



CP SOLAR

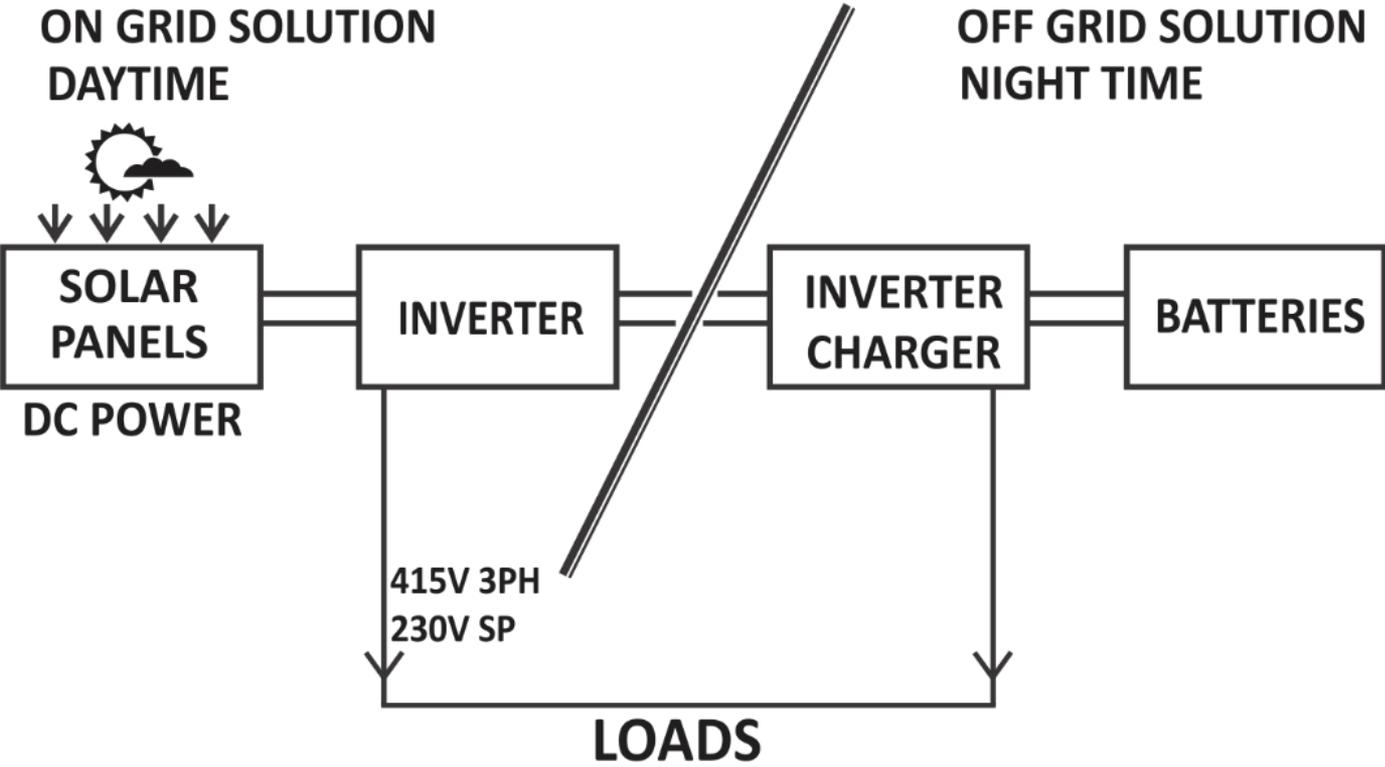
RESOURCES

L I M I T E D

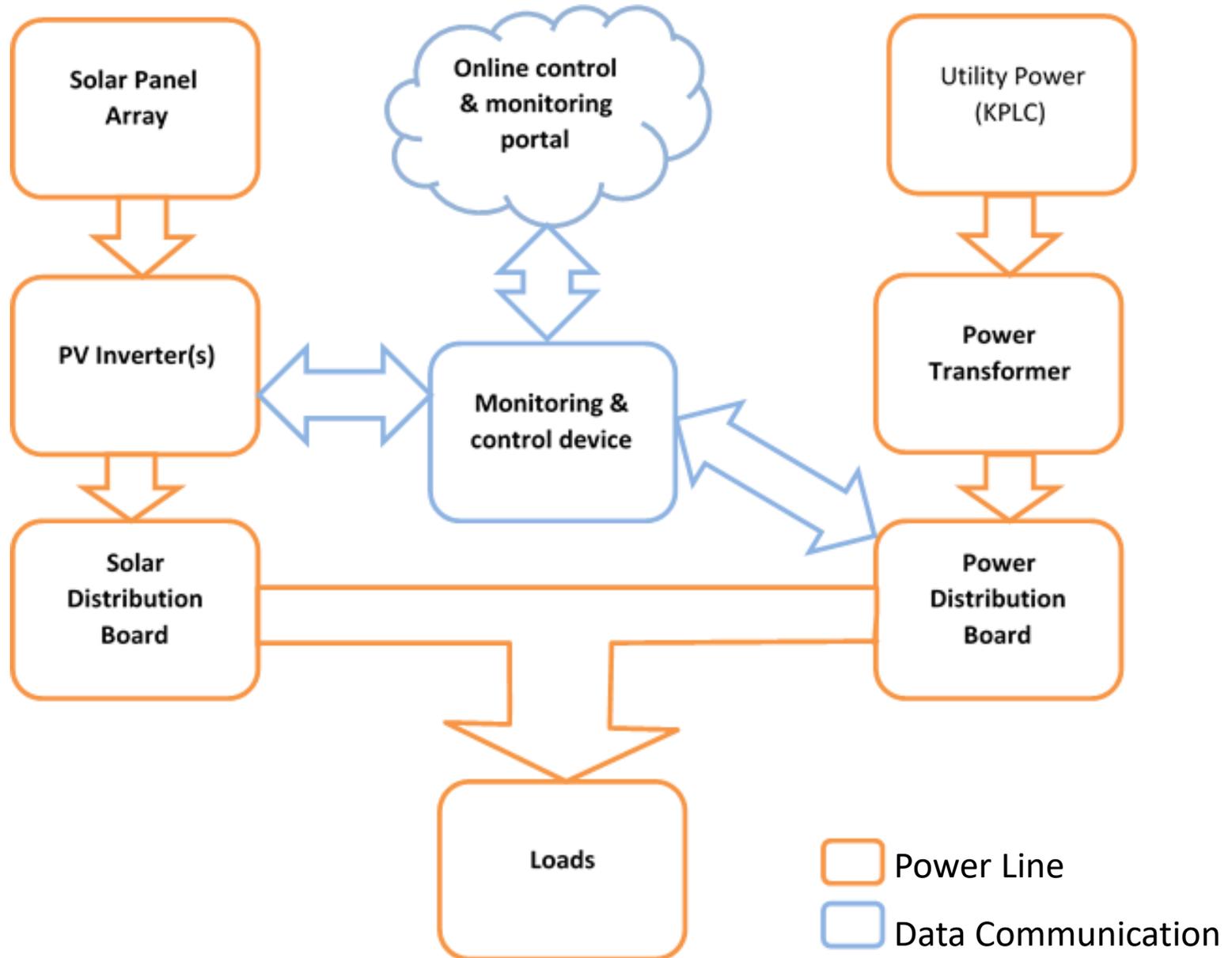
A POWERFUL SOLUTION FOR YOUR POWER NEEDS

**How does our
solar power solution
work?**

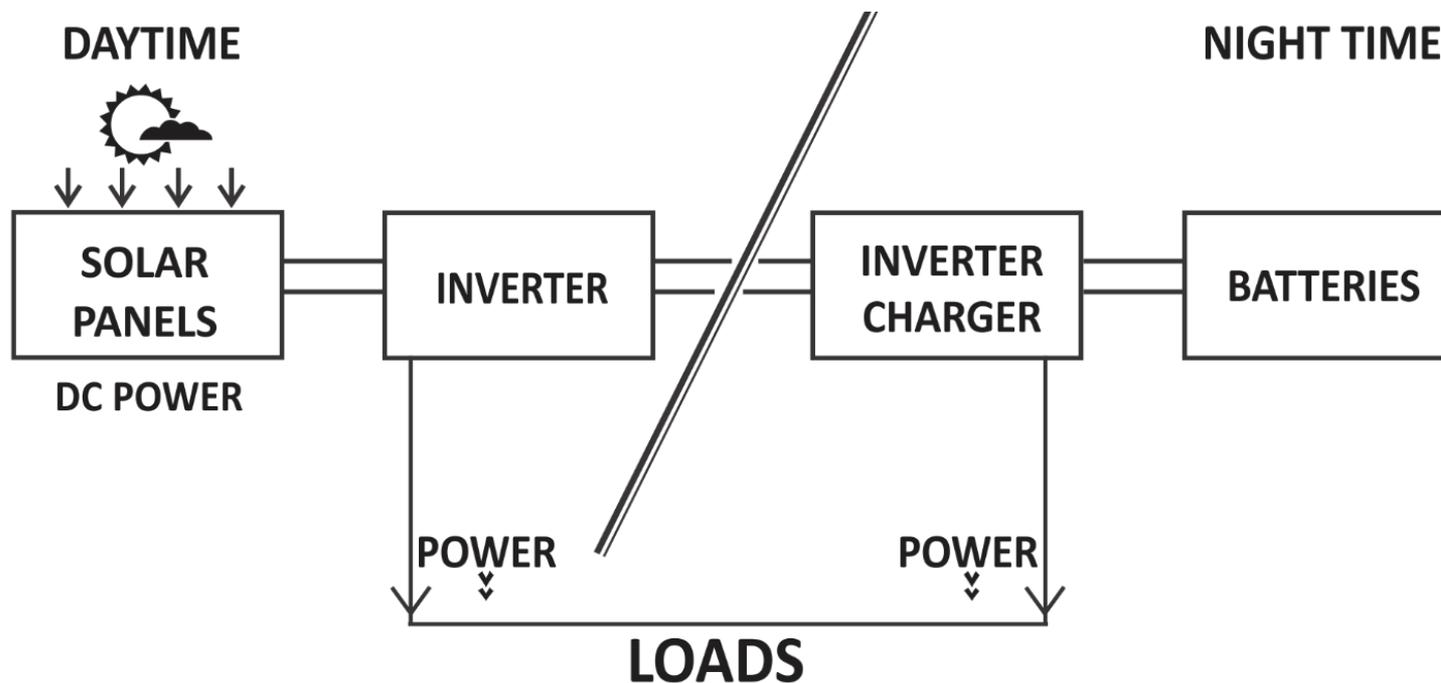
Solar System



How it's connected



Home Solution



- **3 Ongoing Total Home Solution installations are expected to be showcases from February 2020.**
- **DAY:** A home is supplied with solar power from panels during the day. Excess power is used to charge batteries.
- **NIGHT:** A home is supplied with power from batteries. No Generator required. Grid (KPLC) serves as a back-up.

Hybrid power systems controller

Monitoring system for photovoltaic system

SMA Plant management solutions for seamless power integration.

The SMA Hybrid Controller intelligently controls energy flows and enables seamless integration of renewable energies into power grids.

Your benefits:

- Optimal automatic **control of all generators and storage systems**
- Operate micro grids based entirely on renewable energies
- **Save fuel with diesel-off mode**
- Proven grid management functions reduce project risks

Materials Specifications & Warranties

- **SunPower panels:** SunPower - US quoted company, 25 year product and performance warranty, number 1 ranked in the world by Silicon Valley for efficiency
- **Inverters: SMA** - Made in Germany, 5 year warranty and option to renew further 20 years thereafter at a nominal charge
- **Mounting system:** Aluminum rails produced locally as per our mold design and aluminium brackets and stainless steel bolting systems.
- **DC cables:** 6mm solar cables made in Spain/India
- **AC cables and panel boards:** procured locally. AC cables made in Zambia, Turkey or Egypt. Panel boards from local reputed manufacturers

Materials Specifications & Warranties

- **AC Isolators & DC Isolators:** for safety all imported from SMA Germany
- **ABB Switch gear** along with Distribution board
- **Walkways:** Set aside to create room for maintenance and cleaning purposes
- **SMA Data Manager** complete with Energy Metering system. This provides remote monitoring and enables all energy produced by the Solar System to be consumed by the client
- **Dedicated Maintenance team** to offer service to clients and reports on system performance
- **Complete Turn Key Solar Project**
- **Hybrid Controller** – a device to run the generator partially on solar, thereby saving on fuel (optional)

SUNPOWER / SMA INVOLVEMENT

- Full System Design
- Electrical Layout planning
- Solar Panel Layout to provide optimum system yield
- Full System commissioning and inverter configuration
- System support throughout installation and after commissioning
- Warranty

SUNPOWER®



SOLAR PANEL EFFICIENCIES AVERAGE RATING OF TOP PV MANUFACTURERS

	SOLAR PANEL MANUFACTURER	MINIMUM EFFICIENCY (%)	MAXIMUM EFFICIENCY (%)	AVERAGE EFFICIENCY (%)
★1	SunPower	19.00%	22.80%	20.90%
2	LG	18.40%	21.70%	20.12%
3	Panasonic	19.10%	20.30%	19.63%
4	Solaria	19.40%	19.80%	19.53%
5	Solartech Universal	19.00%	19.90%	19.45%
6	Trina Solar	19.00%	19.00%	19.00%
7	REC Solar	16.50%	21.70%	18.90%
8	Silfab	17.80%	20.00%	18.78%
9	Mission Solar Energy	18.50%	18.95%	18.55%
10	LANGi Solar	17.40%	19.30%	18.34%
11	Hyundai	16.20%	18.90%	18.32%
11	Hannwa Q CELLS	17.10%	19.60%	18.31%
12	Winaico	17.13%	19.40%	18.26%
13	CertainTeed Solar	15.40%	19.40%	18.25%
14	Upsolar	16.50%	19.40%	17.92%
15	Reacom Solar	16.00%	19.07%	17.67%
16	Preimar Group	16.60%	19.05%	17.54%
17	Trina Solar Energy	16.20%	18.60%	17.42%
18	Heleine	15.60%	19.30%	17.31%
19	Renogy Solar	15.30%	18.50%	17.30%
20	Talesun	16.90%	17.50%	17.20%
21	BenQ Solar (AUO)	15.50%	18.30%	17.19%

<https://news.energysage.com/what-are-the-most-efficient-solar-panels-on-the-market/>

	SOLAR PANEL MANUFACTURER	MINIMUM EFFICIENCY (%)	MAXIMUM EFFICIENCY (%)	AVERAGE EFFICIENCY (%)
22	Jinko Solar	15.57%	19.55%	17.17%
23	Suniva Inc	16.66%	17.65%	17.14%
24	Phono Solar	15.66%	18.44%	17.04%
25	Boviet Solar	16.50%	17.50%	16.98%
26	S-Energy	15.61%	18.46%	16.95%
27	Canadian Solar	15.58%	18.33%	16.88%
28	Grape Solar	16.21%	17.64%	16.75%
29	ET Solar	15.67%	17.52%	16.60%
30	Mitsubishi Electric	16.30%	16.90%	16.60%
31	Seraphim	15.67%	17.52%	16.55%
32	Hansol	14.97%	18.05%	16.49%
33	GCL	16.00%	17.00%	16.48%
34	Neo Solar Power	16.00%	17.00%	16.48%
35	Axitec	15.37%	17.90%	16.47%
36	RGS Energy	15.60%	17.10%	16.35%
37	CentroSolar	15.30%	17.80%	16.21%
38	AmeriSolar	14.75%	17.01%	15.97%
39	ReneSola	14.90%	16.90%	15.91%
40	China Sunergy	14.98%	16.53%	15.78%
41	Kyocera	14.75%	16.11%	15.42%
42	Green Brilliance	14.24%	15.58%	15.03%

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**Who can benefit from our
solar power solutions?**

If you are a high power consumer, with power bills in excess of Kshs100,000/- every month:

✓ **Manufacturers**

✓ **Quarries**

✓ **Tea Farms**

✓ **Rental Developments**

✓ **Flower Farms**

✓ **Institutions**

✓ **Lodges & Hotels**

✓ **Home Solutions**

✓ **Hospitals**

**What are the gains you
stand to make from our
solar power solution?**

- ✓ **COST SAVINGS:** Free solar energy = a reduction in KPLC consumption.
- ✓ **GREEN ENERGY:** Protects the environment.
- ✓ **TAX RELIEF:** Reduced taxes from government incentives of 100% investment deduction.

Financial Returns

- ✓ On average, a payback period of between 4 to 6 years.
- ✓ “Free solar power” for the life of the solar system (at least 25 years).
- ✓ Over the last few years, the price of solar systems has reduced while KPLC rates have increased.

**Whom have we helped to
make massive savings on
power bills?**

Client List

CLIENT NAME	INDUSTRY	GRID TIED SOLUTIONS	STATUS
Kapa Oil Refineries Ltd	Oil Manufacturer	1.5MW	Complete
Blue Nile Rolling Mills Ltd	Steel Manufacturer	1MW	Complete
DPL Festive Ltd	Bakery	700KW	Complete
Abyssinia Group of Companies	Steel Manufacturer	500KW	Complete
Adix Plastics Ltd	Plastics Manufacturer	500KW	Complete
Subati Flowers Ltd	Floriculture	320KW	Complete
Toptank (Tile & Carpet)	Tank Manufacturer	300KW	Complete
Mjengo Limited	Agro Commodities	300KW	Complete
Nairobi Plastics Ltd	Plastic Manufacturer	675KW	Complete
Sumaria Industries Ltd	Packaging Industry	300KW	Complete
Kenya Sweets Ltd	Confectionery	280KW	Complete
Kenafric Bakery	Bakery	250KW	Complete
Statpack Industries Ltd	Packaging Industry	250KW	Complete
Napro Industries Ltd	Manufacturing	250KW	Complete

Client List continues...

CLIENT NAME	INDUSTRY	GRID TIED SOLUTIONS	STATUS
Steel Structures Ltd	Construction	250KW	Complete
Impala Glass Industries Ltd	Glass Manufacturer	250KW	Complete
Afri Piping Systems Kenya Ltd	Plastic/Metal	200KW	Complete
C&P Shoe Industries Ltd	Shoe Manufacturer	200KW	Complete
Kings Plastics Ltd	Plastic Manufacturer	200KW	Complete
Leisure Lodge Beach & Resort	Hospitality	200KW	Complete
Crystal Industries Ltd	Aluminum Products	200KW	Complete
Carton Manufacturers Ltd	Packaging Industry	200KW	Complete
Shrink Pack Ltd	Packaging Industry	150KW	Complete
Osho Chemicals Ltd	Agro Chemicals	100KW	Complete
Tropical Heat Ltd	Food Manufacturer	100KW	Complete
Belfast Millers Ltd	Animal Feeds	75KW	Complete
Vitafoam Products Ltd	Foam Manufacturer	75KW	Complete
Capitol Printers Ltd	Printing	50KW	Complete
Parklands Plaza	Commercial Building	50kW	Complete

Why CP Solar?

- ✓ Proven track record - 14MW of live active installations.
- ✓ The C&P Banner = strong business incubation
- ✓ An EPRA compliant contractor / vendor.
- ✓ Exclusive distributor of SunPower solar panels - Ranked world's best for efficiency with a 25-year performance and product warranty.

Why CP Solar?

- ✓ Inverters & accessories from SMA Germany with up to 25 years' warranty.
- ✓ 50 + professional team: qualified engineers, electricians and solar technicians.
- ✓ A dedicated maintenance service team.
- ✓ Low-cost maintenance contracts.
- ✓ Loan facility arranged for clients.

Purchase Options

There are three options available as follows;

- a) Outright Purchase**
- b) Pay As You Save**
- c) Power purchase Agreement**

Purchase Options

b) Pay As You Save - Mjengo Ltd Cash-flow

SOLAR INSTALLATION OF 300KW SYSTEM

Cost of Solar Plant	33,000,000
Payment upto installation 30%	9,900,000
Balance amount for the project	23,100,000
finance arranged for 5 years @ 5.5%	
Balance of Kshs. 23,100,000 financed arranged for 5 years @5.5% interest per annum	

Cost To Client

Paid upto installation	9,900,000
Less Tax all. - 100% of Shs. 33000000 x 30% Tax	9,900,000 M
Net Outlay in Shs	-- M
Monthly installment for balance of Kshs. 23,100,000 - Payable over 5 years @ 5.5% interest per annum	441,236
Expected power saving per month in Shs.	458,333

ASSUMPTIONS

1. Power cost remains the same
2. Loan is EURO @ 5.5% per annum. Any fluctuations in forex rates have been ignored
3. Maintenance cost of approximate value of Shs. 140,000 per annum has been excluded in the cashflow
4. Year 1 Tax Allowance has been taken into account, therefore net cash outflow has been considered.
5. Net power savings in year 1 has been ignored

ANNUAL CASH FLOWS OF 300KW SOLAR PV INSTALLATION			
	OUTFLOW	SAVING	NET
YEAR 1	5,294,832	5,500,000	205,168
YEAR 2	5,294,832	5,500,000	205,168
YEAR 3	5,294,832	5,500,000	205,168
YEAR 4	5,294,832	5,500,000	205,168
YEAR 5	5,294,832	5,500,000	205,168
YEAR 6		5,500,000	5,500,000
YEAR 7		5,500,000	5,500,000
YEAR 8		5,500,000	5,500,000
YEAR 9		5,500,000	5,500,000
YEAR 10		5,500,000	5,500,000
YEAR 11		5,500,000	5,500,000
YEAR 12		5,500,000	5,500,000
YEAR 13		5,500,000	5,500,000
YEAR 14		5,500,000	5,500,000
YEAR 15		5,500,000	5,500,000
YEAR 16		5,500,000	5,500,000
YEAR 17		5,500,000	5,500,000
YEAR 18		5,500,000	5,500,000
YEAR 19		5,500,000	5,500,000
YEAR 20		5,500,000	5,500,000
YEAR 21		5,500,000	5,500,000
YEAR 22		5,500,000	5,500,000
YEAR 23		5,500,000	5,500,000
YEAR 24		5,500,000	5,500,000
YEAR 25		5,500,000	5,500,000
			111,025,840

Purchase Options

c) Power Purchase Agreement (PPA) M.O.U. WITH AB Ltd

- In a Power Purchase Agreement, CP Solar Resources Limited installs and runs the solar system
- CP Solar Resources Limited then sells the power generated to AB Ltd at about 23% discount on KPLC rates
- A PPA agreement is to be drafted by a reputable law firm. Each party to bear its lawyers fees.

Purchase Options

c) Power Purchase Agreement (PPA) – AB Ltd Cash-flow

POWER PURCHASE AGREEMENT OF 300KW SYSTEM

AB Ltd has no capital outlay

ANNUAL CASH FLOWS OF 300KW SOLAR PV INSTALLATION				
YEAR	TARRIF SAVINGS	ANNUAL ENERGY SAVING (KWH)	COST SAVING (US\$)	CO2 SAVINGS (TONS)
YEAR 1	0.03500	360,120	\$ 12,604	187
YEAR 2	0.03448	359,903	\$ 12,408	187
YEAR 3	0.03396	359,687	\$ 12,214	187
YEAR 4	0.03345	359,472	\$ 12,024	187
YEAR 5	0.03295	359,256	\$ 11,836	187
YEAR 6	0.03245	359,041	\$ 11,652	187
YEAR 7	0.03197	358,825	\$ 11,470	187
YEAR 8	0.03149	358,610	\$ 11,291	186
YEAR 9	0.03101	358,395	\$ 11,115	186
YEAR 10	0.03055	358,180	\$ 10,942	186
YEAR 11	0.03009	357,965	\$ 10,771	186
YEAR 12	0.02964	357,750	\$ 10,603	186
YEAR 13	0.02920	357,535	\$ 10,438	186
YEAR 14	0.02876	357,321	\$ 10,275	186
YEAR 15	0.02833	357,107	\$ 10,115	186
YEAR 16	0.02790	356,892	\$ 9,957	186
YEAR 17	0.02748	356,678	\$ 9,802	185
YEAR 18	0.02707	356,464	\$ 9,649	185
YEAR 19	0.02666	356,250	\$ 9,499	185
YEAR 20	0.02627	356,036	\$ 9,351	185
YEAR 21	0.15500	355,822	\$ 55,152	185
YEAR 22	0.15500	355,609	\$ 55,119	185
YEAR 23	0.15500	355,396	\$ 55,086	185
YEAR 24	0.15500	355,182	\$ 55,053	185
YEAR 25	0.15500	354,969	\$ 55,020	185
			\$ 493,451	4,648

The next step...

Contact us for a site survey:

- ✓ no cost
- ✓ no obligation

A proposal, customized to your requirements, will be prepared with a quotation.

➤ Decision: **YES!**

Steps

- a) System design for most optimum efficiency.
- b) Roof survey by independent structural engineer to ascertain the strength of the roof.
- c) Installations, panels laying, cabling, mounting, instrumentation & metering.
- d) Commissioning.
- e) Online control and monitoring.



CP Solar Resources Limited and YOU: the beginning of a profitable partnership

CONTACT US TODAY:

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