



HYDROPAK INTERNATIONAL

Engineering, Procurement, construction





#GoForRenewable

Who we are...???

Hydropak International is General Trading & Contracting Company, established legally in 2016, and registered with Rawalpindi Chamber of Commerce & Industry bearing Membership No: AM6950 and Pakistan Engineering Council under C4 category bearing Membership No: C4/12458 to provide contracting work for mechanical, civil, electrical and instrumentation works as well as general trading, import & export work.

Although Hydropak is new with regard to its establishment date as a local company in Pakistan, it is establishing itself as a professional, reliable & innovative company through the systems and procedures which are based on international standards.

Since its inception, Hydropak's experience in the field of import, export, general trading & contracting in civil, mechanical & electrical related works has grown increasingly- today, Hydropak consistently caters to the commercial and contracting sectors with many products and services- and stands unique in the market being professional.

Hydropak is equipped with different products including the specialized sector of micro, mini & small hydropower, a highly qualified professional team, and international strategic relationships- Hydropak proudly maintains a leading role in the general trading & contracting market.

Hydropak is an emerging company in the solar sector having specialization in solar-based water supply schemes and lightning projects. Currently, Hydropak is working throughout the country having WASH projects in remote areas of Sindh, Balochistan and KPK sponsored by UNICEF, Pakistan.

The Company has carried out many successful contracts with different Government & Non-Government Organizations locally & internationally.

Management Message:

Dear Valuable Customers,

Welcome to the Hydropak International. We take pride in being one of the pioneer contracting firm in Pakistan and full time representation nationally and internationally having achieved remarkable growth over the last few years. Hydropak has attained prominence as a market challenger in the field of construction and started entering engineering and procurement field as well.

Our Vision is to be Premier EPC Company and “Be-Ahead” of expectations of all our Clients, Customers & Partners and Our Mission is that We Build the trust” Our mission is to build long term relationships with our clients based on integrity, performance and values. We always deliver smart solutions to our end customers by suggesting innovative ideas and materials.

We have a long tradition & experience of serving our valued customers to their complete satisfaction through efficient management and excellent workmanship, which we continue to maintain with our untiring efforts.

As we look to the years ahead we are continuously renewing our pledge to remain committed to excellence, keep abreast of changes and innovations, adopt better management, construction & supply techniques and successfully overcome all challenges before us.

Thank you

Yours Obediently,
Mr. Rahim Diyar
Managing Director
Hydropak International, Wah cantt

Solar power system:

A solar power system is made up of multiple photovoltaic (PV) panels, a Dc to AC power converter (called inverter) and a rack system that holds the PV panels in place.

Solar PV panels on the roofs of homes and businesses generate clean electricity by converting the energy in sunlight. This conversion takes place within solar panels of specially fabricated materials that make up the solar panels. It is a process that requires no moving parts. In most cases solar panels are connected to the mains power supply through a device called a solar power inverter.

Solar system is divided into Sub-catagories according to Power Consumers requirements:

1) OFF-Grid Solar system:

An off-grid solar system is designed for the power needs of mid- to large-size homes. Unlike grid-tied solar systems, off-grid systems have no connection with the utility.

How OFF-grid solar systems work??

Off-grid solar systems operate from the stored energy in a battery bank. Solar panels are used to keep the battery bank charged.

Your off-grid solar system has to be sized properly to meet your daily power needs and replace the stored energy pulled from the battery bank.

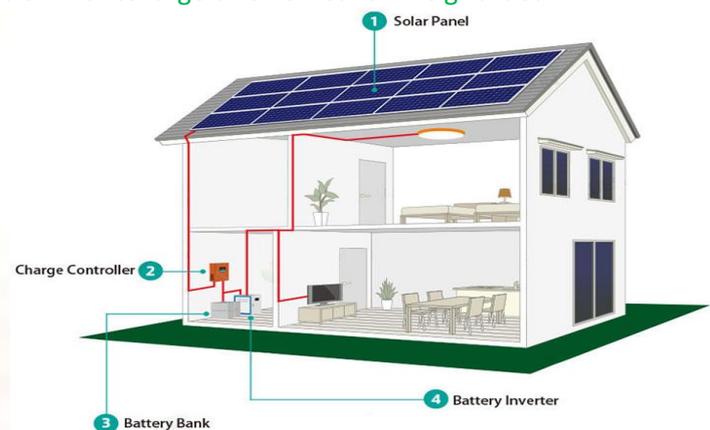


Figure 1 : OFF-Grid Domestic Solar Power system

2) ON-Grid solar power system:

Grid-tie solar systems are designed for those who already have electric utility service, but wish to significantly reduce their electric bill. ON-Grid system mostly work on solar polarity means when solar power is available it will avail solar Generation inspite of utility supply.

How ON-Grid Solar system work??

With grid-tie solar systems, you generate electricity when the sun is shining, and sell any excess back to the electric company (where applicable).

When the sun isn't shining, you just buy power from the grid, same as everyone else.

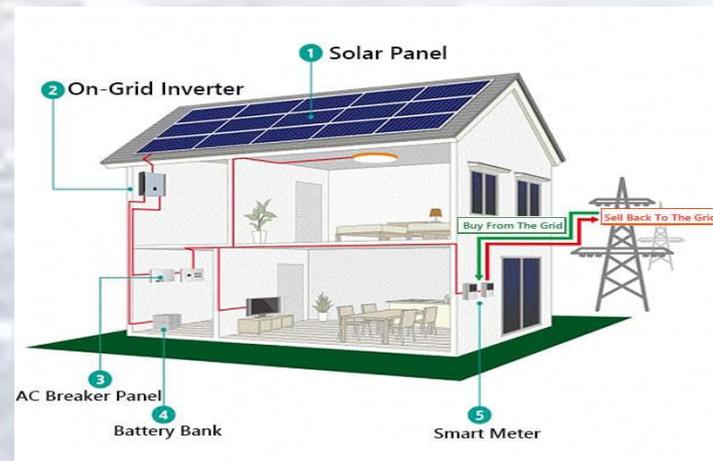
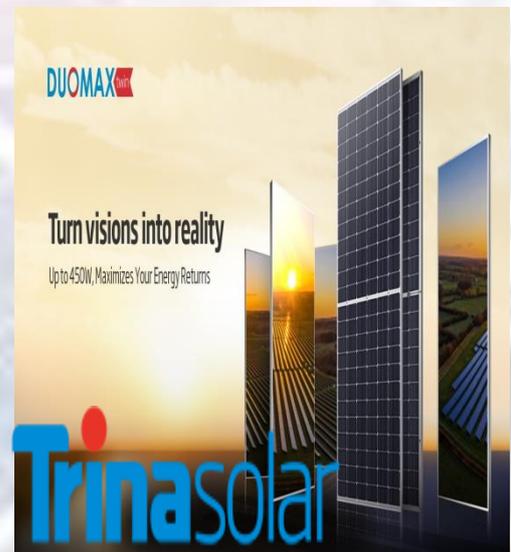
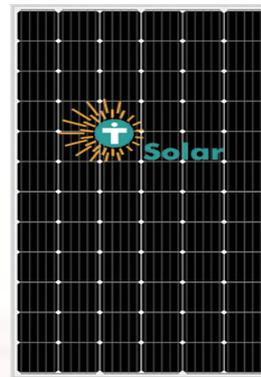


Figure 2:ON-Grid Domestic Solar power system

Main Accessories of Domestic Solar power System

❖ Solar Panels:

- i) **Brand Name: Astro Energy**
Based on Nominal power
Pure Germanium cells with Efficiency 18.5%
25 years warranty of 80% power output
10 years material and workmanship warranty
5 year warranty of 95% power output
Crystalline form: Poly and Mono
Power Range: 100W~330W
Made in Germany
ISO certified
- ii) **Brand Name: Tesla solar,**
25 years warranty of 80% power output
Power Rating: 100W ~ 330W
Crystalline form: Monocrystalline and Polycrystalline
ISO certified
Made in Italy
- iii) **Brand Name: Trina Solar**
25 year warranty of 80% power output
Power rating: 100W ~ 345W
Max. Efficiency: 19.5%
Crystalline form: Monocrystalline and Polycrystalline
Certifications: ISO 9001 , ISO 14001
Made in China



❖ Inverter:

i) **Brand Name : Infini by Voltronic Power**

Specifications:

- Pure sin wave
- Rated power: 1KW ~ 30KW
- Ac output: 230V,1Φ and 380V 3Φ, 50HZ
- System Battery voltage : 48V
- BuiltIn MPPT solar charge controller
- Operating Temp range: 0~50 °C
- Made in China

Main Features:

- Pure sine wave output
- Self-consumption and Feed-in to the grid
- Programmable supply priority for PV, Battery or Grid
- User-adjustable battery charging current and voltage
- Programmable multiple operation modes: Grid-tie (with battery connected),off-grid and grid-tie with backup
- Monitoring software for real-time status display and control
- Parallel operation up to 6 units only for 3K/4K/5K models

ii) **Brand Name: SolarMax**

Specifications:

- Nominal power: 1KW~50KW(SMT series and SP series)
- AC output: 230V,1Φ and 380V 3Φ,50HZ
- Highest efficiency of 98% with maximum flexibility in design
- LED light display on device and Internat wireless(LAN) connectivity
- Builtin MPPT charge controller
- Compact size and high power to weight ratio
- Warranty 5 Years (with 10 year optional)
- Easy installation and commissioning



❖ Battery:

1) Brand Name : AGM(Deep Cycle)

100 AH AGM

CELL-2V-600AH(BLACK) /(GRAY)AGM

200 AH AGM

DC12-200(12v 200AH/20Hr) AGM



Description

DC (Deep Cycle) series is specially designed for frequent cyclic discharge. By using strong grids and specially designed active material, the DC series battery offers 30% more cyclic life than the standby series. It is suitable for UPS, solar & wind energy, telecom system, electric power system, electric vehicles, golf cars, etc.

Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	200Ah@10hr-rate to 1.80V per cell @25°C
Weight	Approx. 60.0 Kg (Tolerance±1.5%)
Max. Discharge Current	2000A (5 sec)
Internal Resistance Approx.	4 mΩ
Operating Temperature Range	Discharge: -20°C~60°C
Charge:	0°C~50°C
Storage:	-20°C~60°C
Normal Operating Temperature Range	25°C±5°C
Float Charging Voltage	13.6 to 13.8 VDC/unit Average at 25 C
Reference Capacity	C3 136.5AH C5 151.5AH C10 174.0AH C20 200.0AH
Recommended Maximum Charging Current	60 A
Equalization and Cycle Service	14.6 to 14.8 VDC/unit Average at 25 C
Self Discharge	RITAR Valve Regulated Lead Acid (VRLA) batteries can be stored for up to 6 months at 25°C and then recharging is recommended. Monthly Self-discharge ratio is less than 3% at 25°C. Please charged batteries before using.
Terminal	Terminal F10/F16
Container Material	A.B.S. UL94-HB, UL94-V0 Optional.

2) **Brand Name :** GEL (Deep Cycle Gel)

100AH GEL

150AH GEL

200AH GEL

12V-45AH GEL



Description

DG (Deep Cycle GEL) series is pure GEL battery with 15 years floating design life , it is ideal for standby or frequent cyclic discharge applications under extreme environments. By using strong grids, high purity lead and patented Gel electrolyte, the DG series offers excellent recovery capability after deep discharge under frequent cyclic discharge use, and can deliver 450 cycles at 100% DOD. Suitable for solar & wind system, CATV, marine, RV and deep discharge UPS, and telecommunication, etc.

Specifications

Cells Per Unit	6
Voltage Per Unit	12
Capacity	200Ah@20hr-rate to 1.80V per cell @25°C
Weight	Approx. 60.0 Kg (Tolerance±1.5%)
Max. Discharge Current	2000A (5 sec)
Internal Resistance Approx.	5.2 mΩ
Operating Temperature Range	Discharge: -20°C~60°C
Charge:	0°C~50°C
Storage:	-20°C~60°C
Normal Operating Temperature Range	25°C±5°C
Float Charging Voltage	13.6 to 13.8 VDC/unit at 25 °C
Reference Capacity	C3 136.5AH C5 151.5AH C10 174.0AH C20 200.0AH
Design Life	15 years(Floating charge)
Recommended Maximum Charging Current	40.0 A
Equalization and Cycle Service	14.2 to 14.4 VDC/unit Average at 25 C
Self Discharge	RITAR Valve Regulated Lead Acid (VRLA) batteries can be stored for up to 6 months at 25°C and then recharging is recommended. Monthly Self-discharge ratio is less than 3% at 25°C.Please charged batteries before using.
Terminal	Terminal F10(M8)/F16(M8)
Container Material	A.B.S. UL94-HB, UL94-V0 Optional.

NOTE: We also provide Batteries of other Brands like NARADA, BRIDGE POWER, PHOENIX, VOLTRONIC

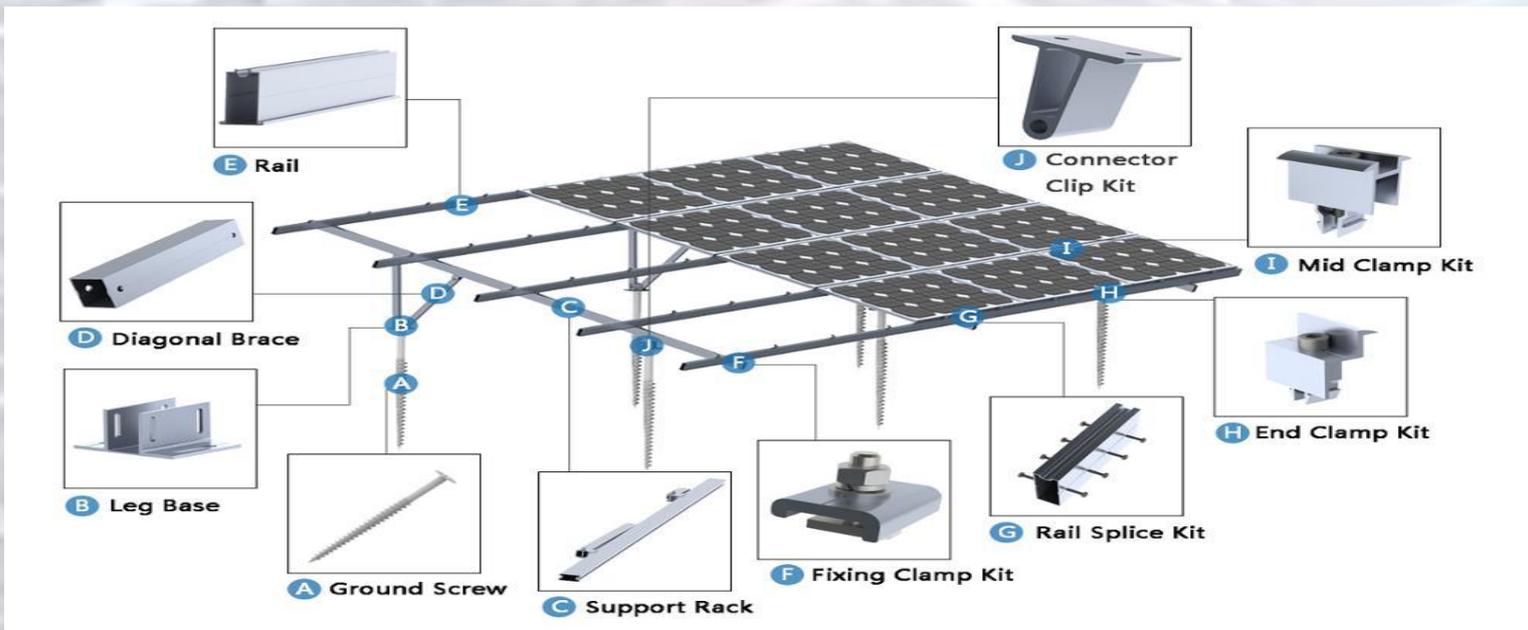
❖ Mounting Structure:

It is a economic and fast-way structure solutions. By using galvanized steel posts into the ground to the required depth without using poured concrete to support a steel racking systems. The racking is strong and cost-effective which adaptable to most terrains.

All mounting structural components are made of high class MS steel, their high resistance to corrosion and they are designed for twenty-year service life and backed by ten years warranty.

GI Frame Technical Information

Type	Description
Install site	Open ground, roof top
Structure Type	Fixed Tilt
Tilt Angle	24°~35°deg (as per location area solar irradiation)
System Height	<2.5m
Max Wind Speed	<120mph
System Height	<2.5m
Max Wind Speed	<120mph
Sand Storm	<1.4KN/m ²
Materials	MS Pipe Red/Silver Oxide + Galvanized paint or Hot Dipped Galvanized
Anticorrosive	Galvanized paint or Hot Dipped Galvanized
Color	Silver/Natural or Optional
Landscape orientation	2 modules high by 4 or 8 wide
Warranty	1 year material and workmanship warranty



Solar Pumping system

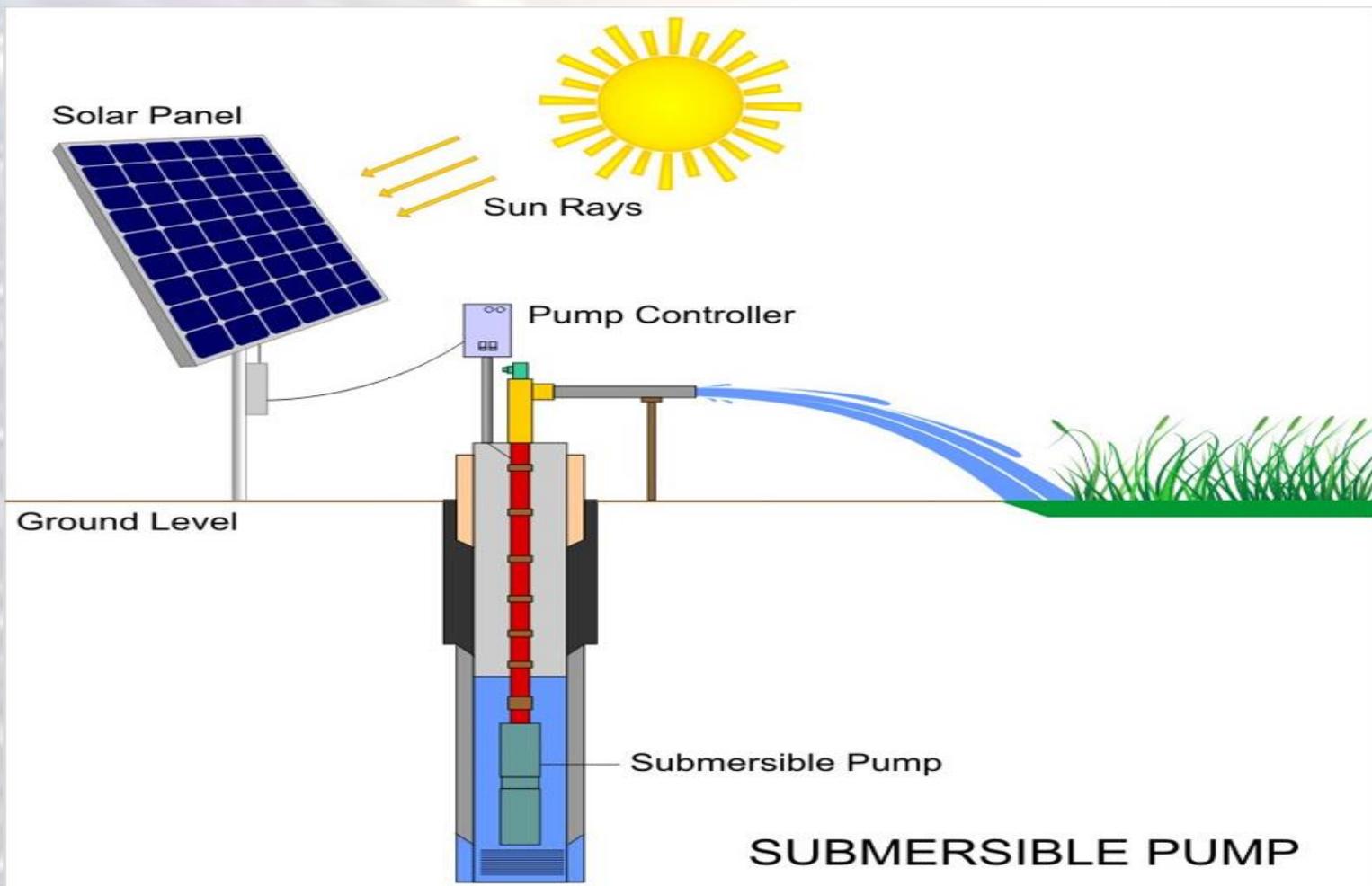
❖ System Introduction:

Solar pumping system consists of four parts: Solar panels, solar pumping inverter/Variable frequency drive(VFD),Three phase AC pump and storage device. The solar pumping inverter converts DC power produced by solar panels to AC power which drives AC pump to pump water from Borehole ,river or lake etc to the storage device.

The inverter Applies high efficiency MPPT algorithm to maximize power harvested from solar panels. It will make the system to maximize efficiency to get the water as much as possible.

The solar pumping system fulfills concept of low carbon energy conservation, environmental protection to improve the living standard in water deficient area.

Accessories is added in solar pump system to realize more function.AC input function, High voltage solar charger to charge bbattery to save energy,AC filter to protect pump.



❖ System Applications:

Solar pumping systems can be applied in the area with sunshine and areas lack of electricity,Such as :

- Daily water usage
- Agricultural irrigation(Drop irrigation,Sprinkling irrigation,Flood irrigation)
- Forestry irrigation
- Desert control
- Pasture animal husbandry
- Rural town and village water supply
- Desalinization of sea water
- Scenic fountain



❖ System features:

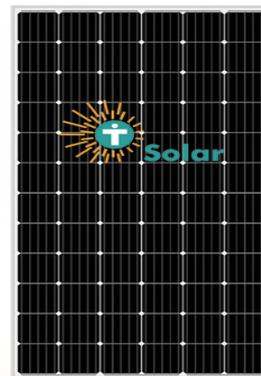
- Reliable solution for agricultural irrigation, daily water, desert control in non-electricity and wate deficient are
 - Wide application with all kinds of PV modules and 3-phase AC pumps
 - IP 65 for outdoor applications
 - Max.Operation temperatire 60 °C
 - Full automatic unattended operation with perfect protection functions for long lifespan 25 years
 - 3 years warranty for complete system and 10 years for PV modules
-

Main devices of Solar Pumping system

❖ Solar panels:

i) **Brand Name: Astro Energy**

Based on Nominal power
Pure Germanium cells with Efficiency 18.5%
25 years warranty of 80% power output
10 years material and workmanship warranty
5 year warranty of 95% power output
Crystalline form: Poly and Mono
Power Range: 100W~330W
Made in Germany
ISO certified



ii) **Brand Name: Tesla solar, Jinko solar,**

25 years warranty of 80% power output
Power Rating: 80W ~330W
Monocrystalline and polycrystalline

iii) **Brand Name: Trina Solar**

25 year warranty of 80% power output
Power rating: 100W ~ 345W
Max. Efficiency: 19.5%
Crystalline form: Monocrystalline and Polycrystalline
Certifications: ISO 9001 , ISO 14001
Made in China



❖ Solar Mobile Mounting structure:

- Engineered for long life and prefabricated to reduce installation cost
- Hot DIP Galvanized steel structure (Detail structure is mentioned above)
- Materials can be of customer request
- Movable and Fixed structure option is available



❖ Solar pumping Inverter:

i) Brand Name: Shenzhen JFY Pumping Inverter

- AC three Phase solar pump inverter;
- Available power Rating:
2.2KW/220V 3-Phase AC,
2.2KW/440V 3-Phase AC ~ 75KW/440V 3-Phase AC



Overview

Solar Pumping System uses the solar power which is one of green energy and it drives the pump directly after the conversion of the inverter. The system requires no external battery, stores waters instead of electricity and then drives the AC pump. The system is economical, saving-energy and clean.

SPRING series Solar Pumping Inverter from JFY Company is dedicated to Solar Pumping System and it can be used for various application scenario. The Solar Pumping Inverter controls and regulates the system operation, converts the DC power from PV array to AC power and then drives AC pumps. It can adjust the output frequency real-time according to the irradiation change and fulfill maximum power point tracking (MPPT).

Features

- Designed dedicated for solar pump, and compatible with various motor types; have excellent performance;
- IP 65 protection level, inverter integrates the combiner box which contains the PV dedicated DC switch, SPD, fuse and other optional accessories;
- Plenty of communication interfaces, such as RS485/CAN/GPRS (optional); the running and status can be checked remotely;
- Inverter allows using grid or diesel generator as backup power supply, 24-hour running;
- Natural cooling design, IP65 high protection level guarantees inverter to be applied under all kinds of outdoor strict environment;
- Using advanced dynamic VI MPPT technique; fast respond and good operating stability;
- Main circuit adopts intelligent power module, high reliability, conversion efficiency reach to 98%;
- Advanced IGBT module, the high and low water position detection control circuit optional;
- Full automatic running; no need manual duty; the pump speed range can be set freely according to the system conditions so that guarantee the running time as long as possible;
- The inverter outer casing is solid and durable, compact size, nice appearance; friendly UI, user can check the real time info and historical info via the LCD display located in the front board; can store the running data up to 8 years;
- Inverter has perfect running protection mechanism, such as output short-circuit protection, IGBT over-current protection, input over/under voltage protection, overload protection, module over-temp protection, grounding protection and so on;

ii) **Brand Name: JNTECH solar pumping inverter**

- AC three phase solar pump inverter
- Output voltage 220V ~ 240V AC/380~460V AC
- Power of low voltage ranges from 1.1KW to 4KW
- Power of high voltages ranges from 2.2KW to 132KW



Basic Info

- Model NO: JNP2K2L
- System : Off-Grid system
- Size: 520*325*296
- Certification : CE, ISO
- Standard : Standard
- Specification : EN50178;IEC/EN62109-1;IEC/EN62109-2;IEC61727, etc.
- Trademark : JNTECH
- Origin : Hefei, Anhui, China
- HS Code : 8504403090

FEATURES

- Drive power-matched three-phase AC pump.
- Adopt advanced IGBT power module.
- High conversion efficiency, low temperature rise, low noise, long lifespan.
- Advanced dynamic MPPT technology, efficiency > 99%.
- Fully automatic operation, it can store operation date for 10 years
- Perfect system protection, high reliability.
- New design of anodized aluminum case.
- LCD display.
- Interface: RS485/GPRS.
- Modular design, easy to install, operate, maintain

❖ **Variable Frequency Drive(VFD):**

A Variable Frequency Drive (VFD) is a type of motor controller that drives an electric motor by varying the frequency and voltage supplied to the electric motor. Frequency (or hertz) is directly related to the motor's speed (RPMs). In other words, the faster the frequency, the faster the RPMs go. If an application does not require an electric motor to run at full speed, the VFD can be used to ramp down the frequency and voltage to meet the requirements of the electric motor's load. As the application's motor speed requirements change, the VFD can simply turn up or down the motor speed to meet the speed requirement. It is usually referred to as an "inverter". It has become common in the industry to refer to any DC-to-AC converter as an inverter.

➤ Why should I use VFD...??

- i. Reduce energy consumption and energy costs
- ii. Increase production through tighter process control
- iii. Extend equipment life and reduce maintenance

- 1) **Brand name:** INVT Solar Pump inverter
Model: Goodrive100-PV series solar pump inverter
Made by: Shenzhen INVT Electric Co., Ltd



Description

INVT Goodrive series low-voltage inverter has excellent performance and rich function, and is reliable and easy to use with complete specifications. It's widely used in more than 80 countries abroad in various application fields, and is generally recognized by customers.

Features

- **Comprehensive voltage level and power range:**
Support single phase/three phase 220V, and three phase 380V water pump, power from 0.4kW to 110KW
- **Easy to use:**
Simply connect the photovoltaic panel to the inverter, no need to set any parameters, and the PV pump can be automatically started after power-on
- **Multiple protection measures:**
It has protection functions such as PV over-voltage protection, PV polarity reverse connection alarm, over-temperature automatic derating, etc., which can effectively extend the life of the product
- **Advanced MPPT algorithm:**
Ensure solar power tracking efficiency can reach 99%
- **Boost module:**
2.2KW and below models can be equipped with boost module to meet the needs of low voltage operation, which can reduce solar panel configuration and reduce user system cost
- **GPRS remote monitoring:**
Supports optional GPRS module, which can realize remote monitoring function of computer webpage and mobile APP
- **AC/DC switching scheme:**
All series of products can realize automatic switching of PV DC input and grid AC input, which can meet 24 hours of no care work
- **IP54 solution:**
Supports IP54 grade cabinet solutions

Specifications

Model	-SS2	-S2	-2	-4
AC input voltage (V)	220(-15%)~240(+10%) (1PH)		220(-15%)~240(+10%) (3PH)	380(-15%)~440(+10%) (3PH)
Max input DC voltage (V)	440	440	440	800
Starting voltage (V)	200	200	200	300
Min operating voltage (V)	150	150	150	250
Recommended DC input voltage range (V)	200~400	200~400	200~400	300~750
Recommended MPP voltage (V)	330	330	330	550
Rated output voltage (V)	1PH 220	3PH 220	3PH 220	3PH 380
Output frequency range (Hz)	0~400			
MPPT	99%			
Installation mode	Support wall-type, rail-type and flange-type installation			
Ambient temp	-10°C~ + 50°C, derate by 2% per every additional 1°C if the temp is above			
Elevation	Below 1000m; derate by 1% per every additional 100m if the elevation is above 1000m			
Cooling mode	Air cooling			

Module design According to Power

SR.NO	POWER	MODEL	IP	TECHNOLOGY	INPUT PV VOLTAGE	OUTPUT VOLTAGE	APPLICABLE MOTOR	NO.OF STRINGS	PANELS IN EACH
1	3HP/2.2KW	GD100-PV	IP20	MPPT	513~570	380V	2HP/3HP	1	16*200
2	5.5HP/4KW	GD100-PV	IP20	MPPT	513~570	380V	3HP/4HP	1	16*200
3	7.5HP/5.5KW	GD100-PV	IP20	MPPT	513~570	380V	5.5HP	2	15*200
4	10HP/7.5KW	GD100-PV	IP20	MPPT	513~570	380V	7.5HP	2	15*300
5	15HP/11KW	GD100-PV	IP20	MPPT	513~570	380V	10HP	2	20*250
6	20HP/15KW	GD100-PV	IP20	MPPT	513~570	380V	15HP	3	16*300
7	25HP/18.5KW	GD100-PV	IP20	MPPT	513~570	380V	20HP	4	20*250
8	30HP/22KW	GD100-PV	IP20	MPPT	513~570	380V	25HP	5	16*300
9	40HP/30KW	GD100-PV	IP20	MPPT	513~570	380V	30HP	6	16*300
10	50HP/37KW	GD100-PV	IP20	MPPT	513~570	380V	40HP	8	16*300
11	60HP/45KW	GD100-PV	IP20	MPPT	513~570	380V	40HP	13	16*300

❖ AC pump(Submersible Pumps):

AC pump are mostly Three phase Submersible Pump which pump water from ground to the storage tank and supply scheme . These Pump are also use to pump water from lake,river or Underground water.We provide pumps of following Brands.

1) Brand Name : DAB Pump

- Available Power ratings:
DAB PUMP S4 E12 **2HP** M 2" ~ DAB PUMP SS8 B-2B.2 **25HP** M 6"
- Operating Conditions:
Max.Liquid temperature is 25 °C
Solid grain or fiber free dilute Clean non-corrosive liquids
pH : 6.5 ~ 8.5
- Made in Italy

Description

The DAB S4 are 4 inch multi-impeller borehole pumps for clean water, designed for water boosting, gardening and irrigation, lifting water from boreholes in domestic and residential, civil and commercial applications and irrigation systems also for agriculture. The S4 pumps must be installed in wells with a diameter of at least 4" , or in tanks or cisterns and it increases the pressure of water that can then be used for example to water medium or large gardens or (in the case of models with a greater flow and head) in irrigation systems in agriculture. These are sand-resistant pumps with a high performance. The entire range complies with the standard MEI ≥ 0.4 . All the model have the ACS certificate. WRAS and DM174 certificate are pending approval.

Available as standard:

- Only pump body
- Pump body with oil-filled motor
- Pump body with water-filled motor
- Kit with pump body and motor, power supply cable, cord and control box.

Power cable and cord of 15 meters

S4 1/13, S4 2/7 S4 2/10, S4 3/6, S4 3/9, S4 4/4, S4 4/7, S4 4/9, S4 6/5, S4 6/7, S4 8/5, S4 6/10, S4 8/7, S4 8/9, S4 12/6, S4 12/9, S4 12/13, S4 16/8, S4 16/12

Power cable and cord of 30 meters: S4 1/19, S4 1/26, S4 2/14, S4 3/13, S4 4/14, S4 6/14, S4 6/21, S4 8/15

Power cable and cord of 40 meters: S4 1/37, S4 1/48, S4 2/20, S4 2/28, S4 2/40, S4 3/19, S4 3/25, S4 3/32, S4 3/39, S4 4/19, S4 4/27



❖ AC Motors:

Submersible pump is drive by Three phase AC Motor. Motor is coupled with pump, Details are mentioned below;

1) Brand Name: TECA Motor

Available Options:

4P 1.5 D 220V

4P 2.2 D 220V

Applications

- For water supply from wells or reservoirs.
- For domestic use for civil and industrial applications.
- For garden use and irrigation.

Operating conditions

- Maximum fluid temperature : +50°C.
- Maximum sand content: 0.3%.
- Maximum immersion : 120m.
- Minimum well diameter : 4".

Motor and pump

- Rewindable motor
- Full obturated screen motor
- Three—phase: 380V—41 5V/50Hz
- Single phase: 220V 240V/50Hz
- Equip with start —up control box.
- NEMA dimension standards

Internal diameter of outlet

- 1.25 "
- 1.5"
- 2"

Warranty

- 1 year (According to our general sales conditions)
- ### 2) Brand Name : TESLA Motor
- Available Power rating: 1.5HP, 2P/4P ~ 40HP,2P/4P
 - Size range: 6" ~ 12"
 - Made of AISI 316 stainless steel
 - RPM: 3500

Applications

- For water supply from wells or reservoirs.
- For domestic use for civil and industrial applications.
- For garden use and irrigation.



Operating conditions

- Maximum fluid temperature : +35°C.
- Maximum sand content: 0.3%.
- Maximum immersion : 120m.

Motor and pump

- Rewindable motor
- Full obturated screen motor
- Three—phase: 380V—41 5V/50Hz
- Single phase: 220V 240V/50Hz
- NEMA dimension standard

❖ Centrifugal Pump:

Centrifugal pumps are used to transport fluids by the conversion of rotational kinetic energy to the hydrodynamic energy of the fluid flow. The rotational energy typically comes from an engine or electric motor.

In water supply scheme Centrifugal pumps are use to Pump the water from Reservoir.

Brand Name : Flowpak

Drive By: Electrical motor (2HP~400HP)

Type : Horizontal

Applications

- Public Water Supply Schemes.
- Fire Fighting Purpose.
- Industrial Applications.
- De-Watering of Mines & Construction Sites.
- Swimming Pools.
- Spray Irrigation.
- Drinking Water.
- Agricultural Irrigation.

Pumping Liquid

- Clean ,Thin, Non-aggressive,Non-explosive,
- Clear,Cold and Fresh water without abrasives,
- Solid particles or fiber

Operating Data

• Capacity	upto	8000	USGPM
• Total Head	upto	330	Feet
• Speed	upto	2900	RPM
• Water Temp.	upto	35	°C (50°C Optional)
• Degree of Protection	upto	IP 55	
• Voltage		380-420	



**Centrifugal pump drive by 10HP AC motor
In Umerkot WASH projects**

Reverse osmosis Plant (RO)

Reverse Osmosis (RO) is a water treatment process that removes contaminants from water by using pressure to force water molecules through a semipermeable membrane. During this process, the contaminants are filtered out and flushed away, leaving clean, delicious drinking water. The clean drinking water collects in a holding tank.

Hydropak International has designed and Manufactured its own RO plant and water filtration plant, Tested it successfully in our projects of solar Based water Supply schemes.

Capacity: 2000 GPD ~ 5000 GPD

Type:Vertical Type

Temperature: 25 °C

Function: Filtration and Ozonation

Why RO Plant...??

There are few advantages of RO plant which are following below:

- i) Improve taste
- ii) Simple maintenance
- iii) Save money
- iv) Remove impurities

Basic Components Of a Reverse Osmosis System:

Cold Water Line Valve:

Valve that fits onto the cold water supply line. The valve has a tube that attaches to the inlet side of the RO pre filter. This is the water source for the RO system.valves use are Butterfly valves.

Pre-Filter(s):

Water from the cold water supply line enters the Reverse Osmosis Pre Filter first. There may be more than one pre-filter used in a Reverse Osmosis system, the most common being sediment and carbon filters. These pre-filters are used to PROTECT the RO membranes by removing sand silt, dirt, and other sediment that could clog the system. Additionally, carbon filters may be used to remove chlorine, which can damage the RO membranes.

Reverse Osmosis Membrane:

The Reverse Osmosis Membrane is the heart of the system. The semipermeable RO membrane is designed to remove a wide variety of both aesthetic and health-related contaminants. After passing through the membrane, the water goes into a pressurized storage tank where treated water is stored

Post filter(s):

After the water leaves the RO storage tank, but before going to the RO faucet, the treated water goes through a final “post filter”. The post filter is usually a carbon filter. Any remaining tastes or odors are removed from the product water by post filtration “polishing” filter.

Automatic Shut Off Valve (SOV):

To conserve water, the RO system has an automatic shut off valve. When the storage tank is full, the automatic shut off valve closes to stop any more water from entering the membrane and blocks flow to the drain. Once water is drawn from the RO faucet, the pressure in the tank drops; the shut off valve then opens to send the drinking water through the membrane while the contaminated wastewater is diverted down the drain.

Check Valve:

A check valve is located in the outlet end of the RO membrane housing. The check valve prevents the backward flow of treated water from the RO storage tank. A backward flow could rupture the RO membrane.

Flow Restrictor:

Water flowing through the RO membrane is regulated by a flow restrictor. There are many different styles of flow controls, but their common purpose is to maintain the flow rate required to obtain the highest quality drinking water (based on the gallon capacity of the membrane). The flow restrictor also helps maintain pressure on the inlet side of the membrane. Without the additional pressure from the flow control, very little drinking water would be produced because all the incoming water would take the path of least resistance and simply flow down the drain line. The flow control is most often located in the RO drain line tubing.

Storage Tank:

The standard RO storage tank holds from 2 - 4 gallons of water. A bladder inside the tank keeps water pressurized in the tank when it is full. The typical under counter Reverse Osmosis tank is 12 inches in diameter and 15 inches tall.

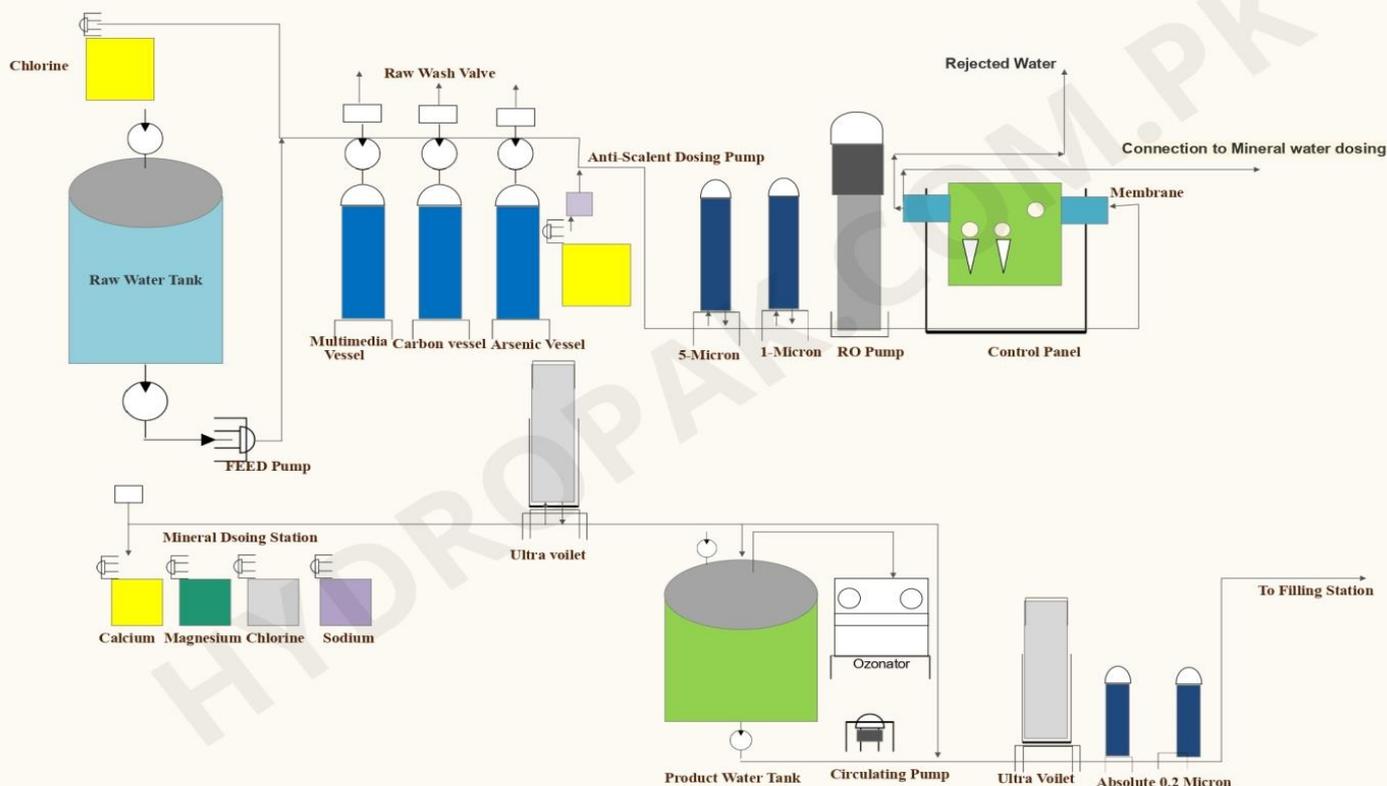
Faucet:

The RO unit uses its own faucet, which is usually installed on the kitchen sink. Some areas have plumbing regulations requiring an air gap faucet, but non-air gap models are more common

Drain line: This line runs from the outlet end of the Reverse Osmosis membrane housing to the drain. The drain line is used to dispose of the wastewater containing the impurities and contaminants that have been filtered out by the reverse osmosis membrane.

Our Designed RO Plant :

COMMERCIAL REVERSE OSMOSIS PLANT(RO Plant)





Transmission lines:

Hydropak international have also good experience in Power distribution. We deals in High voltage and Low voltage overhead Transmission line. we provide best services in this sector with our experienced team.

We have completed several projects in Remote areas for distribution of power from our MMHP projects. We use best quality of Aluminium conductors and high resistive insulators. Specifications of High Transmission(HT) and Low Transmission(LT)

Specification of HT line:

Transmission line sequence : 3 phase 3 wires

Height of poles: 35ft

Type of conductor: Aluminium Alloy conductor(AAC)

Voltage Rating: 11KV

Specification of LT line:

Transmission line sequence: 3 phase 4 wires

Height of poles: 30 feet

Type of conductor: Aluminium conductor Steel reinforced(ACSR)

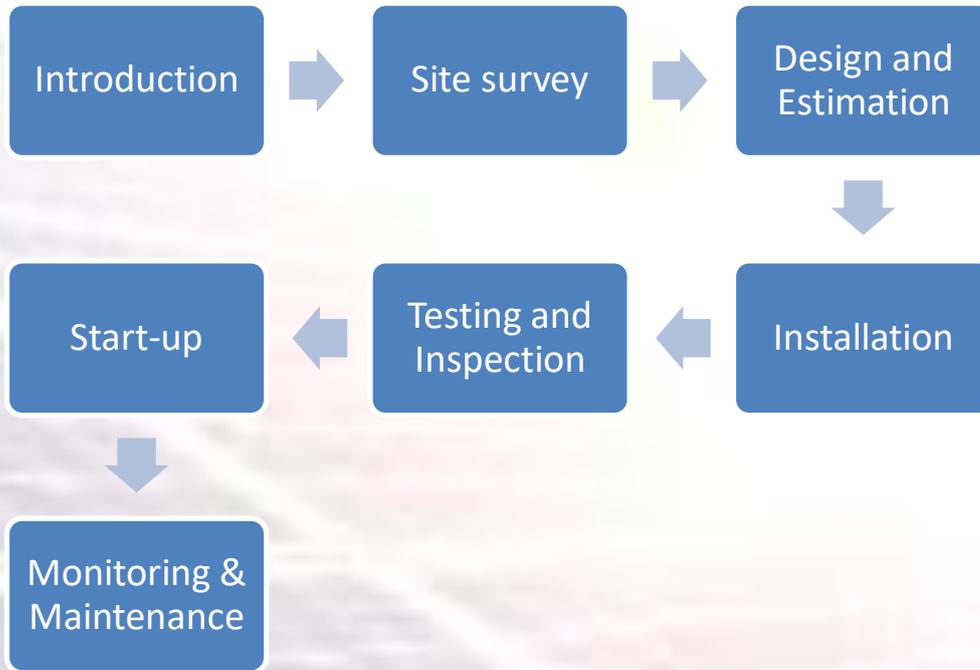
Voltage Rating: 220V/380v

*Further details about our projects are mentioned in Refrence projects section.



Our MMHP Transmission Poles in Remote Area(Northern Areas of Pakistan)

Our Projects Portfolio:



Our Reference Projects:

Installation and Rehabilitation of Solar based RO plant in Tharparkar ,Sindh Funded by UNICEF:

As important as electricity may seem, water is essential to life. Bringing life giving water from under the ground using only the power of the sun is very interesting.

Tharparkar is the most water deficient area in sindh, Pakistan. In collaboration with UNICEF, Pakistan HYDROPAK INTERNATIONAL, Pakistan has installed Solar based

RO filtration plant for drinking purpose which is fed by Solar based water pumping system.

In this water deficient area solar based small water supply units are installed in different locations for communities at there. Projects details with locations are mentioned below;

- 1). Nature of Work: Rehabilitation of RO plant with solarization
Location: Kubri, Haro,Tharparkar
Solar system Installed : 5KW
Submersible motor installed: 4HP

- 2). Nature of work: Rehabilitation of Pump House with HDPE lines
Location: Resham jo thar,satidera, Tharparkar
Solar system Rating: 12KW
Submersible Motor installed: 10HP

- 3). Nature of work: Construction of Water supply scheme with HDPE lines
Location: Sokhroo, chachro, Tharparkar
Solar system Installed: 12KW
Submersible Motor installed: 10HP
Bore Depth: 950ft

- 4). Nature of work: Rehabilitation of water supply scheme
Location: Dhabo saman, Tharparkar
Solar system Rating: 2*12KW
Submersible Motor Rating: 2*10HP



5). Nature of work: Construction of New water Supply scheme and Lightning of Pump House

Location: Tharpakar

Solar system installed: 22KW

Submersible Motor installed: 15HP

Lightning inverter installed: 5KW



6). Nature of work: construction of Pump house ,RO plant and Water tank

Location: Tharpakar

Solar system Installed : 32KW

RO Plant capacity: 15000GDP

Households No: 2000/day



Supply, Installation and operationazation of Solar based RO plant in Gadap Town, Karachi , Sindh Funded by UNICEF:

There is Big issue of clean drinking water in some areas of Karachi. In collaboration with UNICEF, Pakistan HYDROPAK INTERNATIONAL, Pakistan has installed Solar based RO filtration plant for drinking purpose which is fed by Solar based water pumping system.

In this area solar based small water supply units are installed in different locations for communities ,BHUs and schools in Gadap Town Karachi. Projects details with locations are mentioned below;

- 1). Services Description:
- i) Communal water supply in Gadap town
 - ii) water Supply schemes in schools and BHUs
 - iii) Provision of Waste bin in Gadap town

Scope of work:

- i) construction of new Bore hole with complet accessories ,submersible pump,Room for RO plant , 1500 Gallons fiber Tank, Solar Based operation.

Locations: Village Hassan Noman Colony, Malar gai/Zone A

Village QayumAbad/ Zone B, Village Faqirabad/Zone B

Village Jhangabad/Zone B, Village Quetta Town/Zone C

Village Khadim Hussain Solangi Goth/Zone C, Village jamali Goth/zoneE

- ii).Provision of water supply , Bore hole for toilets,submersible pump , 1000 gallons water tank with solar Based Operations.

Locations: GBPS Chutta Gabol Goth/Zone B

GBPS Fateh Mohammad Gabol Gi=oth/ Zone A

BHU Janat Gul/Zone A

BHU Lassi Goth/Zone C

- iii). Provision of Waste Bins on 45 points of UC 31, Gujro, Karachi



Installation and Rehabilitation of Solar based RO plant in Umerkot , Sindh Funded by UNICEF:

Umerkot is also water deficient area in sindh, Pakistan. In collaboration with UNICEF, Pakistan HYDROPAK INTERNATIONAL, Pakistan has installed Solar based RO filtration plant for drinking purpose which is fed by Solar based water pumping system.

In this water deficient area solar based small water supply units are installed in different locations for communities at there. Projects details with locations are mentioned below;

-
- | | |
|--------------------------|---|
| 1). Nature of Work: | Rehabilitation of 1600ft water supply source and RO plant |
| Location: | Nasibar Thar,Umerkot |
| Solar system Installed : | 22KW |
| Maintenance : | Generators and Pumping machinery |



-
- | | |
|--------------------------|--|
| 2).Nature of Work: | Rehabilitation of RO plant with 1500ft supply line |
| Location: | Haji banda ali raho,Umerkot |
| Solar system Installed : | 5KW |



- 3). Nature of Work: Rehabilitation of Pump house, Boudary wall and Reservoirs
Location: Shadi pali ,Umerkot
Solar system Installed : 12KW
Pumping Machinery installed: Solar based centrifugal pump



- 4). Nature of Work: construction, solarization of BHU and solar based pumping machinery
Location: Umerkot
Solar system Installed : 12KW
Inverter installed: Maxpower



Installation and Rehabilitation of Solar based RO plant in Qilla Abdullah , Baluchistan Funded by UNICEF:

Qilla Abdullah, Baluchistan have Drinking water crisis. In collaboration with UNICEF, Pakistan HYDROPAK INTERNATIONAL, Pakistan has installed Solar based RO filtration plant for drinking purpose which is fed by Solar based water pumping system.

In this water deficient area solar based small water supply units are installed in different locations for communities at there. Projects details with locations are mentioned below;

1). Nature of work: Rehabilitation of water Supply schemes

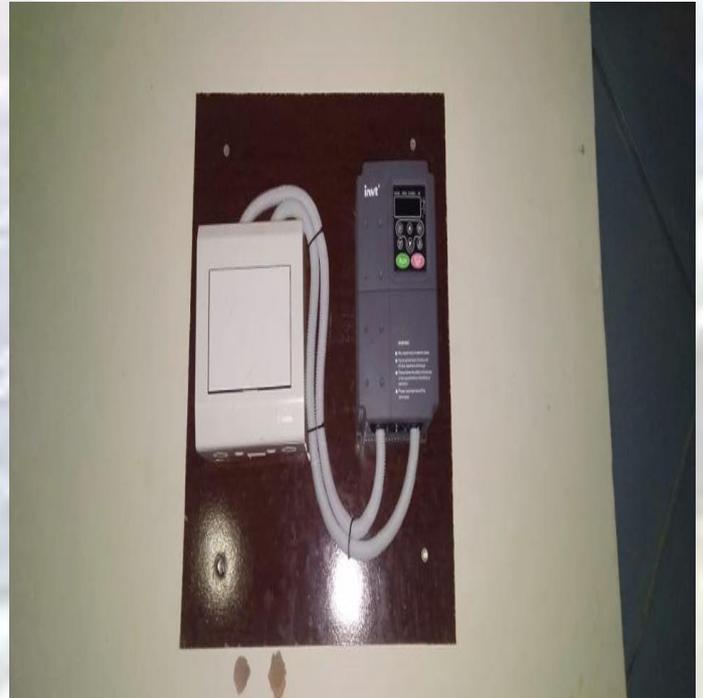
System specification: i) supply and installation of submersible pump 40 Hp, Capable of discharge of 4500 to 5500 GPH against total head of 1200 Rft including 1000Rft GI column pipe 3" Dia, 1050 Rft cable wire 1000mm, complet in all set, including voltage controller(input 110V, output 220V) and Cleaning of Bore

Solar system installed: 40KW

Locations : District: Qilla Abullah, Baluchistan

No of sites: 12

Villages: Killi Norak suleman khel, Jamiyat colony, Killi Thekadyr, Sharaduddin, Aryan college road, Stadium, Purana Chaman killi, Dilsora kareez, Killi Maizai, Arambia Pir Alizai, Killi Habib Zai Habib Zai High School,



Other solar system, Transmission line and General order supply projects:

<p>1). Project Name: 5KW Solar pump installation with civil works Client: ACTED, NGO Location: Achini Bala, Peshawar Year of completion: 2017</p> 	<p>2).Project Name : 5KW + 5KW Solar based water supply scheme client: ACTED ,NGO location: 1) Eppi village, Mir Ali, North Waziristan. 2).Haider Khail,Mir Ali,North waziristan Year of completion: 2017</p> 	<p>3).Project Name: 5KW ON-Grid Domestic lightning project with 4 hrs Backup Client : Shakir khan (Private client) Location: Mardan,KPK</p> 
<p>4).Project Name: 4KW solar based water supply scheme Client : shogram Community Location: Shogram , Chitral,KPK Completion year: 2019 ***** 5). Project Name: Construction of 10 Nos of bore with installation of Hand Pumps in various UCs & Rehabilitation of 4 latrines in GGCM Schools,Sura, UC Nawagai Client: SRSP Location : Buner Completion year: 2018 *****</p>	<p>6). Project Name: Installation of 22KV and 11KV Transmission line for factory Client: Cherat cement Location: Cherat cement factory, Nowshehra Completion year: 2018 ***** 7). Project Name: Supply of Electric water coolers Client: Institute of space and technology, Islamabad Location: IST islamabad Completion year: 2017 *****</p>	<p>8). Project Name: Supply,Manufacturing,installation and commissioning of various items for 5KW Turbine(Research Project) Client: GIK, Location: GIK,Topi, Swabi Completion Year: 2018 ***** 9) Project Name: Supply and Installation of 22KVA diesel generator. Client: Location: Completion year: 2017 *****</p>

Contact Us:

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- Contact# 0092 347 0007547

***** Thankyou *****