

# ENERGY AUDIT REPORT

2021 - 2022

## SARAIGHAT COLLEGE

CHANGSHARI, DISTRICT: KAMRUP (Rural)

ASSAM, PIN: 781101

*Audited by*

**Dr. Bimal Ch. Deka**  
**Professor**  
**Electrical Engineering Department**  
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**Jalukbari, Guwahati-781013**  
**Assam**



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**Jalukbari, Guwahati-13**

## I. Introduction:

Saraighat College was established in the year 1981 and one of the pioneer institutes in the district of Kamrup (Rural) of Assam. The college is located at a distance of 25 km to the North of the Guwahati City.

Energy Auditing is a routine procedure of monitoring energy consumption and conservation of industry/organization/institute and its analysis.

This report presents the energy audit of the Saraighat College after verifying all electrical loads, its connections, protection schemes and optimal utilization of electricity.

## II. Electrical Load of the Campus:

The electricity supply to Saraighat College is provided by the Assam Power Distribution Company Limited. A 63 kVA 3-phase transformer is installed to transfer power to the college.

Consumer No.: 025000001458      Connected Load: 38 kW

Contracted Demand: 35.29 kVA      Tariff Category: HT- IV Bulk Supply (Others)

Supply Voltage Level: HT      Average Power Factor: 0.96

The following sections give details of electrical gadgets used by different academic and administrative blocks of the college.

### 1. ACADEMIC BLOCK:

#### (a) Department:

Sl No	Department	Fan	Light	Desk Top Computer	Printer	UPS
1	Geography	2	2	1	1	1
2	Education	2	2	7	1	
3	Political Science	2	3	1	1	
4	History	4	5	1	1	1(3kVA)
5	Tourism	4	4	19	3	1(6kVA)
6	Persian	7	2	1	1	
7	Philosophy	8	3	1	1	1
8	Anthropology	6	2	1	1	
9	Mathematics	5	2	1	1	
10	English	4	3	2	2	1
11	Economics	4	3	1	1	1
12	Assamese	4	4	1	1	

**(b) Class Rooms:**

Sl No	Class Rooms	Fan	Light	Digital Board	Audio syst	UPS
1	Normal Class rooms (8 nos.)	61	60			
2	Political Science	4	6			
3	History	2	3			
4	Tourism	7	6	3	6	
5	Mathematics	1	3			
6	English	6	4			
7	Economics	9	5			
8	Assamese	9	9			

**(c) Laboratory:**

Sl No	Laboratory	Fan	Light	Desk Top Computer	Printer	UPS
1	Education	2	2			
2	Language Lab	2	12	11		1(3 kVA)
3	Computer	2	2	7	1	

**(d) Digital Room:**

Sl No	Digital Room	Fan	Light	LCD Projector	Smart Board	UPS
1	Room 1	2	2	1	1	
2	Room 2	2	2	1	1	

**2. ADMINISTRATIVE BLOCK:**

Sl No	Type	Fan	Light	Desk Top Computer	Printer	UPS
1	Principal's Room 1	1	3	2		2
2	Principal's Room 2	2	2	1	1	
3	Office	6	11	4	4	1
4	Library	18	19	12	1	1
5	Examination Zone	7	7	2	1	1
6	KKH	3	2			
7	IQAC	4	3	2	1	

### 3. OTHERS:

Sl No	Type	Fan	Light	Desk Top Computer	Printer	UPS
1	Teachers' common room	6	8			
2	Art Gallery		13			
3	Ex-student room	1	2			
4	Gymnasium	4	3			
5	Union Room	2	2	1		
6	Girls' common room	2	6			
7	Boys' common room	4	5			
8	Kitchen	2	2			
9	Canteen	4	4			
10	Hostel Warden	6	13	1		
11	Hostel Rooms	9	14			
12	Corridors		24			
13	Wash Rooms	2	3			

In addition to all the above gadgets, the following electrical appliances are also available in the college:

Sl No	Electrical Items	Rating	Quantity
1	Off-grid roof-top PV system	7 kW	1
2	Photocopy Machine	6.3 A	5
3	Air Conditioner	1.5 Ton	9
4	Display (Digital)		2
5	Vacuum Cleaner	1300 W	1
6	Central UPS (Library)	3 kVA	1
7	Inverter		1
8	Trade-Mill	7000 VA	1
9	Electric Kettle	1200 W	1
10	Refrigerator		2
11	Washing Machine		1
12	Water Pump		1

#### Switches:

There are appropriate and sufficient numbers of MCBs and Isolators for maintaining and protecting the equipments.

#### Outdoor Lighting:

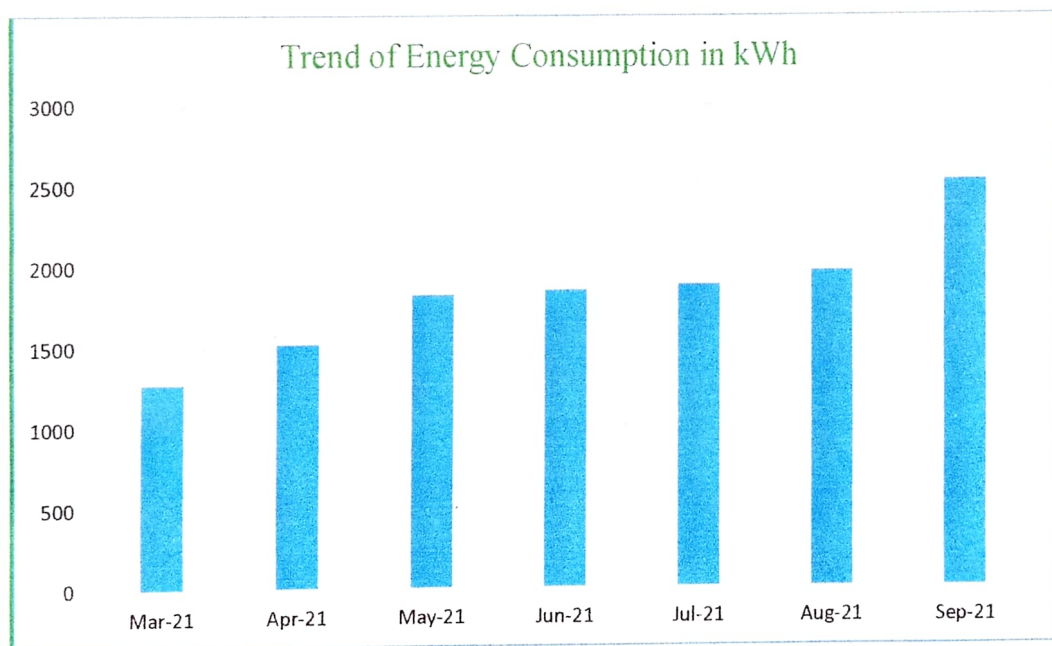
There are 23 LED lights for outdoor lighting. It covers the entire college campus.



### III. ENERGY CONSUMPTION DATA:

The trend of utilization of electrical gadgets and other appliances are reflected in the monthly bills of energy consumption. The energy consumption data are presented below for seven months only from March 2021 to September 2021. The trend is also illustrated pictorially.

Month	Energy consumption (kWh)	PF	Maximum Demand (kVA)	Billed Demand (kVA)	Monthly bills (in rupees)
March 2021	1275.00	0.96	6.0	35.29	16674.00
April 2021	1519.35	0.97	5.97	35.29	18119.00
May 2021	1817.25	0.98	5.97	35.29	20957.00
June 2021	1844.55	0.98	17.49	35.29	20239.00
July 2021	1877.85	0.98	15.87	35.29	20926.00
August 2021	1962.00	0.97	14.85	35.29	22028.00
Sept 2021	2530.80	0.98	15.57	35.29	25640.00



### IV. CONCLUSION

The college has been taking lot of initiative to create awareness among the students, teachers and other stakeholders to make the college campus an energy efficient campus. The Green Energy Initiative is another sincere effort of the college for carbon neutrality. With the rising awareness on the necessity to save energy, the college has resorted to ways and means for saving electricity. Efforts have been made to shift to renewable energy phase wise. A 7 kW off-grid roof-top solar plant has already been installed as an alternative source of energy. The

location of many class rooms, departments and rooms for other academic purposes are such that sufficient natural light and air available during day time and as a result significant amount of electricity is saved. The college has taken steps to replace conventional electric bulbs with LED bulbs to save energy to some extent. The average power factor is 0.97. The e-waste of the college has been disposed as scrap and given away to concerned agencies for recycling.



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**Assam Power Distribution Company Limited**

NAME OF ELECTRICAL SUB-DIVISION: AREA: DISA: (REGD. UNIT)  
 DIST. OFFICE: DISA: (REGD. UNIT)  
 DIST. OFFICE: DISA: (REGD. UNIT)

Consumer Name: ...  
 Meter Number: ...  
 Meter Status: ...  
 Billing Status: ...

Consumer Number: 02500001458  
 Meter Number: ...  
 Meter Status: ...  
 Billing Status: ...

Bill Amount: 20926.000  
 Due Date: 20-Aug-2021

Bill Number: 100010352  
 Bill Period: 01-Jul-2021 To 31-Jul-2021  
 Bill Date: 05-Aug-2021  
 Number of Days: 31  
 Meter Status: RUNNING  
 Billing Status: NORMAL

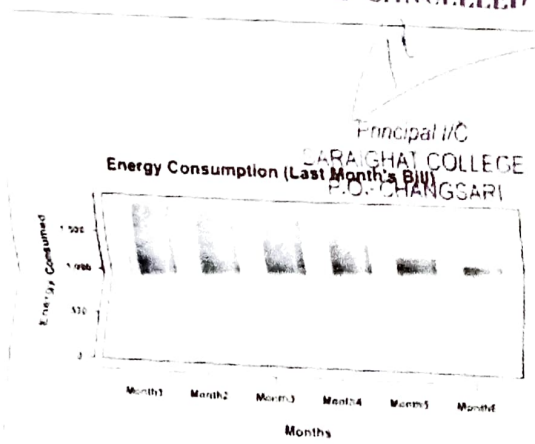


**Meter Reading Details**

Reading Type	Meter Number	MR	Previous Reading (in kWh)	Previous Export (in kWh)	Current Reading (in kWh)	Current Export (in kWh)	Difference Reading (in kWh)	Difference Export (in kWh)
AVG	0250	0250	000.000	0.000	1094.420	0.000	125.160	0.000
LT Metering Penalty	DIR Penalty	LT Metering Penalty	DIR Penalty	LT Rebate	Voltage Rebate	Voltage Penalty	Salable Units (in kWh)	
0.000	0.000	0.000	0.000	0.000	0.000	0.000	1876.160	
Maximum Demand (in KVA)	Maximum Demand (in KVA)	Maximum Demand (in KVA)	Maximum Demand (in KVA)	Billing Demand (in KVA)	Average Power Factor	98.000		
15.97	15.97	15.97	15.97	15.29	98.000			
Availability Percentage								

**Billing Details**

Outstanding Amount	Adjustment Amount	Solar Rebate	Net Bill Amount
Rs. 0.000	Rs. 0.000	0.000	<b>Rs. 20926.000</b>
			<b>In Words: Rupees Twenty Thousands Nine Hundred Twenty Six Only</b>



Details	Units	Rate	Amount
Energy Charge (Normal)	1676.160	7.200	13508.350
Total Energy Charge			13508.350
Energy Charge Re-Estimated			0.000
Rooftop Solar Adjustment			0.000
Demand/Fixed Charge (KVA)	35.29	180.00	6420.82
Electricity Duty			396.46
Govt. Subsidy		0.00	0.00
Overdraw Penalty		0.00	0.00
Meter Rent		0.00	0.00
Charges for disconnection/Reconnection			0.00
Arrear Principal			0.000
Arrear Surcharge			0.000
Current Surcharge			0.000
Adjustment Amount			0.000
<b>Rebate if paid before due date</b>			<b>0.00</b>
<b>Payable amount before due date</b>			<b>20926.00</b>
<b>Payable amount after due date</b>			<b>20926.00</b>

Checked by E&OE

Prepared by 40001339

Signature with seal

Bigyan Bhawan, ABC, G S. Road, Guwahati - 781005  
Ph 0361-2450147/646 Fax 0361-2454617  
email: assamrenewable@gmail.com

V.No 10  
2017/18

### PROFORMA INVOICE

LR No	Transporter's Name	D C No	Inv No	ASS/001/05-06/
		Date	Date	08-03-2018
Invoice Address		P O No SC/UGC/XII/PLAN/ORDER/2018/012		
The Principal Saraighat College P O Changsari Dist Kamrup, Assam Pin - 781 101		Date 08 03 2018		
Contact		Delivery Address Saraighat College, Changsari Kamrup, Assam		

Sl No	Description	Qty	Rate (Rs)	Amount (Rs)
1	Design, Supply, installation, commissioning & testing including 5 warranty of 4 00 kWp Off-Grid Solar Power Plant at Saraighat College, Changsari, Kamrup Assam	1	3 85,014 00	3 85,014 00
Total				3,85,014.00

((Rupees Three lakhs eighty five thousand fourteen) only

For Aditya Solar Shop

*[Signature]*  
Authorized Signatory

Note: Time of Completion 60 days after receipt of 100 % payment.

*Acct*  
*Disseminated*  
*[Signature]*  
*12/21/2018*

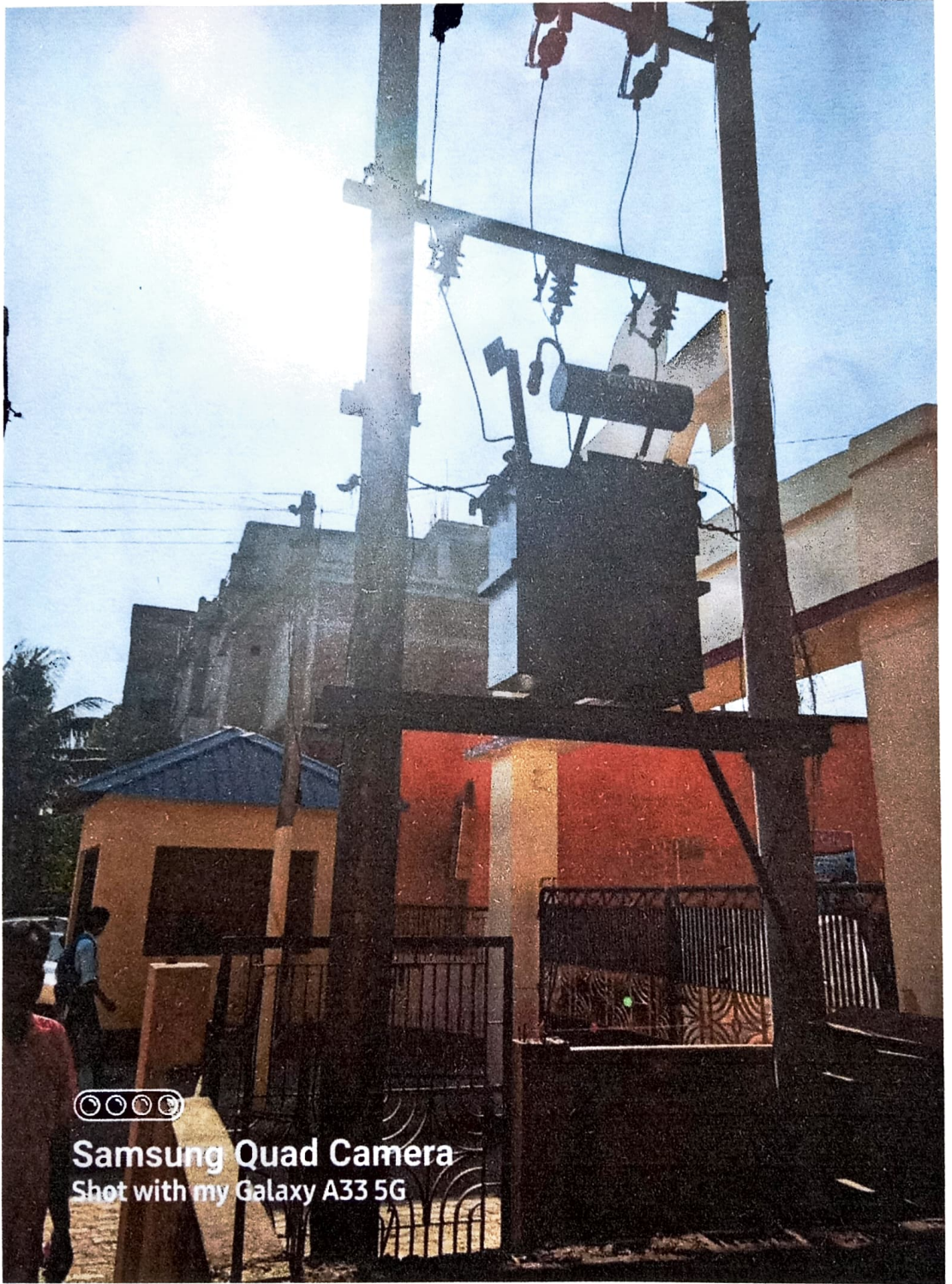
**PAID & CANCELLED**

*[Signature]*  
Principal  
Saraighat College



Samsung Quality Camera  
Shot with my camera A3550





**Samsung Quad Camera**  
Shot with my Galaxy A33 5G

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