Approved by AICTE, Permanently Affiliated to JNTUK & Accredited by NAAC Recognized by UGC under Sections 2(f) and 12(B) of UGC Act, 1956

Aditya Nagar, ADB Road, Surampalem - 533 437, E.G.Dist., Ph. 99631 76662.

# 7.1.2 The Institution has facilities for alternate sources of energy and energy conservation measures

Aditya College of Engineering committed to utilize solar power plants for providing alternative source of energy. In the month of May 2018 Solar Plant was installed with the capacity of 300 kW.

The institute met 56% of its total requirement of power consumption by the institute from renewable sources.

S.No.	Power facilities for the Institution	UNITS	UNITS	Percentage
1	Average power consumption by the institution	10,96,394	-	100
2	Power generated from renewable Energy sources ( <b>Solar plant</b> )	-	6,13,980	<mark>56</mark>
3	Power consumed from Grid (APEPDCL)	-	4,82,414	44
Tota	al annual power requirement by the institution	10,96,394	10,96,394	100

Solar power plant Details				
Total Capacity of the Plant	300KWp			
Roof used for the plant	20,000 Sq-Ft or 2,000 Sq-Mtr			
Average Sun Irradiance	4.89 KWh/Sq-Mtr/Day			
Expected Generation/Day	1000 to 1200 Kwh			

52% of the total lighting requirement of the institution met through LED bulbs to reduce the power consumption.

Department/area	Number of LED bulbs	Power consumed (watts)	Power in (KW)	Working time (hours per Day)	Energy Usage per month (kWh)
Ramanujan Bhavan	243	9	0.009	6	320.76
Newton Bhavan	20	9	0.009	7	26.4
James Watt Bhavan	36	9	0.009	6	47.52
Mechanical shead	15	12	0.012	6	19.8
Other/Outside area	10	9	0.009	7	13.2
То	427.68				

Alternative energy conservation by using the sensors for power saving provided in two rooms with  $\frac{20}{10}$  lights and  $\frac{20}{10}$  fans

Other energy saving equipments also procured by the institute like power saving ACs, Geysers, automatic water system etc.,

Solar energy	Biogas plant	Wheeling to the Grid	Sensor-based energy conservation	Use of LED bulbs/ power efficient equipment
Yes	Yes	Yes	Yes	Yes

S.No	Proof of Documents
1	Solar energy
2	Wheeling to the Grid
3	Sensor-based energy conservation
4	Efficient Use of LED bulbs
5	Other power efficient equipment



**PRINCIPAL** 



Approved by AICTE, Permanently Affiliated to JNTUK & Accredited by NAAC Recognized by UGC under Sections 2(f) and 12(B) of UGC Act, 1956

Aditya Nagar, ADB Road, Surampalem - 533 437, E.G.Dist., Ph: 99631 76662.

# The Institution has facilities for alternate sources of energy and energy Conservation measures Renewable Energy Source: Solar Power Plant

#### **Energy saving measures:**

- Energy management features are activated on computers, laser printers, etc., turn off lights when not used/required, use daylight.
- Use of LEDs, CFLs.
- Use fans when they are needed
- Unplug appliances like printers, faxes, chargers and electronic appliances, when they are not in use.
- Awareness among students and staff on energy conservation through display boards at appropriate places.

The institute met 56% of its total requirement of power consumption by the Institute from renewable sources.

- ➤ In the month of May 2018 Solar Plant was installed
- > Solar plant capacity 300 kW
- The installation cost of total plant is 90,00,000 /-
- Energy produced from the plant per year: 839.1 MWh/year

	General Details
Total Capacity of the Plant	300KWp
Roof used for the plant	20,000 Sq-Ft or 2,000 Sq-Mtr
Average Sun Irradiance	4.89 KWh/Sq-Mtr/Day
Expected Generation/Day	1000 to 1200 Kwh
	Solar Panels Details
Total no. of panels	612 No's
Capacity of each panel	325 Wp
Make	Vikram Solar
Technology & no. of cells	Polycrystalline, 72 cell
Type of Busbar system	4 Busbar series type
Working voltage	1000 VDC
Type of connection of panels	In Series
Panel Efficiency	18.5%
Working Temperature Range	$-40^{\circ}$ c to $85^{\circ}$ c
Panel Dimensions	1956x992x35.2 mm
Weight of each panel	22 Kgs
	Inverter Details
Total no. of Inverters	4 No's
Capacity of each Inverter	50 KVA
Type of Inverter	Solar ON-GRID
Make	ABB
Technology used	Maximum Power Point Tracking (MPPT)
No. of MPPTs/Inverter	3 No's
Weight of Inverter	125 Kgs



PRINCIPAL

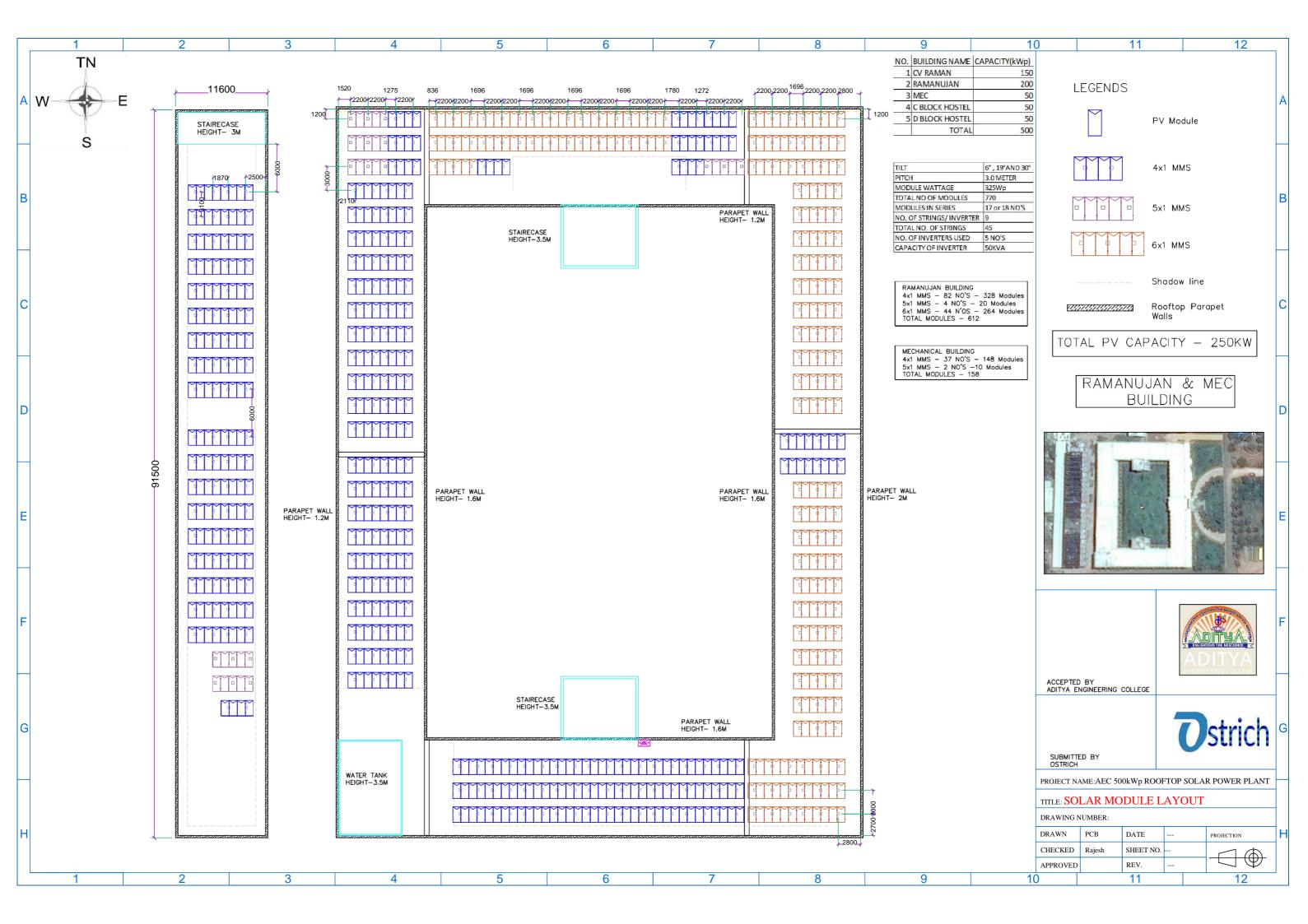
#### Geotagged photos for Solar panels

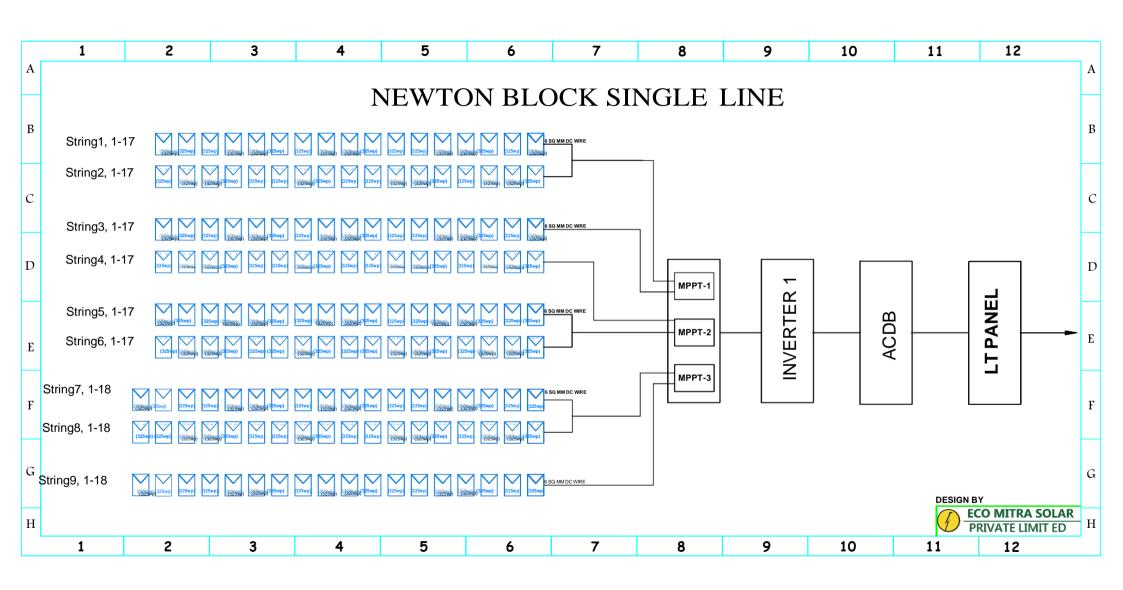




# 3

#### **PRINCIPAL**





Approved by AICTE, Affiliated to JNTUK & Accredited by NAAC Recognized by UGC under section 2(f) of UGC Act 1956
Aditya Nagar, ADB Road, Surampalem - 533 437, E.G.Dist., Ph. 99631 76662.

#### Students Participated while installing the solar panels



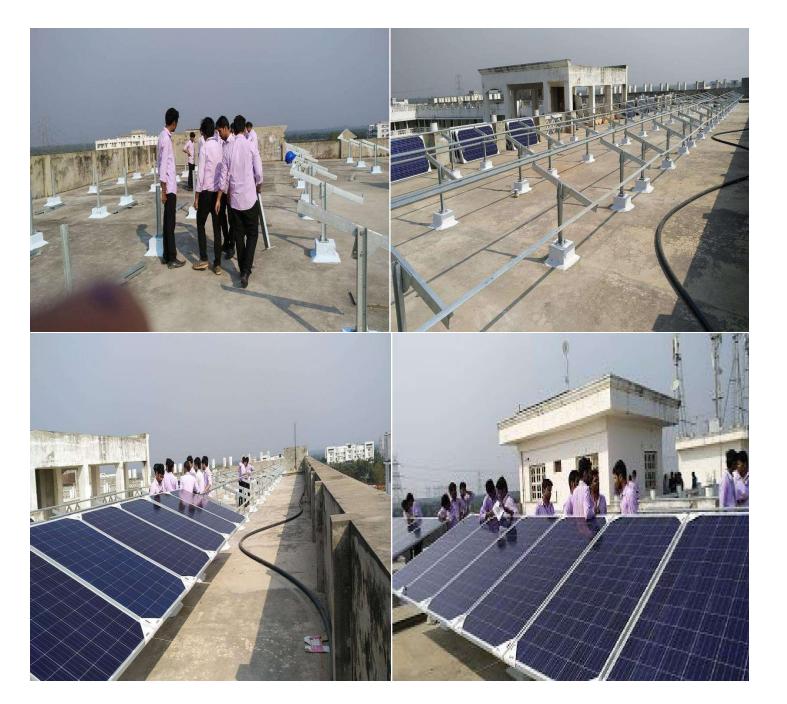








PRINCIPAL





PRINCIPAL

Approved by AICTE, Affiliated to JNTUK & Accredited by NAAC Recognized by UGC under section 2(f) of UGC Act 1956
Aditya Nagar, ADB Road, Surampalem - 533 437, E.G.Dist., Ph. 99631 76662.

#### Power bill comparative statement after Installation of Solar panels

S.No	Month	Total Consumption in KWH	From Grid in KWH	From Solar in KWH	Power Bill in Rs
1	Jan-18	77708	77708		7,06,226/
2	Feb-18	96262	96262		8,80,293/-
3	Mar- 18	134634	134634	Without Solar	14,06,761/-
4	Apr-18	106914	106914		8,97,158/-
5	May- 18	72501	72501		8,71,329/-
6	Jun-18	107287	23970	83317	3,30,494/-
7	Jul-18	128005	60567	67438	6,39.340/-
8	Aug-18	149321	97266	52055	9,27,438/-
9	Sep-18	138748	73629	65119	8,37,606/-
10	Oct-18	136761	65751	71010	8,04,625/-
11	Nov- 18	116857	54797	62060	5,63,805/-
12	Dec-18	103990	51210	52780	5,08,654/-
13	Jan-19	99036	33341	65695	3,68,318/-
14	Feb-19	116389	49424	66965	5,24,668/-



**PRINCIPAL** 

CALL US : 1912

HT DIGITAL BILL FOR THE MONTH OF	November 2019	GST NO: 37AAACE9876B1ZH
----------------------------------	---------------	-------------------------

Service Deta	ils	Consumer Details		
Contracted MD(KVA/HP) 300 (KVA/HP)		SC. No. RJY856		DUE DATE FOR
Specified Voltage(KVA)	11 K\/	M/S SAROJINI EDUCATIONAL SOCIETY,	BILL DATE 05-12-2019	PAYMENT
Actual Voltage	11 KV	SURAMPALEM(V)		19-12-2019
Category		PEDDAPURAM TOWN		
Feeder Type COMMON		E G DT		

Total Month	Fotal Monthly Consumption Details								
Particulars	Date	KWH	KVAH	KVA	TOD PEAK	TOD OFF PEAK	COLONY	PF	LF
Reading as on	01/12/2019	436467	438214.5	80.600	-	-	-	-	-
Reading as on	01/11/2019	411359.5	413028	-	-	-	-	-	-
Difference	-	25107.5	25186.5	-	-	-	-	-	-
Multiplying Factor	-	3	3	3.000	-	-	-	-	-
Total Consumptio	n -	75322	75559	241.800	20505	0.00	-	1	26
Monthly Min Consumptio		-	6045	240.000	-	-	-	-	-
Main Consumptio	n -	75559	-	-	-	-	-	-	-
L&F	-	-	-	-	-	-	-		0.00
Segregated	-				-	-	-	-	-
Colony							0	-	-

Open Access Consumption Details							
Supplier Name	KWH Share	KVA Share	% Wheeling				
Solar Units	0	17508.000	0				

Billing Summary									
	Particulars	Bill Issue Date	KVAH	KVA	TOD PEAK	TOD OFF PEAK	COLONY		
	Billed Units	05-12-2019	58052	241.800	20505	0.00	0		

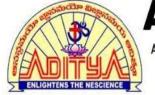
	BILL DETAILS								
Particulars	Units	Rate Per Unit	Amount(Rs.)						
Demand Charges(Normal)	241	475	114855						
Demand Charges(Penal)(80.6%)	0	950	0						
Energy Charges(All Units)	58052	7.65	444097.8						
Energy Excess Charges			0						
Electricity Duty Charges	75560	0.06	4533.6						
Colony Charges	0	0.00	0						
L&F Charges			0.00						
Energy Charges Including Fuel Cost Adjustment		TOTAL CONT.	0.00						
Fuel Surcharge Adjustment			0.00						

ToD Charges	20505
ToD Incentive (-)	0
Sub Tota	583991.4
Customer Charges	1406
Wheeling Charges	C
LPF Charges	C
RKVAH Surcharge Hydel	C
RKVAH Surcharge Wind	d
Open Access CSS	C
ACD Surcharge	C
Late Payment Charges	C
Interest on ED	C
Penal Interest	C
Transformer Hire Charges	C
Differential Voltage Surcharges	C
Load Factor incentive (-)	C
Short MD Shortfal	(
Total For The Month	585397.4
25% Rebate Application	
Ferro Incentive(-)	
Pooled Cost Adj(-)	
Net ICD Amt(ICD-TDS)(0-0)(-)	į d
Other Credit Adj	į d
Loss (or) Gain	-0.4
NET BILL	585397
(Previous Years)Arrears before 31- Mar-2019	0.00
(Current Years)Arrears after 01-Apr-2019	
Net Payable Rs.	585397
This is a system generated bill only for information , please refer to the bill issued by SAO of the circle only.	(Rupees Five Lakhs Eighty Five Thousand Three Hundred and Ninety Seven Only)

CALL US : 1912

HT DI	GITAL B	ILL FOR	THE MON	TH OF D	ecember	2019	GST NO :	37AAACE9	876B1ZH
Se	rvice Deta	ils	Con	sumer De	etails				
Contracted N	MD(KVA/HP)	300 (KVA/ HP)	SC. No. RJ	<b>/</b> 856				DUE DA	TE FOR
Specified Vo	oltage(KVA)		M/S SAROJ SOCIETY,	INI EDUCA	TIONAL	BILL 05-01		PAYN	MENT
Actual Volta	ge	11 KV	SURAMPAL	.EM(V)				19-01	-2020
Category		IIA	PEDDAPUR	AM TOWN					
eeder Type	)	COMMON	E G DT						
Total Month	ly Consum	otion Details	S		1				
Particulars	Date	KWH	KVAH	KVA	TOD PEAK	TOD OFF PEAK	COLONY	PF	LF
Reading as on	01/01/2020	462065	463959	77.260	-	-	-	-	-
Reading as on	01/12/2019	436467	438214.5	-	-	-	-	-	-
Difference	-	25598	25744.5	-	-	-	-	-	-
Multiplying Factor	-	3	3	3.000	-	-	-	-	-
Total Consumptio	n -	76794	77233	231.780	20185.47	0.00	-	0.99	26
Monthly Min Consumptio		-	6000	240.000	-	-	-	-	-
Main Consumptio	n -	77233	-	-	-	-	-	-	-
L&F	-	-	-	-	-	-	-		0.00
Segregated	-				-	-	-	-	-
Colony							0	-	-
	ss Consump			1/\A/  1 Ol		10/4	01	0/ 14/1	17
	upplier Nam	ie		KWH Share	9		Share	% Wh	
Solar Units				0		1808	6.000		)
Billing Sum	marv								
	Particulars	Bill Issue Date	KVAH	KVA	TOD PEAK	TOD OFF PEAK	COLONY		
	Billed Units	05-01-2020	59148	240.000	20185.47	0.00	0		
				BILL	ETAILS				
	Partic	ulars			nits	Rate P	er Unit	Amou	nt(Rs.)
Demand Charges(Normal)			240					11400	
Demand Charges(Penal)(80%)					950				
Energy Charges(All Units)				59148		7.65	I .		
	ess Charges								
	uty Charges				77234	4 0.06		6 4634.0	
Colony Char	ges				0		0.00		
_&F Charge	S								0.0
Energy Chai	rges Includin	n Fuel Cost	Adjustment	100					0.0

ToD Charges			20185
ToD Incentive (-)	40.40	And Color	C
S	Sub Total		591301.24
Custom	er Charges		1406
	ng Charges		0
LF	PF Charges		Q
RKVAH Surch	narge Hydel		Q
RKVAH Surc			C
	Access CSS		(
ACD	Surcharge		d
Late Payme	ent Charges		d
Inte	erest on ED		(
Pe	nal Interest		Q
Transformer Hi	ire Charges		(
Differential Voltage	Surcharges		C
Load Factor i	incentive (-)		Q
Short I	MD Shortfall		C
Total For	The Month		592707.24
25% Rebate	Application		C
Ferro	Incentive(-)		C
Pooled	Cost Adj(-)		C
Net ICD Amt(ICD-T	TDS)(0-0)(-)		O
	r Credit Adj		C
Los	ss (or) Gain		-0.24
N	ET BILL		592707
(Previous Years)Arrears before 31	I- Mar-2019		0.00
(Current Years)Arrears after 0			-0.12
Net Payab	•		592707
This is a system generated bill only for information , p the bill issued by SAO of th		Rupees Five Lakhs Nine F	ty Two Thousand Seven lundred andSeven Only

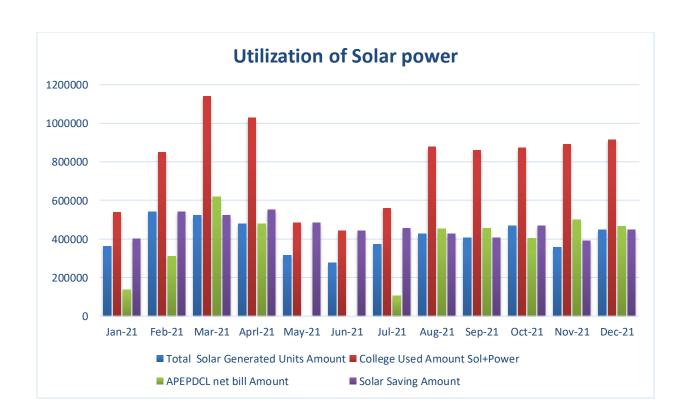


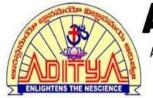
Approved by AICTE, Permanently Affiliated to JNTUK & Accredited by NAAC Recognized by UGC under Sections 2(f) and 12(B) of UGC Act, 1956

Aditya Nagar, ADB Road, Surampalem - 533 437, E.G.Dist., Ph. 99631 76662.

#### SOLAR AND POWER CONSUMED UNITS AND AMOUNT DETAILS 2021

S.No.	Month	Total Solar Generated Units Amount	College Used Amount Sol+ Power	APEPDCL net bill Amount	Solar Saving Amount
1	Jan-21	363640.5	538565.5	136250	402315.5
2	Feb-21	540747.9	850876.9	310129	540747.9
3	Mar-21	522418.5	1140235.5	617817	522418.5
4	Aprl-21	480002.45	1028443.45	477957	550486.45
5	May-21	316291.3	484942.3	0	484942
6	Jun-21	275831.95	442903.95	0	442904
7	Jul-21	371569.6	560117.6	104603	455515
8	Aug-21	426465.75	878769.75	452304	426465.75
9	Sep-21	405366.5	860857.5	455491	405366.5
10	Oct-21	469396.05	872447.05	403051	469396.05
11	Nov-21	356710.95	890790.95	499810	390981
12	Dec-21	447453.8	914384.8	466931	447454
					5538992.65





Approved by AICTE, Permanently Affiliated to JNTUK & Accredited by NAAC Recognized by UGC under Sections 2(f) and 12(B) of UGC Act, 1956

Aditya Nagar, ADB Road, Surampalem - 533 437, E.G.Dist., Ph: 99631 76662.

#### Wheeling to the Grid (Net Metre)





Approved by AICTE, Permanently Affiliated to JNTUK & Accredited by NAAC Recognized by UGC under Sections 2(f) and 12(B) of UGC Act, 1956

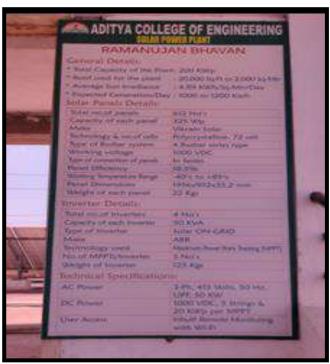
Aditya Nagar, ADB Road, Surampalem - 533 437, E.G.Dist., Ph. 99631 76662.

#### Wheeling to the Grid









**Specifications of Solar Energy** 



PRINCIPAL



# ಆಂಧ್ರಪ್ರವೆ है आन्ध्र प्रदेश ANDHRA PRADESH

Se 5/1/19

Sarojini Edulation Soliety

BU 764642 KOMMANA ESWARA RAA STAMP VENDER Licence No.04-07-15-2017 R.L. No. 84-07-16-2017 PEDDAPURAM

#### FORM OF HT AGREEMENT

(To be executed on non-judicial stamp paper of appropriate value).

Agreement executed on this JANUARY, 5th day of 2019 between Mr. N. SATISH REDDY S/o N. SESHA REDDY which means their/ his/ its in heirs, successors as ONE PART herein after called as "HT consumer" and the Easter power Distribution Company of AP Limited, a Company incorporated under the Provisions of Company Act 1956 consequent to the AP Electricity Reforms Act, 1998 (which means its authorized representatives, assigns, executors and its successors) as OTHERS PART herein after called the "Company".

#### 2. Supply of Power:-

I/We the above mentioned have request the Company to supply electricity at specified voltage of supply as per tariffs for the purpose of M/s SAROJINI EDUCATIONAL SOCIETY and the Company agreed to afford such supply on the terms and conditions notified by them from time to time and as per the Provisions of Electricity Act 2003 and as per the conditions mentioned below

President Society

We agree to take from the Company Electric Power for a maximum load not exceeding 300 KVA which shall be taken to be my/our contracted demand for our exclusive use for the purpose above mentioned at our M/s SAROJINI EDUCATIONAL SOCIETY situated at SURAMPALEM Our contracted load shall be 300 KVA and connected load 350 NP/KW I/We shall not Effect any change in the contracted demand or connected load Without permission of the Company.

4. Re-sale of Electric Power:-

I/We undertake that, I/We shall not sell electrical energy obtained under this agreement With out sanction in Writing of the Company.

5. Obligation to comply with requirement of Acts, and Terms & Conditions of Supply:-

I/We further undertake to company with all the requirements of the Electricity Act 2003, The rules and regulations framed there under, provisions of the tariffs and miscellaneous and General Change and the General Terms & Conditions of Supply prescribed by the company from time to time and agree not to dispute the same.

6. Date of Coming into force of the agreement :-

I/we shall begin/take electrical energy from the company under the conditions of the contract within three months, from the date of issue of intimation in writing to me / us by the Authorized officer of the Company that supply of Electrical Energy is available. The provisions of this agreement shall be deemed to come into force from the date of commencement of supply of energy or the date of expiry of three months notice above referred to whichever if earlier.

7. Period of agreement:-

I/we undertake to avail supply a minimum period of one year from the date of this agreement coming into force.

8. Termination of the agreement:-

I/we shall be at liberty to terminate the contract by giving in writing in writing three months notice expressing such intention at any time after the period of one year. I/we agree that the Company may terminate this agreement at any time giving one week's notice if .I/we violate the terms of this agreement or the General Terms & conditions of supply notified by the Company from time to time or the provisions of any law touching this agreement including the Electricity Act 2003, the rules and Regulations framed there under. This

Sarolini Educational Society

Sarojini Educational Society

Sarojini Edutatibilai Su

9. Obligation of consumer to pay all charges levied by the Company:-

From the date of this agreement coming into force I/we shall be bound by and shall pay the Company maximum demand charges, energy charges, surcharges, meter rents and other charges, if any, in accordance with the tariffs fixed by the Andhra Pradesh Electricity Regulatory Commission and Terms& 💆 Conditions of supply prescribed by the Company from time to time for the particular class of consumers to which I/we belong.

10. Company's right to vary terms of Agreement:-

I/we agree that the Company shall have the unilateral right to vary, from time to time, tariffs, scale of general and miscellaneous charges and the terms and conditions of supply under this agreement by special or general proceeding.

11. Monthly minimum charges:-

I/we shall pay minimum charges every month as prescribed in tariff, and terms and conditions of supply even if no electricity is consumed for any reason whatsoever and also if the charges for electricity actually consumed are less than the minimum charges. The minimum charges shall also be payable by me /us even if electricity is not consumed because supply has been disconnected by the company because of non payment of electricity charges, pilferage or other malpractices or for any other valid reason.

payments towards surcharges, meter rents or other payment by whatever name they may be called. If the amounts actually paid towards demand energy charges during any year fall short of the guaranteed minimum the amount of deficit shall be deemed to be an arrear of electricity charges and recovered accordingly.

13. I/we here by agree that if I/we am/are found indulging in theft every malpractice in respect of use of electrical energy I/we shall pay additional charges may be levied by the Company. I/we also agree that in such an event the company shall in addition to levy of the additional charges have right to disconnect supply of electricity to my /our premises for such period as may be decided by the company.

Signature of the Consumer:

cational Society

Signed by the Consumer in my presence:

Witness-1 Kanda Veerraju

Signature: K. Veerryn

Name & Address: L. Veeraraju

Slo Apparao

D.No: 10-1-195

Date: 21/01/2019 Gullaprolu

S.No:- 1452530701007221

Witness-2

Raparthi Bulaji

Signature:

Name & Address: S/o Satyurarayana

Dev. -3 -72/74, Raines umpeta

Grandepalli (n.). EG Dt Ap

5.00: 1421600111001368

Superintending Engineer OPERATION, RAJAMAHENDRAVARAM

#### File No.EPRJY-01008(52)/34/2017-COMML-RJY

#### Regd. Post with ack. Due

# EASTERN POWER DISTRIBUTION COMPANY OF A.P. LIMITED OPERATION CIRCLE :: RAJAMAHENDRAVARAM

VidyutBhavan, Ullithota Street, Godavari Bund, Rajamahendravaram – 533101 Phone No.0883- 2471862, FAX No.0883-2463354, Email: serjy@apeasternpower.com

From Superintending Engineer Operation::APEPDCL, Rajamahendravaram.

To M/s Sarojini Educational Society, President: Sri N.Satish Reddy, HT RJY-856, Aditya Nagar, ADB Road, Surampalem (V), Gandepalli (M), E.G.District – 533 437.

Lr.No.SE/O/RJY/DE.T/ADE/Comml./F. /D.No. 1651 /17,Dt. 23 -09-17.

Sir.

Sub: APEPDC Ltd., - Operation Circle, Rajamahendravaram - Registration of HT Application for Solar grid interactive roof-top and SPV 500KWp to M/s.Sarojini Educational Society, HT RJY-856, in favour of President: Sri N.Satish Reddy, at Aditya Nagar, ADB Road, Surampalem (V), Peddapuram Town Section in E.G. District of Operation Division Kakinada - Feasibility certificate issued - Reg.

Ref. 1).PR.No.1709127310017, Dt.12-09-17.
2).Lr.No.DE/O/KKD/AE-C/F./D.No.3349/17, Dt.14-09-17 Received in E-office on 20.09.2017.

With reference to your registration for HT Net metering application for SC No. HT RJY-856, M/s.Sarojini Educational Society in favour of President: Sri N.Satish Reddy at Aditya Nagar, ADB Road, Surampalem (V), Peddapuram Town Section in E.G. District of Operation Division Kakinada vide reference 1st cited above for installation of solar SPV generator for 500KWp on your roof top proposed at M/s. Sarojini Educational Society is inspected by the Divisional Engineer / Operation / Kakinada and Divisional Engineer / M&P / Rajamahendravaram and found feasible.

Further you are requested to approach Divisional Engineer / Operation / Kakinada and Divisional Engineer / M&P / Rajamahendravaram with relevant documents (Meter, modules, Grid Tie Inverter, Protective System) after completion of installation of SPV generator.

Encl: As above.

Yours faithfully,

#Approved By# Superintending Engineer Operation:Rajamahendravaram

Signature validal Engineer/Operation/APEPDCL/Kakinada.

Digitally signess to Divisional Engineer/M&P/Rajamahendravaram.

GOVERNMENT OF ANDHRA PRADESH DIRECTORATE OF ELECTRICAL SAFETY

FROM:

THE DY. CHIEF ELECTRICAL INSPECTOR

TO GOVERNMENT: VIJAYAWADA,

D.NO: 27-16-175, 3RD FLOOR, MUDDA SUBBAIAH STREET,

VIJAYAWADA 520 002.

GOVERNOR PET,

TO:

M/S SAROJINI EDUCATIONAL SOCIETY,

ADB ROAD,, SURAMPALEM,

PEDDAPURAM MANDAL,

EAST GODHAVARI DISTRICT.

Lr. No. Dy.C.E.I.G./VJA/TECH/HT/KKD/D.No:

Sir,

Sub:- The Electricity Act 2003 and the Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010. Electrical Installation of voltage exceeding 650V of M/S SAROJINI EDUCATIONAL SOCIETY, ADB ROAD,, SURAMPALEM, PEDDAPURAM MANDAL, EAST GODHAVARI DISTRICT, - Statutory Approval under regulation 43(4) & section 54 of Electricity Act 2003 - Accorded.

Ref:- 1. This office Lr.No:Dy.C.E.I.G./VJA/TECH/KKD/D.No:295/18Dated:08-03-2018

2. Inspection dated: 28-04-2018

3. Your Compliance report received on: 05-05-2018

Under regulation 43(4) of the Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010 and Section 54 of the Electricity Act 2003, the following equipment of your Electrical Installation is approved for energisation.

#### AS PER ANNEXURE ENCLOSED

Under regulation 43(4) of the Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010, any additions or alterations to your above Electrical Installation shall not be connected to supply until and unless the same are approved in writing by this office.

Under regulation 13(4) and 46(7) of the Central Electricity Authority (Measures relating to Safety and Electric Supply) Regulations, 2010, you are solely responsible for the maintenance of the above installation in such condition as to be free from danger.

Manufacturer's test certificate of Transformer is accepted; list of loads is approved and returned here with.

The above approval is accorded without prejudice to the statutory/mandatory obligations to be fulfilled by you under various other acts /regulations as the case may be and ipso facto does not confer any right to use for any other purpose.

Yours faithfully

DEPUTY CHIEF ELECTRICAL INSPECTOR TO GOVERNMENT: VIJAYAWADA

Encl: 1. Load list

2. Test Certificates

1. Copy to the Divisional Engineer/ Operation/ E.P.D.C.L of A.P/KAKINADA, for information. The date of release of supply to the above H.T. Installation may be intimated to the Deputy Electrical Inspector, KAKINADA Sub-Division for information.

2. Copy to the Deputy Electrical Inspector, KAKINADA Sub-Division, for information.

Regd. Post with ack. Due

EASTERN POWER DISTRIBUTION COMPANY OF A.P. LIMITED
OPERATION CIRCLE RAJAMAHENDRAVARAM
VidyutBhavan, Ullithota Street, Godavari Bund, Rajamahendravaram – \$33101
Phone No.0883- 2471862, FAX No.0883-2463354, Email: serjy@apeasternpower.com

From Superintending Engineer Operation::APEPDCL, Rajamahendravaram.

Sir.

To
M/s Sarojini Educational Society,
President: Sri N Satish Reddy,
HT RJY-856, Aditya Nagar,
ADB Road, Surampalem,
E.G.District – 533 437.

Lr.No.SE/O/RJY/DE.T/ADE/Comml./F. /D.No. 1035 /18.Dt. 20 -08-18.

Sub: APEPDC Ltd., - Operation Circle, Rajamahendravaram - Application for Solar grid interactive roof-top and SPV 500KW to M/s.Sarojini Educational Society, HT RJV-856 in favour of President: Sri N.Satish Reddy at Aditya Nagar, ADB Road, Surampalem (V), Peddapuram Town Section in E.G. District of Operation Division Kakinada - Synchronization Certificate Issued - Reg.

Ref: 1).PR.No.1709127310017, Dt.12.09.17.

2) Lr.No.SE/O/RJY/DE.T/ADE/Comml/F/D.No.1651/17, Dt.23.09.17.

3) Menio.No.SE/O/RJY/DE.T/ADE/Comml/F/D.No.854 /18, Dt.28.05.18.

With reference to 1<sup>st</sup> cited, Registration for HT Net metering application for SC No. HT RJY-856 to M/s.Sarojini Educational Society, President: Sri N.Satish Reddy at Aditya Nagar, ADB Road, Surampalem (V), Peddapuram (T) Section in E.G. District of Operation Division Kakinada feasibility was issued vide reference 2<sup>nd</sup> cited and approval for synchronization was accorded vide reference 3<sup>rd</sup> cited.

Accordingly solar SPV generator for 500KWp to M/s.Sarojini Educational Society of HT RJY-856 is synchronized with grid on 29.05.18. This is for favour of information.

Encl: As above.

Yours faithfully.

Superintending Engineer Operation: Rajamahendravaram

Copy to the Divisional Engineer/Operation/APEPDCL/Kakinada.

Copy to the Divisional Engineer/M&P/Kakinada.

Copy submitted to the Chief General Manager /Commercial, Civil &Solar Energy APEPDCLI Visakhapatnam for favour of information please.

## NEW & RENEWABLE ENERGY DEVELOPMENT CORPORATION OF A.P. Ltd

(A State Government Company – ISO 9001:2015 Certified)

Regd.Office: # 12-464/5/1, River Oaks Apartment, CSR Kalyana Mandapam Road,
Tadepalli, Guntur District, Andhra Pradesh – 522 501, India.

E-mail, info@nredcap.in Website: www.nredcap.in



NREDCAP/OSD/GCRT/Edu.Insti/61A/2018

Speed post 12047 Dt. 19.02.2018

M/s.Sarojini Educational Society,

Aditya Nagar, ADB Road, Surampalem (V), Gandepalli(M), E.G.Dist – 533437.

Sir,

Sub: Installation of 500 KWp Grid connected SPV Power Plants at M/s.Sarojini Educational Society, Aditya Nagar, ADB Road, Surampalem (V), Gandepalli(M), E.G.Dist

Ref: 1) MNRE in principal sanction letter no. 03/73/2015-16/GCRT Dt.1.12.2015

2) Your proposal dated: 24.11.2017.

& &&

We invite your attention to your proposal submitted vide reference 2<sup>nd</sup>cited for installation of 500 KWp grid connected Solar roof top system at M/s.Sarojini Educational Society, Aditya Nagar, ADB Road, Surampalem (V), Gandepalli(M), E.G.Dist - 533437.

Taking into consideration the in principle sanction communicated by MNRE vide reference 1<sup>st</sup> cited, in principle sanction is hereby accorded for taking up installation of 500 KWp grid onnected solar roof top system as per the terms and conditions detailed below:

- The system shall installed as per minimum technical requirements / standards for SPV systems / plants given in sanction no.30/11/2012-13/NSM dt.26.6.2014 in vogue and amended time to time.( Refer to MNRE website: <a href="www.mnre.gov.in">www.mnre.gov.in</a>)
- The installation shall be taken up through NREDCAP empanelled suppliers only as per the finalised rate contract rates.
- 3. Only indigenously manufactured PV modules will be used in the project.
- 4. The consent letter from respective DISCOM indicating their willingness / consent for installation of grid connected solar roof top system shall be submitted.
- The eligibility of Central Financial Assistance (CFA) shall be as per the guidelines
  of Ministry of New and Renewable Energy (MNRE) in vogue and amended time
  to time.
- 6. The settlement of the project capacity installed would be done on the basis of prevailing MNRE benchmark cost or the tender cost, whichever is lower. For capacity installed after 31.03.2018 the CFA will be calculated on the basis of new benchmark cost issued by MNRE for the year 2018-19, if any, or the tender cost, whichever is lower.
- The installation of the system shall be completed and commissioned on or before 31.05.2018.

- Proper metering arrangement may be incorporated so that the generation data from the proposed SPV power plants will be available.
- The release of CFA is subject to sanction and release of funds by MNRE and submission of all relevant documents.
- 10. After completion and commissioning of the project the following documents shall be submitted in duplicate for considering release of CFA.
  - 1. Copy of work order
  - 2. Copy of Invoice
  - 3. Joint inspection report in original.
  - 4. Project completion report in original.
  - 5. Photographs (with beneficiary / organization)
  - 6. Synchronization Letter.
  - Statement of Expenditure (SOE) duly certified by Chartered Accountant in original.
  - 8. One month electricity bill (after commissioning)
  - 9. Authorization letter for disbursement of subsidy to the System Integrator.

Thanking you,

Sd/-VC & MANAGING DIRECTOR

Copy to the District Manager, NREDCAP, Kakinada, EG dist. for information and necessary action

Copy to DGM (F&A), NREDCAP, for information.

// forwarded ::, by order//

Officer on Special Duty



**2**: 0883 - 2444892

46-16-26, Danavaipeta

**RAJAMAHENDRAVARAM - 533 103** 

e-mail : dkameswararao2002@yahoo.co.in

PAN: AABFD5512B

Service Tax Regn. AABFD5512BST001

# STATEMENT OF EXPENDITURE (SOE)

Name of state	Andhra Pradesh
Implementing agency	OSTRICH
Name of project	500KW SOLAR ROOF TOP SYSTEM
Sanction no & date	NREDCAP/OSD/GCRT/EDU.Insti/61A/2018
CFA released	Rs 18per Watt
	NO NO

#### DETAILS ABOUT COMPLETED PROJECT

Si	Type of system installed	Capacity (kWp/No)	Location	Total Expenditure Incurred	MNRE share (Rs)	NREDCAP Subsidy(Rs)	User share (Rs)
1	Supply,Installation, Testing & Commissioning of 500 KWpGrid connected solar PV power plant as Per MNRE	500 KWp	Sarojini Educational Society. Aditya Nagar, ADB Road, Surampalem(V), Gandepalli(M, E.G Dist- 533437)	3,00,00,000/-	90,00,000	N/A	3,00,00,000

#### **BREAKUP OF THE CFA**

SI.no	Item description	Cost (Rs)
1	CFA @Rs. 18 Per Watt for the project capacity of 500 KWp	90,00,000/-
2	Sate Govt. Subsidy RsPer Watt for the capacity 500 KWp	N/A
3	Total Eligible CFA	90,00,000/-
4	CFA released	Nil
5	Interest earned on released CFA	N/A
6	Total funds available (in case of advance release)	N/A
7	Balance amount to be released by MNRE/NREDCAP, unspent amount to be returned to MNRE/NREDCAP	90,00,000/-

Date:19/06/2018

Place: Rajamahendravaram

CAIFRN 0017145 S
CHARTERED
CCOUNTANTS

KAMEBWARA RAO & CO.;
Chartered Accountants

A.L. NARASIMHA RAO
M.NO: 202005
PARTNER.

PVSYST V6.67 28/11/17 Page 1/3

Grid-Connected System: Simulation parameters

Project : New Project

Geographical SiteSurampalemCountryIndiaSituationLatitude17.09° NLongitude82.07° ETime defined asLegal TimeTime zone UT+5.5Altitude64 m

Albedo 0.20

Meteo data: Surampalem Meteonorm 7.1 (1981-2010), Sat=86% - Synthetic

Simulation variant: New simulation variant

Simulation date 28/11/17 15h22

Simulation parameters

Coll. plane: Seasonal tilt adjustment Azimuth 0° Winter season O-N-D-J-F-M

Summer Tilt 6° Winter Tilt 40°

Models used Transposition Perez Diffuse Perez, Meteonorm

Horizon Free Horizon
Near Shadings No Shadings

**PV Array Characteristics** 

PV module Si-poly Model ELDORA
Custom parameters definition Manufacturer VIKRAM SOLAR

Number of PV modules In series 19 modules In parallel 82 strings
Total number of PV modules Nb. modules 1558 Unit Nom. Power 325 Wp
Array global power Nominal (STC) 506 kWp At operating cond. 467 kWp (50°C)

Array operating characteristics (50°C) U mpp 662 V I mpp 706 A Total area Module area  $3023 \text{ m}^2$  Cell area  $1708 \text{ m}^2$ 

Inverter Model TRIO-TM-50\_0-TL-OUTD-400

Original PVsyst database Manufacturer ABB

Characteristics Operating Voltage 300-950 V Unit Nom. Power 50 kWac Inverter pack Nb. of inverters 30 \* MPPT 33 % Total Power 500 kWac

**PV Array loss factors** 

Thermal Loss factor Uc (const) 20.0 W/m²K Uv (wind) 0.0 W/m²K / m/s

Wiring Ohmic Loss Global array res. 15 mOhm Loss Fraction 1.5 % at STC

Module Quality Loss Fraction -0.8 %

Module Mismatch Losses Loss Fraction 1.0 % at MPP

Strings Mismatch loss

Loss Fraction 0.10 %

Incidence effect, ASHRAE parametrization IAM = 1 - bo (1/cos i - 1) bo Param. 0.05

User's needs: Unlimited load (grid)

PVSYST V6.67 | 28/11/17 | Page 2/3

#### Grid-Connected System: Main results

Project : New Project

Simulation variant: New simulation variant

Main system parameters System type Grid-Connected

PV Field Orientation Seasonal tilt: summer/winter 6°/40° azimuth 0° PV modules Model **ELDORA** Pnom 325 Wp PV Array Nb. of modules 1558 Pnom total 506 kWp 50.0 kW ac Inverter Model TRIO-TM-50\_0-TL-OUTD-400 Inverter pack Nb. of units Pnom total 500 kW ac 10.0

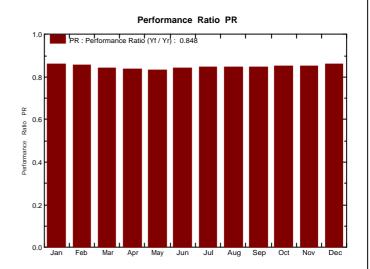
User's needs Unlimited load (grid)

#### Main simulation results

System Production Produced Energy 839.1 MWh/year Specific prod. 1657 kWh/kWp/year

Performance Ratio PR 84.80 %

# Normalized productions (per installed kWp): Nominal power 506 kWp To Lc: Collection Loss (PV-array losses) Ls: System Loss (inverter, ...) Yf: Produced useful energy (inverter output) Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec



#### New simulation variant Balances and main results

	GlobHor	DiffHor	T Amb	Globinc	GlobEff	EArray	E_Grid	PR
	kWh/m²	kWh/m²	°C	kWh/m²	kWh/m²	MWh	MWh	
January	148.4	53.17	23.43	192.1	188.1	88.1 84.94 83.49		0.858
February	145.3	60.99	25.28	169.2	165.1	74.46	73.18	0.854
March	183.4	70.45	28.21	187.1	181.7	81.13	79.71	0.841
April	176.1	80.77	30.43	176.7 170.9	).9 76.07	74.75	0.836	
May	172.1	94.05	32.79	170.0	164.1	72.95	58.20 0.8	0.833
June	138.7	92.20	31.14	136.4	131.2	59.24		0.843
July	130.8	92.81	29.92	129.2	124.2	56.51		0.848
August	136.0	85.68	28.81	135.4	130.4	59.21	58.13	0.848
September	143.8	79.33	28.19	145.8	140.7	63.71	62.58	0.847
October	142.3	71.10	27.59	153.1	148.9	67.04	65.84	0.849
November	142.3	55.01	25.34	177.4	173.5	78.00	76.63 0.853	0.853
December	136.6	56.66	23.63	181.8	177.9	80.77	79.42	0.863
Year	1795.8	892.21	21 27.91 1954.3 1896.7 854.04 839		839.10	0.848		

Legends: GlobHor

GlobHor Horizontal global irradiation

DiffHor Horizontal diffuse irradiation

T Amb Ambient Temperature

GlobInc Global incident in coll. plane

GlobEff EArray E\_Grid PR Effective Global, corr. for IAM and shadings Effective energy at the output of the array Energy injected into grid

Performance Ratio

PVSYST V6.67 28/11/17 Page 3/3

#### Grid-Connected System: Loss diagram

Project: New Project

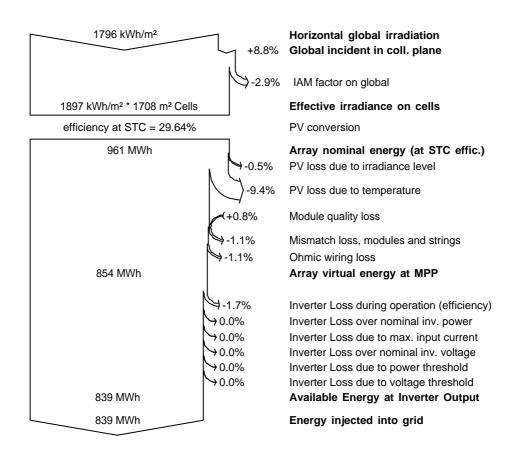
Simulation variant: New simulation variant

Main system parameters System type Grid-Connected

Seasonal tilt: summer/winter PV Field Orientation 6°/40° 0° azimuth PV modules Model **ELDORA** Pnom 325 Wp PV Array Nb. of modules 1558 Pnom total 506 kWp 50.0 kW ac Inverter Model TRIO-TM-50\_0-TL-OUTD-400 Inverter pack Nb. of units 500 kW ac 10.0 Pnom total

User's needs Unlimited load (grid)

#### Loss diagram over the whole year





Approved by AICTE, Permanently Affiliated to JNTUK & Accredited by NAAC Recognized by UGC under Sections 2(f) and 12(B) of UGC Act, 1956

Aditya Nagar, ADB Road, Surampalem - 533 437, E.G.Dist., Ph: 99631 76662.

#### **BIO GAS PLANT**



**BIO GAS PLANT INSTALLED IN THE CAMPUS** 

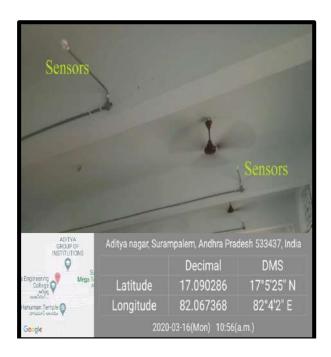


Approved by AICTE, Permanently Affiliated to JNTUK & Accredited by NAAC Recognized by UGC under Sections 2(f) and 12(B) of UGC Act, 1956

Aditya Nagar, ADB Road, Surampalem - 533 437, E.G.Dist., Ph: 99631 76662.

#### **Sensor based Energy Conservation**

Some of the Labs in the Institution are established with sensor controlled Fans and Lights.





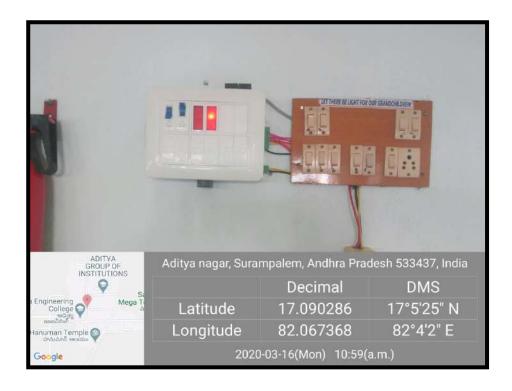






PRINCIPAL

#### **Sensor Control unit**







PRINCIPAL

# ENLIGHTENS THE NESCIENCE

# ADITYA COLLEGE OF ENGINEERING

Approved by AICTE, Permanently Affiliated to JNTUK & Accredited by NAAC Recognized by UGC under Sections 2(f) and 12(B) of UGC Act, 1956 Aditya Nagar, ADB Road, Surampalem - 533 437, E.G.Dist., Ph: 99631 76662.

#### Percentage of annual lighting requirement met through LED bulbs

52% of the total lighting requirement of the institution met through LED bulbs

Energy usage of LED bulbs in the college

Department/area	Number of LED bulbs	Power consumed (watts)	Power in (KW)	Working time (hours per Day)	Energy Usage per month (kWh)
Ramanujan Bhavan	243	9	0.009	6	320.76
Newton Bhavan	20	9	0.009	7	26.4
James Watt Bhavan	36	9	0.009	6	47.52
Mechanical shead	15	12	0.012	6	19.8
Other/Outside area	10	9	0.009	7	13.2
Т	427.68				

Energy usage of CFL bulbs in the college

Department/area	Number of CFL bulbs	Power consumed (watts)	Power in (KW)	Working time (hours per Day)	Energy Usage per month (kWh)
Ramanujan Bhavan	86	15	0.015	6	170.28
Newton Bhavan	5	20	0.02	7	9.9
James Watt Bhavan	18	15	0.015	6	35.64
Т	215.82				



**PRINCIPAL** 

#### LED bulbs used in Seminar halls and Labs













46/

**PRINCIPAL** 

#### GST TAXINVOCE CREDIT

SREE LAKSHMI PRIYA POWER LINES Invoice No. Dated DO No.2-1-11/1, Opp. Geet Sangeet Theatre 3264/2019-20 6-Mar-2020 Sriram Nagar, Bhanugudi Jn Kakinada **Delivery Note** Mode/Terms of Payment GSTIN/UIN: 37AAIFS4481R1Z9 State Name: Andhra Pradesh, Code: 37 Supplier's Ref. Other Reference(s) Buyer ADITYA COLLEGE OF ENGINEERING Buyer's Order No. Dated Surampalem State Name : Andhra Pradesh, Code : 37 Despatch Document No. Delivery Note Date Despatched through Destination Terms of Delivery Description of Goods HSN/SAC GST Quantity Rate Disc. % per Amount Rate M SURFACE BOX 8538 18 % 50.000 no's 67.80 no's 3,390.00 18 % 60.000 no's 2 HL-20A 1W SWITCH 8536 59.32 no's 3,559.20 WITH IDICATOR REO BLISS 3 HL-10AX 1WAY 8536 18 % 250,000 no's 19.49 no's 4,872.50 SWITCH REO-BLISS-AHBSXXW101 11,821.70 CGST 9% 9 % 1,063.96 SGST9% 9 % 1,063.96 Round Off 0.38 \*

Amount Chargeable (in words)

INR Thirteen Thousand Nine Hundred Fifty Only

Total

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

iE. for SREE LAKSHMI PRIYA POW



**D**legrand

RR/KĀBEL

360.000 no's



₹ 13,950.00







Invoice No. 4696

Dated 13-Oct-2018

#### **RAJASTHAN ELECTRICAL & ELECTRONICS**

MAIN ROAD - KAKINADA - 2376707 GSTIN/UIN: 37AAHFR7507G1Z1 State Name: Andhra Pradesh, Code: 37 E-Mail: rajasthanele@yahoo.com

#### PROFORMA INVOICE

Party: ADITYA COLLEGE OF ENGINEERING, ADB ROAD, SURAMPALEM

State Name: Andhra Pradesh, Code: 37

Place of Supply: Andhra Pradesh

SI	Description of Goods	Quantity	Rate	per	Disc. %	Amount
1	HAVELL'S LED BULB 9W	44 NOS	100.00	NOS		4400.00
	Total	44 NOS				4400.00

Amount Chargeable (in words)

Four Thousand Four Hundred INR Only

Company's PAN

: AAHFR7507G

for RAJASTHAN ELECTRICAL & ELECTRONICS

SURAMPNIEM

PRINCIPAL ditya College of Engineering

Authorised/Signatory

Authorised Dealer

RAJASTHAN ELECTRICAL & ELECTRONICS

(A Ultimatte Multi Floor Electrical Shopping Complex) D.No. 13-1-42, Main Road, Kakinada. Tel: 0884-2376707, Cell: +91 98488 51937, +91 98494 09007, +91 97045 68500 E-mail: rajasthanele@yahoo.com - On Goods return - For payment Tax will be deducted

Inspired
INNOVATIO

#### GST TAXINVOCE CREDIT

SREE LAKSHMI PRIYA POWER LINES - (2019-20) Door No.2-1-11/1, Opp. Geet Sangeet Theatre	Invoice No. 1552/2019-20	Dated 7-Sep-2019		
Sriram Nagar, Bhanugudi Jn.Kakinada Ph: 9848499880,8790242223	Delivery Note	Mode/Terms of Payment		
GSTIN/UIN: 37AAIFS4481R1Z9 State Name: Andhra Pradesh, Code: 37 E-Mail: lakshmipriyapowerlines@gmail.com	Supplier's Ref.	Other Reference(s)		
Buyer ADITYA COLLEGE OF ENGINEERING	Buyer's Order No.	Dated		
Surampalem State Name : Andhra Pradesh, Code : 37	Despatch Document No.	Delivery Note Date		
	Despatched through	Destination		
	Terms of Delivery			
	**			

SI No.	Description of Goods	HSN/SAC	GST Rate	Quantity	Rate	per	Disc. %	Amount
2	25MM BENDS HL-ADORE 9 WAT LED	3917 9405	18 %	2,000.000 no's 200.000 no's	4.66 70.54			9,320.00 14,108.00
				199 NOS				23,428.00
	CGST 6% SGST 6% CGST 9%				6 6 9 9	% % %		846.48 846.48 838.80
	SGST 9% Round Off				. 9	%		838.80 1.44
					-			
			,	-24	* **			
-	<b>.</b>		*					
		1						- \$
-	Total			2,200.000 no's				₹ 26.800.00

Amount Chargeable (in words)

INR Twenty Six Thousand Eight Hundred Only

Company's Bank Details

Bank Name : Canara Bank OCC A/c

A/c No. : 2765261001041

Branch & IFS Code : Nagamallithota Branch & CNRB0002765 for SREE LAKSHMI PRIVA POWER LINES - (2019-20)

E. & O.E.

Authorised Signatory

Company's VAT TIN

: 37960199368

Declaration

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

APGST No. KDA/03/1/3606

**ESTIMATION** 

Cell: 98487 45647



# NATARAJ ELECTRICALS

Purushotham Lodge, Bhanugudi Junction, KAKINADA 533 003.

Date: 3/5/16...

0. ' . J		0	O .			
S.No.	PARTICULARS	Qty.	Rate	AMOUNT Rs. Ps.		
	3 hum	18	30	540/-		
	Lo Atour	10	150	1500/		
	mening.	8	50	400/-		
	Then.	30	18	540		
	spin Jup	1.15	45	675/-		
	31y m.	13	:90	11702		
77.4	Neun	16	120	1920/-		
			TOTAL	6745-0		

AD2

lignature

PRINCIPAL
Aditya College of Engineerin

FOR NATARAS ELECTRICALS





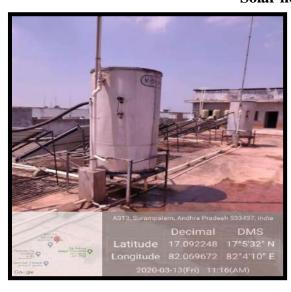
Approved by AICTE, Permanently Affiliated to JNTUK & Accredited by NAAC Recognized by UGC under Sections 2(f) and 12(B) of UGC Act, 1956 Aditya Nagar, ADB Road, Surampalem - 533 437, E.G.Dist., Ph: 99631 76662.

#### The Institution utilized other power equipments to reduce the consumption

A.C with star rating to reduce the power consumption



Solar heaters

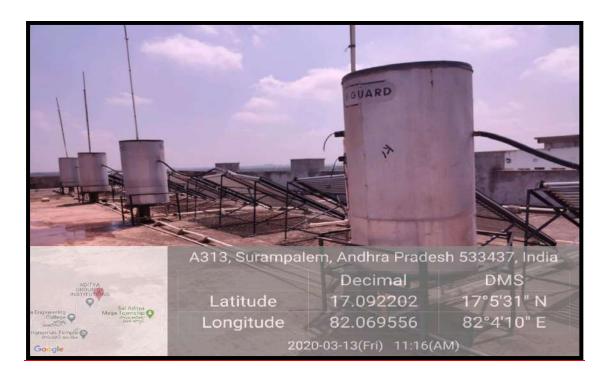


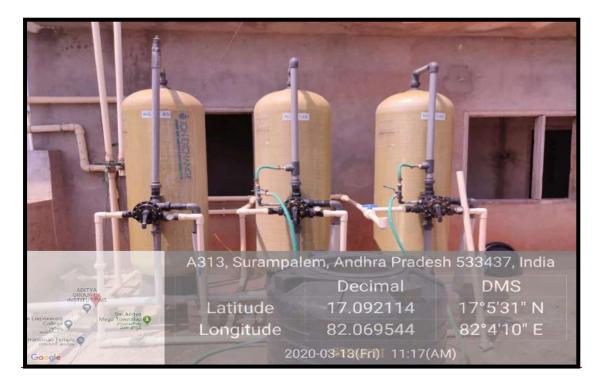




PRINCIPAL

#### **Solar Water heaters in Hostel**







**PRINCIPAL** 

#### **Automatic Water Controller**





AST

**PRINCIPAL**