**Application Form**

1. Firm Name :- …………………………………………………………………………..
2. Head Office Address :-………………………………………………………………...

Telephone:-……………………….. Fax………………………………

Email…………………………………………………………………..

1. Responsible Person……………………………………………………………………..

Position…………………………………………………………………...

Telephone………………… Mobile………………. Fax:-…………….

Email:-…………………………………………………………………

1. Firm Registration No…………………… RegisteredOffice………………………..

Date………………………………………………………………

1. PAN/VAT Registration No………………………. Date………………………….......
2. Business Type/ Purpose :…………………………………………………………….
3. Financial Situation of Last three Years. (If Available Attach Audit report of three years)

Information from Balance sheet

|  |  |  |  |
| --- | --- | --- | --- |
| Fiscal Year | 1 | 2 | 3 |
| Total Assets |  |  |  |
| Total Liabilities |  |  |  |
| Net Worth |  |  |  |
| Current Assets |  |  |  |
| Current Liabilities |  |  |  |

8 . Information from Income Statement (If Available of three years)

|  |  |  |  |
| --- | --- | --- | --- |
| Fiscal Year | 1 | 2 | 3 |
| Total Revenues |  |  |  |
| Profit Before Tax |  |  |  |
| Profit After Tax |  |  |  |

Financial Resources ( Add if required )

|  |  |  |
| --- | --- | --- |
| No. | Source of Financing | Amount |
| 1 |  |  |
| 2 |  |  |

Note – The Bank Guarente letter from the bank must be unconditional

1. Rate and details of the Equipment’s that the firm can supply .

**Note: The supplier willing to supply and work for tubewell only are requested to fill only (A) section i.e. Tubewell with pump and accessories and the supplier willing to supply and work for Solar Irrigation only are requested to fill only (B) section i.e. Solar Irrigation and the supplier willing to supply and work in both must fill the both section. The supplier willing to supply solar irrigation system must view and fill Detailled Bill of Quantities for Solar Irrigation System section.**

PRICE /RATE SCHEDULE

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **S.N.** | **items** | **technical Description** | **Unit** | | **Brand** | **Model** | **Power(HP)** | **Offered Rate excluding of vat** | | **Remarks** |
| **in figure** | **in Words** |
| **A** | **Tubewell with pump and accessories** | | |  |  |  |  |  |  |  |
| 1 | PVC PIPE | supply & delivery of thick threaded and socketed uPVC pipe having nominal outer diameter 114mm of class equivalent to class D BS3505 (wt >=3 kg/m) or similar specification | Rm. | |  |  |  |  |  |  |
| 2 | PVC PIPE | supply & delivery of thick threaded and socketed uPVC pipe having nominal outer diameter 114mm of class equivalent to class E BS3505 or similar specification | Rm. | |  |  |  |  |  |  |
| 3 | PVC Screen | supply & delivery uPVC ribbed screen slot size around 1mm pipe having nominal outer diameter 114mm thick threded and socketed (class-D) | Rm. | |  |  |  |  |  |  |
| 4 | PVC Screen | supply & delivery uPVC ribbed screen slot size around 1mm pipe having nominal outer diameter 114mm thick threded and socketed (class-E) | Rm. | |  |  |  |  |  |  |
| 5 | LCG Screen | supply & delivery LCG screen having variable slot size from 0.5mm, 0.75mm, 1mm and 1.5mm pipe having nominal outer diameter 114mm threded matching with uPVC casing pipes. | Rm. | |  |  |  |  |  |  |
| 6 | G.I Pipe | 4" dia G.I. Pipe medium class (1 m in length) cutting & making both side thred matching with uPVC pipe, pumching office code with load unload and transportation | Rm. | |  |  |  |  |  |  |
| 7 | G.I Bottle | G.I Bottle Tee- reducer (4"x3"x1.5") (>2.3KG.) with all accessories complete(C.I cap 1.5'' & 3'') | No. | |  |  |  |  |  |  |
| 8 | valve | 4'' CI Check valve | No. | |  |  |  |  |  |  |
| 9 | Suction pipe | Suction pipe 3" | Rm. | |  |  |  |  |  |  |
| 10 | Pump Nipple | Pump Nipple 3" |  | |  |  |  |  |  |  |
| 11 | Bend Nipple | Bend Nipple 3" |  | |  |  |  |  |  |  |
| 12 | GI Bend | GI Bend 3" | No. | |  |  |  |  |  |  |
| 13 | G.I. Nipple | 4'' dia. Long G.I Nipple (Heavy Duty) | No. | |  |  |  |  |  |  |
| 14 | hand pipe | MS hand pump small of discharge around 25lph of suitable fittings all complete | No. | |  |  |  |  |  |  |
| 15 | cement | Solvent Cement | ltr | |  |  |  |  |  |  |
| 16 | Miscellaneous | Miscellaneous construction materials as; Nylon jali, tape, rope,Seal & pee gravell etc items for installation of one bore well all complete | Job | |  |  |  |  |  |  |
| 17 | Electric Motor with pump (surface) | Supply and delievery of 2HP single phase with outlet 3" electric motor having 100% copper winding of indian origin having weight >=39kg suitable to operate with fluctuating(Low ) voltage of Madhesh province. | set | |  |  |  |  |  |  |
| 18 | Electric Motor with pump (surface) | Supply and delievery of 1HP single phase with outlet 2" electric motor having 100% copper winding of indian origin having weight >=22kg suitable to operate with fluctuating(Low) voltage of Madhesh province. | set | |  |  |  |  |  |  |
| 19 | Electric Motor with pump (submersible) | Supply and delivery of 2HP single phase with outlet 1.5" electric submersible pump of indian origin suitable to fit in 4" bore and suitable to operate with fluctuating (Low)voltage of Madhesh Province | set | |  |  |  |  |  |  |
| 20 | Drilling Work | Manual drilling Pilot Hole 4", first rimming 6.5" and lowering and installation of 4" pipe all complete | Rft | |  |  |  |  |  |  |
| 21 | Drilling Work | Machine drilling Pilot Hole 4", first rimming 6.5" and lowering and installation of 4" pipe all complete | Rm. | |  |  |  |  |  |  |
| 22 | Delievery Pipe | 2" dia black HDPE PN10 Delivery pipe | Rm. | |  |  |  |  |  |  |
| 23 | Delievery Pipe | Plastic Delivery pipe | KG | |  |  |  |  |  |  |
| 24 | Pumping Test | Pumping Test for well development | Hr | |  |  |  |  |  |  |
| 25 | Transportation Cost | Material Transportation cost to the site allocated by AKC | L.S. | |  |  |  |  |  |  |
| **B** | **Solar Irrigation system** | | |  |  |  |  |  |  |  |
| 1 | 1 lakh LPD at 30m category cosidering 6 working hour | Supply, Delievery, Installation, Testing and Commissioning of Solar irrigation system all complete of 1 lakh LPD at 30 m head category as per specification . | set | |  |  |  |  |  |  |
| 3 | 1 lakh LPD at 20m category cosidering 6 working hour | Supply, Delievery, Installation, Testing and Commissioning of Solar irrigation system all complete of 1 lakh LPD at 20 m head category as per specification . | set | |  |  |  |  |  |  |

Note: Supplier willing to supply solar irrigation system must fill the below Bill of quantities according to the required configuration.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Detailled Bill of Quantities for Solar Irrigation System | | | | |  | |  |  |  | |
| **Solar Irrigation System at 1lakh lpd @30m head Category considering 6 sunshine hours for 1 set** | | | | | | | | | | |
| **S.N.** | **Item Description** | **Capacity** | **Unit** | **Quantity** | | **Unit Price in Nrs exc Vat** | | **Total Amount in Nrs** | **Remarks** |
| 1 | 2 | 3 | 4 | 5 | | 6 | | 7=5x6 |  |
| 1 | Solar PV module |  | KWp |  | |  | |  |  |
| 2 | Submersible/Surface Solar Pump with controller and pump accessories | As per TS | No |  | |  | |  |  |
| 3 | GI Mounting Structure with Concrete Foundation | as per TS | L.S. |  | |  | |  |  |
| 4 | DC Combiner Box(IEC 60529 class IP65 or better),Suerge Protectors, Circuit Breaker | as per TS | Set |  | |  | |  |  |
| 5 | Lighting protection-Earthing and Grounding as per specification | as per TS | L.S. |  | |  | |  |  |
| 6 | Installation and Fitting and Electric wiring , Cables and accessories materials (nut/bolts/wire/switch/clip/mcb etc) and all other miscellaneous items required to complete the project all complete | as per TS | L.S. | as required | |  | |  |  |
|  |  |  |  | Sub Total(A) | | | |  |  |
|  |  |  |  | Vatable Amount(B) | | | |  |  |
|  |  |  |  | Vat (C) =13%xB | | | |  |  |
|  |  |  |  | Total(A+C) | | | |  |  |
|  |  |  |  |  | |  | |  |  |
|  |  |  |  |  | |  | |  |  |
| **Solar Irrigation System at 1lakh lpd @20m head Category considering 6 sunshine hours for 1 set** | | | | | | | | | | |
| **S.N.** | **Item Description** | **Capacity** | **Unit** | **Quantity** | | **Unit Price in Nrs exc Vat** | | **Total Amount in Nrs** |  |
| 1 | 2 | 3 | 4 | 5 | | 6 | | 7=5x6 |  |
| 1 | Solar PV module |  | KWp |  | |  | |  |  |
| 2 | Submersible/Surface Solar Pump with controller and pump accessories | as per TS | No. |  | |  | |  |  |
| 3 | GI Mounting Structure with Concrete Foundation | as per TS | L.S. |  | |  | |  |  |
| 4 | DC Combiner Box(IEC 60529 class IP65 or better),Suerge Protectors, Circuit Breaker | as per TS | Set |  | |  | |  |  |
| 5 | Lighting protection-Earthing and Grounding as per specification | as per TS | L.S. |  | |  | |  |  |
| 6 | Installation and Fitting and Electric wiring , Cables and accessories materials (nut/bolts/wire/switch/clip/mcb etc) and all other miscellaneous items required to complete the project all complete | as per TS | L.S. | as required | |  | |  |  |
|  |  |  |  | Sub Total(A) | | | |  |  |
|  |  |  |  | Vatable Amount(B) | | | |  |  |
|  |  |  |  | Vat (C) =13%xB | | | |  |  |
|  |  |  |  | Total(A+C) | | | |  |  |

**9.Technical Specification**

1. **Tubewell with pump and accessories**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S.N.** | **items** | **Required Specification** | **Offered Specification** | **Remarks** |
|
| 1 | PVC PIPE | supply & delivery of thick threaded and socketed uPVC pipe having nominal outer diameter 114mm of class equivalent to class D BS3505 (wt >=3 kg/m) or similar specification |  |  |
| 2 | PVC PIPE | supply & delivery of thick threaded and socketed uPVC pipe having nominal outer diameter 114mm of class equivalent to class E BS3505 or similar specification |  |  |
| 3 | PVC Screen | supply & delivery uPVC ribbed screen slot size around 1mm pipe having nominal outer diameter 114mm thick threded and socketed (class-D) |  |  |
| 4 | PVC Screen | supply & delivery uPVC ribbed screen slot size around 1mm pipe having nominal outer diameter 114mm thick threded and socketed (class-E) |  |  |
| 5 | LCG Screen | supply & delivery LCG screen having variable slot size from 0.5mm, 0.75mm, 1mm and 1.5mm pipe having nominal outer diameter 114mm threded matching with uPVC casing pipes. |  |  |
| 6 | G.I Pipe | 4" dia G.I. Pipe medium class (1 m in length) cutting & making both side thred matching with uPVC pipe, pumching office code with load unload and transportation |  |  |
| 7 | G.I Bottle | G.I Bottle Tee- reducer (4"x3"x1.5") (>2.3KG.) with all accessories complete(C.I cap 1.5'' & 3'') |  |  |
| 8 | valve | 4'' CI Check valve |  |  |
| 9 | G.I. Nipple | 4'' dia. Long G.I Nipple (Heavy Duty) |  |  |
| 10 | hand pipe | MS hand pump small of discharge around 25lph of suitable fittings all complete |  |  |
| 11 | cement | Solvent Cement |  |  |
| 12 | Electric Motor with pump (surface) | Supply and delievery of 2HP single phase with outlet 3" electric motor having 100% copper winding of indian origin having weight >=39kg suitable to operate with fluctuating(Low ) voltage of Madhesh province. |  |  |
| 13 | Electric Motor with pump (surface) | Supply and delievery of 1HP single phase with outlet 2" electric motor having 100% copper winding of indian origin having weight >=22kg suitable to operate with fluctuating(Low) voltage of Madhesh province. |  |  |
| 14 | Electric Motor with pump (submersible) | Supply and delivery of 2HP single phase with outlet 1.5" electric submersible pump of indian origin suitable to fit in 4" bore and suitable to operate with fluctuating (Low)voltage of Madhesh Province |  |  |

|  |  |
| --- | --- |
| **(B) Solar Irrigation system** | |
| Note: all the accessories needed should be provided by supplier. Equivalent design configuration not less than 1 lakh LPD at given head meeting the technical specification will be accepted and the configuration should be provided by supplier at the time of bidding. | |

**Detailled Technical Specification of Solar Irrigation is as below as per Alternative Energy Promotion Centre and must meet the specifications:**

**Technical Specifications**

# 1. Solar Photovoltaic (PV) Array

* The PV module must be of crystalline type;
* The peak power of individual module must be at least 250Wp at Standard Test Conditions;
* The module efficiency for PV module must be at least 15% and the fill factor must be at least 70%;
* The module must have minimum 60 cells;
* The junction box must have at least IP65 protection according to IEC 60529;
* The operating temperature must be in the range of -20oC to +50oC;
* The warranty must be as follows.

Product Warranty: ≥ 5 years

Performance (Power Output) Warranty: 10 year: ≥ 90% of STC Power

25 years: ≥ 80% of STC Power

* The RETS Certificate (PIT Certificate and RST Certificate) must be provided;
* All PV modules offered for the project must be of same type, same model, same power rating and from the same manufacturer;
* The technical datasheet of PV Module must be provided;
* The following documents must be provided.

➢ RETS (PIT and RST) Certificates

# 2. Pump Controller

* The pump controller must be of Maximum Power Point Tracker (MPPT) type;
* The efficiency of MPPT must be at least 95%;
* The capacity of pump controller must be sufficient to regulate/control the minimum PV Array capacity. The pump controller range must be at least + 20% higher with PV array capacity.
* The pump controller must have at least IP65 protection according to IEC 60529;
* The pump controller must include the protection against dry run, PV reverse polarity, PV short circuit, temperature, lightning;
* The operating temperature must be in the range of -20oC to +50oC;
* The manufacturing warranty must be of at least 2 years;
* The technical datasheet of Pump Controller must be provided.

# 3. Solar Pump

* The Solar Pump must be Submersible or Surface and of DC type;
* The motor used shall be brushless DC motor (BLDC);
* The pump set (pump motor) efficiency must be at least 50% at rated head and discharge. The pump performance curve (flow vs. power at rated head) must be provided.
* The pump set must have at least IP68 protection for Submersible Pump and at least IP65 for Surface Pump according to IEC 60529;
* The pump set must include the protection against reverse polarity, short circuit, temperature, lightning;
* The pump must be manufactured with non-corrosive materials. Ceramic or equivalent non corrodible materials must be used for bearings. For Submersible Pump, Pump body, rotors and impellers must be made of stainless steel with a minimum grade of AISI 304 or higher. For Surface Pump, rotors and impellers must be made of stainless steel with a minimum grade of AISI 304 or higher;
* The oil must not be used for lubrication;
* The operating temperature must be in the range of -20oC to +50oC;
* The manufacturing warranty must be of at least 2 years;
* The solar pump and pump controller must be from the same manufacturer;
* The pump must comply with IEC 62253: 2011 – Photovoltaic Pumping systems – Design qualification and performance measurements / IEC 61010-1:2010, IEC 62109-1:2010, Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements / IEC60335-1, IEC 60335-2-41:2012, Household and similar electrical appliances - Safety - Part 2-41: Particular requirements for pumps.

The test certificate/report from IEC accredited independent laboratory must be provided.

The pump must be tested/certified by certification body testing laboratory (CBTL) or Renewable Energy Testing Laboratory (RETL) or Renewable Energy Certification Body (RECB) or National certification body (NCB) enlisted in the IECEE or IECRE website. • The technical datasheet of Solar Pump must be provided;

* The following documents must be provided.
  + Pump performance curve
  + IEC Test Report
* For the pump capacity equal to or greater than 7.5HP, AC pump is also eligible and IEC requirement is also not mandatory

# 4. DC Combiner Box

* The DC combiner box shall be rated for exterior installation suitable for the Site Conditions, shall be UV and weather resistant and must be rated minimum for IP65 according to IEC 60529;
* The DC combiner box shall have DC breaker and the breaker must comply with IEC 60947-2;
* The DC combiner box must have appropriately sized surge protection device conforming to IEC 61643-31:2018 or EN 50539-11:2013 and grounded adequately;
* The DC combiner box installation shall be protected from direct rain, sun and dust;
* All cables must be connected properly and cable entering/outings into/from the box must be sealed properly (use of cable glands, cables shoes, copper tube, thimble, cable ties) so that dust and insects, mice cannot enter the box.

# 5. Support Structure for PV Modules

* The support structure must be tilted at given latitude/longitude of the site and oriented towards south;
* The mounting structure should withstand wind speed up to 170 km/hr;
* The solar PV module structure must be made of MS galvanized suitable sections of rectangular tubes/angles/channels. There must be minimum of 25mm uniform spacing between the modules;
* The mounting structure shall be installed in such a way that PV array shading is minimized as much as possible considering site condition;
* The minimum clearance between ground level and bottom edge of the PV modules/arrays must be at least 80cm for ground based;
* Stainless Steel (SS 304) nuts & bolts should be used for fixing modules with the structure. Stainless Steel (SS 304) or Galvanized bolts, nuts, fasteners, washers, mounting clamps should be used for fixing structure and compatible with materials which it is being fixed. In case of welding structure, the galvanization should be done after the fabrication work.

# 6. Cables and Accessories

* All cables must be of copper;
* Cables shall be selected with an insulation voltage level applicable to the system voltage for which they are used and ampacities suitable for the load being serve;
* Cables shall be multi-strand, PVC insulated cables and UV resistant, suitable for outdoor installations;
* The allowable voltage drop from PV module or PV array to pump controller to pump must be less than 3%;
* The outdoor cables from PV array to pump should be fitted with adequate size of HDPE pipe or GI pipe;
* All external wiring, cabling, insulation material and junction boxes must be UV-resistant and terminals protected against dust and moisture.

# 7. Lightning Protection System a. Air Termination System

• The lightning air termination system must have following specifications.

* The air terminal rod must be at a minimum height of 1 meter above the highest point of the PV array to be protected
* The minimum thickness of the 1 meter top part must be of 8-10 mm diameter
* The air terminal rods must be made of stainless steel or copper or copper bonded. If copper bonded is used then it must be of minimum 150 microns
* The air termination system shall have as few joints in it as possible. The joints may be clamped, screwed, bolted, crimped, riveted or exothermic welded and must be electrically connected
* The air terminal rod must be rated to withstand an discharge current capacity of 200kA; ➢ The air terminal rod must comply with IEC 62305. • The technical datasheet of Air Termination System must be provided.

# b. Down Conductor

• The down conductor must have following specifications;

* The minimum size of the down conductor system must be of 50mm2 cable or 25mm width and 3 mm thickness copper strip
* The down conductor must be electrically connected to air termination system by clamping, screwing, bolting, crimping, riveting or exothermic welding
* The down conductor must be made of copper or copper bonded. If copper bonded is used then it must be of minimum 150 microns
* The down conductor must comply with IEC 62305.

# c. Earth Electrode

• The earth termination system must have following specifications;

* The earth termination system shall consist of earthing rod(s)
* The length of the earthing electrodes must be minimum 1.5 meters length and the diameter of rod must be minimum 18 mm
* The earthing electrodes must be made of copper or copper bonded. If copper bonded is used then it must be of minimum 250 microns.
* The earth electrode must be electrically connected with down conductor by clamping, screwing, bolting, crimping, riveting or exothermic welding.
* The maximum allowable earth resistance is 10 Ohms; ➢ The earth termination system must comply with IEC 62305. • The technical datasheet of Earthing System must be provided.

# d. Surge Protection Device (SPD)

* The SPD must be DC type;
* The SPD must have following specifications;
* **PV Array Capacity (up to 1200 Wp)** 
  + Type of SPD: Type 2
  + Rated DC Voltage: 250 VDC
  + Maximum Continuous Operating Voltage: 320 VDC
  + Voltage Protection Level at In: 0.8kV
  + Nominal Discharge Current In (8/20): 10kA ➢ Maximum Discharge Current In (8/20): 20kA

**PV Array Capacity (>1200Wp to 3000Wp)**

* + Type of SPD: Type 2
  + Rated DC Voltage: 600VDC
  + Maximum Continuous Operating Voltage: 670 VDC
  + Voltage Protection Level at In: 2.8kV
  + Nominal Discharge Current In (8/20): 20kA ➢ Maximum Discharge Current In (8/20): 40kA

**PV Array Capacity (>3000Wp)**

* + Type of SPD: Type 2
  + Rated DC Voltage: 1000VDC
  + Maximum Continuous Operating Voltage: 1100 VDC
  + Voltage Protection Level at In: 3.8kV
  + Nominal Discharge Current In (8/20): 20kA ➢ Maximum Discharge Current In (8/20): 40kA

* The SPD must comply with IEC 61643-31:2018 or EN 50539-11:2013;
* The technical datasheet of SPD must be provided.

|  |
| --- |
|  |

\*Please submit deposit voucher or bank guarantee as per notice. If not submitted the firm will not be eligible for evaluation.

10. Dealer, Branches and Distributes in the country

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| S.No. | Name | Address | Contact person | Email | Telephone | Mobile |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

Submit copy of dealership agreement with firm registration, PAN or VAT registration otherwise will not be considered for evaluation.

11. Professional Experiences

12. Specific Experience ( Please submit supporting documents)

I hereby declare that the above submitted information are true and correct based on relevant documents and our knowledge and we are not ineligible to participate in the expression of interest, has no conflict of interest in the proposed procurement proceedings and has not been punished for the profession or business related offence.

(Signature of Authorized Person)

Office stamp

Name ………………………….

Position ………………………..