


Atal Bihari Vajpayee Govt College Pandatarai,
Kabirdham

ENERGY AUDIT REPORT (2020-21)

Electricity Utility Bills

The following image shows the contract demand load of the office building:




(यह बिल केवल सामान्य खपत के लिए है - केमस्ट्री/लाभकारी इकाई से संबंधित कपूरी हेतु शुभक फार्म निर्धारित है।)

छत्तीसगढ़ राज्य विद्युत वितरण कंपनी मर्यादित, विद्युत देयक (निम्नदाब हेतु)

1. सर्विस क्रमांक		1005670147/54430590-35-002163 Last Payment of Rs 59,180.00 on 18.01.2021	
2. बिल अवधि	MAR/21	3. बिल क्रमांक	738006689662
4. बिल दिनांक	01/04/21	चैक हेतु	भुगतान हेतु अंतिम तिथि नगद हेतु
5. उपभोक्ता का नाम	GOVT. COLLEGE		13.04.2021 16.04.2021
6. पता	VILL CHARBHATA PANDATARAI PANDATARAI		29. न्यूनतम प्रभार 0.00
7. दूरभाष क्रमांक	0	30. निमत/मांग प्रभार	3,960.00
8. मीटर क्रमांक		31. ऊर्जा प्रभार	530 X 7.25 3,842.50
9. पोल क्रमांक		32. मांग (29 अथवा 30+31)	7,802.50
10. वितरण केन्द्र (नाम/पता/फोन)	91718-83305		33. विद्युत शुल्क (जघृटी) 0.00
11. प्रयोजन	SG19	12. टैरिफ ब्रेक	LV2ND3SG19
13. विद्युत फेज	LV-2.2(B) Three Ph	14. बिल आधार	NDLF State Govt. Ofc OK
15. अनुबंध भार/मांग	29.00 K	16. वर्तमान रीडिंग	32464
17. वर्तमान रीडिंग दिनांक		18. पिछली रीडिंग	31934
19. पिछली रीडिंग दिनांक		20. गुणांक	1.00
21. पॉवर फैक्टर बाधन	0.83	22. विद्युत खपत	530
23. उच्चतम मांग कचन	1.90	24. अंकजित खपत	
25. सुरक्षा निधी जमा	20300	26. कुल खपत	530
27. विगत 6 रीडिंग का सारा			
बाधन माह		बाधन की तिथि	रीडिंग (बाधन)
क	Month	Reading	Units
ख	2021/02	31934	818
ग	2021/01	31116	120
घ	2020/12	30996	220
च	2020/11	30776	364
छ	2020/10	30412	57
ज	2020/09	30355	0
		LT-NO use	
28. शिकायत हेतु संपर्क (क) श्री RAM GOPAL SAHU		विजली बिल हाफ योजना अंतर्गत	
(जुनियर इंजीनियर/सहायक मंत्री) दूरभाष नं. 91718-83305		राज्य शासन द्वारा छूट रु. 0.00	
(ख) ज्ञात दिवस में शिकायत का निराकरण न होने पर		(घरेलू उपभोक्ता हेतु अधिकतम छूट 400 यूनिट तक)	
श्री CHANDRA SHEKHAR JAGNAYAK		विद्युत संबंधित शिकायतें केंद्रीकृत कॉल	
(सहायक मंत्री/कार्यपालन मंत्री) दूरभाष नं. 96305-58605		सेक्टर के फोन नं. 1912 पर दर्ज कराये	
महत्वपूर्ण सूचना - 1) अनुविद्या से बचने के लिये बिल का भुगतान शीघ्र कीजिये। अंतिम तिथि के बाद 15 दिन तक भुगतान न होने जाने पर विजली कटने की कार्यवाही की जा सकती है। 2) सभी बिल कम्पे केने में मूल-तक लेनी हैनी		कार्यपालन मंत्री	


QR कोड स्कैन करें।




या फिर टोल फ्री नंबर पर कॉल करें
1800 2666 866

डाउनलोड करें एक बार, उपहार पाइये हर बार...

- ▶ भारत की प्रतिष्ठित रिसर्च कंपनी एक्सिस माय इंडिया से जुड़े
- ▶ ऑनलाइन जवाब दे और पाए गारंटीड - मोबाइल रिचार्ज (Talk Time)
- ▶ स्मार्टफोन और कार जीतने का अवसर पाइये
- ▶ अपनी पसंद और समस्याओं को संबंधित संस्था तक पहुंचाये
- ▶ APP डाउनलोड करें और सर्वे पूर्ण करके टीवी पर आने का अवसर पाइये




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छत्तीसगढ़ राज्य विद्युत वितरण कंपनी मर्यादित (कार्यालयीन उपयोग हेतु)

सर्विस क्रमांक	1005670147/54430590-35-002163
बिल क्रमांक	738006689662
बिल दिनांक	01/04/21
चैक हेतु	भुगतान हेतु अंतिम तिथि नगद हेतु
	13.04.2021 16.04.2021
सुरक्षा निधी देयक	0.00
अन्य देयक	Pre. Arrears 93,305.17
शुद्ध देयक (निमत तिथि तक)	105,840.00
सकल देयक (अधिभार सहित)	107,360.00



2021-7-27 15:32

Figure – Contract Defined

As it can be observed that the contract demand load of the building is 10 kW

Connected Load

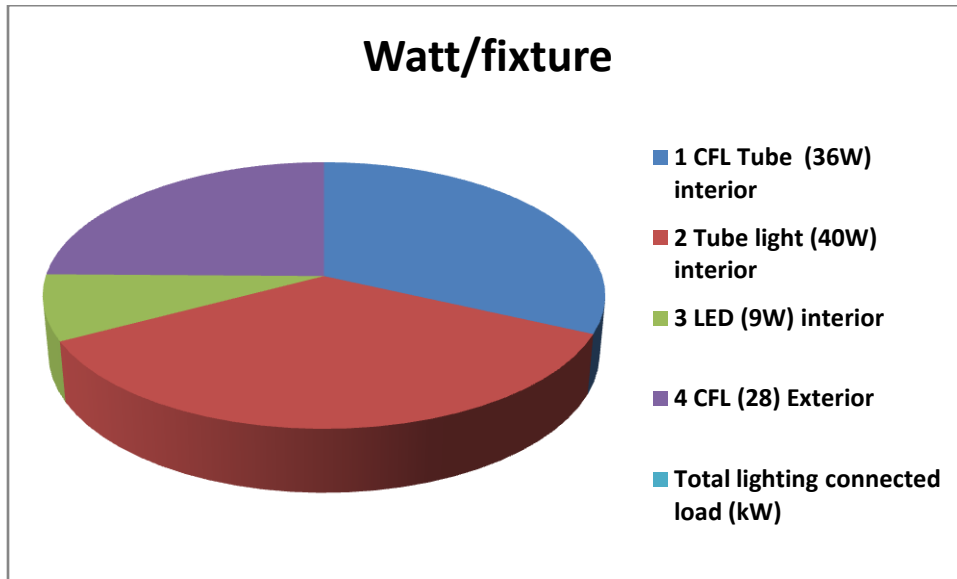
It is defined as the sum of ratings of all electrical that are connected at the supply point regardless of their status of operation. It depends on the installed

Atal Government College, Pandatarai has different types of load in the building. Office building loads are majorly divided in different category:

1. **Lightning load**
2. **Cooling load**
3. **Evaporative Coolers & Fans Load**
4. **Equipment's Load (computer Printer, Photo Copy Machine, Water purifier, etc.)**

Total Connected Load Breakup			
S. No.	Systems/Area	Load in (kW)	Load in Percentage (%)
1	Lightning	4.1	18%
2	Fans and cooler	8.3	38%
3	Computer/Printer	1.8	8%
4	Inviter	7.9	36%
Total Connected Load Breakup		22.09 kW	

Table: Breakup of Connected Load Summary



Pie-Chart Showing Break-up of Connected Load

Contract demand according to unity Bills (kW)	Calculated Connected load (kW)
22	22.09

Lighting and Controls

Lighting and Controls

The facility is college building. This building includes office area, Class room and Lab space Lighting Load is contributing near about 18% of total connected load. The facility has following type of fixtures installed in the buildings:

Lighting fixture load segregation

S. No.	fixture description	serving area	Quantity	Watt/fixture	Total Wattage
1	Tube light (40W)	interior	124	40	4960
2	LED (9W)	interior	24	9	216
Total lighting connected load (kW)					5.176

Table - Lighting Summary



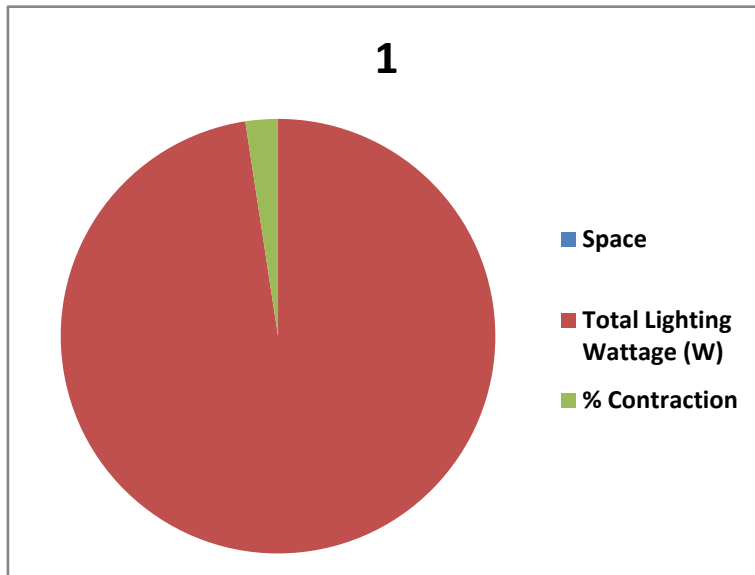
Figure - Fluorescent tubes installed in facility



Figure - LED lights installed in facility

Government College, Pandatarai

S. No.	Space	Total Lighting Wattage (W)	% Contraction
1	Building Interior	3884	96
2	Building Exterior	168	4
Total Lighting Wattage (kW)		4.1	



➤ **Building Envelope**

Atal Bihari Vajpayee Government College Pandatarai



Window Area



as well as relating it to the natural environment in terms of access to daylight, ventilation and views. The window-to-wall ratio is measure of the percentage area determined by dividing the buildings total glazed/window area by its exterior envelope wall area but as per elevation of facility it has been found that all windows fitted in building envelope is made up



Figure - Show wall of Facility

Roof Area

The building roof construction is made of 5 inc. concrete Slab. A roof is part of building envelop. All roofs are not covered by solar photovoltaic, or any renewable energy system, or utilities and services that render it unsuitable for the purpose and shall be either cool roofs or vegetated roof.



Figure - Roof of facility

Coolers, Ceiling & Exhaust Fan's

Evaporative Coolers, Ceiling & Exhaust Fan's

A ceiling fan is a mechanical fan, usually electrically powered, suspended from the ceiling. At the Government College, Pandatarai building there are total 114 numbers of ceiling mounted fan. Some Evaporative Coolers are also installed in facility for meeting thermal comfort up to its best.



Figure - Ceiling Fans installed in facility

Electrical System & Renewable System

Uninterrupted Power Supply

Uninterruptible Power Supply (UPS) system is installed in the building vicinity for computer & other equipment for continuous power supply for the systems wherever is it required. UPS is installed in the rooms of Ground floor having a capacity of 5 kW each



Figure - show battery installed in facility Uninterruptible Power Supply

Equipment's Load

There are several equipments like computers, printers, photocopiers, etc. installed in facility. Computer/Printer contribution in total connected load is around 8% and other equipment's contributes around 36% of total connected load

S. No.	Description	Quantity	Wattage	Total Wattage
1	Computer	15	150	2250
2	Printer	3	300	900
3	TV	1	150	150
4	Water purify	2	750	1500
5	Projector	2	100	200
6	Oven	1	1000	1000
Total load equipment's (kW)				6 kW

Table – Equipment Load Segregation



Figure - Induction **Oven** installed in facility

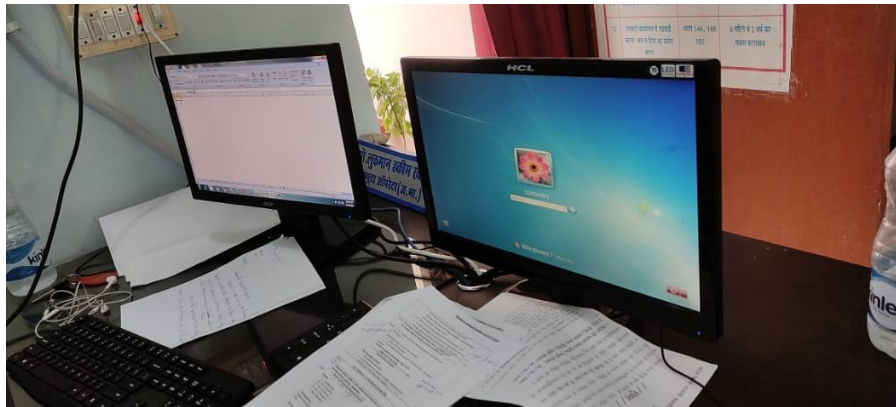


Figure — System- computer's installed in facility

S. No.	Description	Quantity	Wattage	Total Wattage
1	Printer	3	300	900



Figure — System- Printer computer's installed in facility

S. No.	Description	Quantity	Wattage	Total Wattage
1	projector	2	100	200

**System Projector
Installed in facility**

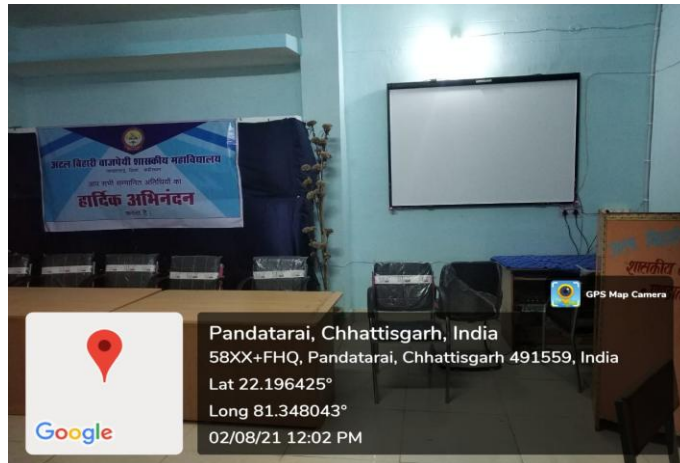


Figure — System Projector computer's installed in facility

Transformer

Building facility has 1 transformer used for supplying the electricity to the building.
Rating capacity of the transformer is about 100 kW for power supply.

Atal Bihari Vajpayee Government College, Pandatarai

Table - transformer Details



Figure - Transformer installed in facility

The temperatures at panels were analyzed by Thermal Imaging Camera. The images below show the snap shot taken by thermal imaging camera



Figure – Fully Infrared

Temperature Measurement at Panels			
S.No.	Feeder	temperature measurement Point ©	
		Panel Body	Control Wiring
1	Panel -1	25	26.7

Table - Temperature Measurement

It has been observed that there is a fluctuation in current distribution between three phases (R-Y-B). Y phase is hotter than other phases as extracting higher amount of current at electric panel.

Suggestion

Phase Balancing Devices are available in market they lead proper balancing of all phases which doesn't cause abnormal distribution of current /load in all phases. They also reduce the chance of fire hazards in panels or facility



All required data is collected by Department of Chemistry. In bulding , in every room, how much fans, tubes, fans,computer , Instrument ,etc will these is measurd. According to survey following data collected.

USE OF LED BULBS/ POWER EFFICIENT EQUIPMENT

Deapartment instrument.	Fan	LED	Tubeling	Frige-	computer	printer	Xerox machine	Scanner	Projector
Principal Office.	3	2	3	1	1	0	1	0	0
Zoology Lab.	4	4	4	0	0	0	0	0	0
Chemistry Lab.	6	4	4	1	0	0	0	0	0
Botany Lab.	4	4	4	0	0	0	0	0	0
Computer lab.	6	6	5	0	10	0	0	0	0
Office.	4	2	4	0	4	2	0	1	0
Staff Room	2	0	4	0	0	0	0	0	0
Library	5	2	3	0	1	0	0	0	0
Sport	2	0	3	0	0	0	0	0	0
H.O.D. office	2	1	4	0	0	0	1	0	0
Smart class room	12	0	7	0	1	0	0	0	1
Class room	64	0	52	0	0	0	0	0	0
Total Qunantity	114	24	97	2	17	2	2	1	1
Total watt.	1579								



Principal
Atal Bihari Vajpayee
 Govt. College, Pandatarai
 Distt. Kabilrdham (C.G.)