

Ref.: TPI/TC/2022-23/015

Date: 27.07.2022

To,
The principal,
Tinsukia College
Tinsukia, Assam

Sub: Energy Audit Report

Dear Sir,

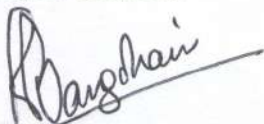
After completing the study on the electrical infrastructure of the college on 04.07.2022 and 07.07.2022, the collected data has been analysed and presented in the enclosed report. The report emphasises in **recommendations to increase productivity, save energy, improve power quality and reduce failure thereby enhancing your plant's 3P: Power, Productivity & Profitability.**

An earnest effort has been made to portray you the existing scenario with potential for improvement. We believe that you shall find our observations & recommendations useful and make a sincere effort to implement the proposed schemes and derive the projected benefits.

We take this opportunity to express our gratitude and thanks to the authority and management for keeping faith in our ability and taking a positive approach.

Thanking you once again and looking forward to a long-term meaningful association with your efforts to improve reliability and to reduce energy losses in your Institution.

Sincerely, Yours
For Teapro Industries



Rana Borgohain (+91 94350 36596)
Prop.



Principal
TINSUKIA COLLEGE
TINSUKIA

ENERGY AUDIT REPORT

Data collection for energy audit of the Tinsukia College, Tinsukia was conceded for the period of 1 June 2021 to 31 May 2022. This audit was over sighted to inquire about convenience to progress the energy competence of the campus. To drop off energy utilization whilst cultivating humanizing comfort, health and safety are prime objective. All data are collected from each classrooms, laboratories, staff rooms, office, auditorium etc. The work is completed by considering, how much tubelights, fans, A.Cs, electronic instruments, etc are installed in each room and the participation of each component in total electricity consumption.

The major activities carried out during the audit are as follow:

- Collection of college's records regarding Electricity Power Consumption.
- Analysis of the Electrical Distribution System
- Analysis of the incoming grid supply.
- Data collection of major power consuming equipment in various rooms– such as Laboratory Equipment, Fans, lighting and pumps.
- Recommendation of various methods and bringing forth the various potential of rectification.


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WORKSHOP : NO.1 BALUPARA, P.O. BORGURI, TINSUKIA-786 126, MOB: 7028534921, E-MAIL: teaproindustries@gmail.com

I. Analysis of Electrical Distribution System

Sl. No	PARTICULARS	OBSERVATION	REMARKS
1	Is distribution of load satisfactory?	YES	
2	Condition of electrical wiring	GOOD	
3	Type of wiring	Concealed and Open	All the open wiring should be concealed
4	Whether electrical equipment's are operating at specified voltage or current (with in the tolerance range)	YES	
5	Rating of Fuses / junction box are as per standards	YES	
6	Whether single isolating switch is available for the whole premises	YES	250A MCCB
7	Earth pits identified	YES	12 Nos. in Total Identified
8	Condition of earthing	FAIR	Needs to be improved
9	Earth connection to equipment's -proper / not proper	PROPER	
10	Voltage between neutral and earth	0V	
12	Weather DG is provided with neutral earthing	YES	
15	Cable Laying condition	GOOD	
16	Cable Terminations	PROPER	

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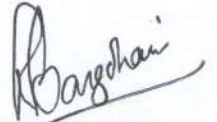
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Sl. No	PARTICULARS	OBSERVATION	REMARKS
17	Meter and Main condition	GOOD	
18	Panel board Condition	GOOD	
19	Solar Panels	Disconnected	
20	LED Lights and energy saving appliances	FAIR	Need to replace all the old energy consuming CFL lights by LEDs.
21	Rating of cables as per standard (YES/NO)	YES	
22	Generator Capacity & condition	40KVA-GOOD 10KVA-GOOD	
23	Solar Panel Capacity & condition	10KW	
24	Average energy produced by Solar	Nil	


Principal
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- Builder, Engineer, Designer & Govt. Registered Electrical Contractor
- Electrical Panel Builder (CPRI approved)
- Manufacturing and servicing unit of Tea Processing Machines & General Engineering Equipment

GSTIN : 18ACAPB0431C2ZL
PAN : ACAPB0431C

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II. Analysis of Incoming Grid Supply:

Parameters		Reading	Normal Range	Remarks
Voltage at Incoming Panel (V)	L1-L2	420	380-430V	Satisfactory
	L2-L3	420	380-430V	Satisfactory
	L3-L1	400	380-430V	Satisfactory
	L1-N	235	200-240V	Satisfactory
	L2-N	236	200-240V	Satisfactory
	L3-N	239	200-240V	Satisfactory
	N-E	0		Satisfactory
Current Reading at Panel	L1	-	-	-
	L2	-	-	-
	L3	-	-	-
Power consumption per phase	L1	-	-	-
	L2	-	-	-
	L3	-	-	-
Frequency of Supply	L-N	50 Hz		Satisfactory

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III. Energy Consumption

Consumers Room description	Fan	LED light	CFL light	Socket	A.C. (Ton)	Computer	Printer/ Scanner	Projector	Fridge	Motor (HP)
Admin Building										
Principal Office	4	11		8 (6A)	1 (.5)	1	1			
Conference Room	3	3		8 (6A)	1 (.5)					
Main Office	6	3	2	15 (6A) 1 (16A)		6	6			
Office rooms (2 nd Floor)	8	4	1	11 (6A) 1 (16A)		3	3			
Computer Lab	6	6	2	20 (6A)		14				
Examination Cell	4	11		5 (6A) 3 (16A)						
IQAC Room	4	3	2	16 (6A)		4	5			
Auditorium	17	14	16	9 (6A)						
Science Section										
Physics Lab	8	8	14	31 (6A) 15(16A)						
Zoology Lab	2	2		3 (6A)		1			1	
Zoology Classrooms	7	3	13	12 (6A)		1				
Botany Lab	8	3	11	8 (6A) 2(16A)						
Botany Classrooms	2	6	6	9 (6A)						
Chemistry Lab	17	10	20	35 (6A) 16(16A)						
Chemistry Classrooms	9	4	5	3 (6A)						
Geography Lab	7	7	7	18 (6A)				1		
Classroom	22	7	21	5 (6A)						
Conference Room-1	10	6	7	14 (6A) 13(16A)				1		
Conference Room-2	14	32	5	24 (6A)				1		
Passage	1	4	6	1 (16A)						
Statistics Dept	5		3	2 (6A) 1 (16A)		1	1			
Mathematics Dept	8	1	4	5 (6A)				1		
Arts Section										
Economics Dept	8	4	4	2 (6A)		1				
Assamese Dept	6	6		2 (6A)		1				
English Dept	3	2		5 (6A)		1				

Principal
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teaPRO

INDUSTRIES

ISO 9001 : 2015 Certified Unit
A Tea Board Registered Unit
CPRI Approved Panel Builder

 **SWITCHGEAR**
SAFE & SURE

Authorised Service Centre

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Consumers	Fan	LED light	CFL light	Socket	A.C. (Ton)	Computer	Printer/Scanner	Projector	Fridge	Borewell Motor
Bengali Dept	1		1	1 (6A)		1				
Philosophy Dept	3	2		5 (6A)		1				
Classrooms	22	11	17	7 (6A)						
Political Sc. Dept	9	6	2	6 (6A)		1				
History Dept	7	4	3	5 (6A)		1				
Hindi Dept	6	4	3	5 (6A)		1				
Classrooms	31	5	28	8 (6A)						
Common Room	5	1	2	9 (6A) 1 (16A)						
Corridor		1	2							
Commerce Section										
HOD Room	2	1	1	3 (6A)		1				
BCA Classrooms	10	2	10	3 (6A)						
HOD Computer Lab	1		1	4 (6A)		1	1			
Computer Lab	3		2	56 (6A)		11				
Corridor			2							
Library										
Library (Ground)	35	3	29	55 (6A)		12	1			
Library (1 st floor)	23	1	24	4 (6A)						
Language Lab	4		6	6 (6A)	2 (.5)	1				
Computer Room	3	16		124(6A)		32		1		
Other Rooms										
Teacher's CR	4	6	2	6 (6A)	1 (.5)					
Boys' CR	4	2		1 (6A)						
Girls' CR	2	4	1	1 (6A)						
GYM	4	2	1	1 (6A)						
VP Room	2	6		3 (6A)						
Office room SU	2		2	1 (6A)						
Canteen	3	12		4 (6A) 2 (16A)						
Kitchen	1	1		3 (6A)						1 (.5 HP)
Sick Room	2		4	1 (6A)						

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R. Dasgupta

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Consumers Room description	Fan	LED light	CFL light	Socket	A.C. (Ton)	Computer	Printer/ Scanner	Projector	Fridge	Borewell Motor
Hostel										
Room 1-33	33		66	33 (6A)						
Toilet	9		9							
Dining room	4	6	3	1 (6A)						
Kitchen		2	2							1 (1 HP)
New building rooms	8	16								
Corridor		15		14 (6A)						
Office cum Library	2		2	4 (6A) 1 (16A)		2				
Warden Room	3	5								
Canteen	5	5		3 (6A)						

CR- Common Room, SU- Students' Union, VP-Vice President

Note:

1. The average power consumption (in KWh) from 1st June, 2021 to 31st May, 2022 is 17.254 KWh.
2. The average power factor is ranged between 85.0 to 95.0 which is satisfactory.
3. The maximum demand (in KVA) is recorded to an average of 17.2 KVA for the period from June, 2021 to May, 2022.
4. Connected Load is 87KW.
5. Contracted Demand is 102KVA.

Recommendations:

- Open wiring is observed in many instances which is suggested to be replaced with concealed wiring.
- Although 12 earthing pits are installed it may not be sufficient for all the equipment and gadgets used in the laboratories and offices. Hence it is suggested to integrate more earthing pits. All the earthing connections should be checked periodically.
- Most of the lights used are CFL or filament type and so it is highly recommended to be replaced by Led lights for lesser consumption of electricity.

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