NEW AND RENEWABLE ENERGY DEVELOPMENT CORPORATION OF ANDHRA PRADESH LIMITED (NREDCAP)
(A State Government Company)

NREDCAP
Clean Energy for Sustainability

Regd.Office:# 12-464/5/1, River Oaks Apartment, CSR KalyanaMandapam Road, Tadepalli, Guntur District, Pin : 522 501.Email: info@nredcap.in, bg@nredcap.in

Ref: NREDCAP/SE/Off-Grid/RC Rates/01/2021-22 Date: 07.04.2021

EXPRESSION OF INTEREST

Expression of Interest (EOI) from empanelled suppliers of NREDCAP for the year 2020-21 is invited for finalization of rate contract prices for supply & installation of Solar Lantern, LED based Solar Street Lighting Systems, Solar Pathway Lighting System, Solar Blinker, Solar 360^{o} PTZ Camera and Solar Water Pumping Systems under Solar Off-Grid Programme in the State of Andhra Pradesh.

EOI is invited for the following solar gadgets with detailed Technical Specifications. The systems shall be supplied and installed on Turnkey basis with five years warranty anywhere in Andhra Pradesh State.

A. 2W LED based Solar Lantern
B. 18W LED based Solar Street Lighting System
C. 36W LED (2 Nos X 18W) based Solar Street Lighting System
D. 60WLED based Solar Street Lighting System
E. 120W LED (2 Nos X 60W) based Solar Street Lighting System
F. 160W LED (4 Nos X 40W) based Solar High Mast Lighting System
G. 9W LED based Solar Pathway Lighting System
H. 15W LED based Solar Blinker
I. Sim based Solar 360^{o} PTZ Camera
J. Solar Water Pumping Systems (1 to 10 HP).

The components involved in the above Solar Gadgets such as SPV Module, W-LED Luminaires, Lithium Ferro Phosphate (LiFePO4) Battery Banks shall have IEC/BIS test certification from MNRE / MNRE authorized test centers. The test reports of the Solar Pumpset in the name of manufacturer / authorized supplier shall be produced. The other technical parameters shall be as per MNRE specifications. The suppliers shall have 3 years experience in installation of solar off-grid systems (Copies of the work completion reports to be enclosed) and minimum cumulative turnover of Rs. 1.00 Crore during the last 3 financial years in Off-Grid Solar Gadgets (Enclose copy of the certificate issued by Charted Accountant). The suppliers

have not been black listed at any time by NREDCAP as well as any of the Govt. Nodal Agencies in the country.

The District Managers of NREDCAP will generate demand with the help of Registered / Renewed suppliers / manufacturers under Solar Off-Grid Programme and submit indents to Head Office by recommending the supplier for allotment of the works. The suppliers shall demonstrate the solar gadgets for which they are submitting their financial offer at NREDCAP Head Office, Tadepalli, Guntur District on 22.04.2021 (except Solar Pumpsets).

The interested applicants fulfilling the eligibility criteria shall submit their sealed financial quotations in the formats enclosed **on or before 22.04.2021** along with an **Earnest Money Deposit of Rs. 50,000/- (Rupees Fifty thousand only)** in the form of DD/BG/RTGS from any Nationalized Bank drawn in favour of NREDCAP, which is refundable after finalization of the rate contract system.

Sd/-
VC & Managing Director

TERMS AND CONDITIONS

1. The Specifications of the proposed LED based Solar Lantern, LED based Solar Street Lighting Systems, Solar Pathway Lighting System, Solar Blinker, Solar 360º PTZ Camera and Solar Water Pumping Systems are mentioned in the enclosed **Annexures - 'A to J'.**
2. The rates quoted in the financial offer (Annexures - A1 to J1) shall inclusive of all taxes as per GST Act.
3. The rates quoted in the financial offer (Annexures - A1 to J1) shall inclusive of Installation and transportation charges.
4. The transportation charges are inclusive of the rate contract price for supply to anywhere in Andhra Pradesh.
5. The filled in document together with all enclosures shall be submitted in a sealed cover super scribing **"Financial offer to fix the Rate Contract Price For Solar Lantern, LED based Solar Street Lighting Systems, Solar Pathway Lighting System, Solar Blinker, Sim based Solar 360º PTZ Camera and Solar Water Pumping Systems under Solar Off-Grid Applications".**
6. Good quality components should be supplied. In case if it is found that materials are not as per MNRE Specifications, such components are to be replaced at free of cost.
7. All the Systems including Battery should be under guaranteed for a period of **Five years** from the date of commissioning against all defects.
8. The empanelled suppliers shall generate demand and submit the specific indents along with payments to Head Office through our District Manager so as to award the works.
9. The price quoted in the financial offer is exclusive of NREDCAP Service charges.
10. The Rate Contract Price finalized is valid up to 31.03.2022 and it may extend further on specific approval of the competent authority.
11. The VC & Managing Director may relax any of the conditions for valid reasons and the decision of VC & Managing Director is final and binding.

Sd/-
VC & Managing Director

Annexure - A

TECHNICAL SPECIFICAIONS OF 2W LED BASED SOLAR LANTERN

S.No	Name of the Component	Technical Specifications
1	SPV Module	5.0 Wp under STC poly crystalline silicon module with IEC/BIS / MNRE approval.
2	Battery Bank	3X3.2V, 1450mAh Capacity Rechargeable Lithium-Ferro Phosphate (LiFePO4) Battery with IEC/BIS test certification from MNRE / MNRE authorized test centers.
3	LED Luminaire	2 Watt W-LED luminaire, dispersed beam, soothing to eyes with the use of proper optics and diffuser.
4	Light output	The lamp should have two levels of light (operation at 100% power and 60% power) to take care of the different lighting needs, as per the user requirements.
5	Accessories	Suitable AC charger
6	Cable	20 feet length
7	Duty Cycle	4 hours a day (at full brightness level), under average daily insulation of 5.5 KWh/Sq.m on a horizontal surface.
8	Autonomy	3 days or 6 operating hours per permissible discharge.
9	Electronics	Overall total efficiency of the Electronics should be minimum 85%
10	Warranty	i) The Solar Lantern (including the battery) will be warranted for a period of five years from the date of supply. ii) The PV Module(s) will be warranted for a minimum period of 25 years from the date of supply.

Date: **Signature of the Supplier / Manufacturer with seal**

Annexure-A1

FINANCIAL OFFER

FINANCIAL OFFER FOR SUPPLYOF 2W LED BASED SOLAR LANTERN

S.No.	Name of the Item	Unit Rate (Rs)
01	Supply of 2W LED based Solar Lantern with the following components as per specifications mentioned in Annexure-A including Transportation charges on FOR destination basis in the State of Andhra Pradesh. i) 5.00 Wp SPV Module ii) 2W LED based luminaire iii) 3X3.2V, 1450mAh capacity rechargeable Lithium-Ferro Phosphate (LiFePO4)Battery iv) Cable: 20 feet length v) AC Charger vi) Other Electrical & Electronic items **Warranty:** i) The Solar Lantern (including the battery) will be warranted for a period of five years from the date of supply. ii) The PV Module(s) will be warranted for a minimum period of 25 years from the date of supply.	
02	GST @5% on item no: 01	
03	Total (01+02) (In words)	

Date: **Signature of the Supplier / Manufacturer with seal**

Annexure - B

TECHNICAL SPECIFICAIONS OF 18W CAPACITY LED BASED SOLAR STREET LIGHTING SYSTEM

S.No	Name of the Component	Technical Specifications
1	SPV Module	12V, 100Wp capacity poly crystalline module with IEC/BIS test certification from MNRE / MNRE authorized test centers along with suitable Solar PV module support Structure.
2	Battery Bank	12.8V, 24Ah capacity Lithium Ferro Phosphate (LiFePO4) Battery with IEC/BIS test certification from MNRE / MNRE authorized test centers.
3	LED Luminaire	18W capacity LED based Solar luminary with inbuilt MPPT charge controller to operate dusk to dawn. The Luminaire must use high efficacy W-LED with minimum 135 lumens per watt and UV free.
4	Light output	Multiple light levels The lamp should have two levels of light to take care of different lighting needs during the night.
5	Mounting of light	Pole mounted, minimum 5.0 meters above the ground level
6	GI Pole	3 inch dia, 6 meters length and 3 mm thick GI Pole
7	Accessories	As per requirement
8	Civil Foundation	The foundation size is 0.45 m X 0.45 m X 0.90 m. The Foundation shall be RCC pile foundation in CC(1:2:4).
9	Duty Cycle	Dust to Dawn 4 hours full light, rest of the time at lower level, with motion sensor. i) In case any movement is there, it senses it and glows to full level. ii) Then it comes back to lower level after sometime, automatically.
10	Autonomy	3 days or 36 operating hours per permissible discharge.
11	Electronics	Overall total efficiency of the Electronics should be minimum 85%
12	Warranty	i) The Street Lighting System (including the battery) will be warranted for a period of five years from the date of installation. ii) The PV Module(s) will be warranted for a minimum period of 25 years from the date of installation.

Date: **Signature of the Supplier / Manufacturer with seal**

Annexure-B1

FINANCIAL OFFER

FINANCIAL OFFER FOR SUPPLY& INSTALLATION OF 18 W LED BASED SOLAR STREET LIGHTING SYSTEM ON TURNKEY BASIS

S.No.	Name of the Item	Unit Rate (Rs)	
		Non-Remote Areas	Remote Areas
01	Design, Supply, Installation, Testing and Commissioning of 18W LED based Solar Street Lighting System with the following components as per specifications mentioned in Annexure-B including installation and transportation charges on Turnkey basis i) 100Wp SPV Module ii) 18W LED based luminaire iii) 12.8V, 24 Ah Lithium Ferro Phosphate (LiFePO4) Battery Bank iv) 6mtrs length GI Pole v) Civil foundation vi) Other Electrical & Electronic items **Warranty:** i) The Street Lighting System (including the battery) will be warranted for a period of five years from the date of installation. ii) The PV Module(s) will be warranted for a minimum period of 25 years from the date of installation.		
02	GST @5% on 70% of item no: 01		
03	GST @18% on 30% of item no: 01		
04	Total – (01+02+03) (In words)		

Date: **Signature of the Supplier / Manufacturer with seal**

Annexure - C

TECHNICAL SPECIFICAIONS OF 36W (2 Nos X 18W) CAPACITY LED BASED SOLAR STREET LIGHTING SYSTEM

S.No	Name of the Component	Technical Specifications
1	SPV Module	2 Nos X 12V, 100Wp capacity poly crystalline module with IEC/BIS test certification from MNRE / MNRE authorized test centers along with suitable Solar PV module support Structure.
2	Battery Bank	2 Nos X 12.8V, 24Ah capacity Lithium Ferro Phosphate (LiFePO4) Battery with IEC/BIS test certification from MNRE / MNRE authorized test centers.
3	LED Luminaire	2 Nos X 18W capacity LED based Solar luminary with inbuilt MPPT charge controller to operate dusk to dawn. The Luminaire must use high efficacy W-LED with minimum 135 lumens per watt and UV free.
4	Light output	Multiple light levels The lamp should have two levels of light to take care of different lighting needs during the night.
5	Mounting of light	Pole mounted, minimum 5.0 meters above the ground level
6	GI Pole	3 inch dia, 6 meters length and 3 mm thick GI Pole
7	Accessories	As per requirement
8	Civil Foundation	The foundation size is 0.45 m X 0.45 m X 0.90 m. The Foundation shall be RCC pile foundation in CC(1:2:4).
9	Duty Cycle	Dust to Dawn 4 hours full light, rest of the time at lower level, with motion sensor. i) In case any movement is there, it senses it and glows to full level. ii) Then it comes back to lower level after sometime, automatically.
10	Autonomy	3 days or 36 operating hours per permissible discharge.
11	Electronics	Overall total efficiency of the Electronics should be minimum 85%
12	Warranty	i) The Street Lighting System (including the battery) will be warranted for a period of five years from the date of installation. ii) The PV Module(s) will be warranted for a minimum period of 25 years from the date of installation.

Date : **Signature of the Supplier / Manufacturer with seal**

Annexure-C1

FINANCIAL OFFER

FINANCIAL OFFER FOR SUPPLY & INSTALLATION OF 36 W (2 Nos x 18W) LED BASED SOLAR STREET LIGHTING SYSTEM ON TURNKEY BASIS

S.No.	Name of the Item	Unit Rate (Rs)	
		Non-Remote Areas	Remote Areas
01	Design, Supply, Installation, Testing and Commissioning of 36W (2 Nos X 18W) LED based Solar Street Lighting System with the following components as per specifications mentioned in Annexure-C including installation and transportation charges on Turnkey basis i) 2 Nos X 100Wp SPV Module ii) 2 Nos X 18W LED based luminaire iii) 2 Nos X 12.8V, 24 Ah Lithium Ferro Phosphate (LiFePO4) Battery Bank iv) 6mtrs length GI Pole v) Civil foundation vi) Other Electrical & Electronic items **Warranty:** i) The Street Lighting System (including the battery) will be warranted for a period of five years from the date of installation. ii) The PV Module(s) will be warranted for a minimum period of 25 years from the date of installation.		
02	GST @5% on 70% of item no: 01		
03	GST @18% on 30% of item no: 01		
04	Total – (01+02+03) (In words)		

Date : **Signature of the Supplier / Manufacturer with seal**

Annexure - D

TECHNICAL SPECIFICAIONS OF 60W CAPACITY LED BASED SOLAR STREET LIGHTING SYSTEM

S.No	Name of the Component	Technical Specifications
1	SPV Module	2 Nos X 12V, 100Wp capacity 'A' Grade Mono crystalline module with IEC/BIS test certification from MNRE / MNRE authorized test centers along with suitable Solar PV module support Structure (Powder coated).
2	Battery Bank	12.8V, 60 Ah capacity Lithium Ferro Phosphate (LiFePO4) Battery with IEC/BIS test certification from MNRE / MNRE authorized test centers separately mounted in battery box. (Series and parallel combination of 48 Nos of 3.2V, 5000 mAh (or) 40 Nos of 3.2V, 6000 mAh rechargeable cells).
3	Battery Box	250X250X200 mm of 2 mm thick battery box (powder coated) with reinforcement as required to house the above battery along with fixing arrangement to GI Pole.
4	LED Luminaire	60W capacity LED based Solar luminary with inbuilt MPPT charge controller to operate dusk to dawn and with 2 core, 2.5 Sq mm copper cable of required length. The Luminaire must use high efficacy W-LED with minimum 135 lumens per watt and UV free.
5	Light output	Multiple light levels The lamp should have two levels of light to take care of different lighting needs during the night.
6	Mounting of light	Pole mounted, 9 meters above the ground level
7	GI Octagonal Pole	9 meters of length, 3 mm thick (111mm dia x 3 mtrs + 90 mm dia x 3 mtrs + 76 mm dia x 3 mtrs with minimum Galvanizing of 85 microns on hot dip Galvanizing process) along with suitable Luminary arm to fix luminary.
8	J Bolts & Base Plate	25 mm dia X 600 mm length GI J bolts along with base plate for making foundation to the GI Octagonal pole.
9	Accessories	i) Hard ware such as GI Nut & Bolts and SS Nut & Bolts for fixing Solar PV module and Battery box and Luminary arms as required. ii) 2.5 Sq sq.mm copper lugs (Ring type).

10	Civil Foundation	The Foundation shall be RCC pile foundation in CC(1:2:4). The soil stratum at work location is mostly hard rock covered with ordinary gravel and mixture of soft rock at varying depths. The foundation shall be cast by drilling 300 mm dia bore hole of minimum depth of 1.5 m below the OGL, laying of RCC (1:2:4) with 6 No's 10 mm dia main reinforcement and 8 mm dia stirrups at 250 mm c/c after inserting the G.I J bolts in position with the help of base plate.
11	Duty Cycle	Dust to Dawn 4 hours full light, rest of the time at lower level, with motion sensor. i) In case any movement is there, it senses it and glows to full level. ii) Then it comes back to lower level after sometime, automatically.
12	Autonomy	3 days or 36 operating hours per permissible discharge.
13	Electronics	Overall total efficiency of the Electronics should be minimum 85%
14	Warranty	i) The Street Lighting System (including the battery) will be warranted for a period of five years from the date of installation. ii) The PV Module(s) will be warranted for a minimum period of 25 years from the date of installation.

Date: **Signature of the Supplier / Manufacturer with seal**

Annexure-D 1

FINANCIAL OFFER

FINANCIAL OFFER FOR SUPPLY & INSTALLATION OF 60 W LED BASED SOLAR STREET LIGHTING SYSTEMON TURNKEY BASIS

S.No.	Name of the Item	Unit Rate (Rs)
01	Design, Supply, Installation, Testing and Commissioning of 60W LED based Solar Street Lighting System with the following components as per specifications mentioned in Annexure-D including installation and transportation charges on Turnkey basis i) 2 Nos X 12V, 100Wp SPV Module with A grade monocrystalline ii) 60W LED based luminaire iii) 12.8V, 60 Ah Lithium Ferro Phosphate (LiFePO4) Battery Bank iv) 9mtrs length Octagonal hot dipped galvanized GI Pole v) J-Bolts along with base plate for making civil foundation as per specifications vi) Other Electrical & Electronic items **Warranty:** i) The Street Lighting System (including the battery) will be warranted for a period of five years from the date of installation. ii) The PV Module(s) will be warranted for a minimum period of 25 years from the date of installation.	
02	GST @5% on 70% of item no: 01	
03	GST @18% on 30% of item no: 01	
04	Total – (01+02+03) (In words)	

Date: **Signature of the Supplier / Manufacturer with seal**

Annexure - E

TECHNICAL SPECIFICAIONS OF 120W (2 Nos X 60W) CAPACITY LED BASED SOLAR STREET LIGHTING SYSTEM

S.No	Name of the Component	Technical Specifications
1	SPV Module	4Nos X 12V, 100Wp capacity 'A' Grade Monocrystalline module with IEC/BIS test certification from MNRE / MNRE authorized test centers along with suitable Solar PV module support Structure (Powder coated).
2	Battery Bank	2 Nos X 12.8V, 60 Ah capacity Lithium Ferro Phosphate (LiFePO4) Battery with IEC/BIS test certification from MNRE / MNRE authorized test centers separately mounted in battery box. (Series and parallel combination of 48 Nos of 3.2V, 5000 mAh (or) 40 Nos of 3.2V, 6000 mAh rechargeable cells for each bank).
3	Battery Box	2 Nos X 250X250X200 mm of 2 mm thick battery box (powder coated) with reinforcement as required to house the above battery along with fixing arrangement to GI Pole.
4	LED Luminaire	2 Nos X 60W capacity LED based Solar luminary with inbuilt MPPT charge controller to operate dusk to dawn and with 2 core, 2.5 Sq mm copper cable of required length. The Luminaire must use high efficacy W-LED with minimum 135 lumens per watt and UV free.
5	Light output	Multiple light levels The lamp should have two levels of light to take care of different lighting needs during the night.
6	Mounting of light	Pole mounted, 9 meters above the ground level
7	GI Octagonal Pole	9 meters of length, 3 mm thick (111mm dia x 3 mtrs + 90 mm dia x 3 mtrs + 76 mm dia x 3 mtrs with minimum Galvanizing of 85 microns on hot dip Galvanizing process) along with suitable Luminary arm to fix luminary.
8	J Bolts & Base Plate	25 mm dia X 600 mm length GI J bolts along with base plate for making foundation to the GI Octagonal pole.
9	Accessories	i) Hard ware such as GI Nut & Bolts and SS Nut & Bolts for fixing Solar PV module and Battery box and Luminary arms as required. ii) 2.5 Sq sq.mm copper lugs (Ring type).

10	Civil Foundation	The Foundation shall be RCC pile foundation in CC(1:2:4). The soil stratum at work location is mostly hard rock covered with ordinary gravel and mixture of soft rock at varying depths. The foundation shall be cast by drilling 300 mm dia bore hole of minimum depth of 1.5 m below the OGL, laying of RCC (1:2:4) with 6 No's 10 mm dia main reinforcement and 8 mm dia stirrups at 250 mm c/c after inserting the G.I J bolts in position with the help of base plate.
11	Duty Cycle	Dust to Dawn 4 hours full light, rest of the time at lower level, with motion sensor. i) In case any movement is there, it senses it and glows to full level. ii) Then it comes back to lower level after sometime, automatically.
12	Autonomy	3 days or 36 operating hours per permissible discharge.
13	Electronics	Overall total efficiency of the Electronics should be minimum 85%
14	Warranty	i) The Street Lighting System (including the battery) will be warranted for a period of five years from the date of installation. ii) The PV Module(s) will be warranted for a minimum period of 25 years from the date of installation.

Date: **Signature of the Supplier / Manufacturer with seal**

Annexure- E1

FINANCIAL OFFER

FINANCIAL OFFER FOR SUPPLY & INSTALLATION OF 120 W (2 Nos X 60W) LED BASED SOLAR STREET LIGHTING SYSTEM ON TURNKEY BASIS

S.No.	Name of the Item	Unit Rate (Rs)
01	Design, Supply, Installation, Testing and Commissioning of 120W (2 Nos X 60W) LED based Solar Street Lighting System with the following components as per specifications mentioned in Annexure-E including installation and transportation charges on Turnkey basis i) 4Nos X 12V, 100Wp SPV Module monocrystalline ii) 2 Nos X 60W LED based luminaires iii) 2 Nos X 12.8V, 60 Ah Lithium Ferro Phosphate (LiFePO4) Battery Bank iv) 9mtrs length Octagonal hot dipped galvanized GI Pole v) J-Bolts along with base plate for making civil foundation as per specifications vi) Other Electrical & Electronic items **Warranty:** i) The Street Lighting System (including the battery) will be warranted for a period of five years from the date of installation. ii) The PV Module(s) will be warranted for a minimum period of 25 years from the date of installation.	
02	GST @5% on 70% of item no: 01	
03	GST @18% on 30% of item no: 01	
04	Total – (01+02+03) (In words)	

Date: **Signature of the Supplier / Manufacturer with seal**

Annexure - F

TECHNICAL SPECIFICAIONS OF 160W (4 Nos X 40W) CAPACITY LED BASED SOLAR HIGH MAST LIGHTING SYSTEM

S.No	Name of the Component	Technical Specifications
1	SPV Module	4 Nos X 12V, 150Wp capacity mono crystalline module with IEC/BIS test certification from MNRE / MNRE authorized test centers along with suitable Solar PV module support Structure.
2	Battery Bank	4 Nos X 12.8V, 75Ah capacity Lithium Ferro Phosphate (LiFePO4) Battery with IEC/BIS test certification from MNRE / MNRE authorized test centers.
3	LED Luminaire	4 Nos X 40W capacity LED based Solar luminary with inbuilt MPPT charge controller to operate dusk to dawn. The Luminaire must use high efficacy W-LED with minimum 135 lumens per watt and UV free.
4	Light output	Multiple light levels The lamp should have two levels of light to take care of different lighting needs during the night.
5	Mounting of light	Pole mounted, 9 meters above the ground level
6	GI Octagonal Pole	9 meters of length, 3 mm thick (111mm dia x 3 mtrs + 90 mm dia x 3 mtrs + 76 mm dia x 3 mtrs with minimum Galvanizing of 85 microns on hot dip Galvanizing process) along with suitable Luminary arm to fix luminary.
7	J Bolts & Base Plate	25 mm dia X 600 mm length GI J bolts along with base plate for making foundation to the GI Octagonal pole.
8	Accessories	i) Hard ware such as GI Nut & Bolts and SS Nut & Bolts for fixing Solar PV module and Battery box and Luminary arms as required. ii) 2.5 Sq sq.mm copper lugs (Ring type).
9	Civil Foundation	The Foundation shall be RCC pile foundation in CC(1:2:4). The soil stratum at work location is mostly hard rock covered with ordinary gravel and mixture of soft rock at varying depths. The foundation shall be cast by drilling 300 mm dia bore hole of minimum depth of 1.5 m below the OGL, laying of RCC (1:2:4) with 6 No's 10 mm dia main reinforcement and 8 mm dia stirrups at 250 mm c/c after inserting the G.I J bolts in position with the help of base plate.
10	Duty Cycle	Dust to Dawn 6 hours full light, rest of the time at lower level 50% / customer requirement. automatically.

11	Autonomy	3 days or 36 operating hours per permissible discharge.
12	Electronics	Overall total efficiency of the Electronics should be minimum 85%
13	Warranty	i) The Solar High Mast Lighting System (including the battery) will be warranted for a period of five years from the date of installation. ii) The PV Module(s) will be warranted for a minimum period of 25 years from the date of installation.

Date: **Signature of the Supplier / Manufacturer with seal**

Annexure- F1

FINANCIAL OFFER

FINANCIAL OFFER FOR SUPPLY& INSTALLATION OF 160W (4 Nos X 40W) CAPACITY LED BASED SOLAR HIGH MAST LIGHTING SYSTEM ON TURNKEY BASIS

S.No.	Name of the Item	Unit Rate (Rs)
01	Design, Supply, Installation, Testing and Commissioning of 160W (4 Nos X 40W) LED based Solar High Mast Lighting System with the following components as per specifications mentioned in Annexure-F including installation and transportation charges on Turnkey basis i) 4 Nos X 150 Wp SPV Module ii) 4 Nos X 40W LED based luminaire iii) 4 Nos X 12.8V, 75 Ah Lithium Ferro Phosphate (LiFePO4) Battery Bank iv) 9 mtrs length GI Octagonal Pole v) Civil foundation vi) Other Electrical & Electronic items **Warranty:** i) The Solar High Mast Lighting System (including the battery) will be warranted for a period of five years from the date of installation. ii) The PV Module(s) will be warranted for a minimum period of 25 years from the date of installation.	
02	GST @5% on 70% of item no: 01	
03	GST @18% on 30% of item no: 01	
04	Total – (01+02+03) (In words)	

Date : **Signature of the Supplier / Manufacturer with seal**

Annexure - G

TECHNICAL SPECIFICAIONS OF 9W (3X3W) CAPACITY LED BASED SOLAR PATHWAY LIGHTING SYSTEM

S.No	Name of the Component	Technical Specifications
1	SPV Module	12V, 30Wp capacity poly crystalline module with IEC/BIS test certification from MNRE / MNRE authorized test centers along with suitable Solar PV module support Structure.
2	Battery Bank	12.8V, 15Ah capacity Lithium Ferro Phosphate (LiFePO4) Battery with IEC/BIS test certification from MNRE / MNRE authorized test centers.
3	LED Luminaire	3X3W capacity LED based Solar luminares with inbuilt MPPT charge controller fitted in Hexagonal shaped pole of 1.0 to 2.0 mtrs height. The Luminaire must use high efficacy W-LED with minimum 135 lumens per watt and UV free.
4	Accessories	As per requirement
5	Civil Foundation	The foundation size is 0.2 m X 0.2 m X 0.4 m. The Foundation shall be RCC pile foundation in CC(1:2:4).
6	Duty Cycle	Dust to Dawn
7	Autonomy	3 days or 36 operating hours per permissible discharge.
8	Electronics	Overall total efficiency of the Electronics should be minimum 85%
9	Warranty	i) The Solar Pathway Lighting System (including the battery) will be warranted for a period of five years from the date of installation. ii) The PV Module(s) will be warranted for a minimum period of 25 years from the date of installation.

Date : **Signature of the Supplier / Manufacturer with seal**

Annexure- G1

FINANCIAL OFFER

FINANCIAL OFFER FOR SUPPLY& INSTALLATION OF 9W (3X3W) CAPACITY LED BASED SOLAR PATHWAY LIGHTING SYSTEM ON TURNKEY BASIS

S.No.	Name of the Item	Unit Rate (Rs)
01	Design, Supply, Installation, Testing and Commissioning of 9W (3X3W) LED based Solar Pathway Lighting System with the following components as per specifications mentioned in Annexure-G including installation and transportation charges on Turnkey basis i) 30Wp SPV Module ii) 9W (3X3W) LED based luminaire iii) 12.8V, 15 Ah Lithium Ferro Phosphate (LiFePO4) Battery Bank iv) Civil foundation v) Other Electrical & Electronic items **Warranty:** i) The Solar Pathway Lighting System (including the battery) will be warranted for a period of five years from the date of installation. ii) The PV Module(s) will be warranted for a minimum period of 25 years from the date of installation.	
02	GST @5% on 70% of item no: 01	
03	GST @18% on 30% of item no: 01	
04	Total – (01+02+03) (In words)	

Date: **Signature of the Supplier / Manufacturer with seal**

Annexure - H

TECHNICAL SPECIFICAIONS OF 15W CAPACITY LED BASED SOLAR BLINKER

S.No	Name of the Component	Technical Specifications
1	SPV Module	12V, 80Wp capacity poly crystalline module with IEC/BIS test certification from MNRE / MNRE authorized test centers along with suitable Solar PV module support Structure.
2	Battery Bank	12.8V, 24Ah capacity Lithium Ferro Phosphate (LiFePO4) Battery with IEC/BIS test certification from MNRE / MNRE authorized test centers.
3	LED Blinker	15W capacity LED based Blinker Size – 300 mm (12 inch) & 200 mm (8inch) Body- Molded Polycarbonate, suitable for extreme weather conditions LENS-UV Stabilized, Transparent Polycarbonate GASKET-Rubber Gasket for sealing between Lens & Signal unit COLOUR – Red/Amber/Green PCB-1.5mm thick, Glass Epoxy for power supply/LED display LED used-Ultra bright, Water clear Viewing Angle – 24 degree for LED's No. of LED's – 176 LED (300mm) 140 LED (300mm) (Power Saver mode) 96 LED (200 mm) Charge Control – Built in Type helps to protect battery UNIT(CCU) – from deep charging as well as overcharging. Also protect panel from Reverse voltage.
4	Mounting of light	Pole mounted, minimum 5.0 meters above the ground level
5	GI Pole	3 inch dia, 5 meters length and 3 mm thick GI Pole
6	Accessories	As per requirement
7	Civil Foundation	The foundation size is 0.45 m X 0.45 m X 0.90 m. The Foundation shall be RCC pile foundation in CC(1:2:4).
8	Autonomy	3 days or 36 operating hours per permissible discharge.
9	Electronics	Overall total efficiency of the Electronics should be minimum 85%
10	Warranty	i) The Solar Blinker (including the battery) will be warranted for a period of five years from the date of installation. ii) The PV Module(s) will be warranted for a minimum period of 25 years from the date of installation.

Date: **Signature of the Supplier / Manufacturer with seal**

Annexure- H1

FINANCIAL OFFER

FINANCIAL OFFER FOR SUPPLY & INSTALLATION OF 15W CAPACITY LED BASED SOLAR BLINKER ON TURNKEY BASIS

S.No.	Name of the Item	Unit Rate (Rs)
01	Design, Supply, Installation, Testing and Commissioning of 15W LED based Solar Blinker with the following components as per specifications mentioned in Annexure-H including installation and transportation charges on Turnkey basis. i) 80Wp SPV Module ii) 15W LED based Blinker iii) 12.8V, 24Ah Lithium Ferro Phosphate (LiFePO4) Battery Bank iv) 5mtrs length GI Pole v) Civil foundation vi) Other Electrical & Electronic items **Warranty:** i) The Solar Blinker (including the battery) will be warranted for a period of five years from the date of installation. ii) The PV Module(s) will be warranted for a minimum period of 25 years from the date of installation.	
02	GST @5% on 70% of item no: 01	
03	GST @18% on 30% of item no: 01	
04	Total – (01+02+03) (In words)	

Date: **Signature of the Supplier / Manufacturer with seal**

Annexure - I

TECHNICAL SPECIFICAIONS OF SIM BASED SOLAR 360^{O} PTZ CAMERA

S.No	Name of the Component	Technical Specifications
1	SPV Module	12V, 80Wp capacity mono crystalline module with IEC/BIS test certification from MNRE / MNRE authorized test centers along with suitable Solar PV module support Structure.
2	Battery Bank	12.8V, 24Ah capacity Lithium Ferro Phosphate (LiFePO4) Battery with IEC/BIS test certification from MNRE / MNRE authorized test centers.
3	Camera	Sim Based 360^{o} PTZ Camera Sensor:1/2.8 ″ Progressive Scan CMOS Image Sensor Compression format:H.265 High Profile Pixel:1920 * 1080P, 2MP Lens:3.6mm Rotation Angle: Horizontal 0-320° / Vertical 0-90° Number of White Lights: 4 nos, Number of Infrared Lights: 4 nos, SD Storage: Support 128GB Memory Card Support Email Notification and FTP Rotation Speed: Horizontal: 40^{o}/s, Vertical: 40^{o}/s Night Vision: Infrared Night Vision, Full Color Night Vision Waterproof Rating: IP65 Water Resistance APP: CAM HI
4	GI Pole	3 mm thick, 3 inch dia and 6 meters length
5	Accessories	As per requirement
6	Civil Foundation	The foundation size is 0.45 m X 0.45 m X 0.90 m. The Foundation shall be RCC pile foundation in CC(1:2:4).
7	Electronics	Overall total efficiency of the Electronics should be minimum 85%
8	Warranty	i) Camera : 1 year warranty ii) Battery: 5 years warranty iii) PV Module: 25 years

Date: **Signature of the Supplier / Manufacturer with seal**

Annexure- I1

FINANCIAL OFFER

FINANCIAL OFFER FOR SUPPLY & INSTALLATION OF SIM BASED SOLAR 360^{O} PTZ CAMERA ON TURNKEY BASIS

S.No.	Name of the Item	Unit Rate (Rs)
01	Design, Supply, Installation, Testing and Commissioning of Sim Based Solar 360^{o} PTZ Camera with the following components as per specifications mentioned in Annexure-I including installation and transportation charges on Turnkey basis. i) 80Wp SPV Module ii) Sim Based 360^{o} PTZ Camera iii) 12.8V, 24Ah Lithium Ferro Phosphate (LiFePO4) Battery Bank iv) 6 mtrs length GI Pole v) Civil foundation vi) Other Electrical & Electronic items **Warranty:** i) Camera : 1 year warranty ii) Battery: 5 years warranty iii) PV Module: 25 years	
02	GST @5% on 70% of item no: 01	
03	GST @18% on 30% of item no: 01	
04	Total – (01+02+03) (In words)	

Date: **Signature of the Supplier / Manufacturer with seal**

Annexure - J

TECHNICAL SPECIFICAIONS OF SOLAR WATER PUMPING SYSTEM

<table>
<tr><th>S.No</th><th>Name of the Component</th><th>Technical Specifications</th></tr>
<tr><td>1</td><td>SPV mono crystalline Module</td><td>
<table>
<tr><td>1HP</td><td>2HP</td><td>3HP</td><td>5HP</td><td>7.5HP</td><td>10HP</td></tr>
<tr><td>1200Wp</td><td>1800Wp</td><td>3000Wp</td><td>4800Wp</td><td>6750Wp</td><td>9000Wp</td></tr>
</table>
</td></tr>
<tr><td>2</td><td>Pumpset</td><td>1/2/3/5/7.5/10HP Surface / Submersible Pumpset</td></tr>
<tr><td>3</td><td>Maximum Power Point Tracker (MPPT)</td><td>MPPT is an algorithm that is included in the pump controller used for extracting maximum available power from SPV array under a given condition. The voltage at which SPV array can produce maximum power is called 'maximum power point' voltage (or peak power voltage)</td></tr>
<tr><td>4</td><td>SPV Controller</td><td>Pump Controller converts the DC voltage of the SPV array into a suitable DC or AC, single or multi-phase power and may also include equipment for MPPT, remote monitoring, and protection devices.

Controller shall be integrated with GSM/GPRS Gateway with Geo tagging. GSM/ GPRS Charges to be included in the Costing till the end of Warranty period of the Pump set.</td></tr>
<tr><td>5</td><td>Structure</td><td>The PV modules should be mounted on metallic structures of adequate strength and appropriate design, which can withstand load of modules and high wind velocities up to 150 km per hour. The raw material used and process for manufacturing of module mounting structure including welding of joints should conform to applicable IS. The module mounting structure should be hot dip galvanized according to IS 4759. Zinc content in working area of the hot dip galvanizing bath should not be less than 99.5% by mass.</td></tr>
<tr><td>6</td><td>Suction / Delivery pipe</td><td>HDPE or uPVC column pipes of appropriate size, the minimum pressure rating as appropriate as per MNRE guidelines.</td></tr>
<tr><td>7</td><td>Electrical Cable</td><td>All cables used shall be as per IS 694. Suitable size of cable shall be used in sufficient length for inter-connection between the SPV array to SPV Controller and the SPV Controller to solar powered pump set. Selection of the cable shall be as per IS 14536.</td></tr>
<tr><td>8</td><td>Earthing Arrangement</td><td>Earthing of the motor shall be done as per IS 9283 in accordance with the relevant provisions of IS 3043. Separate earthing shall be provided for Controller, pump and SPV array.
For safety purpose, it shall be ensured during installation that the earthing is capable of taking care of leakage current.
In case of uPVC/HDPE pipes used as discharge pipe, a separate non-corrosive, low resistance conductor from motor earth terminal to control panel earth terminal shall be provided for earthing.</td></tr>
</table>

9	Lightening arrestor	lightening arrestor shall be provided with every SPV Water Pumping System.
10	Civil Foundation	The general hardware for structure fitment should be either SS 304 or 8.8 grade. Modules should be locked with antitheft bolts of SS 304 Grade. Foundation should be as per the site condition, based on the properties of Soil. Foundation can be done either with the help of 'J Bolt' (refer IS 5624 for foundation hardware) or direct pilling, it should be decided as per the site and relevant IS i.e. IS 6403 / 456 / 4091 / 875 should be referred for foundation design.
11	Warranty	i) The Solar Water Pumping System will be warranted for a period of five years from the date of installation. ii) The PV Module(s) will be warranted for a minimum period of 25 years from the date of installation.

Date: **Signature of the Supplier / Manufacturer with seal**

Annexure- J1

FINANCIAL OFFER

FINANCIAL OFFER FOR SUPPLY & INSTALLATION OF SOLAR WATER PUMPING SYSTEMS OF VARIOUS MODELS & CAPACITIES ON TURNKEY BASIS

S. No	Name of the Item	Unit Cost (Rs)					
		1HP	2HP	3HP	5HP	7.5HP	10HP
1	Supply, Installation, Testing and Commissioning of AC Surface Mounted Model Solar Water pumping Systems on Turnkey basis as per specifications of MNRE (Including pipes & cables)						
2	GST 5% on 70% of unit cost (Rs)						
3	GST 18% on 30% of unit cost (Rs)						
4	Total (In words)						

Date: **Signature of the Supplier / Manufacturer with seal**

S. No	Name of the Item	Unit Cost (Rs)					
		1HP	2HP	3HP	5HP	7.5HP	10HP
1	Supply, Installation, Testing and Commissioning of AC Submersible Model Solar Water pumping Systems on Turnkey basis as per specifications of MNRE (Including pipes & cables)						
2	GST 5% on 70% of unit cost (Rs)						
3	GST 18% on 30% of unit cost (Rs)						
4	Total (In words)						

Date: **Signature of the Supplier / Manufacturer with seal**