Vasavi College of Engineering (Autonomous), Ibrahimbagh, Hyderabad-31
Department of Electrical & Electronics Engineering

Alternative Energy Resource: 275 kWp roof top Solar Power Plant

Year	Energy requirement of the college (Units)	Energy requirement met by Solar (Units)	%Energy requirement met by Solar
2022-23	579098	297999	51.45
2021-22	461762	334826	72.51
2020-21	325950	184919	56.73
2019-20	307254	225837	73.50
2018-19	652093	280724	43.04
2017-18	599202	273959	45.72
2016-17	526954	272237	51.66
2015-16	575268	294701	51.23
2014-15	444993	223548	50.24

M. Chakravarthy
HOD EEE

Vasavi College of Engineering (Autonomous)
Department of Electrical & Electrical Engineering

Month wise Energy Requirement of the Institute for the Academic Year 2022-23

Month	Total Energy requirement (Units)	Energy Requirement Met by Solar (Units)
July-22	38948.09	11588.09
August-22	36607.55	19522.55
September-22	37232.9	20451.9
October-22	36817.7	20673.7
November-22	34038.24	18871.24
December-22	46611.2	23272.2
January-23	36875.1	25515.1
Febraury-23	45916.76	28839.76
March-23	57405.91	30531.91
April-23	65472.19	32317.19
May-23	71882.64	34216.64
June-23	71289.2	32199.2

M. Chakravarthy

HoD EEE

Dr.M.Chakravarthy

Vasavi College of Engineering (Autonomous)
Department of Electrical & Electrical Engineering

Wheeling to the Grid during the Academic Year 2022-23

Month	Wheeling to Grid (Units)
July-22	2508
August-22	4683
September-22	5664
October-22	5846
November-22	7884
December-22	3270
January-23	6204
Febraury-23	6060
March-23	6186
April-23	5676
May-23	3966
June-23	3455

M. Chakravarthy

HoD EEE

Dr.M.Chakravarthy

ORIGINAL FOR RECIPIENT

SolarBull Energy LLP
Regd. Office: A202, Aditya Hilltop,
Filmnagar, Near Senor Valley Villas.
Hyderabad, Telangana 500096
IN
+91-96180-74400
srini@solarbull.in
GSTIN: 36ADOFS2724A1Z8

SolarBull
Solar Solutions Simplified

TAX INVOICE

INVOICE TO
Vasavi College of Engineering
Ibrahimbagh,
Hyderabad-500031.
Hyderabad, Telangana
500031
India
State Code: 36
GSTIN: 36AAATV1119R1Z2

SHIP TO
Vasavi College of
Engineering
Ibrahimbagh,
Hyderabad-500031.
Hyderabad, Telangana
500031
India
State Code: 36

TAX INVOICE NO. INV/1197/19-20
DATE 16-03-2020
DUE DATE 15-04-2020
TERMS Net 30

PLACE OF SUPPLY
36 - Telangana

NO	HSN/SAC	DESCRIPTION / ITEM	QTY	RATE	TAX	AMOUNT
1		**Supply - Solar Rooftop System - 75.24KW**	1	20,91,727.00		20,91,727.00

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

Bank Account Details:-
Bank/Branch - SBI - APSRTC BR.Hyderabad
Account Name -SOLARBULL ENERGY LLP
Account Number -00000037670495202
IFS Code - SBIN0020650

Terms & Conditions:-
Payment - within 30 days

SUBTOTAL	20,91,727.00
CGST @ 2.5% on 2091727.00	52,293.18
SGST @ 2.5% on 2091727.00	52,293.18
TOTAL	21,96,313.36
ROUND OFF AMOUNT	-0.36
BALANCE DUE	**₹21,96,313.00**

For SolarBull Energy LLP

Signature:

275 kWp Roof Top Grid Tied Solar Power Plant

As part of Green Campus Initiative Vasavi College of Engineering has initially commissioned 200 kWp rooftop grid tied fixed tilt solar power plant in the campus with the support of Electrical and Electronics Engineering department in the year 2014. The Vasavi college of Engineering has five buildings namely Viswesrayya block, Ramanujam block, C.V. Raman block, Sarvepalli Radha Krishnan block and Jagdish Chandra Bose block. The rooftop solar PV plant was erected on J.C.Bose block and Viswesrayya block. A 41.53 Sq.mt area is available on J.C.Bose block on which 125 Kwp SPV Installed and a 25 Sq.mt area is available on Viswesrayya block on which 75 Kwp SPV installed.

Diesel generator sets of 625 kVA, 500 kVA and 125 kVA capacities are providing backup power. Load can be met by either 625 kVA DG set or 500 kVA DG set. A diesel generator of 125 kVA capacity is used to meet the load during holidays and for street lighting. Prior to the installation of 200kWp SPV, diesel generators are run to meet the load during the scheduled and unscheduled outages of the state electricity supply. The operation of these generators is not free from pollution.

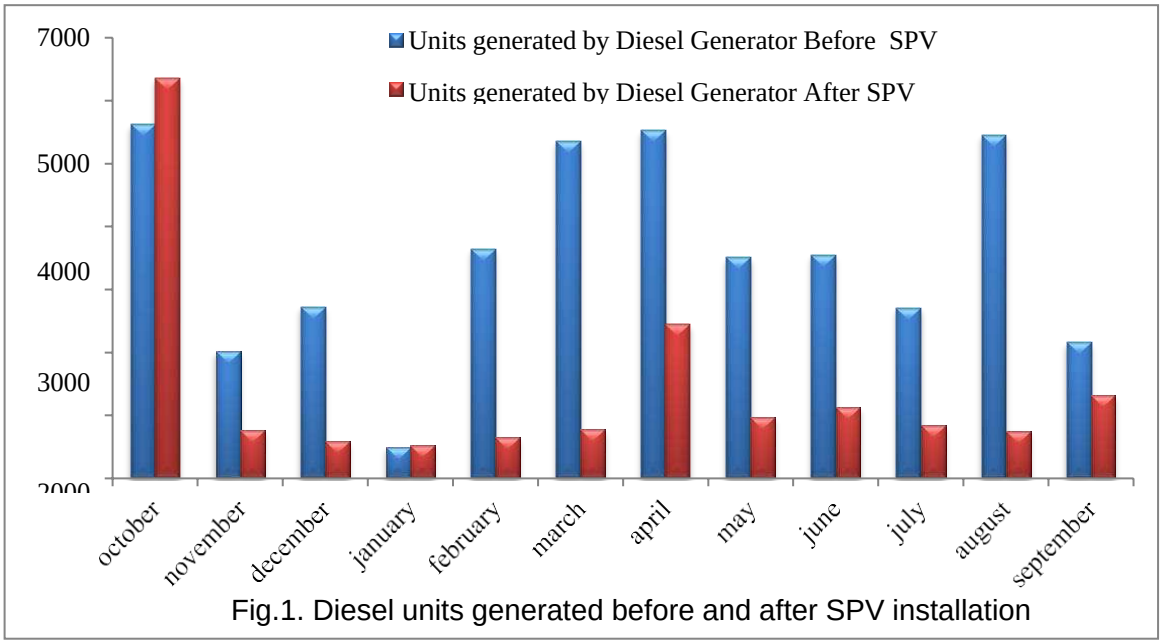

Fig.1. Diesel units generated before and after SPV installation

After the installation of solar PV Power generation, the diesel generators were operated only when there is a failure on grid to meet the load that is in excess to the solar power generation. This reduced operation time and number of units produced by the diesel generators. Thus, the total diesel consumption has decreased considerably.

With the experience gained from the 200 kWp plant, another 75 kWp grid tied fixed tilt Solar Power plant is installed in Pendekanti Institute of Management (PIM) block and Library buildings to cater energy needs of the institute from time to time.

Installation of 275 kWP solar PV Power generation also resulted in a substantial saving of the energy charges per month. Also, the power generated during holidays, Sundays and excess power during working days is fed into the National Grid.

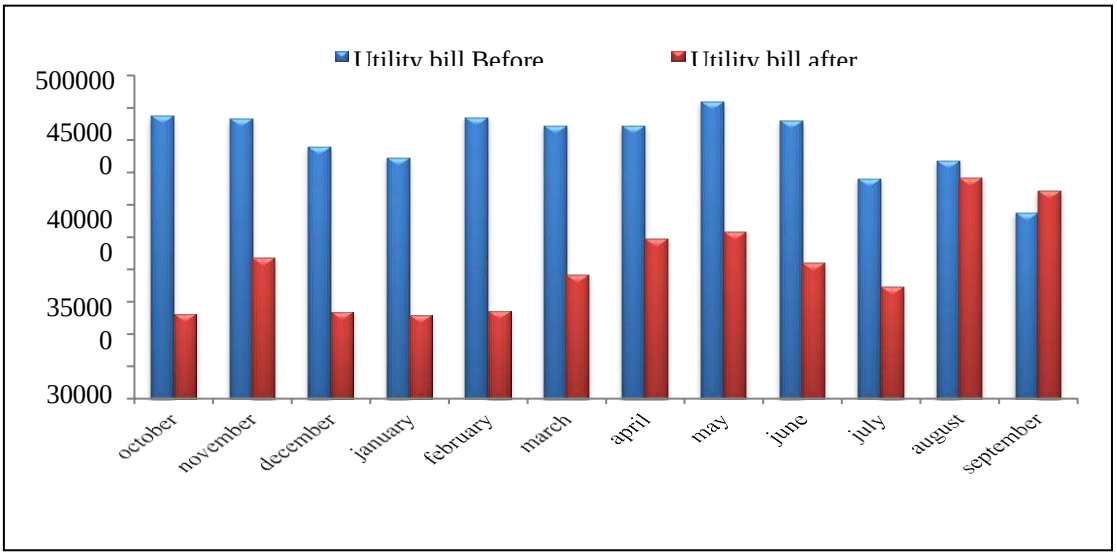

Fig.2. Utility bill (in INR) before and after SPV installation

The 275 kWp solar power plant generates approximately 250846 units of electrical energy annually that is equivalent to reduction in 300 Tons of CO_2 emission approximately. A true green initiative by Electrical and Electronics Engineering department and by the college.

The following table shows the Energy requirement met by the 275 kWp Solar plant year wise from the installation.

Year	Energy requirement of the college (kWh)	Energy requirement met by Solar (kWh)	%Energy requirement met by Solar
2014-15	444993	223548	50.24
2015-16	575268	294701	51.23
2016-17	526954	272237	51.66
2017-18	599202	273959	45.72
2018-19	652093	280724	43.04
2019-20	307254	225837	73.50
2020-21	325950	184919	56.73
2021-22	461762	334826	72.51

Reference: “Design, erection, testing and commissioning of 200Kwp rooftop grid tied solar photovoltaic system at Vasavi College of engineering”. Dr.M.Chakravarthy, K.V.Ramanamurthy, B.Neelima Devi. Conference: 2015 IEEE IAS Joint Industrial and Commercial Power Systems / Petroleum and Chemical Industry Conference (ICPSPCIC),DOI: 10.1109/CICPS.2015.7974067