BJB AUTONOMOUS COLLEGE

ENERGY AUDIT REPORT

2024-25

BJB AUTONOMOUS COLLEGE

LEWIS ROAD, BHUBANESWAR-14

OFFICE OF THE PRINCIPAL

Energy Audit Committee:

CONVENOR: Dr. Mandakini Baral, Asst. Prof. in Physics

MEMBERS (Internal)

1) Dr. Rashmita Deheri, Asst. Prof. in Physics
2) Dr. Soumya Nayak, Asst. Prof. in Zoology

MEMBERS (External)

1) Dr. Brundaban Pradhan, Asst. Prof. in Physics (stage-III), B.J.B. Higher Secondary School, Bhubaneswar.

Students Member

1. Gaurishankar Sahoo, +3 3rd yr. Physics, Roll No.: BS(P)-23-141

BJB AUTONOMOUS COLLEGE

BHUBANESWAR

CERTIFICATE

This is to certify that an Energy Audit BJB Autonomous College, Lewis Road, Bhubaneswar-14 has been conducted for the academic session 2024-25 to assess energy load, costs and consumption reliability to supply of energy, energy conservation and steps to be taken to reduce energy consumption.

12.02.26

CONVENOR
Dr. Mandakini Baral

Gaurisankar Sahoo. 12.02.26

Student Member
Gaurishankar Sahoo

12.02.26

Member
Dr. Soumya Nayak

12.02.26

Member
Dr. Rashmita Deheri

12.2.2026

Member (External)

Dr. Brundaban Pradhan, Asst. Prof. in Physics (stage-III), B.J.B. Higher Secondary School, Bhubaneswar.

16/4/2026

Principal
Prof.(Dr.) Rita Das

CONTENT

Introduction

Buxi Jagabandhu Bidyadhar Autonomous College started functioning in 1957. It became an autonomous college in 1999 and was accredited with "A" level by NAAC in 2025. It Provides Co-education and Multi-faculty teaching facilities in multi-disciplinary courses.

In order to provide /Supply electricity a separate transformer is installed in the campus. There is huge electricity consumption in the class rooms, labs, corridor, offices staff rooms, auditorium and uses of equipment's in different blocks of the college. In broad sense energy efficiency means managing energy consumption in a more economical way otherwise it may increase the energy consumption cost and will be a financial burden for the institution.

Energy Audit Report

As per the energy conservation Act. 2001, energy audit is defined as the verification, monitoring, analysis and use of energy including submission of technical report containing recommendation for improving energy efficiency with cost benefit and an action plan to reduce energy consumption.

In addition to the collected data of the different blocks of the college as per the energy audit report of 2023-24, the following new electrical appliances has been installed in different blocks for the current academic session.

1. 23 Air Conditioners, each of 1.5 ton
2. 12 Air Conditioners, each of 2 ton
3. 36 CCTVs
4. 3 e-podiums

Detail analysis of data collected includes, calculation of total energy consumption along with gross solar generation in the same FY and the corresponding amount paid to the TPCODL in different months. The analyzed data of the session is compared with the previous years. On the basis of results of data analysis and observation, some steps for reducing power were recommended.

Data Analysis

The collected data were then quantified according to the following criteria.

- BJB College Office Building
- New Arts Block, BJB (Auto) College

The quantified data were put in a tabular form and with suitable diagram for easy reference and understanding of the energy consumption.

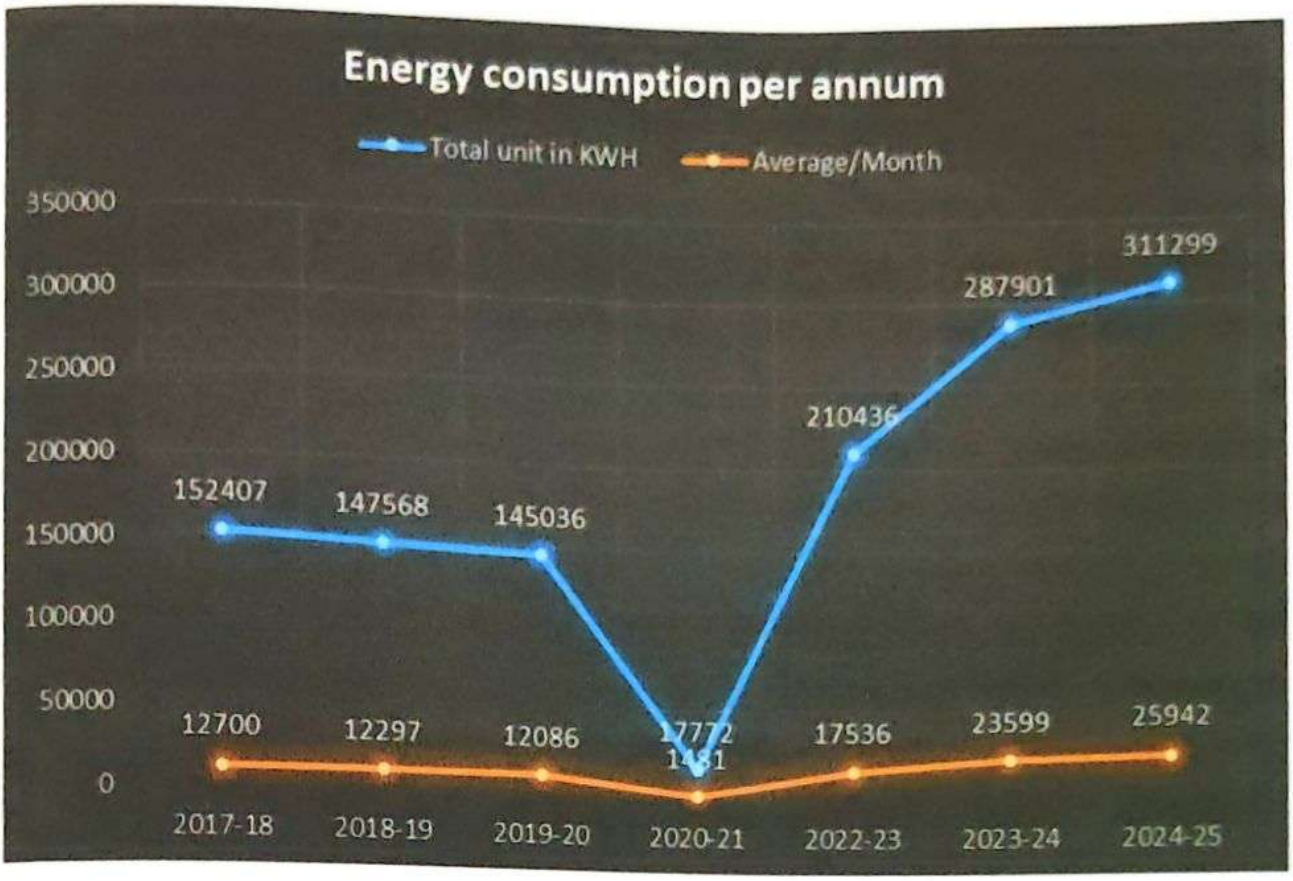
CONSUMPTION HISTORY

Sl No.	Month	BJB College Office Building	New Arts Block, BJB (Auto) College
1.	June 2024	12560	20352
2.	July 2024	14400	16796
3.	Aug 2024	14080	1208
4.	Sept 2024	17520	4429
5.	Oct 2024	13760	11826
6.	Nov 2024	12296	10414
7.	Dec 2024	10790	10085
8.	Jan 2025		7425
9.	Feb 2025	25131	8097
10.	Mar 2025		14481
11.	Apr 2025	17118	24332
12.	May 2025	20035	24164
13.	Total	**157690**	**153609**
14.	Grand Total	**311299**	

Energy consumption Report

The energy consumption bills were collected from office for different years and months. It is then put in the tabular form and suitable diagram for easy reference and better understanding.

SL.NO.	ENERGY BILL OF THE YEAR	AMOUNT PAID PER YEAR (Rs)	TOTAL UNIT IN KWH.	AVARAGE UNIT CONSUMED PER MONTH
1	2017-18	6,85,835	152407	12700
2	2018-19	7,08,330	147568	12297
3	2019-20	6,96,175	145036	12086
4	2020-21(COVID)	98,634	17772	1481
5	2022-23	13,04,706	210436	17536
6	2023-24	17,84,987	287901	23599
7	2024-25	24,59,518	311299	25942



Energy Saving Data

The data of roof top solar panel of BJB College Office Building and New Arts Block for this academic year are as follows

- The Gross Solar Energy generation of New Arts Block is NIL.
- The Gross Solar Energy generation of BJB Office Building is 2576.30 KWH.

Suggestion and Recommendation

- Proper functioning of the solar panel has to be done
- Upgradation of technology in Laboratory equipments.
- Replacement of old electrical cables in some places in administrative block and science block for safety and power loss.
- Replacement of CFL bulb with LED.
- Replacement of LCD monitors with LED.
- Installation of master switch outside each room to save energy.
- Replacement of old generation computer and TV with LED.
- MCB panel in each department for safety and to reduce power consumption.
- Conceal wiring in administrative block and science block for safety purpose.
- Proper installation for AC.
- Proper earthling system for new science block, administrative & S.F. block to save electrical appliances & power loss.

Conclusion

Considering the fact that the organization is a well-established, long time run establishment with good reputation, there is significant scope for conserving energy and made the campus as self-sustained in of the energy conservation initiative taken by the institution are sustained. The energy efficiency lighting schemes awareness among stake holder and necessary power backup are being practiced by the institution. Electrical wire, switch board, stabilizer and WIFI switch is properly covered. In new arts block the electrical wiring (cable), switch, panel board, WIFI switch and etc are properly installed so that there is minimum power loss. Solar energy production in arts block to reduce electric bills almost zero. Administrative block and Science block in some place's cables are weak and of needs replacement to avoid energy loss. Each block needs installation of meter and panel system in each department to avoid loss of energy. The roof top solar panel should be operational in administrative block to reduce electric energy load. It is better for conceal wiring in administrative block and science block to reduce power loss. Steps may be taken to install roof top solar panel in new science block to save energy bill. The overall electrical system in the college is satisfactory and needs further improvement.

SOLAR PANEL INSTALLED ON THE ROOF TOP OF THE ARTS BLOCK

PANEL SWITCH (ARTS BLOCK)

MAIN SWITCH & PANEL (ADMINISTRATIVE BLOCK)

PANEL BOARD

TRANSFORMER

THANK YOU