

**Main Office**

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**INVITATION TO BID**

**Supply and Installation of Complete Solar Water Supply Systems**

**and Spare Solar System Water Pumps for Kabul and Maidan Wardak Provinces**

**اعلان داوطلبی برای تهیه و نصب واتر پمپ با سیستم انرژی آفتابی و واتر پمپ های آفتابی اضافه برای ولایات کابل و میدان وردک**

دفتر مرکزی  
گولایی وزیرآباد  
پست بکس ۲۰۸  
کابل، افغانستان  
تلفون: +۹۳۲۰۲۲۳۰۷۵۲  
موبایل: +۹۳۷۰۰۲۸۸۲۳۲  
ایمیل: [dacaar@dacaar.org](mailto:dacaar@dacaar.org)  
وبسایت: [www.dacaar.org](http://www.dacaar.org)

**DACAAR ITB 07 PRF-312-313/UNICEF/1908-UNEW/402-403/KBL-0110/WRD-0401/04.2020**

**Date: May 05, 2020**

DACAAR invites interested parties to submit their sealed offers for Supply & Installation of Complete Sets Solar Water Supply Systems with Fixed Stands Solar Systems and Complete Set Spare Solar Systems Water Pumps for Kabul and Maidan Wardak Provinces as described in Annex (I).

The offers must reach to DACAAR Main Office Logistics Unit located in (Street No. 12, Paykobe-Naswar, Qala-e-Fathullah, Kabul Province) till 4:00pm May 28, 2020.

The bid opening session will be held on May 31, 2020 at 10:30am in DACAAR Main Office in Kabul Province and the bid winner will be notified shortly after the bid opening session.

داکار از کمپنی های علاقمند و واجد شرایط که خواهش اشتراک در پروسه داوطلبی داکار را داشته باشند دعوت به عمل میآورد تا در داوطلبی برای تهیه و نصب سبیت مکمل سول غیر متحرک واتر پمپ ها زیر آبی مجهز با سیستم انرژی آفتابی و سبیت مکمل واتر پمپ های آفتابی اضافه برای ولایات کابل و میدان وردک اشتراک نمایند که تفصیلات آن در ضمیمه (I) تذکر یافته است.

آفرها باید الی تاریخ 28 می 2020 ساعت 4:00 عصر به شعبه لجستیک دفتر مرکزی داکار واقع (پایکوب نساوار سرک 12 قلعه فتح الله ولایت کابل) سپرده شود.

مجلس آفرگشایی ساعت 10:30 قبل از ظهر تاریخ 31 می 2020 در دفتر مرکزی داکار در ولایت کابل صورت میگیرد که متعاقباً برنده داوطلبی در اسرع وقت اطلاع خواهد یافت.

**Terms and Conditions for the bid winner/participation**

**شرایط قرارداد برای برنده داوطلبی/ اشتراک کننده گان**

1. Delivery and Installation of Solar Water Supply Systems are in Kochi Abad Village Bagrami District of Kabul and Amar Khail Village Maidan Share Centre of Maidan Wardak Provinces as described in Annex (II).
2. Installation & Delivery of Solar pumps & solar systems should be carried out by the company technicians.
3. DACAAR technical staff will inspect the function of solar system pumps, before delivery and after installation in the targeted areas.
4. The bidders have to provide solely information regarding the panels, panels stand and pumps, (e.g. name of manufacturer etc..). Pump daily output design is also needed; otherwise, the offer will not be accepted.
5. Minimum three years' warranty is required after successful installation of solar systems and this fact must be clearly mentioned in the offer.

1. انتقال و نصب سولر غیر متحرک واتر پمپ های زیر آبی مجهز با سیستم انرژی آفتابی در قریه کوچی آباد ولسوالی بگرامی ولایت کابل و قریه امرخیل میدان شهر مرکز ولایت میدان وردک که در ضمیمه (II) ذکر گردیده صورت میگیرد.
2. نصب سولر سیستم و انتقال آن باید توسط اشخاص مسلکی صورت بگیرد.
3. پرسونل داکار نحوه کار سولر سیستم و واتر پمپ را قبل از انتقال و بعد از نصب کردن در ساحات مربوطه نظارت خواهند نمود.
4. داوطلبان مکلف اند تا معلومات مکمل را در مورد پنل های سولر و پمپ که توسط انرژی سولر کار میکند، آب دهی روزانه، و کمپنی ساخت پنل ها و پمپ ها را ارائه نماید، در غیر آن آفر که معلومات فوق الذکر در آن گنجانیده نشده باشد، داکار از آن صرف نظر خواهد کرد.
5. حد اقل معیاد تضمین و خدمات بعد از فروش برای سولر سیستم مدت سه سال بعد از نصب مؤفقانه سولر سیستم میباشد، که این موضوع باید بشکل واضح و روشن در اسناد داوطلبی مشخص گردد.

6. 3% of total contract value will be seized as a service guarantee with DACAAR for three years. This amount will be refunded when the service guarantee period is successfully served.
7. In case of delay without logical reasons in delivery & installation of Solar Systems 0.5% of total cost of undelivered items/ incomplete work will be charged as penalty for each official day of delay.
8. Prices shall be given in Afghani (AFN) and shall include transport plus loading, unloading and complete installation of the systems in targeted areas. Offers without sign and stamp will not accepted.
- This is worth mentioning that the products specifications are divided into three options for each lot, which needs separate quotations;
1. First Option: Made in Europe (All products should be of the same brand).
  2. Second Option: Made in Europe products of different brands can be used in the system (e.g. solar panels from one brand, inverter from another brand and the pump from another brand).
  3. Best Products from well reputed manufacturers of Asian countries, except Chinese.
9. All bidders should deposit 150,000 AFN as a bid security; otherwise, DACAAR has the right to make the decision.
- Submission methods of bid security is as follows:
- a) Put a Bank Guarantee of the amount with bidding documents.
  - Or,
  - b) Deposit (150,000 AFN) to DACAAR Kabul Bank Afghani Account (60019598).
- Note: All deposits (Bid Security/ Contract Performance Guarantee) will be refunded on proper application of vendors along with original bank deposit slip.
10. The winner of the tender must deposit 10% of total contract value as a contract performance guarantee, the amount is refundable after successful completion of the contract.
6. 3% از مجموع ارزش قرارداد بطور ضمانت به مدت سه سال نزد داکار محفوظ میماند، و بعد از تکمیل موفقانه دوره ضمانت کار کرده گی سیستم این مبلغ به قراردادی قابل پرداخت میباشد.
7. در صورت تأخیر رساندن سیستم ها بدون عذر موجه در وقت معینه آن، مبلغ 0.5 فیصد از ارزش اموال/کار تأخیر شده به طور جرمانه در برابر هر روز رسمی تأخیر از طرف قراردادی تأدیه خواهد گردید.
8. قیمت ها باید به افغانی داده شود و شامل قیمت (مالیه دولت، انتقال، بارگیری، تخلیه و نصب سولرسیستم باشد) قیمت های بدون مهر و امضا قابل قبول نمیباشد.
- قابل یاد آور است که مشخصات اجناس به سه قسمت ذیل تقسیم گردیده و به هر قسمت قیمت های جداگانه ارائه گردد:
1. قسمت (اپشن) اول: تمام وسایل متذکره باید ساخت اروپا از یک کمپنی مشخص باشند.
  2. قسمت (اپشن) دوم: تمام وسایل متذکره باید ساخت اروپا از کمپنی های مختلف باشند. (مثلا تخته های سولر، مولد، مین سوچ، پمپ و غیره مواد مورد ضرورت از کمپنی های مختلف اروپایی باشند).
  3. قسمت (اپشن) سوم: تمام وسایل مورد ضرورت باید با کیفیت بالا و از کمپنی های معتبر کشورهای آسیایی بدون کشور چین باشند.
9. آفرها باید همراه با سند 150,000 افغانی تضمین آفر باشد در غیر آنصورت داکار حق تصمیم گیری را دارا میباشد.
- روش های ارائه تضمین آفر عبارتند از:
- a. گذاشتن تضمین بانکی از بانک های معتبر داخل پاکت آفرها.
  - و یا،
  - b. جمع نمودن 150,000 افغانی به حساب افغانی داکار (60019598) در کابل بانک میباشد.
- نوت: تمام تضمین ها (تضمین اشتراک در داوطلبی / تضمین اجراییوی قرارداد) به اساس درخواست اشتراک کننده داوطلبی/ قرارداد کننده و ارائه اصل رسید بانکی پس پرداخت میگردد.
10. شرکت برنده باید مبلغ 10% از مجموع ارزش قرارداد را بحیث تضمین اجراییوی موفقانه قرارداد را به حساب داکار جمع نماید، و مبلغ متذکره بعد از تکمیل موفقانه قرارداد باز پرداخت میباشد.

11. 2% Tax will be applicable on the companies that has valid business license and 7% Tax will be applicable on the companies that have invalid business license, or on individuals who don't have business license, will be deducted from the contractor as a withholding tax and DACAAR will pay that amount to Ministry of Finance, the amount starts from (1 AFN).
12. Payment will be made after successfully & complete installation of solar pump with submission of invoice, confirmation of DACAAR relevant sites accountable within 25 official days.
13. Award of the contract will be based on the price, quality, capacity & potentiality of bidder. The evaluation of bidder and their product will be carried out and DACAAR reserves the right to make the decision of awarding contract, either for the whole lots based on total value or for individual item/lot based on price per item/lot.
14. DACAAR (Logistics Unit) adheres to National and International laws on child labour, DACAAR makes sure all its suppliers and vendors abide by such laws preventing child labour in all DACAAR activities countrywide.
15. The Humanitarian Organizations (HO) may conduct on- site visit in the contractor's premises (or may take similar measures) to ensure compliance.
11. 2% مالیہ برای شرکت هائیکه دارای جواز با اعتبار میباشد، و 7% مالیہ برای شرکت هائیکه دارای جواز معیاد اعتبار آن ختم باشد، و یا اشخاصیکه جواز ندارند توسط داکار وضع گزیده و به وزارت مالیہ دولت اسلامی افغانستان پرداخت میشود، آغاز مبلغ از (1 افغانی).
12. تأدیہ پول بعد از تکمیل نمودن مؤفقانہ قرارداد و بعد از تصدیق نمودن مسؤل ساحوی داکار در جریان 25 روز رسمی قابل اجرا میباشد.
13. برنده شدن قرارداد نظر به قیمت، کیفیت، توانائی و ظرفیت داوطلب بوده، و بعد از بررسی کمپنی و جنس صورت میگردد. البته داکار حق تصمیم گیری در این زمینہ را دارا میباشد، همچنان داکار حق دارد کہ قرار داد را به اساس قیمت کل و یا قیمت فی لات را عقد نماید.
14. دفتر داکار (شعبہ لوژیستیک) با در نظر داشت قوانین ملی و بین المللی برای جلوگیری از کار کودکان مصمم بوده و سعی میکند کہ تمام فعالیتہای تہیہ کنندہ گان و مشتریان این ادارہ به این اصل پایند باشند.
15. سازمان های بشر دوستانہ (HO) ممکن است تا از محلات و سایت ها به بخاطر اطمینان خاطر و تطبیق درست کار توسط قرار داد گیرندہ بازدید بعمل آورده و یا ممکن است اقدامات مشابہی را انجام دهند.

For more details, please visit DACAAR Logistics Unit Main Office Kabul, Sunday through Thursday, from 8:00AM to 03:00PM. Or contact on below Email Addresses: [jamal@dacaar.org](mailto:jamal@dacaar.org) or [faizullah@dacaar.org](mailto:faizullah@dacaar.org)

Yours Sincerely,

Manager - Logistics  
Date: May 05, 2020

**ANNEX (I)**

**Budget Breakdown / فورم ارانه آفر**

**DACAAR ITB 07 PRF-312-313/UNICEF/1908-UNEW/402-403/KBL-0110/WRD-0401/04.2020**

**Lot I: Complete Solar Water Supply System for Kochi Abad Pipe Scheme, Bagrami District of Kabul Province:**

**First Option** – Made in Europe (All products should be of the same brand)

S/N	Required Item	Technical Specifications	Unit	Total QTY	Unit Price (AFN)	Total Price (AFN)	Remarks
1	Complete Solar system submersible water pump with Controller, Solar Panels, sensors, wires, auto fuses (on/off), stainless steel holding cable, fixed stands, electric cables and other required accessories with complete installation of the system according to the attached specifications.	Annex (III)	LUM	1			
2	Solar required submersible water pump, (As Spare Pump)	<b>Additional (Spare)</b> Annex (III)	No	1			<b>No Need for Installation</b>
3	PE Delivery Pipe according to pump outlet size	-	MTR	146			(PE80 - PN16)
4	PE required fittings	-	LUM	1			(PN 16 Bar)
<b>Installation Charges: AFN</b>							
<b>Transportation Cost to Kochi Abad Pipe Scheme, Bagrami District of Kabul Province: AFN</b>							
<b>Grand Total: AFN</b>							
<b>Note:</b> The pumps, controller, panel and some other important accessories must be European Made and must be of the same brand.							

Bidder Name: \_\_\_\_\_ اسم آفر دهنده:

Address & Stamp: \_\_\_\_\_ آدرس کمپنی و مهر کمپنی:

Mobile No: \_\_\_\_\_ نمبر موبائیل:

Email Address: \_\_\_\_\_ آدرس ایمل:

Delivery Time: \_\_\_\_\_ زمان تحویلدهی:

**ANNEX (I)**

**Budget Breakdown / فورم ارانه آفر**

**DACAAR ITB 07 PRF-312-313/UNICEF/1908-UNEWB/402-403/KBL-0110/WRD-0401/04.2020**

**Lot I: Complete Solar Water Supply System for Kochi Abad Pipe Scheme, Bagrami District of Kabul Province:**

**Second Option** – Made in Europe products of different brands can be used in the system (e.g. solar panels from one brand, inverter from another brand and the pump from another brand).

S/N	Required Item	Technical Specifications	Unit	Total QTY	Unit Price (AFN)	Total Price (AFN)	Remarks
1	Complete Solar system submersible water pump with Controller, Solar Panels, sensors, wires, auto fuses (on/off), stainless steel holding cable, fixed stands, electric cables and other required accessories with complete installation of the system according to the attached specifications.	Annex (III)	LUM	1			
2	Solar required submersible water pump, (As Spare Pump)	<b>Additional (Spare)</b> Annex (III)	No	1			<b>No Need for Installation</b>
3	PE Delivery Pipe according to pump outlet size	-	MTR	146			(PE80 - PN16)
4	PE required fittings	-	LUM	1			(PN 16 Bar)
<b>Installation Charges: AFN</b>							
<b>Transportation Cost to Kochi Abad Pipe Scheme, Bagrami District of Kabul Province: AFN</b>							
<b>Grand Total: AFN</b>							

Bidder Name: \_\_\_\_\_ اسم آفر دهنده:

Address & Stamp: \_\_\_\_\_ آدرس کمپنی و مهر کمپنی:

Mobile No: \_\_\_\_\_ نمبر موبائیل:

Email Address: \_\_\_\_\_ آدرس ایمل:

Delivery Time: \_\_\_\_\_ زمان تحویلدهی:

**ANNEX (I)**

**Budget Breakdown / فورم ارائه آفر**

**DACAAR ITB 07 PRF-312-313/UNICEF/1908-UNEWB/402-403/KBL-0110/WRD-0401/04.2020**

**Lot I: Complete Solar Water Supply System for Kochi Abad Pipe Scheme, Bagrami District of Kabul Province:**

**Third Option** – Best Products from well reputed manufacturers of Asian countries, except Chinese

S/N	Required Item	Technical Specifications	Unit	Total QTY	Unit Price (AFN)	Total Price (AFN)	Remarks
1	Complete Solar system submersible water pump with Controller, Solar Panels, sensors, wires, auto fuses (on/off), stainless steel holding cable, fixed stands, electric cables and other required accessories with complete installation of the system according to the attached specifications.	Annex (III)	LUM	1			
2	Solar required submersible water pump, (As Spare Pump)	<b>Additional (Spare)</b> Annex (III)	No	1			<b>No Need for Installation</b>
3	PE Delivery Pipe according to pump outlet size	-	MTR	146			(PE80 - PN16)
4	PE required fittings	-	LUM	1			(PN 16 Bar)
<b>Installation Charges: AFN</b>							
<b>Transportation Cost to Kochi Abad Pipe Scheme, Bagrami District of Kabul Province: AFN</b>							
<b>Grand Total: AFN</b>							

Bidder Name: \_\_\_\_\_ اسم آفر دهنده:

Address & Stamp: \_\_\_\_\_ آدرس کمپنی و مهر کمپنی:

Mobile No: \_\_\_\_\_ نمبر موبائیل:

Email Address: \_\_\_\_\_ آدرس ایمل:

Delivery Time: \_\_\_\_\_ زمان تحویلدهی:

**ANNEX (I)**

**Budget Breakdown / فورم ارانه آفر**

**DACAAR ITB 07 PRF-312-313/UNICEF/1908-UNEWB/402-403/KBL-0110/WRD-0401/04.2020**

**Lot II: Complete Solar Water Supply System for Amar Khil Village Maidan Shahr Centre of Maidan Wardak Province:**

**First Option** – Made in Europe (All products should be of the same brand)

S/N	Required Item	Technical Specifications	Unit	Total QTY	Unit Price (AFN)	Total Price (AFN)	Remarks
1	Complete Solar system submersible water pump with Controller, Solar Panels, sensors, wires, auto fuses (on/off), stainless steel holding cable, fixed stands, electric cables and other required accessories with complete installation of the system according to the attached specifications.	Annex (III)	LUM	1			
2	Solar required submersible water pump, (As Spare Pump)	<b>Additional (Spare)</b> Annex (III)	No	1			<b>No Need for Installation</b>
3	PE Delivery Pipe according to pump outlet size	-	MTR	389			(PE80 - PN16)
4	PE required fittings	-	LUM	1			(PN 16 Bar)
<b>Installation Charges: AFN</b>							
<b>Transportation Cost to Amar Khil Village Maidan Shahr Centre of Maidan Wardak Province: AFN</b>							
<b>Grand Total: AFN</b>							
<b>Note:</b> The pumps, controller, panel and some other important accessories must be European Made and must be of the same brand.							

Bidder Name: \_\_\_\_\_ اسم آفر دهنده:

Address & Stamp: \_\_\_\_\_ آدرس کمپنی و مهر کمپنی:

Mobile No: \_\_\_\_\_ نمبر موبائیل:

Email Address: \_\_\_\_\_ آدرس ایمل:

Delivery Time: \_\_\_\_\_ زمان تحویلدهی:

**ANNEX (I)**

**Budget Breakdown / فورم ارانه آفر**

**DACAAR ITB 07 PRF-312-313/UNICEF/1908-UNEW/402-403/KBL-0110/WRD-0401/04.2020**

**Lot II: Complete Solar Water Supply System for Amar Khil Village Maidan Shahr Centre of Maidan Wardak Province:**

**Second Option** – Made in Europe products of different brands can be used in the system (e.g. solar panels from one brand, inverter from another brand and the pump from another brand).

S/N	Required Item	Technical Specifications	Unit	Total QTY	Unit Price (AFN)	Total Price (AFN)	Remarks
1	Complete Solar system submersible water pump with Controller, Solar Panels, sensors, wires, auto fuses (on/off), stainless steel holding cable, fixed stands, electric cables and other required accessories with complete installation of the system according to the attached specifications.	Annex (III)	LUM	1			
2	Solar required submersible water pump, (As Spare Pump)	<b>Additional (Spare)</b> Annex (III)	No	1			<b>No Need for Installation</b>
3	PE Delivery Pipe according to pump outlet size	-	MTR	389			(PE80-PN16)
4	PE required fittings	-	LUM	1			(PN 16 Bar)
<b>Installation Charges: AFN</b>							
<b>Transportation Cost to Amar Khil Village Maidan Shahr Centre of Maidan Wardak Province: AFN</b>							
<b>Grand Total: AFN</b>							

Bidder Name: \_\_\_\_\_ اسم آفر دهنده:

Address & Stamp: \_\_\_\_\_ آدرس کمپنی و مهر کمپنی:

Mobile No: \_\_\_\_\_ نمبر موبائیل:

Email Address: \_\_\_\_\_ آدرس ایمل:

Delivery Time: \_\_\_\_\_ زمان تحویلدهی:



**ANNEX (I)**

**Budget Breakdown / فورم ارانه آفر**

**DACAAR ITB 07 PRF-312-313/UNICEF/1908-UNEWB/402-403/KBL-0110/WRD-0401/04.2020**

**Lot II: Complete Solar Water Supply System for Amar Khil Village Maidan Shahr Centre of Maidan Wardak Province:**

**Third Option** – Best Products from well reputed manufacturers of Asian countries, except Chinese

S/N	Required Item	Technical Specifications	Unit	Total QTY	Unit Price (AFN)	Total Price (AFN)	Remarks
1	Complete Solar system submersible water pump with Controller, Solar Panels, sensors, wires, auto fuses (on/off), stainless steel holding cable, fixed stands, electric cables and other required accessories with complete installation of the system according to the attached specifications.	Annex (III)	LUM	1			
2	Solar required submersible water pump, (As Spare Pump)	<b>Additional (Spare)</b> Annex (III)	No	1			<b>No Need for Installation</b>
3	PE Delivery Pipe according to pump outlet size	-	MTR	389			(PE80-PN16)
4	PE required fittings	-	LUM	1			(PN 16 Bar)
<b>Installation Charges: AFN</b>							
<b>Transportation Cost to Amar Khil Village Maidan Shahr Centre of Maidan Wardak Province: AFN</b>							
<b>Grand Total: AFN</b>							

Bidder Name: \_\_\_\_\_ اسم آفر دهنده:

Address & Stamp: \_\_\_\_\_ آدرس کمپنی و مهر کمپنی:

Mobile No: \_\_\_\_\_ نمبر موبائیل:

Email Address: \_\_\_\_\_ آدرس ایمل:

Delivery Time: \_\_\_\_\_ زمان تحویلدهی:

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**Budget Breakdown / فورم ارانه آفر**

**DACAAR ITB 07 PRF-312-313/UNICEF/1908-UNEWB/402-403/KBL-0110/WRD-0401/04.2020**

**Information about Types and Warranty of Solar Panels and Solar Pumps**

**Complete Solar Water Supply System for Kabul and Maidan Wardak Provinces**

S/N	Manufacturer of solar pumps (Name of Company)	Warranty period of solar panels (year)	Name of submersible pumps (Name of company)	Warranty period of submersible pumps (year)

**ANNEX (II)**

**Tentative Work Plan / پلان تخمینی کار**

**DACAAR ITB 07 PRF-312-313/UNICEF/1908-UNEWB/402-403/KBL-0110/WRD-0401/04.2020**

**Complete Solar Water Supply System for Kabul and Maidan Wardak Province**

Lot#	QTY	Items Description	Location of Installations	Contract Sign Date	Date of Inspection before delivery	Delivery Date	Installation Date
I	1 Set	Supply and Installation of Complete Solar Water Supply System & Spare Solar System Water Pump	Kochi Abad Pipe Scheme, Bagrami District of Kabul Province	Starts Upon DACAAR Final Approval	June 18, 2020	June 25, 2020	June 30, 2020
II	1 Set	Supply and Installation of Complete Solar Water Supply System & Spare Solar System Water Pump	Amar Khil Village, Maidan Shahr Centre of Maidan Wardak Province				

**ANNEX (III)**  
**Technical Specification for Solar Pump Systems**  
**DACAAR ITB 07 PRF-312-313/UNICEF/1908-UNEWB/402-403/KBL-0110/WRD-0401/04.2020**

**Lot I: Complete Solar Water Supply System for Kochi Abad Pipe Scheme, Bagrami District of Kabul Province:**

S/No	Specification	Unit	Quantity	Remark
1	Diameter of PVC Casing	Inch	8	Needs
2	Depth of well	Meter	160	Planned
3	Static water level	Meter	80	Assumed, based on wells during 2019
4	Draw down/Dynamic Level	Meter	120	Assumed, based on wells during 2019
5	Pump Installation Depth	Meter	155	Assumed, based on wells during 2019
6	Height of ground water reservoir from well surface to top of Tank	Meter	16	Tank Location is 0m higher then well so 0+16=16m
7	Length of Delivery Pipe from Pump to Water Tank	Meter	186	Assumed, Elevated Water Tank is 15m away from well surface.
8	Electric Cable Length	Meter	165	Panels are 15m away from Tube Well
9	Average Daily Requirement for 255 families	Lit/Day	51,408	For 255 families
10	Static Head	Meter	140	Assumed with 0.5bar extra
11	Total Head	Meter	140+Head Loss	Would be calculated through solar software by supplier according to delivery pipe diameter

**Some other necessary specification:**

1. For multiple Fixed Stand, reinforced concrete M(1:1.5:3)walls 2m center to center, 40cm thick, 70cm above ground surface, and 50cm underground surface, embedded strong hooks in the mentioned concrete wall, is needed.
2. 10cm PCC (1:2:4), 60cm wide under foundation wall.
3. They should consider strong angle iron for all stands.
4. The angle iron for panel stand will be min (50x50x4)mm, or even stronger to resist against heavy winds.
5. Painting of the angle iron of solar panel stand with anti-corrosive and anti-stain paint.
6. The system to be adjustable in accordance to the actual site surface (From T. Well to the RCC elevated water tank) and also the system will be adjusted with the pump test result after construction of the wall.

**Note:**

- Company/Bidder can offer to any/ all of the mentioned three options through separate quotations with keeping the exact specification into consideration.
- The system should be adjustable in accordance to the actual pumping test report of the well, means the solar system will be adjusted accordingly.

**ANNEX (III)**  
**Technical Specification for Solar Pump Systems**  
**DACAAR ITB 07 PRF-312-313/UNICEF/1908-UNEW/402-403/KBL-0110/WRD-0401/04.2020**

**Lot II: Complete Solar Water Supply System for Amar Khil Village Maidan Shahr Centre of Maidan Wardak Province:**

S/No	Specification	Unit	Quantity	Remark
1	Diameter of PVC Casing	Inch	8	Needs
2	Depth of well	Meter	130	Planned
3	Static water level	Meter	40	Assumed, based on wells during 2019
4	Draw down/Dynamic Level	Meter	90	Assumed, based on wells during 2019
5	Pump Installation Depth	Meter	125	Assumed, based on wells during 2019
6	Height of elevated tank from well surface to top of Tank	Meter	54	Assumed, Tank location is 51m higher than well, and height of water tank is 3m from ground level, so 51+3=54m
7	Length of Delivery Pipe from Pump to Water Tank	Meter	389	Water tank is 260m away from well surface
8	Electric Cable Length	Meter	325	Panels are 200m away from Tube Well
9	Average Daily Requirement	Lit/Day	73,584	For 365 families
10	Static Head	Meter	149	Assumed with 0.5bar extra
11	Total Head	Meter	149+Head Loss	Would be calculated through solar software by supplier according to delivery pipe diameter

**Some other necessary specification:**

1. For multiple Fixed Stand, reinforced concrete M(1:1.5:3) walls 2m center to center, 40cm thick, 70cm above ground surface, and 50cm underground surface, embedded strong hooks in the mentioned concrete wall, is needed.
2. 10cm PCC (1:2:4), 60cm wide under foundation wall.
3. They should consider strong angle iron for all stands.
4. The angle iron for panel stand will be min (50x50x4)mm, or even stronger to resist against heavy winds.
5. Painting of the angle iron of solar panel stand with anti-corrosive and anti-stain paint.
6. The system to be adjustable in accordance to the actual site surface (From T. Well to the RCC elevated water tank) and also the system will be adjusted with the pump test result after construction of the wall.

**Note:**

- Company/Bidder can offer to any/ all of the mentioned three options through separate quotations with keeping the exact specification into consideration.
- The system should be adjustable in accordance to the actual pumping test report of the well, means the solar system will be adjusted accordingly.