

**Marathwada Shikshan Prasarak Mandal's
DEOGIRI COLLEGE, AURANGABAD**



**USAGE OF SOLAR ENERGY – LIGHT & WATER
HEATING**

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USAGE OF SOLAR ENERGY – LIGHT & WATER HEATING REPORT

Introduction:

World's energy demand is growing fast because of population explosion and technological advancements. It is therefore important to go for reliable, cost effective and everlasting renewable energy source for energy demand arising in future. Solar energy, among other renewable sources of energy, is a promising and freely available energy source for managing long term issues in energy crisis. Solar industry is developing steadily all over the world because of the high demand for energy while major energy source, fossil fuel, is limited and other sources are expensive. In today's climate of growing energy needs and increasing environmental concern, alternatives to the use of non-renewable and polluting fossil fuels have to be investigated. One such alternative is solar energy. Solar energy is quite simply the energy produced directly by the sun and collected elsewhere, normally the Earth. The sun creates its energy through a thermonuclear process that converts about 650,000,000 tons of hydrogen to helium every second. The process creates heat and electromagnetic radiation. The heat remains in the sun and is instrumental in maintaining the thermonuclear reaction. The electromagnetic radiation (including visible light, infra-red light, and ultra-violet radiation) streams out into space in all directions. Only a very small fraction of the total radiation produced reaches the Earth. Due to the nature of solar energy, two components are required to have a functional solar collector: a collector that collects the radiation that falls on it and converts a fraction of it to other forms of energy (either electricity and heat or heat alone). The storage unit is required because of the non-constant nature of solar energy; at certain times only a very small amount of radiation will be received. At night or during heavy cloud cover, for example, the amount of energy produced by the energy generator. These two components are a collector and a storage unit. The collector simply by the collector will be quite small. The storage unit can hold the excess energy produced during the periods of maximum productivity, and release it when the productivity drops. In practice, a backup power supply is usually added, too, for the situations when the amount of energy required is greater than both what is being produced and what is stored in the container.

Report of the Activities

Deogiri College is one of the prime institutions contributing in the Environmental and Social prosperity by inculcating the practical knowledge to aware the individuals regarding the importance of renewable sources of energy. A great effort has been made to tackle the energy crisis issues through the installation and functioning of ultimate source of energy i.e. solar energy. As a prime institute Deogiri College initiated a activity to adopt eco-friendly lifestyle by the consumption of energy through solar source for which solar appliances have been installed on almost all the buildings including college building, Girls and Boys hostels and offices. Our College installed Solar Panels of 15 MW on the terraces of Wing A. It produces average 72 to 90 Units electricity per day. The radiation that does reach the Earth is the indirect source of nearly every type of energy used today. The exceptions are geothermal energy, and nuclear fission and fusion. Even fossil fuels owe their origins to the sun; they were once living plants and animals whose life was dependent upon the sun. Active solar heating systems use solar energy to heat a fluid either liquid or air and then transfer the solar heat directly to the interior space or to a storage system for later use. If the solar system cannot provide adequate space heating, an auxiliary or back-up system provides the additional heat. Solar water heaters may be used for Community Centres, Hospitals, Nursing homes; Hotels, Restaurants, Homes, Dairy plants, Swimming Pools, Canteens, Ashrams, Hostels and Industry etc. The use of solar water heater may curtail the electricity or fuel bills significantly. Energy is transferred from the sun to the water-glycol fluid used to heat water stored in a hot water cylinder. Inside the hot water cylinder, a base coil is connected to the solar collectors. This top immersion heater or coil will heat the water to a higher temperature when needed.

Use of Renewable Energy:

The use of renewable energy like solar energy is done at college hostels. The details are as follows:

Sr.No	Hostel	Solar Panels	Capacity	Make
01	Boys' Hostel	26	9000 Litres	TATA
02	Girls' Hostel	18	10,000 Litres	TATA
03	Solar Street lights	05	40 Watt each	Yashwant Solar Ind.
04	Solar High Mast	01	160 Watt	Yashwant Solar Ind

Besides the use of solar energy at college hostels, the college plans to make use of solar energy to light up the area around the college play ground where citizens of the city come to take morning and evening walk.

Photographs of solar energy appliances



North Gate of Deogiri College



In front of Central Library



Beside play ground



Junior College premises



In front of B.Ed College



Near Girls Hostel



Boys Hostel terrace



Boys Hostel terrace



Girls Hostel terrace



Savitribai Phule Girls Hostel terrace



Boys Hostel terrace



Boys Hostel terrace

Purchase Orders

(ORIGINAL FOR RECEIPT)

Tax Invoice		Invoice No.	Date			
YASHWANT SOLAR INDUSTRIES(20-21) C/o. Unit No. 21, Plot No. 24 Kanchi, MIDC, Wagle, 1st Area, Aurangabad-431 139 Mobile: 9724182400 Cell: 9724182400 State Name: Maharashtra, Code: 27 E-Mail: chandanev@yashis@gmail.com Dues: Deogiri College, Aurangabad Railway Station Road, Aurangabad-431 001 GSTIN(AIN): 27AABTMS7271412G State Name: Maharashtra, Code: 27		22	13 Oct 2021			
		Delivery Note	Goods Terms of Payment			
		281	Other Reference(s)			
		22	Buyer's Order No.			
		Buyer's Order No.	Goods Invoice Date			
		Dispatch Document No.	13 Oct 2021			
		Dispatched Through	Destination			
		Bill of Lading/B.L.R.R. No.	Aurangabad			
		Bill of Lading/B.L.R.R. No.	Motor Vehicle No.			
		Terms of Delivery	MH-20CT-7941			
Description of Goods	HSN/SAC	Quantity	Rate per	Amount		
Solar 4x15watt Solar Highmast with 40watt Panel 4 Nos, 8W Ultra-Reserve Battery 4 Nos with All Accessories	85	1 Nos	55,000.00	55,000.00		
Solar Led Street Light Semi Integrated Solar Led Street Light Fixture-12watt Solar Panel-40watt with Accessories	85	4 Nos	12,000.00	48,000.00		
				1,03,000.00		
Output Sgst@6%				6,180.00		
Output Cgst@6%				6,180.00		
Total		6 Nos	₹ 1,15,360.00			
E & O E						
Amount Chargeable (in words) INR One Lakh Fifteen Thousand Three Hundred Sixty Only						
HSN/SAC	Taxable Value	Central Tax		State Tax		Total Tax Amount
		Rate	Amount	Rate	Amount	
85	1,03,000.00	6%	6,180.00	6%	6,180.00	12,360.00
Total			6,180.00		6,180.00	12,360.00
Tax Amount (in words) INR Twelve Thousand Three Hundred Sixty Only						

DCA-LGC-(2017-18)

Railway Station Road,
Aurangabad.

Greensense Energy Systems Pvt.Ltd
Ledger Account

1-Apr-2017 to 31-Mar-2018

Page 1

Date	Particulars	Vch Type	Vch No.	Debit	Credit
14-7-2017	To HDFC BANK 50200024917467 Cheque 000122	Payment 14-7-2017	612	3,37,500.00	
	New Ref P.O.220	3,37,500.00 Dr			
	BEING BILL BOOKED AGAINST SOLAR WATER HEATING SYSTEM PURCHASE				
29-9-2017	To HDFC BANK 50200024917467 Cheque 000333	Payment 29-9-2017	1451	2,00,000.00	
	Advance 2ND Adv Paid	2,00,000.00 Dr			
	BEING 2ND ADVANCE PAID AGAINST SOLAR SYSTEM				
				5,37,500.00	
By	Closing Balance				5,37,500.00
				5,37,500.00	5,37,500.00

DCA-CDC-(2018-19)

Railway Station Road,
Aurangabad.

Greensense Energy Systems Pvt.Ltd
Ledger Account

1-Apr-2018 to 31-Mar-2019

Date	Particulars	Vch Type	Vch No	Debit	Page 1 Credit
1-4-2018	To Opening Balance				
1-4-2018	By Shardabai Govindrao Pawar L.Host Capital Exp New Ref 28	Journal	2	5,37,500.00	7,35,000.00 ✓
	BEING BILL BOOKED AGAINST ETC SOLAR SYSTEM 500 LPD PURCHASED				
24-4-2018	To HDFC BANK 50200024917467 Cheque 000564	Payment	86	1,00,000.00	
	Advance 3RD ADV BEING ADVANCE PAID WIDE CHEQUE 000564				
6-9-2018	To HDFC BANK 50200024917467 Cheque 000735	Payment	1258	97,500.00	
	Agst Ref 28 BEING BILL PAID AGAINST ETC SOLAR SYSTEM 500 LPD PURCHASED				
				7,35,000.00	7,35,000.00

Tax Invoice

(ORIGINAL FOR RECIPIENT)

Greensense Energy Systems Pvt. Ltd.-
 No. 672 MIDC,
 Industrial Area,
 Aurangabad-431 130
 Tel: 020-22403622, 07774052523
 Email: info@gsenergy.com
 GSTIN: 27AAACQ3096E1ZL

Devgiri College-Aurangabad
 Devgiri Road, Aurangabad-431 001
 Maharashtra, Code : 27

Invoice No. 28	Dated 31-Aug-2017
Delivery Note 33, 35, 39, 46	Mode/Terms of Payment
Supplier's Ref. 28	Other Reference(s)
Buyer's Order No. PD/17-18/220	Dated 12-Jul-2017
Despatch Document No.	Delivery Note Date 20-Aug-2017, 23-Aug-2017, 26-Aug-2017, 31-Aug-2017
Despatched through Partys Vehicle	Destination Aurangabad
Bill of Lading/LR-RR No.	Motor Vehicle No. MH-20CT-7041
Terms of Delivery	

Description of Goods	HSN/SAC	GST Rate	Quantity	Rate	per Disc %	Amount
ITC Solar System-500 LPD (Solar Water Heating System-500 LPD) Sr. No. 17083406, 17083407, 17083408 17083411, 17083410, 17083414 17083413, 17083409, 17083412 17083415, 17083422, 17083423 17083424, 17083425, 17083416 17083419, 17083417, 17083418 17083420, 17083421 With Stand+Tube+Holder	841919	5 %	20.000 Nos	42,854.00	Nos	8,57,080.00
Less: Subsidy Receivable						
Output SGST@2.5%				2.50 %		(-1,57,080.00)
Output CGST@2.5%				2.50 %		17,500.00
Total			20.000 Nos			₹ 7,35,000.00

Amount Chargeable (in words) **INR Seven Lakh Thirty Five Thousand Only** E & O.E

HSN/SAC	Taxable Value	Central Tax		State Tax		Total Tax Amount
		Rate	Amount	Rate	Amount	
841919	8,57,080.00	2.50%	17,500.00	2.50%	17,500.00	35,000.00
Total	8,57,080.00		17,500.00		17,500.00	35,000.00

Tax Amount (in words) : **INR Thirty Five Thousand Only**

Declaration
 We declare that this invoice shows the actual price of the goods described and that all particulars are true and correct. Payment delayed will be charged interest @3% per month.

Customer's Seal and Signature

Company's LBT No. **270145980**
 for Greensense Energy Systems Pvt. Ltd.



This is a Computer Generated Invoice

(Duplicate)

PURCHASE ORDER

To
DEGI COLLEGE, AURANGABAD.
 Station Road,
 Aurangabad
 PIN: 27AABTM0727H1ZQ
 Name : Maharashtra, Code : 27
 Tel : 0240-2367330,0240-2367373 02402367374

From
Eveready Solar Energy Industries
 Station Road, Aurangabad

Voucher No
313

Dated
30-Dec-2019
 Mode/Terms of Payment
As Per Approved
 Other Reference(s)

Supplier's Ref /Order No
PD/19-20/313
 Despatch through
Local

College
 Destination
College

- Terms of Delivery
- 1) Material Delivery at College
 - 2) Material for Boy's Hostel
 - 3) Rates As Per Approved Rate Copy
 - 4) GST Inclusive
 - 5) Mention Gst No Compulsory Bill
 - 6) TDS Amount Will Be Deducted As Per Norms

Description of Goods	GST Rate	Quantity	Rate	per	Disc %	Amount
10 Liter Solar Water Heater System Eveready Company	0%	3 Nos.	42,477.75	Nos		1,27,433.25
500 Liter & 1000 Liter System By Back	0%	(-1) Nos.	33,250.00	Nos.		(-)33,250.00

Total 2 Nos.

94,183.25
E & OE

Please quote the order No. & date in the bill)
 Amount Chargeable (in words)
**Ninety Four Thousand One Hundred Eighty Three
 Twenty Five paise Only**

Head of Dept.

Store Incharge

Accountant

Registrar

Principal

This is a Computer Generated Document

Tax-Invoice

(ORIGINAL FOR RECIPIENT)



EVEREADY SOLAR ENERGY INDUSTRIES
 Gvt No. 53, Plot No. 02, Wadgaon Road,
 Neer Shani Mandir, MIDC Waluj,
 Aurangabad - 431 136
 GSTIN/UIN: 27AHSPC0565H1ZR
 State Name : Maharashtra, Code - 27
 Contact : 9922901822, 9922996236
 E-Mail : evereadysolar@gmail.com
 www.evereadysolar.com

Invoice No. **108**
 Dated **4-Jan-2020**
 Delivery Note Mode/Terms of Payment
 Supplier's Ref. **108**
 Other Reference(s)
 Despatch Document No. Delivery Note Date
 Despatched through **By Vehicle**
 Destination **Aurangabad**
 Bill of Lading/LR-RR No. Motor Vehicle No. **MH44U0344**
 Terms of Delivery

Consignee
DEOGIRI COLLEGE, AURANGABAD
 Railway Station Road,
 Aurangabad,
 GSTIN/UIN : 27AABTM0727H1ZQ
 State Name : Maharashtra, Code : 27

Buyer (if other than consignee)
DEOGIRI COLLEGE, AURANGABAD
 Railway Station Road,
 Aurangabad,
 GSTIN/UIN : 27AABTM0727H1ZQ
 State Name : Maharashtra, Code : 27

Sl No.	Description of Goods	HSN/SAC	GST Rate	Quantity	Rate	per	Amount
1	SOLAR WATER HEATER ETC HARD 500 LPD	84199020	18%	3 Nos	29,899.50	Nos	89,698.50
Less :							
SGST Output							2,242.46
CGST Output							2,242.46
Round Off							(-).042
Total							₹ 94,183.00

By: Boys Hostel Capital Exp. An
 Solar System / Yashwantrao Chavan B. Hostel

Amount Chargeable (in words) **INR Ninety Four Thousand One Hundred Eighty Three Only**
 E & O.E

HSN/SAC	Taxable Value	Central Tax Rate	Central Tax Amount	State Tax Rate	State Tax Amount	Total Tax Amount
84199020	89,698.50	2.50%	2,242.46	2.50%	2,242.46	4,484.92
Total	89,698.50		2,242.46		2,242.46	4,484.92

Tax Amount (in words) : **INR Four Thousand Four Hundred Eighty Four and Ninety Two paise Only**

PAID BY CASH / Ch. No. 2018/11
 Dt. 14/01/2020 on H.D.C. 7467
 Amt. Rs. 94,183/-

FOR DEOGIRI COLLEGE, A'BAD.

Principal D.C.A'bad. Member CDC D.C.A'bad. Secretary MSP Mandol, A'bad.

Declaration
 We declare that this invoice shows the actual price of the goods described and that all particulars are true and correct.

Company's Bank Details
 Bank Name : ICICI BANK
 A/c No. : 145405000804
 Branch & IFS Code : WALUJ, AURANGABAD & ICIC0001454
 for EVEREADY SOLAR ENERGY INDUSTRIES

Customer's Seal and Signature

Authorised Signatory

SUBJECT TO AURANGABAD JURISDICTION

DCA-CDC-(2019-20)

Railway Station Road,
Aurangabad.

Eveready Solar Energy Industries
Ledger Account

1-Feb-2020 to 31-Mar-2020

Date	Particulars	Vch Type	Vch No.	Debit	Page 1 Credit
14-2-2020	By Boys Hostel Capital Exp A/c New Ref 108 BEING BILL BOOKED AGAINST SOLAR WATER HEATER ETC HARD 500 LPD 03NOS@29899 PURCHASED	Journal 94,183.00 Cr	315		94,183.00 ✓
	To HDFC BANK 50200024917467 Cheque 001241 Agst Ref 108 BEING BILL PAID AGAINST SOLAR WATER HEATER ETC HARD 500 LPD 03NOS@29899 PURCHASED	Payment 14-2-2020 94,183.00 Dr	2049 94,183.00 Cr	94,183.00	✓
				94,183.00	94,183.00

Tax Invoice (JURIDICAL PUR RECEIPT)

YASHWANT SOLAR INDUSTRIES(20-21) Plot No. 21, Plot No. 22 Aurangabad, Maharashtra Pin Code - 431 001 Mobile: 9772402400 E-mail: chandersekarshah88@gmail.com Deogiri College, Aurangabad Railway Station Road, Aurangabad-431 001 GSTIN/UIN: 27AABTM0727H1ZG State Name: Maharashtra, Code: 27	Invoice No: 22 Railway Note Supplier's Ref: 251 Buyer's Order No: 22 Dispatch Document No: Dispatched Through: Bill of Lading/E.O.R. No: Date: 13 Oct 2021 Other Reference: Date: Delivery Note Date: 13 Oct 2021 Destination: Arrangabad Motor Vehicle No: MH-20C 7 7041 Terms of Delivery:
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Description of Goods	HSN/SAC	Quantity	Rate per	Amount
Solar 4x15watt Solar Highmast with 40watt Post-4 Nos. 10H/20m-Height-6000mm 4 Nos with All Accessories	85	1 Nos	55,000.00	55,000.00
Solar Led Street Light Semi Integrated Solar Led Street Light Fixture-12watt Solar Panel-40watt with Accessories	85	4 Nos	12,000.00	48,000.00
				1,05,000.00
				6 % 6,180.00
				6 % 6,180.00
Total				₹ 1,15,360.00

Output Sgst@6%
Output Cgst@6%

Amount Chargeable (in words): **INR One Lakh Fifteen Thousand Three Hundred Sixty Only**

HSN/SAC	Taxable Value	Central Tax		State Tax		Total
		Rate	Amount	Rate	Amount	Tax Amount
85	1,03,000.00	6%	6,180.00	6%	6,180.00	12,360.00
Total			6,180.00		6,180.00	12,360.00

Tax Amount (in words): **INR Twelve Thousand Three Hundred Sixty Only**


 for YASHWANT SOLAR INDUSTRIES(20-21)
 Authorised Signatory

Declaration
We declare that this invoice shows the actual price of the goods described and that all particulars are true and correct.

This is a Computer Generated Invoice



[Signature]
Principal
Deogiri College,
Aurangabad.

[Signature]
Dr.M.N.Naik,
Asso.Prof. & Head,
Department of Env. Science,
Deogiri College, Aurangabad.