) Lightning Arrestor;
- (d) Hardware Over voltage protection; and
- (e) Hardware Over current protection.

14. PV MODULES:

PV Solar panels should be of reputed Indian make like TATA BP Solar, Central Electronics Limited (CEL), Topsun Energy Ltd etc. However vendor to intimate HPCL in advance and to take HPCL's approval at the time of bidding. **Make & specifications of PV Solar panels to be installed by the party shall be attached as a part of technical bid.**

The solar panel shall consist of poly crystalline or equivalent or better silicon solar cells of minimum 325 watts connected in suitable series – paralleled configuration to obtain the required voltage and current rating of solar panel. The offer shall indicate the type of the cell employed along with all the electrical and mechanical characteristics. Attempt should be made to utilize panels with maximum power output and efficiency.

It is preferable to get the following items tested from the given agencies:

Sr. No.	Parts & Accessories	IS requirements
1.	Module type	IEC 61215 (Latest Edition)/ IEC 6164614
2.	Module type	IEC 61730 Part I & II & UL1703 for safety qualification testing
3.	Performance PV standards	IEC 61215 (Latest edition) and IEC 61646 (Latest edition) set specific test sequences, conditions and requirements for the design qualification of a PV module

The party must get the photovoltaic modules tested & approved by one of the IEC authorized test centers. Party must provide test Certificates can be from any of the NABL/BIS accredited testing/calibration laboratory. Solar PV module conversion efficiency should not be less than 10% under Special Terms & Conditions. The PV modules shall have no negative tolerance. The design qualification is deemed to represent the PV module's performance capability under prolonged exposure to standard climates (defined in IEC 60721 -2-1). The modules and all the associated components viz. module junction box shall be designed to work in harsh environment and shall have corrosion resistant frames suitable for mounting on Galvanized Iron (GI) structures. Surge protection devices shall be provided, if required. Data sheet of the offered module indicating peak power, current short circuit, current open circuit voltage, frame material, weight, Ingress protection for junction box, certifications etc. shall be submitted with the offer.

TECHNICAL SPECIFICATIONS

Party shall get PV modules tested by IEC authorized test centers such as TPL (Tata Projects Ltd), SGS, LLOYD, DNV, RITES, TUV Nord., Bureau Veritas (India) Pvt. Ltd during manufacture and in assembled condition prior to dispatch in accordance with the standard practice/ QAP of the manufacturer and applicable Standards at no cost to HPCL. Copies of test certificates for such inspections in triplicate shall be supplied before dispatch of the equipment to the project site

15. MODULE MOUNTING STRUCTURE:

Modules shall be mounted on non-corrosive support structures with inclination & bends such as to maximize annual energy output. Support structure design and foundation or fixation mounting arrangements should withstand horizontal minimum wind speed of 120 km/hr. Support/Mounting structures shall be manufactured with steel angles & channels; spray galvanized to IS 1477 part -1 with thickness of 85-90 microns as per IS 5905. All fasteners shall be of Stainless Steel. The foundation for module mounting structures shall be 1:2:4 PCC Construction. The structure shall be designed to ensure maximum load is on the beams and columns so that roof has minimum load. There shall be minimum 500 mm clearance between ground level and bottom edge of Solar PV modules.

16. DC DISTRIBUTION BOARD (DCDB):

The existing DCDB shall be used. MCB / MCCB to be used shall be of reputed make and shall be approved by HPCL.

17. SOLAR POWER CONTROLLER:

The solar power controller shall regulate the charge of the battery i.e., float as well as boost and also act as MPPT charge controller and shall monitor the charging current from the solar array. Power from the battery bank & solar arrays shall be routed through the solar controller. Output: Controlled DC Output for Charging of Batteries in Float/Boost Mode and also CVCC output for supplying DC loads.

The charge controller shall be designed as per IEC 62093, IEC 60068 Part-2 and other applicable standards.

Solar charge controller shall be designed for 3 step charging – Boost, Float & trickle charging. The controller shall be provided with low loss type, high efficiency, and tested components with overall loss of the solar controller not exceeding 10% of the rated load. If more than one solar power controller is incorporated at one site the system should work in parallel.

PROTECTIONS/FEATURES

- (a) Suitable enclosure protection such as IP65 or above
- (b) Protection against overcharging of the battery
- (c) Protection against deep discharging of the battery
- (d) Protection against transient / surge at array input terminal through proper rated MOVs
- (e) MCBs at the array and load terminals
- (f) Protection against Array , battery reverse conditions

TECHNICAL SPECIFICATIONS

- (g) Load short circuit protection through Load MCB
- (h) Control circuit is provided with fuse
- (i) Blocking diode is provided to prevent discharge of battery through solar PV Module
- (j) Built in with cable drop and temperature compensation
- (k) Potential free contact to be provided for:
 - I) Battery Low
 - II) Battery at 1.9 V+/-0.02/Cell
 - III) Battery at 1.8 V+/-0.02/Cell
 - IV) Battery on Discharge

18. MAXIMUM POWER POINT TRACKER (MPPT):

Maximum power point tracker shall be integrated into the solar power controller for maximum energy drawn from the solar PV array. The MPPT should be microprocessor/micro-controller based to minimize power losses. The details of working mechanism of MPPT shall be mentioned.

The efficiency of the charge controller (MPPT based) shall not be less than 94% and shall be suitably designed to meet array capacity.

MPPT must conform to IEC 62093, IEC 60068 as per specifications.

MCCBs and MCBs shall be used for the circuit or device protection in place of fuses however, semiconductor grade fuses shall be used for diodes, SCR etc.

Unless specified otherwise, the solar controller shall be well mounted type with hinged and door with gasket in the front. The cable entry shall be from bottom through glands and access to all equipment shall be from the front only.

The supply system shall be suitable for both positive earthed and negative earthed system as required. The provision of positive earthing shall be through an isolating link. Apart from required control element, the following component/features shall be provided in the controller as per minimum requirements.

- i) A2-Pole MCCB with shunt trip to isolate the solar panel from the solar controller / Battery on receipt of Fire Alarm Signal from Fire Alarm Panel (The signal will be the form of a normally open potential – free contact)
- ii) Ammeters to measure load current and solar array current
- iii) An array Fault indicator to indicate solar array failure
- iv) Voltmeter to indicate system output voltage and Battery Voltage
- v) Charge-discharge Ammeter
- vi) Battery deep Discharge alarm and indication
- vii) Control circuit fail alarm and indication
- viii) Switches mounted on the front to disconnect all alarms and indications
- ix) Current limiting features with active elements
- x) Voltage regulator shall be switching mode type
- xi) Digital Ampere-hour meter