

**5. GUARANTEE OF PERFORMANCE -**

- a) The SPV Water Pumping System shall be guaranteed for their performance of the nominal volume rate of flow and the nominal head at the guaranteed duty point as specified in 7.1 under the "Average Daily Solar Radiation" condition of 7.15 KWh/m<sup>2</sup> on the surface of SPV array (i.e. coplanar with the Photo Voltaic (PV) Modules). The actual duration of pumping of water on a particular day and the quantity of water pumped could vary depending on the solar intensity, location, season, etc.
- b) Solar Photo Voltaic Water Pumping Systems shall be guaranteed by the manufacturer against the defects in material and workmanship under normal use and service for a period of at least 60 months from the date of commissioning.
- c) Sufficient spares for trouble free operation during the Warrantee period should be made available as and when required.

**6. MARKING AND PARAMETERS TO BE DECLARED BY THE MANUFACTURER -**

The motor pump-set and Controller used in SPV Water Pumping Systems shall be securely marked with the following parameters declared by the manufacturer:

**i. Motor Pump-set -**

- a) Manufacturer's name, logo or trade-mark;
- b) Model, size and SI No of pump-set;
- c) Motor Rating (kW /HP);
- d) Total head, m, at the guaranteed duty point;
- e) Capacity (LPD) at guaranteed head;
- f) Operating head range, m;
- g) Maximum Current(A);
- j) Voltage Range (V) and;
- k) Type - AC or DC Pump set; &
- l) Photo Voltaic (PV) Array Rating in Watts peak (W<sub>p</sub>)

**ii. Controller -**

- a) Manufacturer's name, logo or trade-mark;
- b) Model Number;
- c) Serial Number;
- d) Voltage Range;
- e) Power Range in kW for Controller; and
- f) Current rating(A)

**7. OPERATION AND MAINTENANCE MANUAL -**

An Operation and Maintenance Manual in Hindi, should be provided with the solar PV pumping system. The Manual should have information about solar energy, photovoltaic, modules, DC/AC motor pump set, tracking system, mounting structures, electronics and switches. It should also have clear instructions about mounting of PV module, DO's and DONT's and on regular maintenance and Trouble Shooting of the pumping system. Helpline number and Name and address of the Service Centre and contact number of authorized representative to be contacted in case of failure or complaint should also be provided. A warranty card for the modules and the motor pump set should also be provided to the beneficiary.

8. Raw material test certificates (MTC) of all types of raw material used in dual axis manual tracking type MMS as per appropriate IS code should be submitted along with dispatch documents.

**9. TESTS TO BE PERFORMED ON DUAL AXIS MANUAL TRACKING TYPE MMS FOR SOLAR WATER PUMPING SYSTEM -**

1. For ascertaining proper welding of structure part following should be referred -
  - a. Weld wire grade should be of grade **(ER 70 S -6)**
  - b. D.P. Test (Pin Hole / Crack) **(IS822)**
2. For ascertaining hot dip galvanizing of fabricated structure following should be referred -
  - a. Min coating required should be as per IS4759.
  - b. Testing of galvanized material.
    - i. Preece Test (CuSO<sub>4</sub> Dip Test) **(IS2633)**
    - ii. Mass of Zinc **(IS 6745)**
    - iii. Adhesion Test **(IS2629)**

**e-Price Bid-I****e-Price Bid (For supply, installation, Commissioning & Testing of Pump)**

Schedule of Rates for SPV DC- AC Surface/ Submersible Pumps

*(e-bidding as per Specifications & Scope of Work of No. 515/CREDA/SPV-PUMPS/SSY-VI/2021 Dated : 12.05.2021)*Supply, Survey, formulation of proposal, Installation and Commissioning of **Solar Photovoltaic Pumps (all types of MNRE Models)** anywhere in the State of Chhattisgarh.

Sl. No.	Particulars	Rates of Solar Pumping System with Solar Module, Solar Pump, Controller, M.M Structure, L.A, Earthing-02 Nos., Rope wire, Cable, PVC Pipes and other required BOS and with five years warrantee, System insurance , COMC ,Civil work, installation, commissioning and testing Excluding GST ( in multiples of 100)
1.	3000 Wp SPV Modules & 3 HP DC(Surface Pump)	
2.	3000 Wp SPV Modules & 3 HP AC(Surface Pump)	
3.	3000 Wp SPV Modules & 3 HP DC(Submersible Pump)	
4.	3000 Wp SPV Modules & 3 HP AC(Submersible Pump)	
5.	4800 Wp SPV Modules & 5 HP DC (Surface Pump)	
6.	4800 Wp SPV Modules & 5 HP AC (Surface Pump)	
7.	4800 Wp SPV Modules & 5 HP DC(Submersible Pump)	
8.	4800 Wp SPV Modules & 5 HP AC (SubmersiblePump)	

Above rates are FOR anywhere in the State of Chhattisgarh inclusive of roadworthy packing, loading, unloading, all types of incidental expenses, 5 years warrantee, insurance and COM as mentioned in the tender document. Above rates applicable for all types of pump models for each category as per MNRE Specifications 2019-20 and Tender Annexure-IV,V (Page 55-58). **According to GST notification no. 24 /2018-Central Tax(Rate) Dated 31.12.2018 GST Rate will be applicable under composite supply and installation basis. Rate of GST on Supply of Goods (70% of gross consideration treated as supply of Goods) 5% GST and balance portion (30% of gross consideration treated as taxable installation services) 18% GST will be Paid extra as per prevailing rate.** No other cost will be claimed other than above quotes price & the applicable GST.

**Note: In this regard if there is any change in the composition ratio of goods and services by any Authority/ Courts, same shall be applicable.**

**Signature of the Authorized Signatory** : .....

Seal of Company : .....

Date : .....

**e-Price Bid-II**

(To be filled by only those bidders who are MNRE approved manufacturer of universal solar pump controller)

**e-Price Bid (For supply, installation, Commissioning & Testing of Controller & Universal Solar Pump Controller )**

Schedule of Rates for Controller & Universal Solar Pump Controller for SPV DC- AC Surface/  
Submersible Pumps

(e-bidding as per Specifications & Scope of Work of No. 515/CREDA/SPV-PUMPS/SSY-VI/2021 Dated :  
12.05.2021)

Supply, Installation and Commissioning of Controller & Universal Solar Pump Controller for **Solar Photovoltaic Pumps (all types of MNRE Models)** anywhere in the State of Chhattisgarh.

Sl. No.	Particulars	Rates of Supply of Controller for Solar Pumping System Excluding GST ( in multiples of 100)	Rates of Supply of Universal Solar Pump Controller for Solar Pumping System Excluding GST (in multiples of 100)
1.	3000 Wp SPV Modules & 3 HP DC(Surface Pump)		
2.	3000 Wp SPV Modules & 3 HP AC(Surface Pump)		
3.	3000 Wp SPV Modules & 3 HP DC(Submersible Pump)		
4.	3000 Wp SPV Modules & 3 HP AC(Submersible Pump)		
5.	4800 Wp SPV Modules & 5 HP DC (Surface Pump)		
6.	4800 Wp SPV Modules & 5 HP AC (Surface Pump)		
7.	4800 Wp SPV Modules & 5 HP DC(Submersible Pump)		
8.	4800 Wp SPV Modules & 5 HP AC (Submersible Pump)		

Above rates are FOR anywhere in the State of Chhattisgarh inclusive of roadworthy packing, loading, unloading, all types of incidental expenses, 5 years warrantee, insurance and COM as mentioned in the tender document. Above rates applicable for all types of controller for solar pumping system each category as per MNRE Specifications 2019-20 and Tender Annexure- IV, V (Page 55-58). **According to GST notification no. 24 /2018-Central Tax (Rate) Dated 31.12.2018 GST Rate will be applicable under composite supply and installation basis. Rate of GST on Supply of Goods (70% of gross consideration treated as supply of Goods) 5% GST and balance portion (30% of gross consideration treated as taxable installation services) 18% GST will be Paid extra as per prevailing rate.** No other cost will be claimed other than above quotes price & the applicable GST.

**Note: In this regard if there is any change in the composition ratio of goods and services by any Authority/ Courts, same shall be applicable.**

**Signature of the Authorized Signatory** : .....

Seal of Company : .....

Date : .....

**SCHEDULE - I****PART 'A': GENERAL INFORMATION**

(Strike off whichever is not applicable. Separate sheets should be used, wherever necessary)

- 01.** Name & Address of the Bidder :
- 02.** Name & Address of the firm/Company etc. :
- a) Registered office :
- b) Factory/works address :
- c) Fax Nos. :
- d) Telephone / Mobile Nos. :
- e) Email id :
- 03.** Confirm whether tenderer is Manufacturer : Yes/No
- 04.** Only manufacturer to give following particulars
- a) Address of factory :
- b) Year of starting manufacture :
- c) Whether same/similar materials :  
Manufactured earlier  
(if yes, give reference)
- d) Yearly/monthly production capacity :
- e) Maximum yearly production :  
Achieved so far
- 05.** Whether the firm is SSI Unit of : Yes/No  
Chhattisgarh State:
- a) If yes, write registration No. :
- b) Whether documentary evidence :  
Regarding registration enclosed
- c) Items for registration :
- d) Period of registration :
- d) Whether latest copy Competency/ : Yes/No  
Certificate furnished
- 06.** Whether the firm is 100% owned by
- a) State Government : Yes/No
- b) Central Government : Yes/No
- If yes, Notification/certificate issued from : Yes/No  
The competent authority to this effect is  
Enclosed
- 07.** a) Whether the bidder is old participant : Yes/No  
with CREDA
- b) If yes, whether documentary : Yes/No  
Evidence is enclosed.
- 08.** Any other information that bidder may like : If yes, give details  
to give in order to highlight his bid

PLACE :

**SIGNATURE OF TENDERER**

NAME IN FULL

DATE:

DESIGNATION/STATUS

FIRM/COMPANY SEAL

**SCHEDULE - I****PART 'B' : COMMERCIAL INFORMATION**

(Strike off, whichever is not applicable. Separate sheets should be used. Wherever necessary)

01. i) Earnest Money Details : Bank draft/Bankers cheque payable to "CREDA", Raipur
- ii) Amount of E.M.D. & full details : ` .....
- iii) If exempted, state whether the bidder is / Fully Owned State/Central Govt. Unit : SSI Unit of C.G.
- iv) Reference of documentary evidence regarding exemption enclosed. : Yes/No
02. Whether the offer is valid for 6 months from the date of opening of commercial/technical bid. : Yes/No
03. Rate of Sales Tax on the date of bid (exclusive in the rate quoted) :
04. **DISCOUNT:**
- a) Whether any rebate/discount is offered. : Yes/No
- b) If yes, whether the rebate is unconditional/conditional Rate/amount of rebate/discount : Yes/No
- c) If conditional State condition : Yes/No
05. **PAYMENT TERMS:**
- Whether CREDA's terms of payment is acceptable to tenderer : Yes/No
06. **COMPLETION PERIOD OF WORK:**
- Whether tenderer is agreeing for completion period of work as Specified in the tender : Yes/No
07. **PENALTY CLAUSE:**
- Whether agreeable to CREDA's Penalty Clause : Yes/No
08. Whether agreeable to CREDA's clause of warrantee period : Yes/No
09. **SECURITY DEPOSIT:**
- Whether Security Deposit clause is understood : Yes/No
10. Indicate State, Central Sales Tax Registration Number State : Yes/No  
Central:
- (Please Note that in case of non-registration with Commercial Tax, Department Purchase Tax as admissible shall be deducted by the Purchaser from the Bills of the supplier)
11. Please mention whether rates offered are applicable for part quantities. : Yes/No

PLACE:

**SIGNATURE OF TENDERER**

DATE:

NAME IN FULL

DESIGNATION/STATUS

FIRM/COMPANY SEAL

**SCHEDULE - II****PART 'C': TECHNICAL INFORMATION**

(Strike off whichever is not applicable. Separate sheets should be used. Wherever necessary)

01. Whether material offered is exactly as per technical specification : Yes/No
02. Whether the copies of completion certificate received during last 3 years from other State Nodal Agency or from other Organization for Solar pumpingsystems (if yes, give details) enclosed. : Yes/No
03. Whether pamphlets/technical details literatures along with drawing etc. furnished with the offer : Yes/No  
(if yes, give details)
04. Whether the tenderer agrees to furnish material test certificates in respect of chemical composition and physical properties from Govt./ Govt. approved lab with each batch of supplies. : Yes/No
05. Whether the tenderer has furnished details of manufacturing equipments and short history of plant : Yes/No  
(if yes, give details)
06. Whether details of manufacturing process furnished with offer. : Yes/No  
(if yes, give details)
07. a) Whether all testing facilities are available. : Yes/No  
If so, give details and in case of non-availability of facilities indicate approved lab available in surrounding areas where tests are proposed to be conducted.

PLACE

**SIGNATURE OF TENDERER**

DATE

NAME IN FULL

DESIGNATION/STATUS

FIRM/COMPANY

SEAL

**SCHEDULE - III**  
**TECHNICAL DEVIATIONS**

From,  
Tenderer Name & Address -

To,  
The CE,  
CREDA, HO,  
Raipur

**Sub - Technical Deviations.**

**Dear Sir,**

The technical deviations & variations to the specifications stipulated in the tender, for the item quoted are as under -

<b>Sl.No.</b>	<b>Condition</b>	<b>Clause No. of Tender document</b>	<b>Page No. of Tender document</b>	<b>Statement of deviations and variations</b>
-----				

2. Except aforesaid deviations, the entire order, if placed, on us shall be executed in accordance with your specifications and other conditions. Variation/deviations etc. if found, elsewhere in our offer should not be given any considerations while finalizing the tender.

PLACE

**SIGNATURE OF TENDERER**

DATE

NAME IN FULL

DESIGNATION/STATUS

FIRM/COMPANY SEAL

**NOTE-**Continuation sheet of like size & format may be used as per bidder's requirements and shall be annexed to this schedule.



**SCHEDULE - IV**

**PAST EXPERIENCE**

**From :**

Bidder's Name & Address -

To,

**The CE,**

**CREDA, HO,**

**Raipur**

**Sub - Performance/Past Experience.**

**Dear Sir,**

We furnish herewith the record of our performance and experience as follows -

---

<b>Sl.No.</b>	<b>Purchaser's Name &amp; Address</b>	<b>Order No. Date</b>	<b>Ordered Quantity</b>	<b>Qty. supplied (Nos.)</b>	<b>Value of Order</b>
---------------	---	---------------------------	-----------------------------	---------------------------------	---------------------------

---

---

PLACE

**SIGNATURE OF TENDERER**

DATE

NAME IN FULL

DESIGNATION/STATUS

FIRM/COMPANY SEAL

**NOTE-**Photocopy of the completion certificate received from other State Agencies/Govt. Undertakings etc. should be enclosed.

**STANDARDS FOR SOLAR POWERED IRRIGATION SYSTEMS**

Component	Standard	Description
1. PV Module- Design	IEC 61215-1:2016	Terrestrial Photovoltaic (PV)modules- Design qualification and type approval- Part 1 : Test requirements
	IEC 61215-1-1:2016	Terrestrial Photovoltaic (PV) modules- Design qualification and type approval- Part 1-1 : Special requirements for testing of crystalline silicon photovoltaic (PV) modules
	IEC 61215-1-2:2016	Terrestrial Photovoltaic (PV) modules- Design qualification and type approval- Part 2: Test procedures
2. Module Testing	IEC 61701: 2011	Salt mist corrosion testing of photovoltaic (PV) modules, wherever applicable
3. PV Module Safety	IEC 61730-1:2016	Photovoltaic (PV) module safety qualification- Part 1: Requirements for construction
	IEC 61730-2:2016	Photovoltaic (PV) module safety qualification- Part 1: Requirements for testing
	UL 1703/ UL 61730	PV module safety standards
4. Junction Box/ Fuses/Cut-Offs	IEC 62790: 2014	Junction boxes for Photovoltaic modules – Safety requirements and tests
	UL 2579	UL 2579: Low Voltage Fuses- Fuses for Photovoltaic systems, wherever required
5. Connectors	UL 4248-18	Fuse Holders- Part 18: Photovoltaic Systems
	IEC 62852: 2014	Connectors for DC-application in photovoltaic Systems- Safety requirement test
6. Controllers	UL 6703	Connectors for use in Photovoltaic Systems
	IEC 61683:1999	Photovoltaic Systems- Power Conditions-Procedure for measuring efficiency
	IEC 60068-2-1: 2007	Environmental testing- Part 2-1: Tests- Test A : Cold
	IEC 60068-2-2: 2007	Environmental testing- Part 2-1: Tests- Test B : Dry heat
	IEC 60068-2-14: 2009	Environmental testing- Part 2-14, Test- Test-N: Change of temperature
	IEC 60068-2-30: 2005	Environmental testing-Part 2:30 Tests -Db: Damp heat, cyclic (12 h+ 12 h cycle)
7. Wires, Cable and Cords	UL 1581	Reference Standard for Electrical Wire, Cables and Flexible Cords
	UL 4703	Photovoltaic Wire

**Note :**

- All pump systems mentioned under this tender should qualify the bench mark performance specified at specification for Solar Photo Voltaic Water Pumping Systems (Total water and Liter/Watt peak/Day requirement).
- Submitted Test Reports / Acknowledgement should also include above standards.

## Detailed Specifications of BOS

Sl.No.	Components	Specification
1	Surface/Submersible cables	for 3HP 2.5/4 sq.mm., for 5HP 4 sq.mm. 3 core flat ISI mark copper cable. Sine wave filter should be used as and when required.
2	Cable for Panel	Wiring with MC4 connector 6/4 sq.mm. copper flexible universal DC cable with MC4 connector.
3	HDPE pipe for Submersible	Pump set- ISI 100% virgin with minimum PE100, DN63, PN8 as per IS 4984 of 1995 for 3HP and PN10 for 5HP Pump set.
4	Suction and delivery pipe for surface pump	IS 15265 PVC pipes hoses for suction line for agriculture pumps.
5	Rope wire/ Garware safety Rope	Stainless steel/GI/Nylon 8mm for 3HP, 10mm for 5HP rope wire standard make. Garware/standard make safety rope of suitable size can also be used.
6	Earthing Kit-1 and lighting arrestor	Chemical earthing as per IS 3043/IEC 60364-5-54/62561-2 standard make. LA 14 ft. GI pipe with 30mm GI strip or 10 mm GI wire.
7	Earthing Kit-2	Chemical earthing with tested compound IEC 6235-3 of standard make.
8	SS theft proof Nut Bolt	SS304 anti theft Nut bolt with washer.
9	MS and SS Nut bolt and washer	MS with SS polish nut bolt and washer for main pole and other are SS nut bolt.
10	Conduit pipe/ black drip pipe	2mm thick PVC conduit pipe ISI make or black drip pipe for covering panel wiring.
11	Cable Tie	UV protected cable tie.
12	Foot Valve, Coupler	ISI/standard make PVC foot valve and standard make clamp.
13	Bend and Union	ISI B Class
14	Clamp, Bore cap	Bore cap & clamp good quality and standard make.
15	Instruction manual	DO & Don'ts, O&M instruction after Installation with SI, DO and CREDA toll free number etc.
16	Sticker	As per CREDA design

**Note:** Selection of Pump should be as per bore testing and for maximum discharge and pump also support minor irrigation system minimum drip irrigation system positively.

**DRAFT AGREEMENT**

CONTRACT AGREEMENT BETWEEN Chief Engineer Chhattisgarh State Renewable Energy Development Agency (CREDA) Raipur AND M/s..... Represented by .....THIS CONTRACT AGREEMENT against Tender No. 515/CREDA/SPV-PUMPS/SSY-VI/2021 Dated: 12.05.2021(also referred to as "Service Contract") is made on the .....day of ..... 2021.

**BETWEEN**

- (1) Chief Engineer Chhattisgarh State Renewable Energy Development Agency (CREDA) Raipur a society incorporated under the laws Society Registration Act 1973 , (1973 , Sr. No. 44 ) (with amendment from time to time) and having its Registered Office at VIP Road Near Energy Education Park, Village- Fundhar, Raipur and (hereinafter called "The Employer" and also referred to as "CREDA" )

**And**

- (2) .....Represented by .....a company incorporated under the laws of Companies Act 1956/2013/ Partnership firm/ Proprietorship firm/Consortium (as applicable, with amendment from time to time ) and having its Principal place of business at.....and Registered Office at.....hereinafter called "The Contractor" and also referred to as " ....."

Whereas the contractor has offered to enter into contract with the said CREDA for the Supply of Solar Irrigation Pumps and for installation, commissioning and comprehensive operation & maintenance of Solar Pumps with 5 Year Warranty for the capacities of 3Hp to 5Hp.

Wide Tender No. 515/CREDA/SPV-PUMPS/SSY-VI/2021 Dated: 12.05.2021 on the terms and conditions herein contained and the rates approved by the CREDA (Letter No. .... dated ..... annexed here to) have been duly accepted and where as the necessary security deposit shall be furnished in accordance with the provisions of the tender document and whereas no interest will be claimed on the security deposits.

Now these presents witness and it is hereby agreed and declared by and between parties to these presents as follows-

- 1) The Contractor shall, during the period of this contract, that is to say from ..... to ..... or completion thereof, until this Contract shall be determined by such notice as is hereinafter mentioned, safely carryout, by means of labours employed at his own expenses and by means of tools, implements and equipment etc. to be supplied by him to his labour at his own expenses, for installation of "Solar Pumps" as described in tender documents. (annexed to the agreement).
- 2) The NIT (Notice Inviting Tender), Corrigendum to NIT, Notices, Bid documents (Qualifying, Technical and Financial), approved rates annexed hereto and such other additional particulars, undertaking, instructions, general conditions of contract, Scope of work, Technical specifications of Solar Pumping Systems and Annexures therein, engineering documents, detailed specifications of BOS & drawings, so far they relate to the Tender No.515/CREDA/SPV-PUMPS/SSY-VI/2021 Dated: 12.05.2021as may be found requisite to be given during execution of the work shall be deemed and taken to be an integral part of the contract and shall also be deemed to be included in the expression "The Agreement or "The Contract "wherever herein used.
- 3) The contractor shall also supply the requisite number of workmen with means & materials as well as tools, appliances, machines, implements, vehicles for transportation, cartage etc. required for the proper execution of work within the time prescribed in the work orders and /or as per the tender conditions.