



**DIRECTORATE
AGRICULTURE ENGINEERING
SINDH HYDERABAD**

022-9200059
director.dae@gmail.com

No: DAE/Stores-969/343 /17
Hyderabad dated: 06/11/17

To,

✓
The Director (A&F),
Sindh Public Procurement Regulatory Authority,
Secretariat No. A4, Court Road,
KARACHI

Subject: **HOISTING OF FINANCIAL OFFER ON SPPRA WEBSITE AGAINST NOTICE NO. DAE/STORES-969/3132/17 DATED 06.09.2017 FOR THE PREQUALIFICATION OF CONTRACTORS FOR INSTALLATION OF SOLAR WATER PUMP / TUBEWELLS IN SINDH 2017-18 – SPPRA SR. NO. 34398.**

Enclosed herewith please find a original copy of Technical Evaluation for the Pre-qualification of Contractors for the Installation of Solar Water Pump / Tubewell under the ADP Scheme "Provision of Solar Water Pumps / Tubewells on Subsidized Rates to Farmers" alongwith hard & soft copy of Financial offer for publication on the SPPRA website.

Following documents are enclosed.

- i. Notification of Procurement Committee (Copy).
- ii. Notification of Complaint Redressal Committee (Copy).
- iii. Procurement Plan 2017-18 (Copy).
- iv. Original Technical Evaluation Report.
- v. Document for submission of Financial Offer (for publication on SPPRA website).
- vi. Minutes of Technical Committee Meeting held on 27.10.2017.
- vii. List of Pre-qualified firms.

An early response is requested.


DIRECTOR

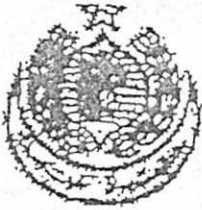
**AGRICULTURE ENGINEERING
SINDH HYDERABAD**

CC to:-

- The Director General, Agricultural Engineering & Water Management Sindh Hyderabad for kind information.
- The Additional Secretary (Tech), Agriculture, Supply & Prices Department, Government of Sindh, Karachi for kind information.
- The PS to Secretary, Agriculture, Supply & Prices Department, Government of Sindh, Karachi for information.

✓
DIRECTOR
**AGRICULTURE ENGINEERING
SINDH HYDERABAD**

NO. 2473
DATED: 07-11-17



GOVERNMENT OF SINDH
AGRICULTURE, SUPPLY &
PRICES DEPARTMENT

NOTIFICATION

No.13(347)SO(DEV)/2013: In Supersession of this department's Notification of even number dated 30.11.2016, in pursuance of Rule-7 of SPP Rules, 2010, Government of Sindh, Agriculture, Supply & Prices Department is pleased to reconstitute a Procurement Committee for the schemes / Projects of Agriculture Engineering Sindh with following composition and Terms of References:-

III. COMPOSITION:

- | | | |
|------|----------------------------------------------------------------------------------------|------------------|
| ✓ 1. | Director,
Agriculture Engineering Sindh, Hyderabad. | Chairman |
| 2. | Director, Sindh On Farm Water Management,
Hyderabad Division. | Member |
| 3. | Representative of Industries & Commerce Department,
Government of Sindh, Karachi | Member |
| 4. | District Accounts Officer /
Representative of District Accounts Officer, Hyderabad. | Member |
| 5. | Deputy Director (Headquarter),
Agriculture Engineering Sindh, Hyderabad | Member/Secretary |

IV. Terms of References:

- Prepare bidding documents;
- Carryout Technical as well as Financial evaluation of the bids;
- Prepare evaluation report as provided in Rule-45 of SPPRA;
- Make recommendations for the award of Contract to the competent authority and;
- Perform any other function ancillary and incidental to the above.

SECRETARY TO GOVT. OF SINDH

Karachi, dated the 08-02-2017

No.13(347)SO(DEV)/2013

A copy is forwarded to information & necessary action to:

- The Secretary to Government of Sindh, Finance Department, Karachi.
- The Secretary to Government of Sindh, Industries Department, Karachi.
- The Managing Director, SPPRA, Karachi.
- The Director General, Agricultural Engineering & Water Management Sindh, Hyderabad.
- All Members of Committee.

(ABDUL AZIZ CHANNA)
DEPUTY SECRETARY (TECH:)

to:-

- 1- P.S. to Minister, Agriculture, Supply & Prices Department, Govt. of Sindh, Karachi.
- 2- P.S. to Secretary, Agriculture, Supply & Prices Department, Govt. of Sindh, Karachi.



GOVERNMENT OF SINDH
AGRICULTURE, SUPPLY &
PRICES DEPARTMENT

NOTIFICATION

No.13(347)SO(DEV)/2016: In supersession of this Department Notification of even number Dated 22.3.2013 and in compliance with Rule 31 of SPP Rules, 2010, Government of Sindh, Agriculture, Supply & Prices Department is pleased to re-constitute a Committee for Complaint Redressal with the following composition and terms of reference:-

I. COMPOSITION

1-	Director General, Agricultural Engineering & Water Management Sindh, Hyderabad,	Chairman
2-	Col. (Rtd.) Zia Siddiqui, (An Independent Professional)	Member
3-	Representative of Office of the Accountant General Sindh, Karachi	Member

II. Terms of References:

- i. Committee may examine the complaint of bidder as per SPPRA Rules.
- ii. The Complaint Redressal Committee upon receiving a complaint from an aggrieved bidder may, if satisfied:
 - a. Prohibit the procurement committee from acting or decision in a manner inconsistent with these rules and regulations.
 - b. Annul, in whole or in part, any authorized act or decision of the procurement committee; and
 - c. Reverse any decision of the procurement committee or substitute its own decision for such a decision.Provide that the Complaint Redressal Committee shall not make any decision to award this contract.
- iii. The committee shall announce its decision within seven days. The decision shall be intimated to the bidder and the Authority within three working days by procuring agency. In case of failure of the committee to decide the complaint, the procuring agency shall not award the contract.
- iv. The procuring agency shall award the contract after the decision of the Complaint Redressal Committee.
- v. Mere fact of lodging of a complaint shall not warrant suspension of the procurement proceedings.

DR. SAIED AHMED MANGNEJO
SECRETARY TO GOVT. OF SINDH

Contd. P/2

4499

No.13 (347) SO (DEV)/2017

Karachi, dated the 05-01-2017

A copy is forwarded for information & further necessary action to:-

1. The Principal Secretary to Governor of Sindh, Karachi
2. The Principal Secretary to Chief Minister, Sindh, Karachi
3. The Accountant General, Sindh, Karachi
4. The Managing Director, Sindh Public Procurement Regulatory Authority, Karachi
5. The Additional Secretary (Staff) to Chief Secretary, Sindh, Karachi
6. The Director General, Agricultural Engineering & Water Management, Sindh, Hyd.
7. The Director General, Agriculture Extension Sindh, Hyderabad
8. The Director General, Agriculture Research Sindh, Tandojam
9. Members of the Committee.



(ABDUL AZIZ CHANNA)
DEPUTY SECRETARY (TECH.)

C.c. to:-

- 1- P.S. to Minister Agriculture, Supply & Prices Department, Govt. of Sindh, Karachi
- 2- P.S. to Secretary Agriculture, Supply & Prices Department, Govt. of Sindh, Karachi



Handwritten notes:
 290
 05-01-17
 Mr. Khan
 Subj
 13/01/17
 Mr. Khan

Handwritten notes:
 270
 8/1

ANNUAL PROCUREMENT PLAN OF DIRECTORATE AGRICULTURE ENGINEERING SINDH HYDERABAD FOR FISCAL YEAR 2017-18

Rs. in Million


Sr. No.	Description of Procurement	Quantity (Where Applicable)	Estimated Unit Cost (Where Applicable)	Estimated Total Cost	Funds Allocated	Source of Funds (ADP / Non-ADP)	Proposed Procurement Method	Timing of Procurement				Remarks
								1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	
1	ADP # 28 Provision of Assistance to Farmers on Purchase of Wheel Type Tractors Phase-IV (SDG # 2)	5492 Nos. Wheel Type Tractors	-	Rs. 1500.0 Million	Rs. 1500.0 Million	ADP	Pre-qualification of Tractors Manufacturers	✓	✓	-	-	All Procurement under SPPRA Rules and subjected to the Release of funds.
2	ADP # 29 Provision of Solar Water Pumps / Tubewells on Subsidized Rate to Farmers In Sindh. (Revised) GOS Share Rs. 802.00 Million Farmers Share Rs. 198.00 Million Total Rs. 1000.00 Million. (SDG # 2, 6)	138 Nos. Solar Water Pumps	-	Rs. 563.858 Million	Rs. 563.858 Million	ADP	Pre-qualification of Contractors	✓	✓	-	-	All Procurement under SPPRA Rules and subjected to the Release of funds.
3	ADP # 30 Replacement of Earth Moving Machinery Phase-III (SDG # 2)	32 Nos. Bulldozers & Allied Transportation Equipment	-	Rs. 600.0 Million	Rs. 600.00 Million	ADP	Single Stage Two Envelope Procedure	✓	✓	-	-	All Procurement under SPPRA Rules and subjected to the Release of funds.
4	ADP # 31 Subsidy Assistance on Agriculture Implements for Farm Mechanization Phase-II. (SDG # 17)	555 Nos. Various Agriculture Implements	-	Rs. 60.0 Million	Rs. 60.0 Million	ADP	Pre-qualification of Manufacturer / Supplier	-	✓	✓	✓	The different of cost would be adjusted through re-appropriation All Procurement under SPPRA Rules and subjected to the Release of funds.
	ADP # 32 Preservation and Storage Facility of Fruits & Vegetable through Hot Water Treatment & Controlled Atmospheric Store on Subsidy to Farmers	02 Nos. Hot Water Treatment Plant 02 Nos. Controlled Atmospheric Stores	-	Rs. 336.00 Million	Rs. 242.027 Million	ADP	Pre-qualification of Manufacturer / Supplier	-	-	✓	✓	All Procurement under SPPRA Rules and subjected to the approval of Scheme and release of funds.



Sr No.	Description of Procurement	Quantity (Where Applicable)	Estimated Unit Cost (Where Applicable)	Estimated Total Cost	Funds Allocated	Source of Funds (ADP / Non-ADP)	Proposed Procurement Method	Timing of Procurement				Remarks
6	ADP # 34 Provision of Assistance to Farmers on Purchase of Wheel Type Tractors Phase-V (SDG # 2)	1832 Nos. of Wheel Type Tractors	-	Rs. 500.0 Million	Rs. 500.0 Million	ADP	Pre-qualification of Tractors Manufacturers	✓	✓	-	-	All Procurement under SPPRA Rules and subjected to the Release of funds.
7	ADP # 35 Provision of Power Drilling rigs Machine on Hire Charges basis to Farmers in Sindh (SDGS # 1, 2, 6)	01 No. Power Drilling Rigs & Allied Transportation Equipment	-	Rs. 130.0 Million	Rs. 100.00 Million	ADP	Single Stage Two Envelope Procedure	✓	✓	-	-	All Procurement under SPPRA Rules and subjected to the Release of funds.
8	ADP # 37 Strengthening Agricultural Engineering through Capacity Building of Staff, Youth Entrepreneurship through Technology Support (SDGS # 1, 2, 6)	Procurement of Furniture, Machinery & Equipments for the 14 Agriculture Engineering Workshops	-	Rs. 200.0 Million	Rs. 200.00 Million	ADP	Single Stage Two Envelope Procedure	✓	✓	-	-	All Procurement under SPPRA Rules and subjected to the Release of funds.
9	ADP # 38 Provision of Combined Harvester, Wheat and Paddy on (50%) Subsidy to Farmers in Sindh (SDGs # 17) (GOS Share Rs. 300.00 Million + Rs. 284.500 Million)	08 Nos. Combined Harvesters + 10% Spare Parts	-	Rs. 75.0 Million	Rs. 75.00 Million	ADP	Single Stage Two Envelope Procedure	✓	✓	-	-	All Procurement under SPPRA Rules and subjected to the Release of funds.

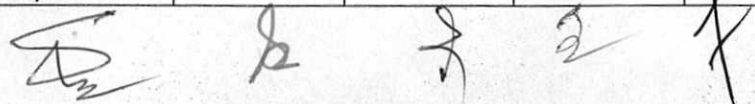

DIRECTOR

AGRICULTURE ENGINEERING SINDH

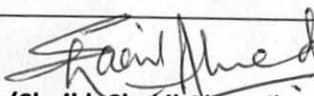
HYDERABAD


Evaluation Report / Qualification Criteria for the Pre-qualification of firms for the Installation of Solar Water Pump / Tubewells

Sr. No.	Information to be supplied	M/s EBR Energy Pakistan Pvt. Ltd. Lahore	M/s Nizam Energy System Pvt. Ltd. Karachi	M/s K.K. B. Karachi	M/s Smart Int., Quetta	M/s Global Business Service, Karachi	M/s Catkin Engineering Sales & Service, Islamabad	M/s S.M. Engineer & Contractor	M/s MASCO Karachi	M/s Skyways Karachi	M/s K Power Tandojam	M/s M.A. Enterprises
1.	Name of the Bidder	M/s EBR Energy Pakistan Pvt. Ltd. Lahore	M/s Nizam Energy System Pvt. Ltd. Karachi	M/s K.K. B. Karachi	M/s Smart Int., Quetta	M/s Global Business Service, Karachi	M/s Catkin Engineering Sales & Service, Islamabad	M/s S.M. Engineer & Contractor	M/s MASCO Karachi	M/s Skyways Karachi	M/s K Power Tandojam	M/s M.A. Enterprises
2.	Legal status of the Bidder (Company / Partnership / Joint Venture)	Company	Company	Company	Company	Company	Company	Company	Company	Joint Venture	Company	Company
3.	Valid Registration Certificate of Pakistan Engineering Council in at-least C5 Category or up, with at-least one of the following specialization codes CE-09/CE-10/CE-11/ME-06/ME-07/EE-03/EE-05/EE-11	C-3 Valid upto 30.06.2018	C-2 Valid upto 30.06.2018	C-A Valid upto 30.06.2018	C-5 Valid upto 30.06.2018	C-4 valid upto 30.06.18	C-3 valid upto 30.06.2018	C-3 applied (Application attached)	C-5 Applied	C-6 valid upto 31.12.2014	C-4 valid upto 18.06.2018	C-5 Applied
4.	Certificate from the original Manufacturer certifying the nomination of the Bidder/Tenderer as Authorized Sole Agent with year of nomination and current year's renewal agreement.	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Solar Panel & Solar Inverter	Provided	Not Provided
5.	Registered with Income Tax, Sales Tax Departments, Sindh Revenue Board Provide Registration Number. With documentary evidence.	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided
6.	Name and address of the quoted equipment Manufacturer. Please provide the details in separate sheet.	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided / Pump details not indicated	Provided	Provided
7.	Names, qualification and experience of the service engineers and technicians. Location where they are posted / working provide complete address and detail of equipment and machinery. Details of service center /workshops to provide the repair and after sale services in Sindh (Location, Address, Telephone numbers to be provided)	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Swiss Solar of Provided	Provided	Provided

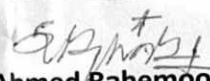



Sr. No.	Information to be supplied	M/s EBR Energy Pakistan Pvt. Ltd. Lahore	M/s Nizam Energy System Pvt. Ltd. Karachi	M/s K.K. B. Karachi	M/s Smart Int., Quetta	M/s Global Business Service, Karachi	M/s Catkin Engineering Sales & Service, Islamabad	M/s S.M. Engineer & Contractor	M/s MASCO Karachi	M/s Skyways Karachi	M/s K Power Tandojam	M/s M.A. Enterprises	
8.	Reference list of Similar works where same / Similar Equipment were installed locally and or internationally during last three years.	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Not Provided	
9.	Performance certificate from the Organization in Government or private companies to whom the bidder or the company has supplied and installed the similar kind goods in Pakistan or abroad.	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Swiss Solar of Provided	Only Private Person Provided	Not Provided	
10.	Bank reference, name of banks and address may be given. The Banker's certificate regarding financial capability of the Bidder/Tenderer shall be furnished. (Bank Statement of last 03 years, indicating turnover of atleast Rs. 50.00 Million per annum.	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Bank Account Certificate balance on 30.6.17 Rs. 15.00 Million	Only 03 months provided 9.28 Million	Provided	
11	Details of similar nature projects under execution.	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Not Provided	Provided	Provided	
12	Facilities of After Sales Service facilities in Sindh.	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Not Provided	Provided	Provided	
13	Item wise List of IEC / EU / USA Standards followed by the manufacturer	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	
14	Item wise warranty periods	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Not Provided	Provided	Provided	
15	Confirmation of Schedule of Requirement	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	
16	Confirmation of Delivery Schedule.	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	
17	Any other documents please specify.	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	Provided	
		<u>Qualified</u>	<u>Qualified</u>	<u>Qualified</u>	<u>Qualified</u>	<u>Qualified</u>	<u>Qualified</u>	<u>Qualified</u>	<u>Qualified</u>	<u>Qualified</u>	<u>Dis-qualified</u>	<u>Qualified</u>	<u>Dis-qualified</u>


(Sheikh Shakil Ahmed)
 Director
 Agriculture Engineering Sindh
 Hyderabad
CHAIRMAN


(Mussarat Mokhtar)
 Deputy Director (Insp)
 Industries & Commerce Department,
 Government of Sindh Karachi
MEMBER


(Saifullah Magsi)
 Rep: of District Accounts Officer,
 District Hyderabad
MEMBER


(Shakil Ahmed Rahemoun)
 Director,
 Water Management
 Hyderabad Division
MEMBER


(Mumtaz Ahmed Siddiqui)
 Deputy Director Mech / HQ
 Agriculture Engineering Sindh
 Hyderabad
MEMBER/SECRETARY

COMPARISON OF TECHNICAL DATA (LIFT PUMP)

Size : 6X8" to 8x8"

Capacity : 500,000 L/day (Min)

Depth : 50 ft.

Rated Power : 12 to 15 kw $\pm 10\%$

Item	Specification	M/s EBR Energy Pakistan Pvt. Ltd. Lahore	M/s Nizam Energy System Pvt. Ltd. Karachi	M/s K.K. B. Karachi	M/s Smart Int., Quetta	M/s Global Business Service, Karachi	M/s Catkin Engineering Sales & Service, Islamabad	M/s S.M. Engineer & Contractor	M/s MASCO Karachi	M/s Skyways Karachi	M/s K Power Karachi	M/s M.A. Enterprises	
		1	2	3	4	5	6	7	8	9	10	11	
Lift Pump (Make & Model)		Lorentz PSK2-9CS-G100-22/2-1	Grundfos NB125-200/219	Maxisu	PEM (Local)	KSB / Dongfeng	Alarko	Xunong	Lorentz PSK2-9CS-G100-22/2-1		Maxisu	Komex	
a.	Rated Power	12 to 15 Kw ($\pm 10\%$) both limits	10 HP (10.8 KW-PV)	11kw	15kw	12kw	12 to 15 Kw ($\pm 10\%$) both limits	20 to 24 Kw ($\pm 10\%$) both limits	11 kw	7.5kw	Not Provided	15kw	12 to 15 Kw ($\pm 10\%$) both limits
b.	Discharge Capacity	Average 650,000 Litre / day	738,000 L/day	798600 L/day	$\pm 10\%$	650,000 L/day	Average 650,000 Litre / day	Average 450,000 Litre / day	700000 Litre / day	650,000 L/day	Not Provided	$\pm 10\%$	Average 650,000 Litre / day
c.	Rated Speed	2400 – 3000 RPM	1400-2900	1475 rpm	2800	2600rpm	2400 – 3000 RPM	2700 – 3000 RPM	2700 – 3000 RPM	1400-2905	Not Provided	2800	2400 – 3000 RPM
d.	Efficiency	More than 75%	79%	75.50%	80%	90%	More than 75%	More than 75%	More than 75%	70%	Not Provided	80%	More than 75%
e.	Power factor	0.8 to 0.9	0.87	0.85	0.8 to 0.9	0.8	0.8 to 0.9	0.8 to 0.9	0.8 to 0.9	0.87%	Not Provided	0.8 to 0.9	0.8 to 0.9
f.	Voltage Tolerance	$\pm 5\%$ to – 15%	$\pm 5\%$ to – 15%	Yes	$\pm 5\%$ to – 15%	$\pm 5\%$	$\pm 5\%$ to – 15%	$\pm 5\%$ to – 15%	$\pm 5\%$ to – 15%	$\pm 5\%$	Not Provided	$\pm 5\%$ to – 15%	$\pm 5\%$ to – 15%
g.	Protection Type	IP68 or Equivalent	IPX4	Yes	IP68	IP68	IP68 or Equivalent	IP68 or Equivalent	IP68 or Equivalent	IP54	Not Provided	IP68	IP68 or Equivalent
h.	Insulation Class	Y or better	F	F	Better	Y	Y or better	Y or better	Y or better	F	Not Provided	Better	Y or better
i.	Flange	NEMA or Equivalent	NEMA	NEMA	NEMA	6"x8"	NEMA or Equivalent	NEMA or Equivalent	Comply	AISI304, ASTM25B	Not Provided	NEMA	NEMA or Equivalent
j.	Warranty	Atleast 1 year	1 Year	2 Years	1 Year Plus	1 year	Atleast 1 year	1 year minimum	1 Year	2 Years	Not Provided	1 Year Plus	Atleast 1 year

Item	Specification	M/s EBR Energy Pakistan Pvt. Ltd. Lahore	M/s Nizam Energy System Pvt. Ltd. Karachi	M/s K.K. B. Karachi	M/s Smart Int., Quetta	M/s Global Business Service, Karachi	M/s Catkin Engineering Sales & Service, Islamabad	M/s S.M. Engineer & Contractor	M/s MASCO Karachi	M/s Skyways Karachi	M/s K Power Karachi	M/s M.A. Enterprises	
		1	2	3	4	5	6	7	8	9	10	11	
k.	Country of Origin	Please Specify	German Made in China	Denmark	Turkey	Pakistan	German / China	Turkey	Xunong, China	Germany	Not Provided	Turkey	China
Solar Panels			ESM- 300-156	Canada Solar CS6U-330P	Jinko	Maysun Solar MS-72 Poly	China	Talesun China	Perlight	Jinko Solar	Not Provided	Jinko	Hanwa Solar
a.	Max. Power / No. of Panels	280 to 320 W	300W / 36 Panels (10,800 Watt)	330 W	320 Watt	300 Watt	300 to 320 Watt	280 to 320 W	265 to 325 Watt	320 W	Not Provided	320 Watt	280 to 320 W
b.	Optimum Operating Voltage	35 to 37 V	38 V	37.2 V	37V	37V	35 to 36 V	35 to 37 V	35 to 37 V	37.4	Not Provided	37V	35 to 37 V
c.	Optimum Operating Current	7 to 9 Amp	7.89 Amp	8.88 A	8.56A	9 Amp	8.4 Amp	7 to 9 Amp	7 to 9 Amp	8.56 A	Not Provided	8.56A	7 to 9 Amp
d.	Module Efficiency	Atleast 16% or higher	16.10%	16.68%	16.49%	16.00%	16%	Atleast 16% or higher	16%	16%	Not Provided	16.49%	Atleast 16% or higher
e.	Operating Temperature	- 40°C to 85°C	- 40°C to 85°C	Yes	- 40°C to 85°C	- 40°C to 85°C	- 40°C to 85°C	- 40°C to 85°C	- 40°C to 85°C	- 40°C to 85°C	Not Provided	- 40°C to 85°C	- 40°C to 85°C
f.	Type	Poly Crystalline	Poly Crystalline	Yes	Poly	Poly	Poly Crystalline	Poly Crystalline	Poly Crystalline	Poly Crystalline	Not Provided	Poly	Poly Crystalline
g.	Front Glass	4mm or better tempered glass	3.2 mm low iron toughned glass	Yes	4mm	4mm	better tempered glass	4mm or better tempered glass	4mm or better tempered glass	4mm or better tempered glass	Not Provided	4mm	4mm or better tempered glass
h.	Frame	Anodized aluminum alloy	Anodized aluminum alloy	Yes	Anodized aluminum alloy	Anodized aluminum alloy	Anodized aluminum alloy	Anodized aluminum alloy	Anodized aluminum alloy	Yes	Not Provided	Anodized aluminum alloy	Anodized aluminum alloy
i.	Product Warranty	Atleast 10 years.	10 Years	Yes	Atleast 10 years.	Atleast 10 years.	10 years.	Atleast 10 years.	10 Years	10 Years	Not Provided	Atleast 10 years.	Atleast 10 years.

Item	Specification	M/s EBR Energy Pakistan Pvt. Ltd. Lahore	M/s Nizam Energy System Pvt. Ltd. Karachi	M/s K.K. B. Karachi	M/s Smart Int., Quetta	M/s Global Business Service, Karachi	M/s Catkin Engineering Sales & Service, Islamabad	M/s S.M. Engineer & Contractor	M/s MASCO Karachi	M/s Skyways Karachi	M/s K Power Karachi	M/s M.A. Enterprises	
		1	2	3	4	5	6	7	8	9	10	11	
j.	Standards	IEC 61701, IEC 62716, DIN 60068 – 2 – 68 or Equivalent	IEC 61215:2005, EN 61215:2005, IEC 617301:2004, EN 61730-1:2007, IEC 61730-2:2004, EN 61730-2:2007	Yes	IEC 61701, IEC 62716, DIN 60068 – 2 – 68	IEC 61701, IEC 62716, DIN 60068 – 2 – 68 or Equivalent	Equivalent	IEC 61701, IEC 62716, DIN 60068 – 2 – 68 or Equivalent	IEC 61701, IEC 62716, DIN 60068 – 2 – 68 or Equivalent	IEC 61701, IEC 62716, DIN 60068 – 2 – 68 or Equivalent	Not Provided	IEC 61701, IEC 62716, DIN 60068 – 2 – 68 or Equivalent	IEC 61701, IEC 62716, DIN 60068 – 2 – 68 or Equivalent
k.	Junction box	IP68 Rated	IP65	Yes	IP68 Rated	IP68 Rated	IP68 Rated	IP68 Rated	IP68 Rated	IP67	Not Provided	IP68 Rated	IP68 Rated
l.	Connector	MC4 Compatible	MC4 Compatible	Yes	MC4 Compatible	MC4 Compatible	MC4 Compatible	MC4 Compatible	MC4 Compatible	Yes	Not Provided	MC4 Compatible	MC4 Compatible
m.	Country of Origin	Please Specify.	China	China	China	UAE	China / Dubai	Talesun China	China	China	Not Provided	China	China
n.	Total no. of Panels for the rated power.	Please Specify.	36 Panels 36x300 = 10800 W	48 Pcs	46	300x400= 12000 Watt	48	42 @ 310W / Panel	40 x 315 W/ Panel	34	Not Provided	46	30 to 40 Nos.
o.	Linear Performance Warranty.	20 to 25 years	25 Years	25 years	25 Years	25 Years	20	20 to 25 years	20 Years	25 Years	Not Provided	25 Years	20 to 25 years
Inverter			PSK2-9	Grundfos Renewable Solar Inverter (RSI 15kw)	Jinktech	ADA SP-100	INVT	Talesun	Perlight	PSK29 (Lorentz)	Not Provided	Jintech	INVT
a.	Amperage	25 to 32 Amp	17 Amp	31 Amp	15kw	30 Amp	25 Amp	30 to 45 Amp	30 Amp	Max 17x3	Not Provided	15kw	25 to 32 Amp
b.	Power	12 to 15 kw	10 kw	15 kw	12 to 15 kw		15 kw	20 to 24 kw	15 kw	10 kw	Not Provided	12 to 15 kw	12 to 15 kw
c.	Output	3 Phase 370 to 385 Vac	3 Phase 380 to 415 Vac	3 Phase 380 to 415 Vac	3 Phase 370 to 385 Vac	3 Phase 370 to 385 Vac	3 Phase 370 to 385 Vac	3 Phase 370 to 385 Vac	3 Phase 370 to 385 Vac	380 Vac	Not Provided	3 Phase 370 to 385 Vac	3 Phase 370 to 385 Vac

Item	Specification	M/s EBR Energy Pakistan Pvt. Ltd. Lahore	M/s Nizam Energy System Pvt. Ltd. Karachi	M/s K.K. B. Karachi	M/s Smart Int., Quetta	M/s Global Business Service, Karachi	M/s Catkin Engineering Sales & Service, Islamabad	M/s S.M. Engineer & Contractor	M/s MASCO Karachi	M/s Skyways Karachi	M/s K Power Karachi	M/s M.A. Enterprises	
		1	2	3	4	5	6	7	8	9	10	11	
d.	Input	340to 650 Vdc	300 to 850 VDC	300 to 850 VDC	340to 650 Vdc	340to 650 Vdc	340to 650 Vdc	340to 650 Vdc	Max 850 Vac	Not Provided	340to 650 Vdc	340to 650 Vdc	
e.	MPPT	Inbuilt	In Built	Yes	Inbuilt	MPPT	In Built	Inbuilt	Agreed	Not Provided	Inbuilt	Inbuilt	
f.	Protection	In built for over current, over load, anti-lightening etc.	Yes, In Built	Yes	In built for over current, over load, anti-lightening etc.	IP68	over current, over load, anti-lightening etc.	In built for over current, over load, anti-lightening etc.	Agreed	Not Provided	In built for over current, over load, anti-lightening etc.	In built for over current, over load, anti-lightening etc.	
g.	Efficiency	95% or more.	98%	Yes	95% or more.	98%	95%	95% or more.	Max 98%	Not Provided	95% or more.	95% or more.	
h.	Country of Origin	Please Specify	German Brand Made in China	Italy	China	China	China	Larens China	Hober /China	Germany	Not Provided	China	China
i.	Warranty	Two years minimum	2 Years	2 Years	2 Years	2 Years	02 Years	Two years minimum	2 Years	2 Years	Not Provided	2 Years	Two years minimum
	Cables & Wires	99.9% Copper UV Protection of matching configuration.	99.90%	Yes	99.9% Copper UV Protection of matching configuration.	99.9% Copper UV Protection of matching configuration.	99.90%	99.9% Copper UV Protection of matching configuration.	99.9% Copper UV Protection of matching configuration.	Agreed	Not Provided	99.9% Copper UV Protection of matching configuration.	99.9% Copper UV Protection of matching configuration.
	Grounding Kit	Standard	Yes	Yes	Standard	Standard	Yes	Standard	Standard	Agreed	Not Provided	Standard	Standard
	Water out let & accessories	5" HDPE or M/s Steel Pipes	Suction 8" Discharge 6" Steel	Yes	5" HDPE or M/s Steel Pipes	Steelex	Standard	5" HDPE or M/s Steel Pipes	5" HDPE or M/s Steel Pipes	Agreed	Not Provided	5" HDPE or M/s Steel Pipes	5" HDPE or M/s Steel Pipes
	Mounting Structures	Rust free powdered coated.	GI Structure	Yes	Rust free powdered coated.	Local	Yes	Rust free powdered coated.	Rust free powdered coated.	Agreed	Not Provided	Rust free powdered coated.	Rust free powdered coated.

Item	Specification	M/s EBR Energy Pakistan Pvt. Ltd. Lahore	M/s Nizam Energy System Pvt. Ltd. Karachi	M/s K.K. B. Karachi	M/s Smart Int., Quetta	M/s Global Business Service, Karachi	M/s Catkin Engineering Sales & Service, Islamabad	M/s S.M. Engineer & Contractor	M/s MASCO Karachi	M/s Skyways Karachi	M/s K Power Karachi	M/s M.A. Enterprises
		1	2	3	4	5	6	7	8	9	10	11
Mounting Plate / box.	Rust free powder coated of Iron & G.I. with environmental protection for inverter, switches, junction box etc.	GI Mounting Plate with Environmental Protection	Yes	Rust free powder coated of Iron & G.I. with environmental protection for inverter, switches,	Local	Rust Free Standard Installation	Rust free powder coated of Iron & G.I. with environmental protection for inverter, switches,	Rust free powder coated of Iron & G.I. with environmental protection for inverter, switches,	Agreed	Not Provided	Rust free powder coated of Iron & G.I. with environmental protection for inverter, switches,	Rust free powder coated of Iron & G.I. with environmental protection for inverter, switches, junction box
Execution of Tubewell bore, casing & excavation with necessary support structures & pipping	Yes as per requirement of Solar Pump at specified depth.	It's a surface pump, so bore hole is not applicable.	Yes	Yes as per requirement of Solar Pump at specified depth.	as per requirement	Yes specified depth	Yes as per requirement of Solar Pump at specified depth.	Yes as per requirement of Solar Pump at specified depth.	Agreed	Not Provided	Yes as per requirement of Solar Pump at specified depth.	Yes as per requirement of Solar Pump at specified depth.



(Sheikh Shakil Ahmed)

Director

Agriculture Engineering Sindh Hyderabad

CHAIRMAN



(Mussarat Mokhtar)

Deputy Director (Insp)

Industries & Commerce

Department, Government of

Sindh Karachi

MEMBER



(Saifullah Magsi)

Rep: of District Accounts Officer, District

Hyderabad

MEMBER

(Shakil Ahmed Rahemoun)

Director,

Water Management

Hyderabad Division

MEMBER



(Mumtaz Ahmed Siddiqui)

Deputy Director Mech / HQ

Agriculture Engineering Sindh Hyderabad

MEMBER/SECRETARY

COMPARISON OF TECHNICAL DATA (SUBMERSIBLE PUMP 100 FT.)

Delivery Size : 5"

Capacity : 500,000 L/day (Min)

Depth : 100 ft.

Rated Power : 15 to 18 kw \pm 10%

Item	Specification	M/s EBR Energy Pakistan Pvt. Ltd. Lahore	M/s Nizam Energy System Pvt. Ltd. Karachi	M/s K.K. B. Karachi	M/s Smart Int., Quetta	M/s Global Business Service, Karachi	M/s Catkin Engineering Sales & Service, Islamabad	M/s S.M. Engineer & Contractor	M/s MASCO Karachi	M/s Skyways Karachi	M/s K Power Karachi	M/s M.A. Enterprises	
		1	2	3	4	5	6	7	8	9	10	11	
Submersible Pump (Make & Model)		Lorentz PSK2-21 C-SJ75-4	Grundfos SP- 77-4	MAXISU	Komax KSP-6/7	GreenFox	Alarko	Xunong	Lorentz PSK2- 15C-SJ75-3		Maxisu	Komex	
a.	Rated Power	15 to 18 Kw (\pm 10%) both limits	20-HP (16.20 KW-PV)	15 kw	18kw	15kw	15 to 18 Kw	15 to 18 Kw (\pm 10%) both limits	14 kw	11 kw	Not Provided	18kw	15 to 18 Kw (\pm 10%) both limits
b.	Discharge Capacity	Average 500,000 Litre / day	Average 500,000 Litre / day	472,740 L/day	Average 500,000 Litre / day	500,000 L/day	Average 500,000 Litre / day	Average 500,000 Litre / day	500000 Litre / day	450000 to 700000 litre / day	Not Provided	Average 500,000 Litre / day	Average 500,000 Litre / day
c.	Rated Speed	2660 – 3000 RPM	1400-2850 rpm	2900 rpm	2660 – 3000 RPM	2700rpm	2660 – 3000 RPM	2660 – 3000 RPM	2660 RPM	1400 - 2850 rpm	Not Provided	2660 – 3000 RPM	2660 – 3000 RPM
d.	Efficiency	More than 75%	79%	75.00%	More than 75%	98%	85%	More than 75%	More than 75%	70%	Not Provided	More than 75%	More than 75%
e.	Power factor	0.8 to 0.9	0.87	0.85	0.8 to 0.9	0.8	0.85	0.8 to 0.9	0.8 to 0.9	0.87	Not Provided	0.8 to 0.9	0.8 to 0.9
f.	Voltage Tolerance	\pm 5% to – 15%	\pm 5% to – 15%	Yes	\pm 5% to – 15%	\pm 5%	\pm 5% to – 15%	\pm 5% to – 15%	\pm 5% to – 15%	\pm 5%	Not Provided	\pm 5% to – 15%	\pm 5% to – 15%
g.	Protection Type	IP68 or Equivalent	IP68	Yes	IP68 or Equivalent	IP68	Equivalent	IP68 or Equivalent	IP68 or Equivalent	IP54	Not Provided	IP68 or Equivalent	IP68 or Equivalent
h.	Insulation Class	Y or better	F	F	Y or better	F	Better	Y or better	Y or better	F	Not Provided	Y or better	Y or better
i.	Flange	NEMA or Equivalent	NEMA	NEMA	NEMA	5"	Equivalent	NEMA or Equivalent	NEMA or Equivalent	AISI304 (Agreed)	Not Provided	NEMA	NEMA or Equivalent
j.	Warranty	Atleast 1 year	1 Year	2 Years	1 year	1 year	1 Year	Atleast 1 year	1 Year	2 Years	Not Provided	1 year	Atleast 1 year
k.	Country of Origin	Please Specify	German Brand China	Denmark	Turkey	UAE	China	Turkey	Xunong, China	Germany	Not Provided	Turkey	China

Item	Specification	M/s EBR Energy Pakistan Pvt. Ltd. Lahore	M/s Nizam Energy System Pvt. Ltd. Karachi	M/s K.K. B. Karachi	M/s Smart Int., Quetta	M/s Global Business Service, Karachi	M/s Catkin Engineering Sales & Service, Islamabad	M/s S.M. Engineer & Contractor	M/s MASCO Karachi	M/s Skyways Karachi	M/s K Power Karachi	M/s M.A. Enterprises	
		1	2	3	4	5	6	7	8	9	10	11	
Solar Panels		ESM 300-156	Canadia Solar CS6U-330P	Jinko	Maysun Solar MS-72 Poly	China Made	Talesun China	Perlight	Janko Solar	Not Provided	Jinko	Hanwa Solar	
a.	Max. Power / No. of Panels	280 to 320 W	300 W/ 54 Panels (16200 Watt)	330 W	320 Watt	300w	300 to 320 W	280 to 320 W	265 to 325 Watt	320 Watt	Not Provided	320 Watt	280 to 320 W
b.	Optimum Operating Voltage	35 to 37 V	38 V	37.2 V	37V	37V	35 to 36 Volt	35 to 37 V	35 to 37 V	37.4 V	Not Provided	37V	35 to 37 V
c.	Optimum Operating Current	7 to 9 Amp	7.89 Amp	8.88 A	8.56 Amp	9 Amp	8.4 Amp	7 to 9 Amp	7 to 9 Amp	8.56 Amp	Not Provided	8.56 Amp	7 to 9 Amp
d.	Module Efficiency	Atleast 16% or higher	16.10%	16.68%	16.49%	16%	16%	Atleast 16% or higher	16%	16%	Not Provided	16.49%	Atleast 16% or higher
e.	Operating Temperature	-40°C to 85°C	-40°C to 85°C	Yes	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C	-40°C to 85°C	Not Provided	-40°C to 85°C	-40°C to 85°C
f.	Type	Poly Crystalline	Poly Crystalline	Yes	Poly Crystalline	Poly Crystalline	Poly Crystalline	Poly Crystalline	Poly Crystalline	Poly Crystalline	Not Provided	Poly Crystalline	Poly Crystalline
g.	Front Glass	4mm or better tempered glass	3.2 mm low iron toughned glass	Yes	4mm or better tempered glass	4mm	High tempered glass	4mm or better tempered glass	4mm or better tempered glass	4mm or better tempered glass	Not Provided	4mm or better tempered glass	4mm or better tempered glass
h.	Frame	Anodized aluminum alloy	Anodized aluminum alloy	Yes	Anodized aluminum alloy	Anodized aluminum alloy	Anodized aluminum alloy	Anodized aluminum alloy	Anodized aluminum alloy	Anodized aluminum alloy	Not Provided	Anodized aluminum alloy	Anodized aluminum alloy
i.	Product Warranty	Atleast 10 years.	10 Years	Yes	10 years.	10 Years	10 Years	Atleast 10 years.	10 Years	10 Years	Not Provided	10 years.	Atleast 10 years.

Item	Specification	M/s EBR Energy Pakistan Pvt. Ltd. Lahore	M/s Nizam Energy System Pvt. Ltd. Karachi	M/s K.K. B. Karachi	M/s Smart Int., Quetta	M/s Global Business Service, Karachi	M/s Catkin Engineering Sales & Service, Islamabad	M/s S.M. Engineer & Contractor	M/s MASCO Karachi	M/s Skyways Karachi	M/s K Power Karachi	M/s M.A. Enterprises	
		1	2	3	4	5	6	7	8	9	10	11	
j.	Standards	IEC 61215:2005, EN 61215:2005, IEC 617301:2004, EN 61730-1:2007, IEC 61730-2:2004, EN 61730-2:2007	Yes	IEC 61701, IEC 62716, DIN 60068 – 2 – 68	IEC 61701, IEC 62716, DIN 60068 – 2 – 68	Equivalent	IEC 61701, IEC 62716, DIN 60068 – 2 – 68 or Equivalent	IEC 61701, IEC 62716, DIN 60068 – 2 – 68 or Equivalent	IEC 61701, IEC 62716, DIN 60068 – 2 – 68 or Equivalent	Not Provided	IEC 61701, IEC 62716, DIN 60068 – 2 – 68	IEC 61701, IEC 62716, DIN 60068 – 2 – 68 or Equivalent	
k.	Junction box	IP65	Yes	IP68 Rated	IP68	IP68	IP68 Rated	IP68 Rated	IP67	Not Provided	IP68 Rated	IP68 Rated	
l.	Connector	MC4 Compatible	Yes	MC4 Compatible	MC4 Compatible	MC4 Compatible	MC4 Compatible	MC4 Compatible	Yes	Not Provided	MC4 Compatible	MC4 Compatible	
m.	Country of Origin	Please Specify.	China	China	China	UAE	China	Talesun China	China	China	Not Provided	China	Please Specify.
n.	Total no. of Panels for the rated power.	Please Specify.	54 Panels	64 Pcs	56	300x66	64	75 @ 310 W / Panel	72 x 315 W / Panel	54	Not Provided	56	Please Specify.
o.	Linear Performance Warranty.	20 to 25 years	25 Years	25 years	20 to 25 years	25 years	20 Years	20 to 25 years	20 Years	25 Years	Not Provided	20 to 25 years	20 to 25 years
Inverter		PSK-2 21	Grundfos Renewable Solar Inverter (RSI)	Jintech	ADA SP-100	INVT	Larens	Hober	PSK2-15 (Lorentz)	Not Provided	Jintech	INVT	
a.	Amperage	30 to 40 Amp	33 Amp	31 Amp	30 to 40 Amp	36 Amp	30 to 40 Amp	32 Amp	32 Amp	3x24 Amp	Not Provided	30 to 40 Amp	30 to 40 Amp
b.	Power	15 to 18 kw	21 kw	15 kw	15 to 18 kw	18kw	15 to 18 kw	15 to 18 kw	15 kw	15kw	Not Provided	15 to 18 kw	15 to 18 kw
c.	Output	3 Phase 370 to 385 Vac	3 Phase 370 to 385 Vac	3 Phase 380 to 415 Vac	3 Phase 370 to 385 Vac	3 Phase	3 Phase 370 to 385 Vac	3 Phase 370 to 385 Vac	3 Phase 370 to 385 Vac	3P, 380 V	Not Provided	3 Phase 370 to 385 Vac	3 Phase 370 to 385 Vac

Item	Specification	M/s EBR Energy Pakistan Pvt. Ltd. Lahore	M/s Nizam Energy System Pvt. Ltd. Karachi	M/s K.K. B. Karachi	M/s Smart Int., Quetta	M/s Global Business Service, Karachi	M/s Catkin Engineering Sales & Service, Islamabad	M/s S.M. Engineer & Contractor	M/s MASCO Karachi	M/s Skyways Karachi	M/s K Power Karachi	M/s M.A. Enterprises	
		1	2	3	4	5	6	7	8	9	10	11	
d.	Input	340to 650 Vdc	300 to 850 VDC	340to 650 Vdc	340to 650 Vdc	340to 650 Vdc	340to 650 Vdc	340 to 650 Vdc	Max 850	Not Provided	340to 650 Vdc	340to 650 Vdc	
e.	MPPT	Inbuilt	In Built	Yes	Inbuilt	MPPT	Inbuilt	Inbuilt	Inbuilt	Agreed	Not Provided	Inbuilt	Inbuilt
f.	Protection	In built for over current, over load, anti-lightening etc.	In Built	Yes	In built for over current, over load, anti-lightening etc.	IP68	In built for over current, over load, anti-lightening etc.	In built for over current, over load, anti-lightening etc.	In built for over current, over load, anti-lightening etc.	Agreed	Not Provided	In built for over current, over load, anti-lightening etc.	In built for over current, over load, anti-lightening etc.
g.	Efficiency	95% or more.	98%	Yes	95% or more.	98%	95%	95% or more.	95% or more.	98%	Not Provided	95% or more.	95% or more.
h.	Country of Origin	Please Specify	German Brand China	Italy	China	China	china	Larens China	Hober / China	Germany	Not Provided	China	Please Specify
i.	Warranty	2 years minimum	2 Years	2 Years	2 Years	2 years	02 Years	2 years minimum	2 Years	2 Years	Not Provided	2 Years	2 years minimum
	Cables & Wires	99.9% Copper UV Protection of matching configuration.	99.90%	Yes	99.9% Copper UV Protection of matching configuration.	As per requirement	99.9% Copper UV Protection of matching configuration.	99.9% Copper UV Protection of matching configuration.	99.9% Copper UV Protection of matching configuration.	Agreed	Not Provided	99.9% Copper UV Protection of matching configuration.	99.9% Copper UV Protection of matching configuration.
	Grounding Kit	Standard	Standard	Yes	Standard	Standard	Standard	Standard	Standard	Agreed	Not Provided	Standard	Standard
	Water out let & accessories	5" HDPE or M/s Steel Pipes	5" Steel or pipe	Yes	5" HDPE or M/s Steel Pipes	Steelex	Yes	5" HDPE or M/s Steel Pipes	5" HDPE or M/s Steel Pipes	Agreed	Not Provided	5" HDPE or M/s Steel Pipes	5" HDPE or M/s Steel Pipes
	Mounting Structures	Rust free powdered coated.	GI Structure	Yes	Rust free powdered coated.	Rust free powdered coated.	Yes	Rust free powdered coated.	Rust free powdered coated.	Agreed	Not Provided	Rust free powdered coated.	Rust free powdered coated.

Item	Specification	M/s EBR Energy Pakistan Pvt. Ltd. Lahore	M/s Nizam Energy System Pvt. Ltd. Karachi	M/s K.K. B. Karachi	M/s Smart Int., Quetta	M/s Global Business Service, Karachi	M/s Catkin Engineering Sales & Service, Islamabad	M/s S.M. Engineer & Contractor	M/s MASCO Karachi	M/s Skyways Karachi	M/s K Power Karachi	M/s M.A. Enterprises
		1	2	3	4	5	6	7	8	9	10	11
Mounting Plate / box.	Rust free powder coated of Iron & G.I. with environmental protection for inverter, switches, junction box etc.	GI Mounting Plate with Environmental Protection	Yes	Rust free powder coated of Iron & G.I. with environmental protection for inverter, switches, junction box etc.	As per requirement	Rust free powder coated of Iron & G.I. with environmental protection for inverter, switches, junction box etc.	Rust free powder coated of Iron & G.I. with environmental protection for inverter, switches, junction box etc.	Rust free powder coated of Iron & G.I. with environmental protection for inverter, switches, junction box etc.	Agreed	Not Provided	Rust free powder coated of Iron & G.I. with environmental protection for inverter, switches, junction box etc.	Rust free powder coated of Iron & G.I. with environmental protection for inverter, switches, junction box etc.
Execution of Tubewell bore, casing & excavation with necessary support structures & pipping	Yes as per requirement of Solar Pump at specified depth.	Yes	Yes	Yes as per requirement of Solar Pump at specified depth.	As per requirement	Yes as per requirement of Solar Pump at specified depth.	Yes as per requirement of Solar Pump at specified depth.	Yes as per requirement of Solar Pump at specified depth.	Agreed	Not Provided	Yes as per requirement of Solar Pump at specified depth.	Yes as per requirement of Solar Pump at specified depth.



(Sheikh Shakil Ahmed)
Director
Agriculture Engineering Sindh Hyderabad
CHAIRMAN



(Mussarat Mokhtar)
Deputy Director (Insp)
Industries & Commerce
Department, Government of
Sindh Karachi
MEMBER



(Saifullah Magsi)
Rep: of District Accounts Officer, District
Hyderabad
MEMBER



(Shakil Ahmed Rahemooon)
Director,
Water Management
Hyderabad Division
MEMBER



(Mumtaz Ahmed Siddiqui)
Deputy Director Mech / HQ
Agriculture Engineering Sindh Hyderabad
MEMBER/SECRETARY

COMPARISON OF TECHNICAL DATA (SUBMERSIBLE PUMP 150 FT.)

Delivery Size : 5"

Capacity : 450,000 L/day (Min)

Depth : 150 ft.

Rated Power : 20 to 24 kw $\pm 10\%$

Item	Specification	M/s EBR Energy Pakistan Pvt. Ltd. Lahore	M/s Nizam Energy System Pvt. Ltd. Karachi	M/s K.K. B. Karachi	M/s Smart Int., Quetta	M/s Global Business Service, Karachi	M/s Catkin Engineering Sales & Service, Islamabad	M/s S.M. Engineer & Contractor	M/s MASCO Karachi	M/s Skyways Karachi	M/s K Power Karachi	M/s M.A. Enterprises	
		1	2	3	4	5	6	7	8	9	10	11	
Submersible Pump (Make & Model)		Lorentz (PSK2-21 CSJ75-4)	Grundfos SP-95-4	Maxisu	KOMAX KPS-6/9	Greenfox	Alarko	Xunong	Lorentz PSK2-21-C-SI42-10		Maxisu	Komex	
a.	Rated Power	20 to 24 Kw ($\pm 10\%$) both limits	(21.6-HP KW-PV)	18.5 kw	18 kw	20kw	20 to 24 Kw	20 to 24 Kw ($\pm 10\%$) both limits	18 kw	15kw	Not Provided	24kw	20 to 24 Kw ($\pm 10\%$) both limits
b.	Discharge Capacity	Average 450,000 Litre / day	Average 474,000 Litre / day	454,800 L/day	Average 450,000 Litre / day	450,000 L/day	Average 450,000 Litre / day	Average 450,000 Litre / day	450000 Litre / day	Average 450,000 Litre / day	Not Provided	Average 450,000 Litre / day	Average 450,000 Litre / day
c.	Rated Speed	2700 – 3000 RPM	1400-2850 rpm	2900 rpm	2700 – 3000 RPM	2800rpm	2700 – 3000 RPM	2700 – 3000 RPM	2700 RPM	1400-2850rpm	Not Provided	2700 – 3000 RPM	2700 – 3000 RPM
d.	Efficiency	More than 75%	79%	75.70%	More than 75%	75%	80%	More than 75%	More than 75%	70%	Not Provided	More than 75%	More than 75%
e.	Power factor	0.8 to 0.9	0.87	0.85	0.8 to 0.9	0.8	0.85	0.8 to 0.9	0.8 to 0.9	0.87	Not Provided	0.8 to 0.9	0.8 to 0.9
f.	Voltage Tolerance	$\pm 5\%$ to – 15%	$\pm 5\%$ to – 15%	Yes	$\pm 5\%$ to – 15%	$\pm 5\%$	$\pm 5\%$ to – 15%	$\pm 5\%$ to – 15%	$\pm 5\%$ to – 15%	$\pm 5\%$	Not Provided	$\pm 5\%$ to – 15%	$\pm 5\%$ to – 15%
g.	Protection Type	IP68 or Equivalent	IP68	Yes	IP68 or Equivalent	IP68	Equivalent	IP68 or Equivalent	IP68 or Equivalent	IP68	Not Provided	IP68 or Equivalent	IP68 or Equivalent
h.	Insulation Class	Y or better	F	F	Y or better	Y	Better	Y or better	Y or better	F	Not Provided	Y or better	Y or better
i.	Flange	NEMA or Equivalent	NEMA	NEMA	NEMA	5"	Equivalent	NEMA or Equivalent	NEMA or Equivalent	AISI304, ASTM25B	Not Provided	NEMA or Equivalent	NEMA or Equivalent
j.	Warranty	1 year minimum	1 Year	2 Years	1 year minimum	1 year	1 Year	1 year minimum	1 Year	2 Years	Not Provided	1 year minimum	1 year minimum

Item	Specification	M/s EBR Energy Pakistan Pvt. Ltd. Lahore	M/s Nizam Energy System Pvt. Ltd. Karachi	M/s K.K. B. Karachi	M/s Smart Int., Quetta	M/s Global Business Service, Karachi	M/s Catkin Engineering Sales & Service, Islamabad	M/s S.M. Engineer & Contractor	M/s MASCO Karachi	M/s Skyways Karachi	M/s K Power Karachi	M/s M.A. Enterprises	
		1	2	3	4	5	6	7	8	9	10	11	
k.	Country of Origin	Please Specify	German Brand China	Denmark	Turkey	UAE	China	Turkey	Xunong, China	Germany	Not Provided	Turkey	China
Solar Panels			ESM 300-156	Canada Solar CS6U-330P	Jinko	Maysun Solar MS-72 Poly	China	Talesun China	Perlight	Janko Solar	Not Provided	Jinko	Hanwa Solar
a.	Max. Power / No. of Panels	280 to 320 W	300 W/ 72 Panels (21600 Watt)	330 W	320 Watt	300w	300 to 320 W	280 to 320 W	265 to 325 Watt	320 W	Not Provided	320 Watt	280 to 320 W
b.	Optimum Operating Voltage	35 to 37 V	38 V	37.2 V	37 V	37V	35 to 37 V	35 to 37 V	35 to 37 V	37.4V	Not Provided	37 V	35 to 37 V
c.	Optimum Operating Current	7 to 9 Amp	7.89 Amp	8.88 A	8.56 Amp	9A	8.4 Amp	7 to 9 Amp	7 to 9 Amp	8.56 Amp	Not Provided	8.56V	7 to 9 Amp
d.	Module Efficiency	Atleast 16% or higher	16.10%	16.68%	16.49%	16%	16%	Atleast 16% or higher	16%	16%	Not Provided	16.49%	Atleast 16% or higher
e.	Operating Temperature	- 40°C to 85°C	- 40°C to 85°C	Yes	- 40°C to 85°C	- 40°C to 85°C	- 40°C to 85°C	- 40°C to 85°C	- 40°C to 85°C	- 40°C to 85°C	Not Provided	- 40°C to 85°C	- 40°C to 85°C
f.	Type	Poly Crystalline	Poly Crystalline	Yes	Poly Crystalline	Poly	Poly Crystalline	Poly Crystalline	Poly Crystalline	Poly Crystalline	Not Provided	Poly Crystalline	Poly Crystalline
g.	Front Glass	4mm or better tempered glass	3.2 mm low iron toughned glass	Yes	4mm or better tempered glass	4mm	better tempered glass	4mm or better tempered glass	4mm or better tempered glass	4mm or better tempered glass	Not Provided	4mm or better tempered glass	4mm or better tempered glass
h.	Frame	Anodized aluminum alloy	Anodized aluminum alloy	Yes	Anodized aluminum alloy	Anodized aluminum alloy	Anodized aluminum alloy	Anodized aluminum alloy	Anodized aluminum alloy	Anodized aluminum alloy	Not Provided	Anodized aluminum alloy	Anodized aluminum alloy
i.	Product Warranty	Atleast 10 years.	10 Years	Yes	Atleast 10 years.	10 years	10 years	Atleast 10 years.	10 Years	10 Years	Not Provided	Atleast 10 years.	Atleast 10 years.




Item	Specification	M/s EBR Energy Pakistan Pvt. Ltd. Lahore	M/s Nizam Energy System Pvt. Ltd. Karachi	M/s K.K. B. Karachi	M/s Smart Int., Quetta	M/s Global Business Service, Karachi	M/s Catkin Engineering Sales & Service, Islamabad	M/s S.M. Engineer & Contractor	M/s MASCO Karachi	M/s Skyways Karachi	M/s K Power Karachi	M/s M.A. Enterprises	
		1	2	3	4	5	6	7	8	9	10	11	
j.	Standards	IEC 61701, IEC 62716, DIN 60068 – 2 – 68 or Equivalent	IEC 61215:2005, EN 61215:2005, IEC 617301:2004, EN 61730-1:2007, IEC 61730-2:2004, EN 61730-2:2007	Yes	IEC 61701, IEC 62716, DIN 60068 – 2 – 68 or Equivalent	IEC 61701, IEC 62716, DIN 60068 – 2 – 68	Equivalent	IEC 61701, IEC 62716, DIN 60068 – 2 – 68 or Equivalent	IEC 61701, IEC 62716, DIN 60068 – 2 – 68 or Equivalent	IEC 61701, IEC 62716, DIN 60068 – 2 – 68 or Equivalent	Not Provided	IEC 61701, IEC 62716, DIN 60068 – 2 – 68	IEC 61701, IEC 62716, DIN 60068 – 2 – 68 or Equivalent
k.	Junction box	IP68 Rated	IP65	Yes	IP68 Rated	IP68	IP68 Rated	IP68 Rated	IP68 Rated	IP67	Not Provided	IP68 Rated	IP68 Rated
l.	Connector	MC4 Compatible	MC4 Compatible	Yes	MC4 Compatible	MC4 Compatible	MC4 Compatible	MC4 Compatible	MC4 Compatible	Yes	Not Provided	MC4 Compatible	MC4 Compatible
m.	Country of Origin	Please Specify.	China	China	China	UAE	China	Talesun China	Perlright, China	China	Not Provided	China	China
n.	Total no. of Panels for the rated power.	Please Specify.	72 Panels	80 Pcs	56	300x81	72	42 @ 310W / Panel	72 x 315 W / Panel	76	Not Provided	75	50 to 60 Nos.
o.	Linear Performance Warranty.	20 to 25 years	25 Years	25 years	20 to 25 years	25 Years	Yes	20 to 25 years	20 Years	25 Years	Not Provided	20 to 25 years	20 to 25 years
Invertor			PSK-2 21	Grundfos Renewable Solar Inverter (RSI 18.5kw)	Jintech	ADA SP-100	INVT	Talesun	Hober	PSK2-21 (Lorentz)	Not Provided	Jintech	INVT
a.	Amperage	30 to 45 Amp	33 Amp	38 Amp	30 to 45 Amp	38 Amp	30 to 45 Amp	45 Amp	32 Amp	3x33Amp	Not Provided	30 to 45 Amp	30 to 45 Amp
b.	Power	20 to 24 kw	21 kw	18.5 kw	20 to 24 kw	22 kw	Yes	20 to 24 kw	15 kw	21 kw	Not Provided	20 to 24 kw	20 to 24 kw





Item	Specification	M/s EBR Energy Pakistan Pvt. Ltd. Lahore	M/s Nizam Energy System Pvt. Ltd. Karachi	M/s K.K. B. Karachi	M/s Smart Int., Quetta	M/s Global Business Service, Karachi	M/s Catkin Engineering Sales & Service, Islamabad	M/s S.M. Engineer & Contractor	M/s MASCO Karachi	M/s Skyways Karachi	M/s K Power Karachi	M/s M.A. Enterprises	
		1	2	3	4	5	6	7	8	9	10	11	
c.	Output	3 Phase 370 to 385 Vac	3 Phase 380 to 415 Vac	3 Phase 370 to 385 Vac	3 Phase	3 Phase 370 to 385 Vac	3 Phase 370 to 385 Vac	3 Phase 370 to 385 Vac	3P 380Vac	Not Provided	3 Phase 370 to 385 Vac	3 Phase 370 to 385 Vac	
d.	Input	340to 650 Vdc	300 to 850 VDC	340to 650 Vdc	340to 650 Vdc	340to 650 Vdc	340to 650 Vdc	340 to 650 Vdc	Max 850 Vdc	Not Provided	340to 650 Vdc	340to 650 Vdc	
e.	MPPT	Inbuilt	In Built	Yes	Inbuilt	MPPT	Inbuilt	Inbuilt	Inbuilt	Agreed	Not Provided	Inbuilt	Inbuilt
f.	Protection	In built for over current, over load, anti-lightening etc.	In Built	Yes	In built for over current, over load, anti-lightening etc.	IP68	over current, over load, anti-lightening etc.	In built for over current, over load, anti-lightening etc.	In built for over current, over load, anti-lightening etc.	Agreed	Not Provided	In built for over current, over load, anti-lightening etc.	In built for over current, over load, anti-lightening etc.
g.	Efficiency	95% or more.	98%	Yes	95% or more.	98%	95%	95% or more.	95% or more.	98%	Not Provided	95% or more.	95% or more.
h.	Country of Origin	Please Specify	German Brand China	Italy	China	China	China	Larens China	Hober / China	Germany	Not Provided	China	China
i.	Warranty	Two years minimum	2 Years	2 Years	Two years minimum	Two years	Two years	Two years minimum	2 Years	2 Years	Not Provided	Two years	Two years minimum
	Cables & Wires	99.9% Copper UV Protection of matching configuration.	99.90%	Yes	99.9% Copper UV Protection of matching configuration.	99.9% Copper	Yes	99.9% Copper UV Protection of matching configuration.	99.9% Copper UV Protection of matching configuration.	Agreed	Not Provided	99.9% Copper UV Protection of matching configuration.	99.9% Copper UV Protection of matching configuration.
	Grounding Kit	Standard	Standard	Yes	Standard	Standard	Yes	Standard	Standard	Agreed	Not Provided	Standard	Standard
	Water out let & accessories	5" HDPE or M/s Steel Pipes	5" Steel Iron pipe	Yes	5" HDPE or M/s Steel Pipes	Steelex	Yes	5" HDPE or M/s Steel Pipes	5" HDPE or M/s Steel Pipes	Agreed	Not Provided	5" HDPE or M/s Steel Pipes	5" HDPE or M/s Steel Pipes
	Mounting Structures	Rust free powdered coated.	GI Structure	Yes	Rust free powdered coated.	As per requirement	Yes	Rust free powdered coated.	Rust free powdered coated.	Agreed	Not Provided	Rust free powdered coated.	Rust free powdered coated.

Item	Specification	M/s EBR Energy Pakistan Pvt. Ltd. Lahore	M/s Nizam Energy System Pvt. Ltd. Karachi	M/s K.K. B. Karachi	M/s Smart Int., Quetta	M/s Global Business Service, Karachi	M/s Catkin Engineering Sales & Service, Islamabad	M/s S.M. Engineer & Contractor	M/s MASCO Karachi	M/s Skyways Karachi	M/s K Power Karachi	M/s M.A. Enterprises
		1	2	3	4	5	6	7	8	9	10	11
Mounting Plate / box.	Rust free powder coated of Iron & G.I. with environmental protection for inverter, switches, junction box etc.	GI Mounting Plate with Environmental Protection	Yes	Rust free powder coated of Iron & G.I. with environmental protection for inverter, switches, junction box etc.	As per requirement	Rust free Standard Installation	Rust free powder coated of Iron & G.I. with environmental protection for inverter, switches, junction box etc.	Rust free powder coated of Iron & G.I. with environmental protection for inverter, switches, junction box etc.	Agreed	Not Provided	Rust free powder coated of Iron & G.I. with environmental protection for inverter, switches, junction box etc.	Rust free powder coated of Iron & G.I. with environmental protection for inverter, switches, junction box etc.
Execution of Tubewell bore, casing & excavation with necessary support structures & pipping	Yes as per requirement of Solar Pump at specified depth.	Yes	Yes	Yes as per requirement of Solar Pump at specified depth.	As per requirement	Yes as per specified depth	Yes as per requirement of Solar Pump at specified depth.	Yes as per requirement of Solar Pump at specified depth.	Agreed	Not Provided	Yes as per requirement of Solar Pump at specified depth.	Yes as per requirement of Solar Pump at specified depth.


 (Sheikh Shakil Ahmed)
 Director
 Agriculture Engineering Sindh Hyderabad
CHAIRMAN


 (Mussarat Mokhtar)
 Deputy Director (Insp)
 Industries & Commerce
 Department, Government
 of Sindh Karachi
MEMBER


 (Saifullah Magsi)
 Rep: of District Accounts Officer, District
 Hyderabad
MEMBER


 (Shakil Ahmed Rahemoun)
 Director,
 Water Management
 Hyderabad Division
MEMBER


 (Mumtaz Ahmed Siddiqui)
 Deputy Director Mech / HQ
 Agriculture Engineering Sindh Hyderabad
MEMBER/SECRETARY

COMPARISON OF TECHNICAL DATA (SUBMERSIBLE PUMP 250 FT.)

Delivery Size : 5"

Capacity : 400,000 L/day (Min)

Depth : 250 ft.

Rated Power : 28 to 32 kw ±10%

Item	Specification	M/s EBR Energy Pakistan Pvt. Ltd. Lahore	M/s Nizam Energy System Pvt. Ltd. Karachi	M/s K.K. B. Karachi	M/s Smart Int., Quetta	M/s Global Business Service, Karachi	M/s Catkin Engineering Sales & Service, Islamabad	M/s S.M. Engineer & Contractor	M/s MASCO Karachi	M/s Skyways Karachi	M/s K Power Karachi	M/s M.A. Enterprises	
		1	2	3	4	5	6	7	8	9	10	11	
Submersible Pump (Make & Model)		Lorentz (PSK2-25 CSJ75-12)	Grundfos SP-77-8	Maxisu	KOMAX KPS-06/11	Greenfox	Alarko	Xunong	Lorentz (PSK2-25CSJ42-12)		Maxisu	Komex	
a.	Rated Power	28 to 32 Kw (±10%) both limits	(25 HP 32.4 KW-PV)	30 kw	32kw	30kw	30kw	28 to 32 Kw (±10%) both limits	27 kw	18.5 kw	Not Provided	32kw	28 to 32 Kw (±10%) both limits
b.	Discharge Capacity	Average 400,000 Litre / day	Average 400,500 Litre / day	493,560 L/day	Average 400,000 Litre / day	400000 L/day	400000 L/day	Average 400,000 Litre / day	400000 Litre / day	Average 400,000 Litre / day	Not Provided	Average 400,000 Litre / day	Average 400,000 Litre / day
c.	Rated Speed	2700 – 3000 RPM	1400-2850 rpm	2900 rpm	2700 – 3000 RPM	2800rpm	2700 – 3000 RPM	2700 – 3000 RPM	2700 RPM	1400-2850 rpm	Not Provided	2700 – 3000 RPM	2700 – 3000 RPM
d.	Efficiency	More than 75%	79%	75.70%	More than 75%	75%	85%	More than 75%	77%	70%	Not Provided	More than 75%	More than 75%
e.	Power factor	0.8 to 0.9	0.87	0.85	0.8 to 0.9	0.8	0.8	0.8 to 0.9	0.8 to 0.9	0.87	Not Provided	0.8 to 0.9	0.8 to 0.9
f.	Voltage Tolerance	±5% to – 15%	±5% to – 15%	Yes	±5% to – 15%	±5%	±5% to – 15%	±5% to – 15%	±5% to – 15%	±5%	Not Provided	±5% to – 15%	±5% to – 15%
g.	Protection Type	IP68 or Equivalent	IP68	Yes	IP68 or Equivalent	IP68	Equivalent	IP68 or Equivalent	IP68 or Equivalent	IP68	Not Provided	IP68 or Equivalent	IP68 or Equivalent
h.	Insulation Class	Y or better	F	F	Y or better	F	Better	Y or better	Y or better	F	Not Provided	Y or better	Y or better
i.	Flange	NEMA or Equivalent	NEMA	NEMA	NEMA or Equivalent	5"	Equivalent	NEMA or Equivalent	NEMA or Equivalent	AISI304, ASJM25B	Not Provided	NEMA or Equivalent	NEMA or Equivalent
j.	Warranty	Atleast 1 year	1 Year	2 Years	Atleast 1 year	1 year	1 Year	1 year	1 Year	2 Years	Not Provided	Atleast 1 year	Atleast 1 year
k.	Country of Origin	Please Specify	German Brand China	Denmark	Turkey	UAE	China	Turkey	Xunong, China	Germany	Not Provided	Turkey	China

Item	Specification	M/s EBR Energy Pakistan Pvt. Ltd. Lahore	M/s Nizam Energy System Pvt. Ltd. Karachi	M/s K.K. B. Karachi	M/s Smart Int., Quetta	M/s Global Business Service, Karachi	M/s Catkin Engineering Sales & Service, Islamabad	M/s S.M. Engineer & Contractor	M/s MASCO Karachi	M/s Skyways Karachi	M/s K Power Karachi	M/s M.A. Enterprises	
		1	2	3	4	5	6	7	8	9	10	11	
Solar Panels		ESM 300-156	Canadia Solar CS6U-330P	Jinko	Maysun Solar MS-72 Poly	China	Talesun China		Jinko Solar	Not Provided	Jinko	Hanwa Solar	
a.	Max. Power / No. of Panels	280 to 320 W	300 W/ 108 Panels (32.40 KW-PV)	330 W	320 Watt	300 watt	280 to 320 W	280 to 320 W	265 to 325 Watt	320 W	Not Provided	320 W	280 to 320 W
b.	Optimum Operating Voltage	35 to 37 V	38 V	37.2 V	37 V	37V	35 to 36.5 V	35 to 37 V	35 to 37 V	37.4 V	Not Provided	37 V	35 to 37 V
c.	Optimum Operating Current	7 to 9 Amp	7.89 Amp	8.88 A	8.56 Amp	9Amp	8.4 Amp	7 to 9 Amp	7 to 9 Amp	8.56 Amp	Not Provided	8.56 Amp	7 to 9 Amp
d.	Module Efficiency	Atleast 16% or higher	16.10%	16.68%	Atleast 16% or higher	16.00%	16%	Atleast 16% or higher	16%	16.49	Not Provided	Atleast 16% or higher	Atleast 16% or higher
e.	Operating Temperature	- 40°C to 85°C	- 40°C to 85°C	Yes	- 40°C to 85°C	- 40°C to 85°C	- 40°C to 85°C	- 40°C to 85°C	- 40°C to 85°C	- 40°C to 85°C	Not Provided	- 40°C to 85°C	- 40°C to 85°C
f.	Type	Poly Crystalline	Poly Crystalline	Yes	Poly Crystalline	Poly	Poly Crystalline	Poly Crystalline	Poly Crystalline	Poly Crystalline	Not Provided	Poly Crystalline	Poly Crystalline
g.	Front Glass	4mm or better tempered glass	3.2 mm low iron toughned glass	Yes	4mm or better tempered glass	4mm	Better tempered glass	4mm or better tempered glass	4mm or better tempered glass	4mm or better tempered glass	Not Provided	4mm or better tempered glass	4mm or better tempered glass
h.	Frame	Anodized aluminum alloy	Anodized aluminum alloy	Yes	Anodized aluminum alloy	Anodized aluminum alloy	Anodized aluminum alloy	Anodized aluminum alloy	Anodized aluminum alloy	Anodized aluminum alloy	Not Provided	Anodized aluminum alloy	Anodized aluminum alloy
i.	Product Warranty	Atleast 10 years.	10 Years	Yes	Atleast 10 years.	10 Years	10 Years	10 years.	10 Years	10 Years	Not Provided	Atleast 10 years.	Atleast 10 years.

Item	Specification	M/s EBR Energy Pakistan Pvt. Ltd. Lahore	M/s Nizam Energy System Pvt. Ltd. Karachi	M/s K.K. B. Karachi	M/s Smart Int., Quetta	M/s Global Business Service, Karachi	M/s Catkin Engineering Sales & Service, Islamabad	M/s S.M. Engineer & Contractor	M/s MASCO Karachi	M/s Skyways Karachi	M/s K Power Karachi	M/s M.A. Enterprises	
		1	2	3	4	5	6	7	8	9	10	11	
j.	Standards	IEC 61215:2005, EN 61215:2005, IEC 617301:2004, EN 61730-1:2007, IEC 61730-2:2004, EN 61730-2:2007	Yes	IEC 61701, IEC 62716, DIN 60068 – 2 – 68 or Equivalent	IEC 61701, IEC 62716, DIN 60068 – 2 – 68	Equivalent	IEC 61701, IEC 62716, DIN 60068 – 2 – 68 or Equivalent	IEC 61701, IEC 62716, DIN 60068 – 2 – 68 or Equivalent	IEC 61701, IEC 62716, DIN 60068 – 2 – 68 or Equivalent	Not Provided	IEC 61701, IEC 62716, DIN 60068 – 2 – 68	IEC 61701, IEC 62716, DIN 60068 – 2 – 68 or Equivalent	
k.	Junction box	IP68 Rated	IP65	Yes	IP68 Rated	IP68	IP68 Rated	IP68 Rated	IP68 Rated	IP67	Not Provided	IP68 Rated	IP68 Rated
l.	Connector	MC4 Compatible	MC4 Compatible	Yes	MC4 Compatible	MC4 Compatible	MC4 Compatible	MC4 Compatible	MC4 Compatible	Yes	Not Provided	MC4 Compatible	MC4 Compatible
m.	Country of Origin	Please Specify.	China	China	Please Specify.	UAE	China	Talesun China	Perlight, China	China	Not Provided	China	China
n.	Total no. of Panels for the rated power.	Please Specify.	108 Panels	128 Pcs	100	300x100	102	135 @ 310 Watt / Panel	132 x 315 W/ Panel	108	Not Provided	100	100 to 110
o.	Linear Performance Warranty.	20 to 25 years	25 Years	25 years	20 to 25 years	25 Years	20 years	20 to 25 years	20 Years	25 Years	Not Provided	20 to 25 years	20 to 25 years
Inverter			PSK-2 25	Grundfos Renewable Solar Inverter (RSI 30 kw)	Jintech	ADA SP-100	INVT	Talesun China	Hober	PSk2-25 (Lorentz)	Not Provided	Jintech	INVT
a.	Amperage	55 to 75 Amp	40 Amp	61 Amp	55 to 75 Amp	60 Amp	55 to 75 Amp	60 Amp	30 Amp	Max 3x40 Amp	Not Provided	55 to 75 Amp	55 to 75 Amp
b.	Power	28 to 32 kw	25 kw	30 kw	28 to 32 kw	30kw	Yes	28 to 32 kw	30 kw	25 kw	Not Provided	28 to 32 kw	28 to 32 kw
c.	Output	3 Phase 370 to 385 Vac	3 Phase 370 to 385 Vac	3 Phase 380 to 415 Vac	3 Phase 370 to 385 Vac	3 Phase	3 Phase 370 to 385 Vac	3 Phase 370 to 385 Vac	3 Phase 370 to 385 Vac	380 Vac	Not Provided	3 Phase 370 to 385 Vac	3 Phase 370 to 385 Vac



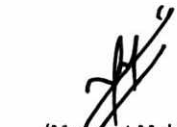
Item	Specification	M/s EBR Energy Pakistan Pvt. Ltd. Lahore	M/s Nizam Energy System Pvt. Ltd. Karachi	M/s K.K. B. Karachi	M/s Smart Int., Quetta	M/s Global Business Service, Karachi	M/s Catkin Engineering Sales & Service, Islamabad	M/s S.M. Engineer & Contractor	M/s MASCO Karachi	M/s Skyways Karachi	M/s K Power Karachi	M/s M.A. Enterprises	
		1	2	3	4	5	6	7	8	9	10	11	
d.	Input	340to 650 Vdc	340to 650 Vdc	300 to 850 VDC	340to 650 Vdc	340 to 650 Vdc	340to 650 Vdc	340 to 650 Vdc	Max 850 dc	Not Provided	340to 650 Vdc	340to 650 Vdc	
e.	MPPT	Inbuilt	In Built	Yes	Inbuilt	MPPT	In built	Inbuilt	Agreed	Not Provided	Inbuilt	Inbuilt	
f.	Protection	In built for over current, over load, anti-lightening etc.	In Built	Yes	In built for over current, over load, anti-lightening etc.	IP68	over current, over load, anti-lightening etc.	In built for over current, over load, anti-lightening etc.	In built for over current, over load, anti-lightening etc.	Agreed	Not Provided	In built for over current, over load, anti-lightening etc.	In built for over current, over load, anti-lightening etc.
g.	Efficiency	95% or more.	98%	Yes	95% or more.	98%	95%	95% or more.	95% or more.	Max 98%	Not Provided	95% or more.	95% or more.
h.	Country of Origin	Please Specify	German Brand China	Italy	Please Specify	China	China	Larens China	Hober / China	Germany	Not Provided	China	Please Specify
i.	Warranty	Two years minimum	2 Years	2 Years	Two years minimum	Two years	Two years	Two years minimum	2 Years	2 Years	Not Provided	Two years minimum	Two years minimum
	Cables & Wires	99.9% Copper UV Protection of matching configuration.	99.90%	Yes	99.9% Copper UV Protection of matching configuration.	99.90%	99.90%	99.9% Copper UV Protection of matching configuration.	99.9% Copper UV Protection of matching configuration.	Agreed	Not Provided	99.9% Copper UV Protection of matching configuration.	99.9% Copper UV Protection of matching configuration.
	Grounding Kit	Standard	Standard	Yes	Standard	Standard	Standard	Standard	Standard	Agreed	Not Provided	Standard	Standard
	Water out let & accessories	5" HDPE or M/s Steel Pipes	5" Steel Iron pipe	Yes	5" HDPE or M/s Steel Pipes	Steelex 5"	Yes	5" HDPE or M/s Steel Pipes	5" HDPE or M/s Steel Pipes	Agreed	Not Provided	5" HDPE or M/s Steel Pipes	5" HDPE or M/s Steel Pipes
	Mounting Structures	Rust free powdered coated.	GI Structure	Yes	Rust free powdered coated.	as per requirement	Yes	Rust free powdered coated.	Rust free powdered coated.	Agreed	Not Provided	Rust free powdered coated.	Rust free powdered coated.

Item	Specification	M/s EBR Energy Pakistan Pvt. Ltd. Lahore	M/s Nizam Energy System Pvt. Ltd. Karachi	M/s K.K. B. Karachi	M/s Smart Int., Quetta	M/s Global Business Service, Karachi	M/s Catkin Engineering Sales & Service, Islamabad	M/s S.M. Engineer & Contractor	M/s MASCO Karachi	M/s Skyways Karachi	M/s K Power Karachi	M/s M.A. Enterprises
		1	2	3	4	5	6	7	8	9	10	11
Mounting Plate / box.	Rust free powder coated of Iron & G.I. with environmental protection for inverter, switches, junction box etc.	GI Mounting Plate with Environmental Protection	Yes	Rust free powder coated of Iron & G.I. with environmental protection for inverter, switches, junction box etc.	as per requirement	as per requirement	Rust free powder coated of Iron & G.I. with environmental protection for inverter, switches, junction box etc.	Rust free powder coated of Iron & G.I. with environmental protection for inverter, switches, junction box etc.	Agreed	Not Provided	Rust free powder coated of Iron & G.I. with environmental protection for inverter, switches, junction box etc.	Rust free powder coated of Iron & G.I. with environmental protection for inverter, switches, junction box etc.
Execution of Tubewell bore, casing & excavation with necessary support structures & pipping	Yes as per requirement of Solar Pump at specified depth.	Yes	Yes	Yes as per requirement of Solar Pump at specified depth.	as per requirement	as per requirement	Yes as per requirement of Solar Pump at specified depth.	Yes as per requirement of Solar Pump at specified depth.	Agreed	Not Provided	Yes as per requirement of Solar Pump at specified depth.	Yes as per requirement of Solar Pump at specified depth.



(Sheikh Shakil Ahmed)
Director

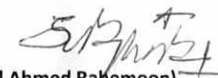
Agriculture Engineering Sindh Hyderabad
CHAIRMAN



(Musarrat Mokhtar)
Deputy Director (Insp)
Industries & Commerce
Department, Government of
Sindh Karachi
MEMBER



(Saifullah Magsi)
Rep: of District Accounts Officer, District
Hyderabad
MEMBER



(Shakil Ahmed Rahmoon)
Director,
Water Management
Hyderabad Division
MEMBER



(Mumtaz Ahmed Siddiqui)
Deputy Director Mech / HQ
Agriculture Engineering Sindh Hyderabad
MEMBER/SECRETARY

GOVERNMENT OF SINDH



FINANCIAL OFFER

PRE-QUALIFICATION OF CONTRACTORS FOR INSTALLATION OF SOLAR WATER PUMP / TUBEWELL IN SINDH 2017-18.

Name of Tender:	Notice No. DAE/Stores-969/3132/17 dated 06.09.2017 Pre- Qualification Documents for Installation of Solar Water Pump / Tubewells in Sindh.
Name Project /Scheme:	<i>"Provision of Solar Water Pump / Tubewells on Subsidized Rates to Farmers in Sindh".</i>
Name of Department :	Agriculture, Supply & Prices Department
Name of Procuring Agency :	Director Agriculture Engineering Sindh Hyderabad
Date of Submission	23-11-2017 upto 11:30 AM
Date of Opening	23-11-2017 upto 12:00 Noon
Place of Opening	Directorate, Agriculture Engineering Sindh, Block B Shahbaz building, Hyderabad. Phone # 022-9200059 / 9200061.
Bid Security	2% of bid offer in the shape of demand draft / Pay order in favour of Directorate, Agriculture Engineering Sindh Hyderabad



ATTACHMENT REQUIRED

IGNORE IF ALREADY PROVIDED

1. NTN CERTIFICATE
2. SALES TAX CERTIFICATE
3. SINDH REVENUE BOARD (SRB) REGISTRATION CERTIFICATE
4. BANK STATEMENT OF LAST 03 YEARS
5. BANK CERTIFICATE OF FINANCIAL STABILITY
6. SIGNED COPY OF INTEGRITY PACT
7. BID SECURITY AS PER ITEM 2 OF TOR
8. CONFIRMATION FOR PERFORMANCE SECURITY AS PER ITEM 3 OF TOR

CHECK LIST

IMPORTANT NOTE

Bidders are required to use provided financial document, any other format would not be considered.



TERMS & CONDITION

- 1) All rates of Installation of Solar Water Pump / Tubewell will be on turnkey basis.
- 2) Bid security amount 2% of the bid price in shape of bank draft / pay order in favour of Director, Agriculture Engineering Sindh, having a validity period of 28 days beyond bid validity.
- 3) Performance security 10% of the total Contract price in shape of Bank draft / Pay order / Bank Guarantee in favour of Director Agriculture Engineering Sindh having valid upto 90 days beyond the date of completion of contract. (To be submitted after award of contract).
- 4) Firms are required to be registered with Sindh Revenue Board having NTN & SNTN and all the Provincial as well as Federal Taxes and Duties would be borne by the Supplier.
- 5) Solar Water Pump / Tubewell will be installed with the brand new material, machinery & equipment with good quality verified by departmental verification committee.
- 6) No conditional Bid would be accepted.
- 7) The firm will be responsible for installation of Solar Water Pump / Tubewell in prescribed time, after receiving of allotment order.
- 8) The Firm will sign an assignment agreement with farmer and department on Rs. 100/- Judicial Stamp paper and will submit to department before starting the installation work.
- 9) The Government share will be paid to installation firm in three installation against the submitted bills of firm through District Accounts Officer Hyderabad. The payment of subsidy will be made in three installments.
 - a. 1st Installment 10% at bore completion / testing of water.
 - b. 2nd Installment 40% at Supply of Equipment & Machinery at Site.
 - c. 3rd Installment 30% at completion of Installment & Operationalization / testing / Verification.
- 10) The farmer cost share of 20% would be provided to the installing firm with the work order.
- 11) The scheme would be announced on print media and application would be collected accordingly.
- 12) The Departmental inspection committee will inspect the material, installation process and completion of work.
- 13) The firm will provide necessary training / awareness to beneficiary farmers for the operation, maintenance & Safety precautions of installed Solar Water Pump / Tubewell.
- 14) The firm will provide operating manual to beneficiary farmers.
- 15) The Rates offered remain valid till 30.06.2018.
- 16) The firm is bound to submit completion report having all relevant details of farmers and installed Solar Water Pump / Tubewell to Director, Agriculture Engineering Sindh Hyderabad within three days upon the completion.
- 17) The firm have to submit design with complete layout plan of each category alongwith financial plan.
- 18) Solar Tubewell / Pump will be con turnkey basis, also covered Civil work as tender requirement.
- 19) The firm will have to submit photocopy of delivery challan, duly signed by the farmers.
- 20) The firm should have to installed board mentioning details of installed pump, name of beneficiary farmer and the name of scheme, (specimen will be provided).
- 21) Departmental verification committee will conduct final verification in the presence of the representative of firm.
- 22) For the orders of more then 10.00 Million an integrity pact is required to be executed in pursuance of SPPRA Rule 89 (Sample attached).

**SIGNATURE & STAMP
OF CONTRACTOR**

**TENDER NOTICE NO. DAE/STORES-969/3132/17 DATED 06.09.2017****FINANCIAL PROPOSAL**

Sr. No.	Description	Cost of Equipment & Accessories	Cost of Installation & Services	GST on Cost of Equipment	Sindh Sales Tax on installation & Services	Income Tax	Total Cost	Qty Firm willing to install	Total Amount
SOLAR POWER WATER LIFT PUMP									
1	Water Pump 6"x8" to 8"x8" Suction pipe upto 50 ft. Capacity minimum 650000 L/P/day, Built on Iron frame with Solar Panels minimum of 12kw.								
SOLAR WATER PUMP / TUBE WELLS									
2	Delivery 5" inch, Depth 100 ft. Capacity minimum 500,000 L/P/day, Water Pump / Submersible Pump with Solar Panels minimum of 15kw Allied piping & civil work.								
SOLAR WATER PUMP / TUBE WELLS									
2	Delivery 5" inch, Depth 150 ft. Capacity minimum 450,000 L/P/day, Water Pimp / Submersible Pump with Solar Panels minimum of 22kw Allied piping & civil work.								
SOLAR WATER PUMP / TUBE WELLS									
4	Delivery 5" inch, Depth 250 ft. Capacity minimum 400000 L/P/day, Water Pump / Submersible Pump with Solar Panels minimum of 30kw Allied piping & civil work.								
								TOTAL BID VALUE	
								Amount of Bid Security 1% of Bid Amount	

**All rates are inclusive of taxes.
Bidders are required to fill this profoma, any other
Format would not be entertained.**

**SIGNATURE & STAMP
OF CONTRACTOR**



Integrity Pact

DECLARATION OF FEES, COMMISSION AND BROKERAGE ETC. PAYABLE BY THE SUPPLIERS/CONTRACTORS/CONSULTANTS.

Contract Number: _____

Dated: _____

Contract Value: _____

Contract Title: _____

[Name of Supplier/Contractor/Consultant] hereby declares that it has not obtained or induced the procurement of any contract, right, interest, privilege or other obligation or benefit from Government of Sindh (GoS) or any administrative subdivision or agency thereof or any other entity owned or controlled by it (GoS) through any corrupt business practice.

Without limiting the generality of the foregoing, [Name of Supplier/Contractor/Consultant] represents and warrants that it has fully declared the brokerage, commission, fees etc. paid or payable to anyone and not given or agreed to give and shall not give or agree to give to anyone within or outside Pakistan either directly or indirectly through any natural or juridical person, including its affiliate, agent, associate, broker, consultant, director, promoter, shareholder, sponsor or subsidiary, any commission, gratification, bribe, finder's fee or kickback, whether described as consultation fee or otherwise, with the object of obtaining or inducing the procurement of a contract, right, interest, privilege or other obligation or benefit, in whatsoever form, from Procuring Agency (PA) except that which has been expressly declared pursuant hereto.

[Name of Supplier/Contractor/Consultant] certifies that it has made and will make full disclosure of all agreements and arrangements with all persons in respect of or related to the transaction with PA and has not taken any action or will not take any action to circumvent the above declaration, representation or warranty.

[Name of Supplier/Contractor/Consultant] accepts full responsibility and strict liability for making any false declaration, not making full disclosure, misrepresenting facts or taking any action likely to defeat the purpose of this declaration, representation and warranty. It agrees that any contract, right, interest, privilege or other obligation or benefit obtained or procured as aforesaid shall, without prejudice to any other right and remedies available to PA under any law, contract or other instrument, be voidable at the option of PA.

Notwithstanding any rights and remedies exercised by PA in this regard, [Name of Supplier/Contractor/Consultant] agrees to indemnify PA for any loss or damage incurred by it on account of its corrupt business practices and further pay compensation to PA in an amount equivalent to ten times the sum of any commission, gratification, bribe, finder's fee or kickback given by [Name of Supplier/Contractor/Consultant] as aforesaid for the purpose of obtaining or inducing the procurement of any contract, right, interest, privilege or other obligation or benefit, in whatsoever form, from PA.

[Procuring Agency]

[Supplier /Contractor/Consultant]

LIST OF PRE-QUALIFIED FIRMS FOR YEAR 2017-18
FOR THE INSTALLATION OF SOLAR WATER PUMP /
TUBEWELLS TO FARMERS IN SINDH

1. M/s EBR Energy Pvt. Ltd. Lahore
2. M/s K.K.B., Karachi.
3. M/s Catkin Engineering Sales & Service, Islamabad.
4. M/s Global Business Service, Karachi
5. M/s Smart International, Quetta.
6. M/s K-Power Tandojam
7. M/s Masco Energy Service, Karachi
8. M/s Nizam Energy Pvt. Ltd. Karachi
9. M/s S. M. Engineers & Contractors, Quetta

MINUTES OF THE MEETING FOR THE MEETING OF PROCUREMENT COMMITTEE HELD ON 27-10-2017 AT 01:00 PM, IN THE COMMITTEE ROOM OF DIRECTOR, AGRICULTURE ENGINEERING SINDH, HYDERABAD TO EVALUATE THE PRE-QUALIFICATION DOCUMENT OF TENDER NOTICE NO. DAE/STORES-969/3132/17 DATED: 06.09.2017 FOR PRE-QUALIFICATION OF CONTRACTORS FOR THE INSTALLATION OF SOLAR WATER PUMP / TUBEWELLS IN SINDH (2017-18)

Meeting started with the name of Almighty Allah.


List of participants attached.

The Chairman welcomed all the participants of the meeting and asked the Member / Secretary to brief the participants about the agenda of the meeting.

The Pre-qualification documents were opened on 04.10.2017, 11 (eleven) firms submitted their pre-qualification document, after detailed technical evaluation, the procurement committee declares the pre-qualification document of (1) M/s M.A. Enterprises, Hyderabad (2) M/s Skyways Enterprises, Karachi technically Non-responsive and declares the proposals of following firms as Technically responsive.

1. M/s K.K.B Karachi
2. M/s EBR Energy Pakistan Pvt. Ltd. Lahore
3. M/s Nizam Energy Pvt. Ltd. Karachi
4. M/s K Power Tando Jam District Hyderabad
5. M/s Smart International, Quetta
6. M/s Catkin Sales & Service, Islamabad
7. M/s Global Business Service, Karachi
8. M/s S.M. Engineers & Contractors, Quetta
9. M/s Masco Energy Service, Karachi

The Procurement committee advised the department to inform all qualified / disqualified firms about the result and hoist the technical evaluation report & financial document on SPPRA website.


MEMBER / SECRETARY
PROCUREMENT COMMITTEE

NO. DAE/STORES-969/ 3582 /17

Dated: 27/10/2017.

C.C. to:

- The Director General Agricultural Engineering & Water Management Sindh, Hyderabad for kind information.
- The Additional Secretary (Tech) Agriculture Department Government of Sindh Karachi for kind information.
- PS to Secretary Agriculture Department Government of Sindh, Karachi for kind information.
- Member Procurement Committee _____ (All).


MEMBER / SECRETARY
PROCUREMENT COMMITTEE

LIST OF PARTICIPANTS

1	(SHEIKH SHAKIL AHMED) DIRECTOR AGRICULTURE ENGINEERING SINDH HYDERABAD	CHAIRMAN
2	(SHAKIL AHMED RAHEMOON) DIRECTOR, WATER MANAGEMENT SINDH HYDERABAD	MEMBER
3	(MUSARRAT MOKHTAR) DEPUTY DIRECTOR (INSPECTION) INDUSTRIES & COMMERCE DEPARTMENT, GOVERNMENT OF SINDH KARACHI	MEMBER
4	(SAIFULLAH MAGSI) REP OF DISTRICT ACCOUNTS OFFICER DISTRICT ACCOUNTS OFFICE, DISTRICT HYDERABAD	MEMBER
5	MUMTAZ AHMED SIDDIQUI DEPUTY DIRECTOR (MECH) / HQ AGRICULTURE ENGINEERING SINDH HYDERABAD	MEMBER / SECRETARY