

# **Proposal: Solar Project at Suryodaya Education Foundation School**

## **Abstract**

Most times during the year, Kathmandu is experiences at least 14 hours of power-cuts per day, usually during school hours. The schools productivity is considerably lower due to inaccessibility of energy. Furthermore, we are trying to teach our students about renewable energy importance and possibilities.

## **Reasons for Necessity of Solar System**

1. We are unable to run computer and multimedia classes in our computer lab.

-Suryodaya is planning to require teachers to teach some classes on a digital platform, which is currently impossible without reliable electricity.

2. Early and late in the day we are unable to have lights in our classrooms, which makes learning difficult.

3. The administration is unable to be fully productive because of the inability to work on our computers and print documents.

4. We want to teach our students about sustainable/renewable energy and the importance of reducing carbon emissions.

-The students will learn about how our school would be powered, then go and tell their parents. Thus, we will also be educating our community about renewable energy.

5. We are a non-profit school and over time, solar energy at the school will save us considerable money. The economic saving from the elimination of the cost of electricity will enable us to provide more financial aid to underprivileged students.

6. We are unable to access the internet without electricity. Inaccessibility to the internet makes it difficult to educate and connect our students with the rest of the world. Furthermore, we need electricity to facilitate our future e-library and internet research projects.

7. Students at the hostel do not have access to light for effective studying and living at night.

## Scope

The scope of the solar project is to run our entire campus and hostel with clean and renewable solar energy. We have done many bids for the best price and found the best quality and price. Our need has been calculated by Surya Power Company.

### SCHOOL

Sl. No	Equipment	Quantity	Watt	Total Power	Working Hours	Utilization Factor	Total Wh/day
1.	Desktop LCD (17")	30	150	4500	3	80%	10800
2.	Laptop	6	50	300	1.5	100%	450
3.	Ceiling Fan	16	65	1040	3	85%	2650
4.	Photocopy Machine	1	450	450	2	85%	765
5.	Laser Printer	3	350	1050	0.5	95%	499
6.	Water Pump (1-Phase)	1	370	370	0.5	100%	185
7.	LCD Projectors	8	201	1608	2		
8.	LED Lights	6	20	120	3		
9.	Florescent Lights (Classroom)	38	36	1368	2		
	<b>TOTAL</b>						<b>20,400 W</b>

### HOSTEL

Sl No	Equipment	Qty	Watt (w)	Total Power	Working Hours	Utilization Factor	Total Wh/day
1.	CFL lights	15	22	330	4	60%	792
2.	TV LCD 32"	1	130	130	2	85%	221
3.	TV (CRT) 22"	1	150	150	2	75%	225
4.	Fridge	1	250	250	4	95%	950
5.	Water Pump (1-phase)	2	370	740	1	70%	518
6.	Underground Pump	1	380	380	1	90%	342

7.	Pump	1	690	690	0.5	90%	310
8.	Water Purification System Pump	1	690	690	1	90%	620
	<b>TOTAL</b>						<b>8160 W</b>

## Solar System Requirements and Cost

### SCHOOL

SN	Particulars	Qty.	Rate/Piece (NRP)	Total Amount
1.	REC, Solar Pana, Norway (255Wp)	20	28,050	561,000
2.	Exide, Solar Batter, India (150AH)	15	30,000	450,000
3.	UTL, Solar Hybrid Inverter with inbuilt MPPT charge controller (10 VA@180v)	1	443,000	443,000
4.	Panel Structure	1 set		100,000
5.	Installation Materials	1 set		100,000
6.	Installation, Commissioning and Transportation	1 lot		50,000
7.	Battery Rack	1 set		25,000
	<b>Total</b>			<b>1,729,000</b>

### HOSTEL

SN	Particulars	Qty.	Rate/Piece (NRP)	Total Amount
1.	REC, Solar Pana, Norway (255Wp)	8	28,500	224,400
2.	Exide, Solar Batter, India (100 AH)	8	20,000	160,000
3.	UTL, Solar Hybrid Inverter with inbuilt MPPT charge controller (5KVA@180v)	1		175,000
4.	Panel Structure	1 set		40,000
5.	Installation Materials	1 set		40,000
6.	Installation, Commissioning and Transportation	1 lot		30,000
	<b>Total</b>			<b>669,400</b>

**\*\*All prices include 13% VAT tax \*\***