

FACILITIES FOR ALTERNATE SOURCES OF ENERGY AND ENERGY CONSERVATION MEASURES

1) SOLAR ENERGY

BIHER has been implementing several solar energy implementations as alternative energy sources to supplement energy needs at different Campuses.

On analysing the average power consumption graph in the BIHER campus, it was noted that a minimum of 25 KW power is consumed daily. In some days like in summer average consumption exceeds 30 KW. Thus, it was very essential to reduce the power consumption, which we obtain from the conventional form with renewable energy resources. Solar energy was adopted as an alternate way for reducing the maximum power consumption from the powerhouses. The site selection was based on solar insolation availability, grid connectivity, availability of adequate rooftop space for power generation. The rooftops area is used for the solar panel installation. Strings of 11kW and 3.5kW are mounted on the rooftops of Campus-1. Wirings were done carefully by implementing all the required safety equipment. Caution and mandatory signs were placed for awareness. Design, manufacturing, erection and quality assurance expertise were put to test in the commissioning phase by the manufacturer of the equipment and the installation team of Amrita. After the installation, on an average basis, about 128 kWh of energy is given to the grid per day. Therefore, on an average of 35-megawatt hour energy is generated in twelve months. 3.5kW is off-grid. This is used for battery charging and for lighting purpose. Recently BIHER repaired the solar installation. The bills are attached below.

Installed Solar Photovoltaic Systems

Location : Chennai

Latitude : 12.90⁰N

Longitude : 80.13⁰E

Solar Azimuth Angle at local noon : 202⁰

Battery Storage System : 3.5KW

Number of panels 12

Configuration : 6 Strings each string made of 2 modules

Battery Bank : Total number: 24,
Each battery 2V, 340Ahr,
All connected in series

Electrical Characteristic of each panel

: P_{max}=280W

: V_{oc} = 43V

: V_{mp} = 35V

: I_{sc} = 8V

: I_{mp}=8.68A

: Maximum System Voltage =1000V

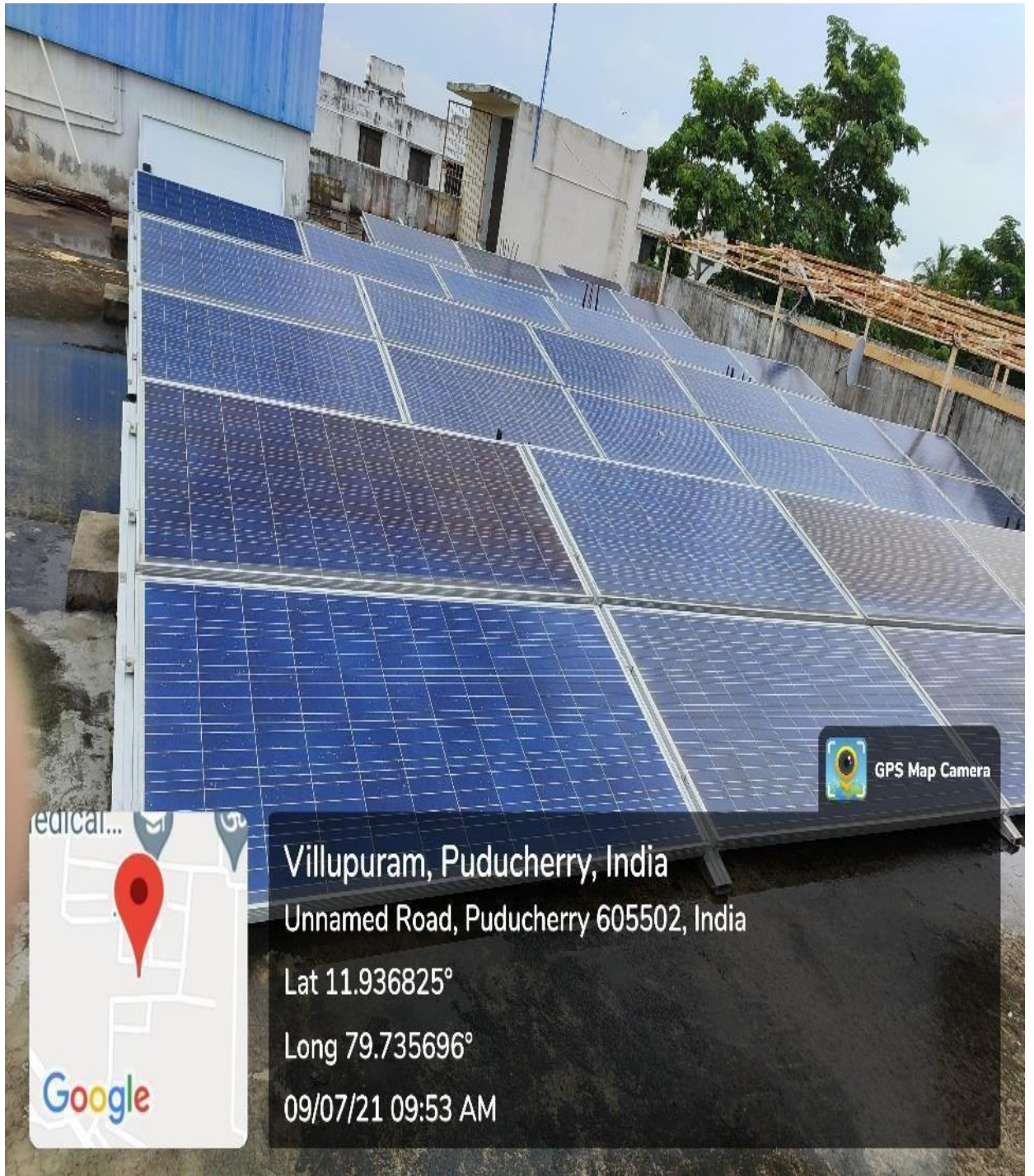


Facilities for alternate sources of energy and energy conservation measures



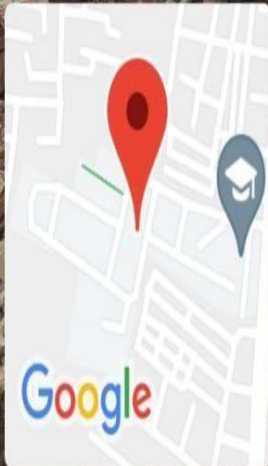
1.Solar Energy

Sri Lakshmi Narayana Institute of Medical Sciences-SLIMS



SOLAR ENERGY – Solar Panel @ BIST

Bharath Institute of Science & Technology



Chennai, Tamil Nadu, India

7, 2nd Main Rd, Tambaram, Chennai, Tamil Nadu 600126, India

Lat 12.908101°

Long 80.140326°

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SOLAR ENERGY @ SCHOOL OF ARTS AND SCIENCE

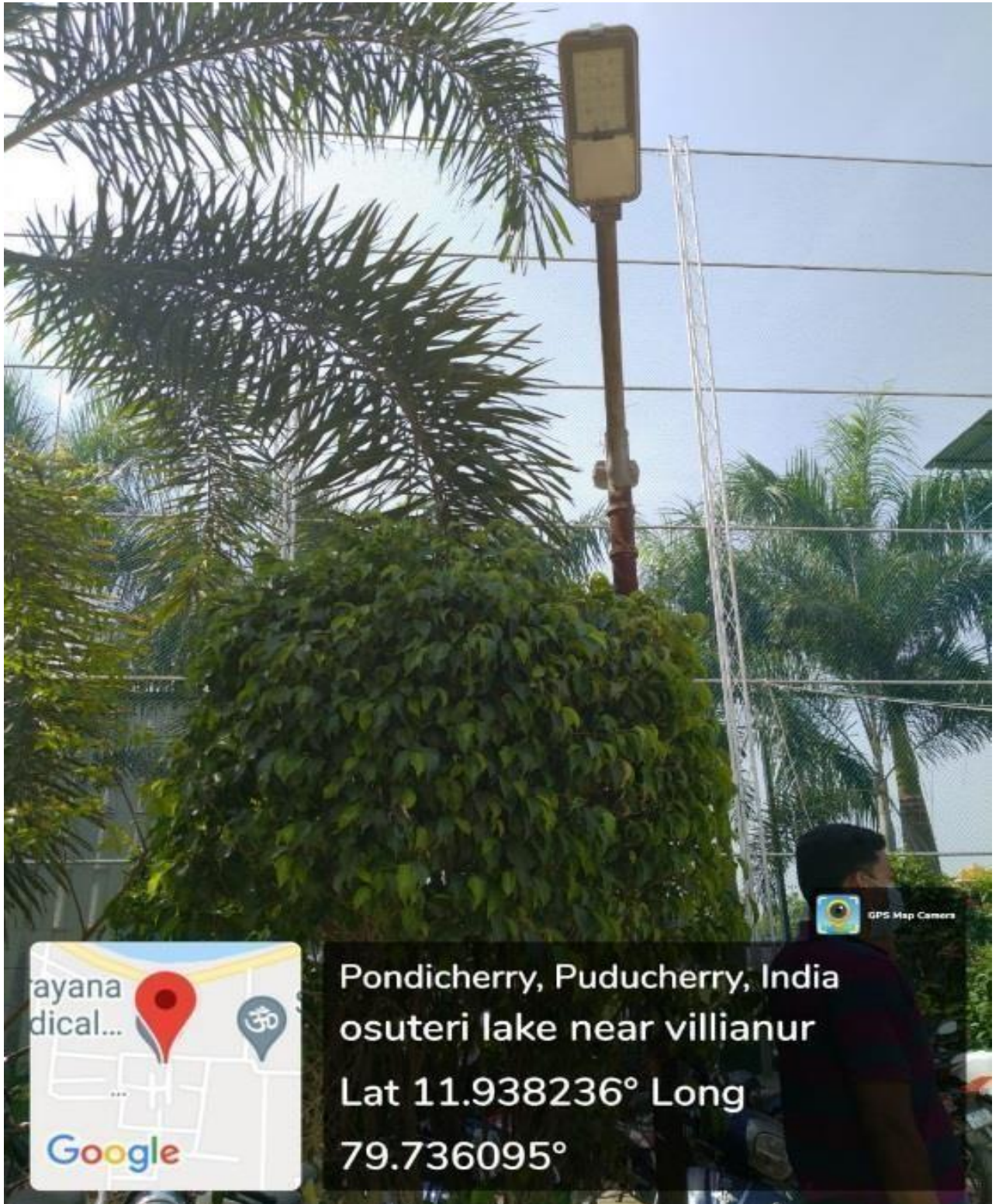


Unnamed Road, Tiruvanchery, Tambaram,
Chennai, Tamil Nadu 600126, India
Latitude **12.895273°** Longitude **80.143072°**
LOCAL 16:10:38 THURSDAY 07.15.2021
GMT 10:40:38 ALTITUDE 33 METER



33b, Sakthi Ayyanar St, Tiruvanchery, Selaiyur, Chennai, Tamil Nadu 600126, India
Latitude **12.895504°** Longitude **80.142144°**
LOCAL 16:10:13 GMT 10:40:13 THURSDAY 07.15.2021 ALTITUDE 33 METER

**Energy Conservation Automatic Solar Street Lamps @ SLIMS-
Sri Lakshmi Narayana Institute of Medical Sciences**



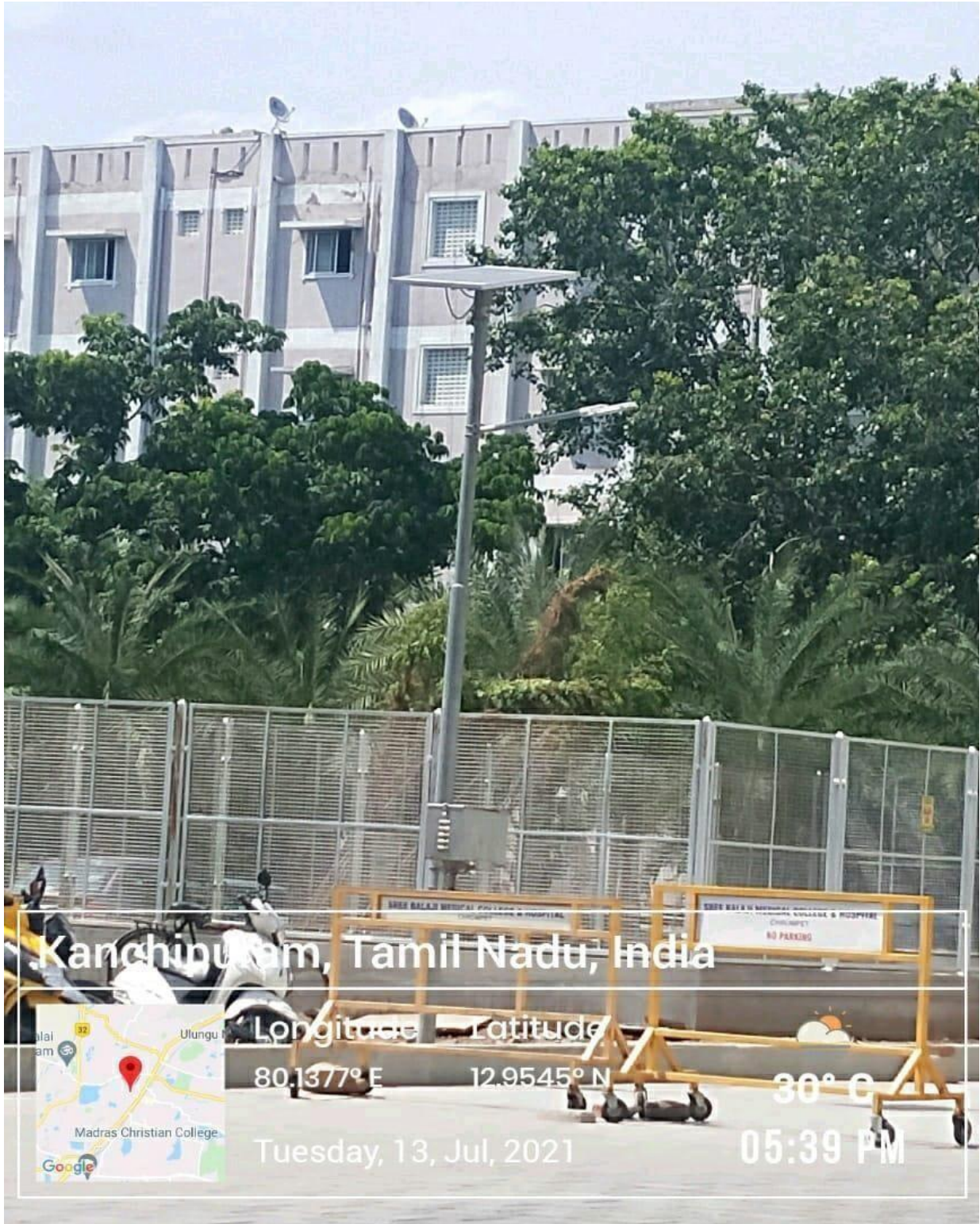
Pondicherry, Puducherry, India
osuteri lake near villianur
Lat 11.938236° Long
79.736095°

**Power Efficient & Sensor Based Solar Street Lamps @
SLIMS Campus**

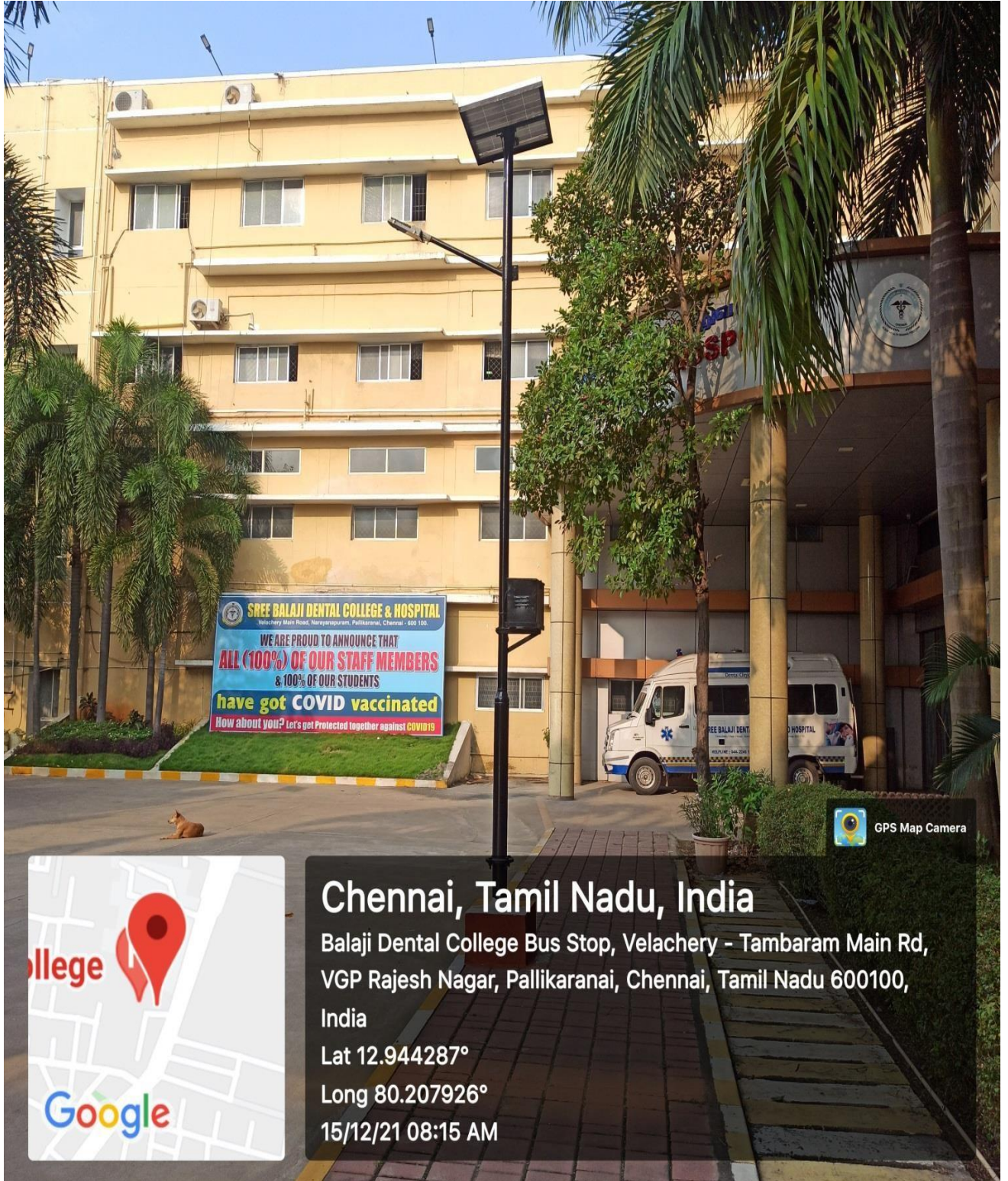




**Power Efficient Solar Campus Lamps & Sensor Based @Sree
Balaji Medical College & Hospital-SBMCH**



**Energy Conservation Automatic Solar Street Lamps @ Sree
Balaji Dental College & Hospital-SBDCH**



Chennai, Tamil Nadu, India

Balaji Dental College Bus Stop, Velachery - Tambaram Main Rd,
VGP Rajesh Nagar, Pallikaranai, Chennai, Tamil Nadu 600100,
India

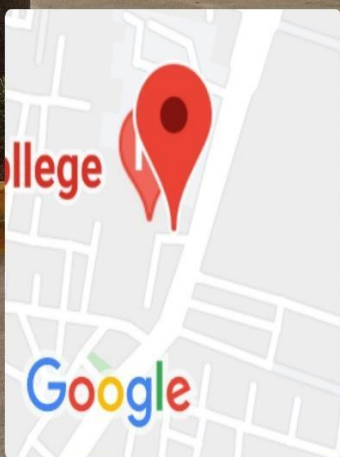
Lat 12.944287°

Long 80.207926°

15/12/21 08:15 AM



GPS Map Camera



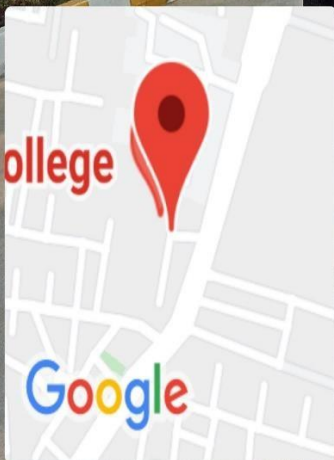
Chennai, Tamil Nadu, India

Balaji Dental College Bus Stop, Velachery - Tambaram Main Rd,
VGP Rajesh Nagar, Pallikaranai, Chennai, Tamil Nadu 600100,
India

Lat 12.94424°

Long 80.207937°

15/12/21 08:16 AM



Chennai, Tamil Nadu, India

**MAIN BLOCK, BALAJI DENTAL COLLEGE, VGP Rajesh
Nagar, Pallikaranai, Chennai, Tamil Nadu 600129, India**

Lat 12.944203°

Long 80.207746°

15/12/21 08:17 AM



Solar Energy-Solar Panels @ BIHER Bharath Institute of Higher Education & Research



Chennai, Tamil Nadu, India

7, 2nd Main Rd, Tambaram, Chennai, Tamil Nadu 600126, India

Lat 12.908101°

Long 80.140326°

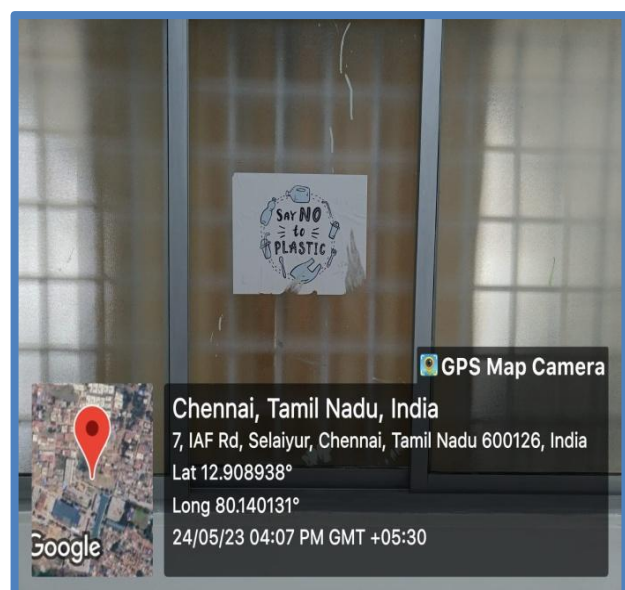
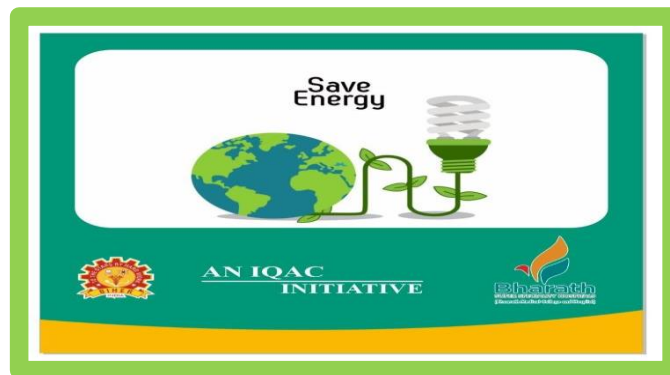
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Solar Energy @ Bhaarith medical college and hospital

Automated water level controllers



Sign Boards on Save Energy and Save Water Displayed in the Campus

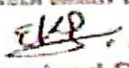


Bills for the purchase of equipment's for the facilities created under this metric

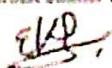
7.1.2: ALTERNATE SOURCES OF ENERGY AND ENERGY CONSERVATION MEASURES

1. Bills of Purchase (Solar System)

Tax Invoice Bill of Solar Panels and other accessories

Original for Recipient	Page 1 of 2				
TAX INVOICE					
Mangla Smart Energy Solutions Private Limited					
Address: E9, Perambal Kott Street, Tripura - 641604, TamilNadu, India					
Ph: 0421 - 4337005 / 0488034293					
State: TamilNadu State Code: TN No: 33					
GSTIN No: 33AAJCM2872N1Z1					
Bill to	Place of Supply	Invoice No	Dated		
Buyer (Bill to) Sree Balaji medical college & Hospitals ,No7 worrks Road Chrompet , Chennai-600044 State Name : TamilNadu	SAME	15	27-Sep-21		
Description of Goods	HSN /SAC CODE	QTY	Units	RATE	Amount
1. Solar Photovoltaic Panels (330 W) Monocrystalline 435 New 335 W x 66.58 x 67 Solar Panels)		48	Nos	10005.8	480278.40
2. Inverters (On grid)		2	Nos	65072.0	130144.00
2. Breakdowns DC Motor 5 Hp		1	No	48235.0	48235.00
4. Module Mounting Structures		1	Nos	55000.0	55000.00
5. Module Mounting Structure - 16.050 (VWP Model)					
6. Earth Pit					
7. Earthing Wire					
AC Distribution Box, DC Distribution Box (Electricals, Cables & earthing pits and Artery junction Boxes / Components)		2	Sets	48233.5	96467.00
8. Pyranometer - Solar Radiation Sensor		2	Nos	38075.0	76150.00
9. Weather Gown		2	Nos	24250.0	48500.00
10. Data Logger		2	Nos	17830.0	35660.00
11. Lightning Arresters		1	Set	55245.0	55245.00
12. Pump Controller		2	Nos	64272.5	128545.00
Page 1 - TAXABLE VALUE					1225056.00
BANK DETAILS					
Bank: Mangla Smart Energy Solutions Private Limited					
Bank: ESB Bank					
Account no: 0112102000050591					
Type: Current Account					
IFSC code: ESB0000113					
Branch: Tripura					
Amount Chargeable (in words)					
For Mangla Smart Energy Solutions Private Limited For MANGLA SMART ENERGY SOLUTIONS (P) LTD  Authorised Signatory					
Company's PAN: AAJCM2872N					

Tax Invoice of Solar Panels and other accessories

Original for Recipient		Page 2 of 2			
TAX INVOICE					
Mangla Smart Energy Solutions Private Limited					
Address: 69, Perumal Koil Street, Tripur - 641004, Tamilnadu, India					
Ph: 0471 - 4337005 / 9488394293					
State: Tamilnadu State Code: TN No: 33					
GSTIN No: 33AAJCM2872H1Z1					
Bill to	Place of Supply	Invoice No			
Dated					
Buyer (Bill to) Sree Balaji medical college & Hospitals ,No7 worrks Road Chrompet , Chennai-600044 State Name : TamilNadu	SAME	15			
		27-Sep-21			
Description of services	HSN /SAC CODE	QTY	Units	RATE	Amount
11 LCD display & LED indicator		3	Sets	1173.00	3519.00
12 GSM based Remote monitoring meter level sensors - Meter and change over switch		1	Set	8224.00	8224.00
13 Fuse monitoring		3	Nos	9386.67	28160.00
14 Switching elements		3	Nos	4441.67	13325.00
15 Water Flow Meter		2	Sets	5612.50	11225.00
16 Surge Protection Devices & MCBs		2	Nos	8450.00	16900.00
17 Solar DC Cables		480	Mtrs	60.34	24152.00
18 MC4 Connectors		50	Sets	64.75	3237.00
BANK DETAILS	Page 2 - TAXABLE VALUE				119325.00
	Total TAXABLE VALUE (Page 1 & 2)				1344363.00
Client: Mangla Smart Energy Solutions Private Limited	ADD CGST	2.5%	30660.13		
Bank: EBI Bank	ADD SGST	2.5%	30660.13		
Account no: 041102000095891	ADD IGST	0.0%	0.00		
Type: Current Account	TOTAL				1411583.25
FSC code: 884 0000113	OTHER CHARGES				
Branch: Tivoli	TOTAL (ROUND OFF)				1411583
Amount Chargeable (in words) INR Fourteen Lakhs Eleven Thousand Five Hundred And Eighty Three Rupees Only	For Mangla Smart Energy Solutions Private Limited				
	FOR MANGLA SMART ENERGY SOLUTIONS (P) LTD				
					
	Authorized Signatory				
Company's PAN: AAJCM2872H1					



SATHVIK SOLAR

INVOICE

ORIGINAL FOR BUYER

SATHVIK SOLAR



Regd. office :

Old No.18, New No.39, South Usman Road,
T.Nagar, Chennai - 600 017 , Tamil Nadu.
Email Id: sathviksolar@gmail.com
PH:044-22425838, Mobile: 08939406424

To Sree Lakshmi Narayana Institute of Medical Sciences Osudu, Agaram Villege, Villianur Gommune Kudupakkam Post, Puducherry - 605 502	Invoice No: SS/02	Date: 05.03.2016
	D.C. No: 02	Date: 30.01.2016
	P.O.No. Verbal	
	Lorry No.	
	TIN No : 33096288358	

Description of Goods	Quantity	Rate		Amount	
8000 Litres per day Solar water heater system (ETC - INSTITUTION 500 x 16 units)	1	1,142,857	00	1,142,857	00
		Sub-Total		1,142,857	00
		CST-5%		57,143	00
		Total		1,200,000	00
Total Value in words:- Twelve Lakhs Rupees only					

Certified that the Particulars given above are true and correct and the amount indicated represents the price actually charged and that there is no flow of additional consideration directly or indirectly from the buyer.

For SATHVIK SOLAR

Dinesh B. E.
Authorised Signatory

E.&O.E.



SRI LAKSHMI NARAYANA INSTITUTE OF MEDICAL SCIENCES

OSUDU, AGARAM VILLAGE, VILLIANUR COMMUNE, KUDAPAKKAM POST,
PUDUCHERRY - 605 502.

Date: 16/11/2015

Ref: Quotation dated 15/11/2015

To,

SATHVIK SOLAR

New No: 39, Old No: 18, South Usman Road
T Nagar, Chennai 600017
TIN: 33096288358

Sub: Purchase order for 8000 Liters Per Day Solar water heater System
(ETC - INSTITUTIONAL 500 x 16 units)

Dear Sir,

Here by consider this order as confirmation of Solar water heater system for capacity of
8000 LPD (i.e 500 LPD X 16 Nos)

Total value of system is **Rs.12,000,00 (Twelve Lakhs rupees only).**

4 Solar water heater systems will be installed separately (2000 liters / day capacity each) 2 in boy's
hostel and 2 in ladies hostel.

Terms and conditions:

1. Above price including VAT.
2. Transportation and Packing included.
3. Installation and commissioning
4. 1st Year Guarantee and 5 Years warranty
5. Inlet water tank under SLIMS scope of work

Payment terms:

- a. 60 % advance payment
- b. 25% payment towards supply of material
- c. 15 % towards installation and commissioning of the system

Thanking you

For Sri Lakshmi Narayana Institute of Medical Sciences

General Manager