



JANKI DEVI MEMORIAL COLLEGE

ENERGY AUDIT REPORT

2023-2024

PREPARED BY
EHS ALLIANCE SERVICES



TABLE OF CONTENT

TABLE OF CONTENT	1
CERTIFICATE	2
ACKNOWLEDGEMENT	3
DISCLAIMER	4
ABBREVIATION	5
OVERVIEW OF THE COLLEGE	6
AUDIT PARTICIPANTS	11
EXECUTIVE SUMMARY	11
ENERGY AUDIT - ANALYSIS	12
1. ENERGY CONSUMPTION	12
1.1 SUMMARY OF MONTHLY ELECTRICITY CONSUMPTION AND TOTAL BILL AMOUNT	12
2. DIESEL CONSUMPTION	14
3. ANALYSIS OF DG SETS	15
4. AC SYSTEM	16
5. FANS ANALYSIS	18
6. ANALYSIS OF LIGHTING SYSTEM	19
6.1 BRIEF DESCRIPTION OF EXISTING SYSTEM	19
6.2 INVENTORY OF LIGHTING	19
6.3 LUX MEASUREMENT	19
7. OTHER POWER CONSUMPTION	21
7.1 INVENTORY OF IT INFRASTRUCTURE	21
7.2 WATER PUMP DETAILS	21
7.3 OTHER LOADS	21
8. CAPACITOR BANK	22



CERTIFICATE



CERTIFICATE

PRESENTED TO

JANKI DEVI MEMORIAL COLLEGE

Sir Ganga Ram Hospital Marg, Old Rajinder Nagar, Rajinder Nagar,
New Delhi, Delhi 110060

That has been assessed by EHS Alliance Services for the comprehensive study of Energy
Audit on institutional working framework to fulfill the requirement of

ENERGY AUDIT

ACADEMIC YEAR 2023-24

The energy-saving initiatives carried out by the institution have been verified in the report
submitted and were found to be satisfactory.

The efforts taken by management and faculty towards all types of energy used in the
institution and sustainability are highly appreciable and noteworthy.

SIGNATURE



24.05.2024

DATE OF AUDIT

EHS ALLIANCE SERVICES, PLOT A-72, SURYA VIHAR, GURUGRAM, 122001
WWW.EHSALL.IN | BUSINESS@EHSALL.IN | EHSALLIANCE@GMAIL.COM

ACKNOWLEDGEMENT

EHS Alliance Services would like to thank the management of Janki Devi Memorial College for assigning this important work of Energy Audit. We appreciate the co-operation to the teams for completion of assessment.

First of all, we would like to thank **Professor Swati Pal - Principal, JDMC** for giving us an opportunity to evaluate the environmental performance of the campus.

We would also like to thank **Dr Deepak Rawat - Department of Environmental Studies, JDMC – Audit Coordinator** for his continuous support and guidance, without which the completion of the project would not have been possible. We are also thankful to other staff members who were actively involved while collecting the data and conducting field measurements.

We are also thankful to

Ms Vandana Madan	<i>Convener, AVANI- The Environment Club, JDMC</i>
Dr Sana Rehman	<i>Department of Environmental Studies, JDMC</i>
Mr Surendra Kumar	<i>Administrative Officer, JDMC</i>
Dr Kaushal Kishore	<i>Administrative Officer, JDMC</i>
Mr Avinash	<i>Assistant - Admin, JDMC</i>
Mr Vijay Pratap	<i>Junior Assistant - Admin, JDMC</i>

DISCLAIMER

EHS Alliance Services Energy Audit Team has prepared this Energy Audit Report for Janki Devi Memorial College based on input data submitted by the representatives of college complemented with the best judgment capacity of the expert team.

While all reasonable care has been taken in its preparation, details contained in this report have been compiled in good faith based on information gathered.

It is further informed that the conclusions are arrived following best estimates and no representation, warranty or undertaking, express or implied is made and no responsibility is accepted by Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report.

If you wish to distribute copies of this report external to your organization, then all pages must be included.

EHS Alliance, its staff and agents shall keep confidential all information relating to your organization and shall not disclose any such information to any third party, except that in the public domain or required by law or relevant accreditation bodies. EHS Alliance staff, agents and accreditation bodies have signed individual confidentiality undertakings and will only receive confidential information on a 'need to know' basis.



Vijay Singh
Lead Auditor EMS & Energy



Dr. Uday Pratap
Co-Auditor EMS & Energy



ABBREVIATION

A	Amps
AC	Air Conditioner
AC	Alternating Current
AMET	Academy of Maritime Education and Training
CFL	Compact Fluorescent Lamp
CIP	Comprehensive Inspection Program
DC	Direct Current
HSD	High Speed Diesel
Hz	Hertz
kg	Kilogram
kVA	Kilo-Volt-Ampere
kW	kilo Watts
kWh	Kilowatt Hour
kWp	Kilowatt Peak
LED	Light Emitting Diode
LPG	Liquefied Petroleum Gas
MMS	Module Mounting Structure
MPPT	Maximum Power Point Tracker
NAAC	The National Assessment and Accreditation Council
SEC	Specific Energy Consumption
SPV	Solar Photovoltaic
STC	Standard Test Condition
TV	Television
V	Volts
W	Watts
W/m²	Watt Per Square Meter

OVERVIEW OF THE COLLEGE

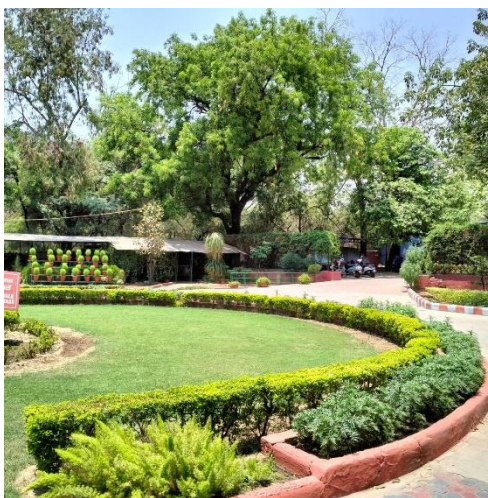
Janki Devi Memorial College, a premier women's college of University of Delhi was founded in 1959 by the famous Gandhian Shri Brij Krishan Chandiwalla in memory of his mother Smt. Janki Devi. JDMC aims to provide quality education to young women and empower them to become economically self-reliant, have the confidence to face the vicissitudes of a challenging society, contribute meaningfully to the society at large and acquire the capability to think, lead and change the world.

Situated in New Delhi Ridge in idyllic surroundings with its lush green lawns and imposing building, the college offers twelve under-graduate courses in Liberal Arts, Social Sciences, Mathematics and Commerce and eight post graduate courses. JDMC is the Centre for Non-Collegiate Women's Education Board (NCWEB) as well as School of Open Learning (SOL), University of Delhi. The college runs several Add-on courses/Certificate courses for students to enhance their skills. JDMC has MOUs with national and international agencies to provide the much-needed real world exposure to its students. It has more than thirty Societies/Clubs/Cells to give its students sufficient platforms to excel in various domains. The college has an extremely dedicated, committed and motivated faculty and staff.

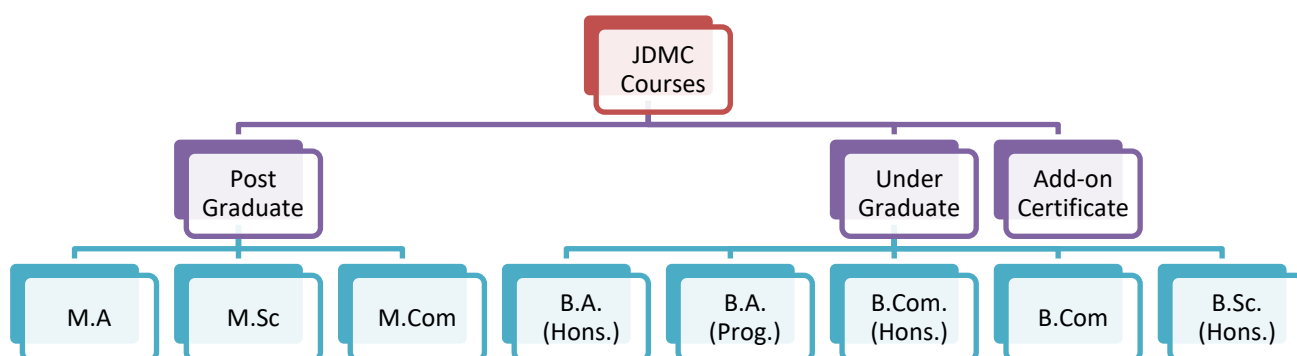


The college offers facilities and infrastructure to create a holistic atmosphere for the pursuit of academic and extracurricular activities. JDMC has recently completed its 60-year journey in pursuit of excellence. The college has provided a nurturing environment to students from all parts of India. It has the distinction of having a disabled-friendly infrastructure along with a strong assistance system in place for the students and faculty with visual disability.

The JDMC-IQAC works in its mandated direction of internalizing and institutionalizing the quality enhancement initiatives. These initiatives encompass various stakeholders, namely students (with the aim of their integrated development), teaching staff and non-teaching staff (enhancing their capabilities and empowering them) and students' parents and Alumnae (strengthening mutually beneficial relationships).



JDMC offers wide range of under graduate, post graduate and Add-on certificate courses.





VISION | MISSION | CORE VALUES

JDMC, a premier women's college of University of Delhi, endeavours to promote enduring knowledge which is global in its perspective and yet local in its relevance. Students are challenged & inspired to pursue excellence in liberal and performing arts, humanities, commerce and sports, in an environment which is vibrant & constantly evolving. Founded with a vision to empower women, JDMC continues to strive to help its students to develop a capacity to think, lead and change the world.

MISSION STATEMENT AND CORE VALUES

The egalitarian approach of the institution promotes the inclusion of all sections of the society. The institution is equally inclusive of all its constituencies, with their respective duties, responsibilities and achievements. The students and staff, belonging to diverse classes, castes, ethnic and religious groups cooperate in a democratic environment to take the college to newer heights of excellence. The institution besides providing education, also serves as a platform for cultural expression and excellence, constantly reminding students of the primary importance of cultural diversity, national integration and tolerance, along with the need to be in harmony with the environment

Janki Devi Memorial College is committed to the following core values:

- The foundational ideal is enshrined in the upanishadic motto of the college itself, 'Vidyahi paramam Jyoti'- Knowledge is Eternal Light
- Gandhian philosophy of responsible citizenship and empowerment of women through education
- Imparting knowledge based on traditional values, yet with modern and global significance in an evolving academic world
- Education, in combination with technological skills, empowers the students both academically and economically, and proactively contributes to their brighter future

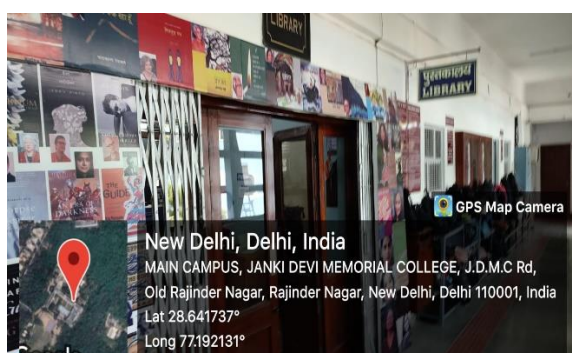
Therefore, the college creates a motivational environment to provide holistic education and personality development of the students, resulting in a synthesis of their career growth and ethical and responsible citizenship

Facilities in the campus

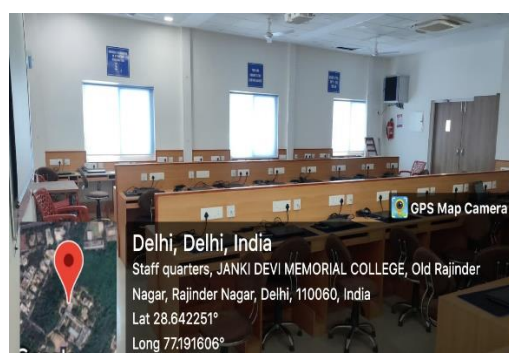
The college has an impressive building with lush green lawns, an eco-friendly campus with solar lighting and a rain-water harvesting system. The classrooms are clean, comfortable and well ventilated; the premises contain a common room and a medical room with a sanitary napkin vending machine, an open air auditorium; a bank, a multi-cuisine and attractive cafeteria, computer laboratories; an audio-visual room; a photocopying centre as well as a Mother Dairy booth.

LIBRARY: JDMC library is a repository of over 1 lakh books and over 100 journals, both academic and general. It is among the first fully automated libraries in Delhi University and provides photocopying and free internet access facilities.

WELL EQUIPPED LABS: JDMC has 4 computer labs, 2 Research Rooms, and an A/V room. With 200+ systems and ICT facilities, these rooms provide a state-of-the-art teaching/learning environment to the students and faculty.

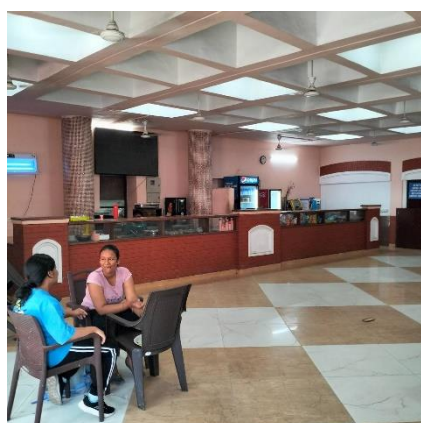


Library



Computer Lab

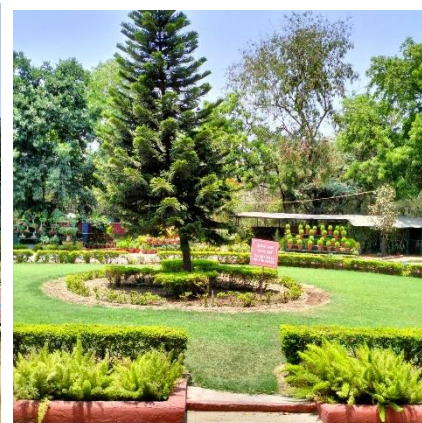
CANTEEN: The college has a spacious cafeteria that offers a wide variety of snacks to students and staff at reasonable rates.



Canteen



Sports ground



Lush green campus

GARDEN: The college Gardens are a source of pride for JDMC. The gardens have won many awards in different categories in the university flower show.

SMART CLASSES: The college has 3-5 smart Classrooms which are ICT-enabled with interactive smart boards to facilitate the teaching-learning process.

SEMINAR ROOM: The Seminar Room has a seating capacity of more than 200 with a state-of-the-art audio-visual system which is updated on a regular basis. The Seminar Room functions as a multi-purpose space used to hold conferences, seminars, workshops, meetings etc.



Smart classrooms



Seminar room

Geo Location
Geo Coordinates from
Google maps:
28.640232, 77.188914



AUDIT PARTICIPANTS

On behalf of the college

Name	Designation
Professor Swati Pal	<i>Principal, JDMC</i>
Ms Vandana Madan	<i>Convener, AVANI- The Environment Club, JDMC</i>
Dr Deepak Rawat	<i>Department of Environmental Studies, JDMC</i>
Dr Sana Rehman	<i>Department of Environmental Studies, JDMC</i>
Mr Surendra Kumar	<i>Administrative Officer, JDMC</i>
Dr Kaushal Kishore	<i>Administrative Officer, JDMC</i>
Mr Avinash	<i>Assistant - Admin, JDMC</i>

On behalf of EHS Alliance Services

Name	Position	Qualifications
Mr. Vijay Singh	<i>Lead Auditor</i>	<i>M.Sc. M. Tech (Environment Science & Engineering), Energy Auditor, Post Diploma in Industrial Safety Management</i>
Dr. Uday Pratap	<i>Co-Auditor</i>	<i>Ph.D., EMS: Lead Auditor ISO14001:2015, QCI-WASH</i>

EXECUTIVE SUMMARY

The purpose of this Energy Audit was to seek opportunities to improve the energy efficiency of the Janki Devi Memorial College. Reducing the energy consumption despite improving the human comfort, health and safety were of primary concern.

Beyond just identifying the energy consumption pattern, this audit sought to detect and categorize the most energy efficient appliances. Additionally, some daily practices relating common appliances have been shared which may help reducing the energy consumption. Data collection for energy audit of the campus was carried out by the EHS Alliance Team. The Energy Audit Report accounts for the energy consumption patterns of the institution on actual survey and detailed analysis during the audit.

The work comprehends the area wise consumption traced using suitable equipment. The analysis was carried out by our team with the support of the staff members from Janki Devi Memorial College. The report provides a list of possible actions to preserve and efficiently

access the available source, resources and their saving potential was also identified. We look forward towards optimization that the authorities, students and staff members would follow the recommendations in the best possible way. The report is based on certain generalizations including the approximations wherever necessary. The views conveyed may not reveal the general opinion. They merely represent the opinion of the team guided by the interviews of clients. We are happy to submit this Energy audit report to the Janki Devi Memorial College.

ENERGY AUDIT - ANALYSIS

1. ENERGY CONSUMPTION

To understand the Energy Consumption trends and to analyze the average monthly consumption we have collected electricity energy bills from July 2023 to June 2024.

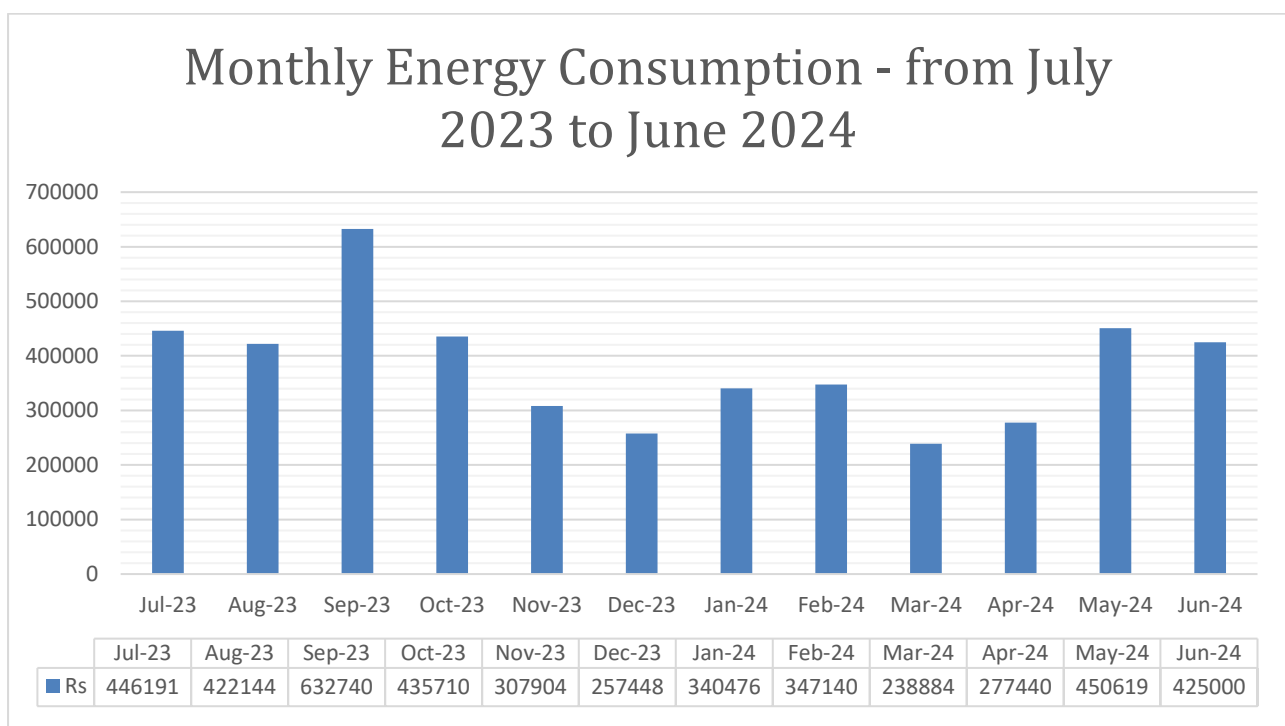
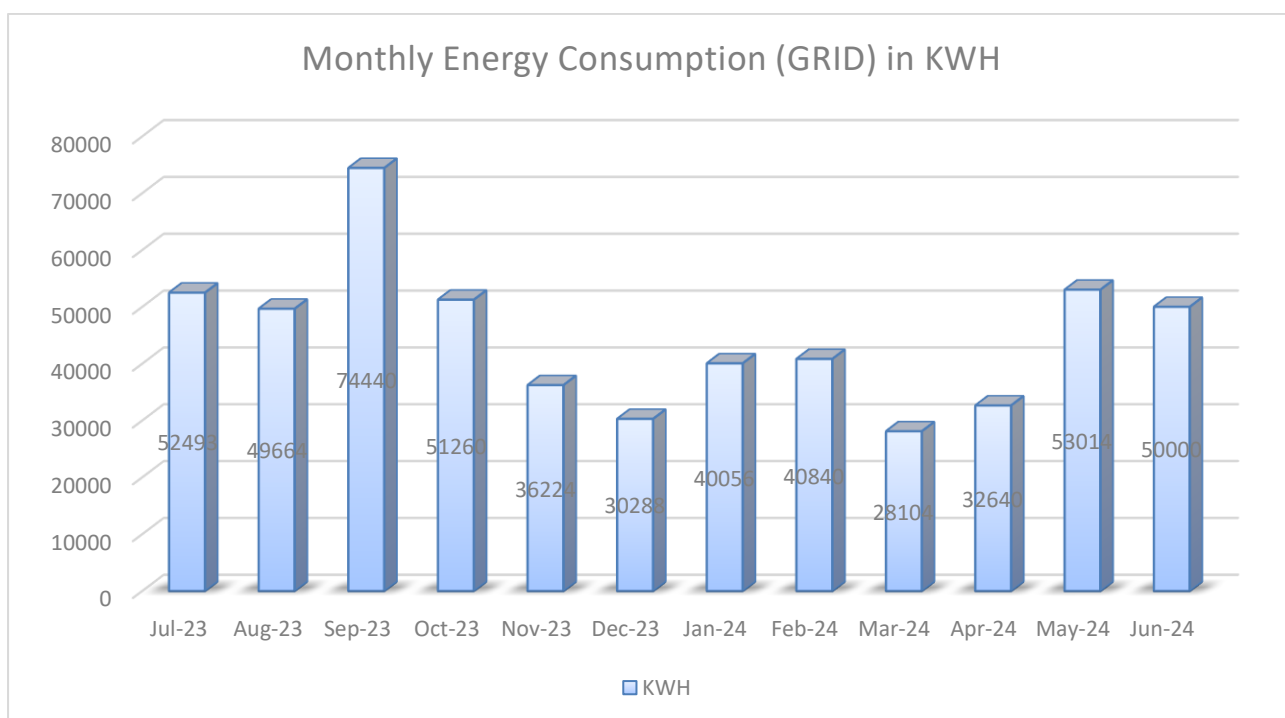
The details of “**Meter Connection**” at “**Janki Devi Memorial College**” are as follows-

Name - The Principal
CA No. - 100001930

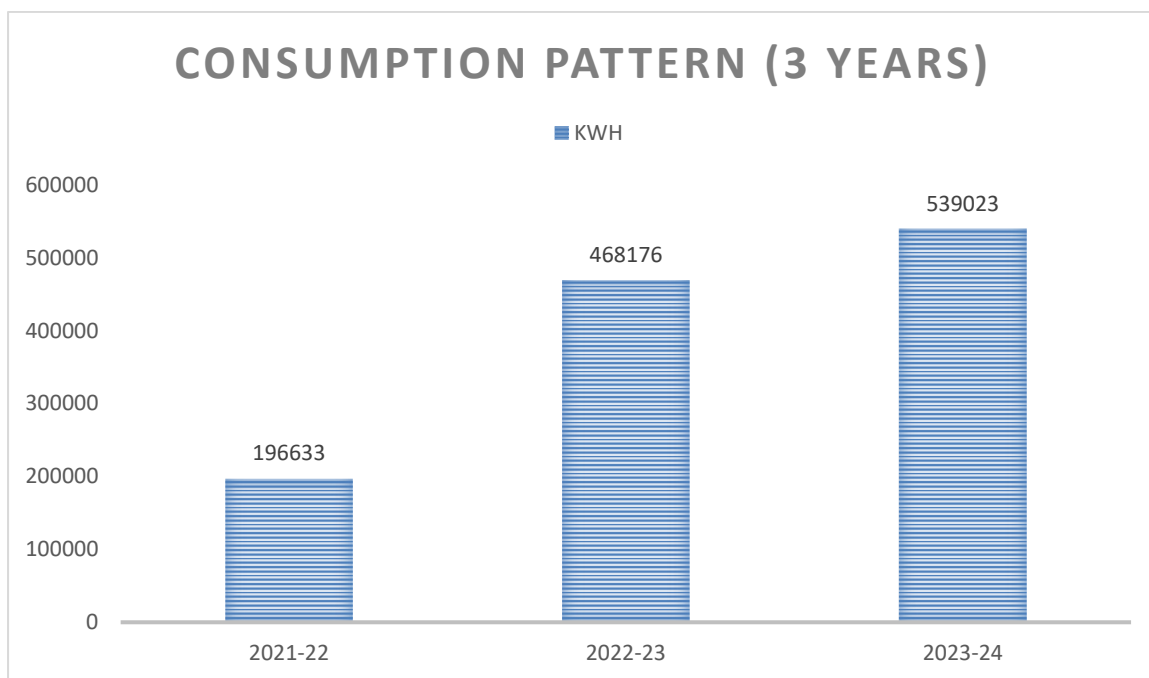
1.1 SUMMARY OF MONTHLY ELECTRICITY CONSUMPTION AND TOTAL BILL AMOUNT

To understand the Energy consumption trend and for developing the baseline parameter we have collected monthly energy bill for the 12 months i.e. from July 2023 to June 2024

Month	Grid Units	Amount	Solar Units	Net metering Units	Amount
Jul-23	52493	10.00	6,061	52493	446191
Aug-23	49664	10.00	3,845	49664	422144
Sep-23	74440	10.00	7,144	74440	632740
Oct-23	51260	10.00	4,367	51260	435710
Nov-23	36224	10.00	4,551	36224	307904
Dec-23	30288	10.00	3,667	30288	257448
Jan-24	40056	10.00	3,815	40056	340476
Feb-24	40840	10.00	3,066	40840	347140
Mar-24	28104	10.00	4,410	28104	238884
Apr-24	32640	10.00	6,485	32640	277440
May-24	53014	10.00	7,197	53014	450619
Jun-24	50000	10.00	7,000	50000	425000
SUM	539023		61608	539023	4581696

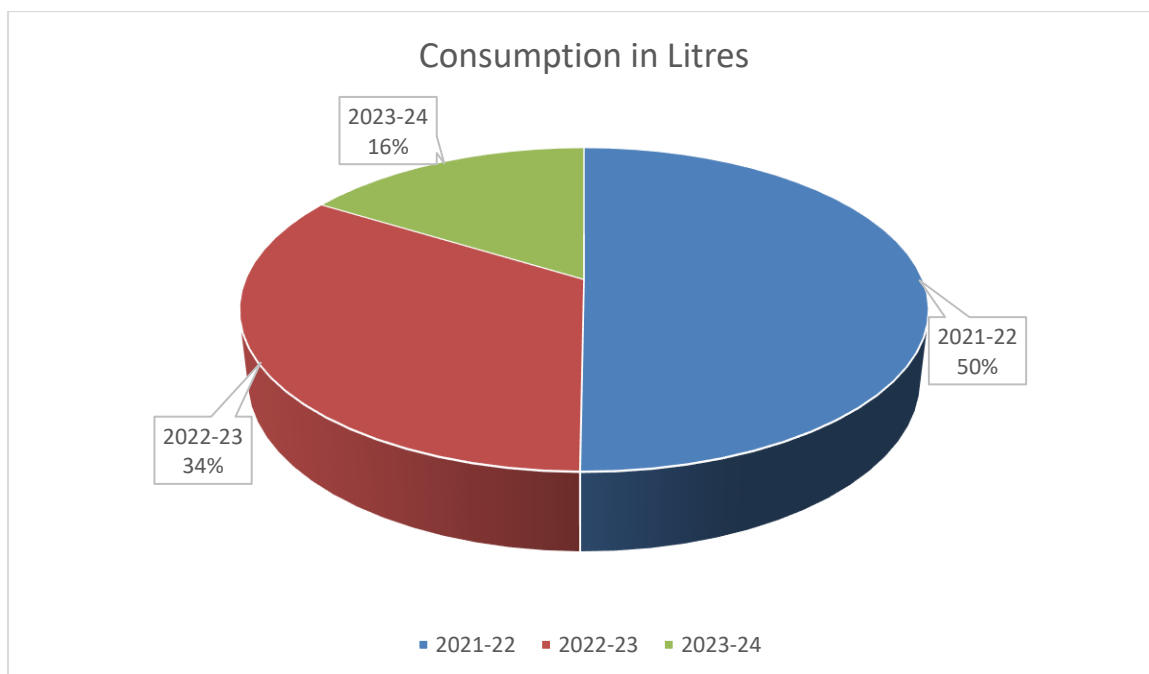


Analysis of electricity consumption for the last 3 years is shown below



2. DIESEL CONSUMPTION

From July 2023 to June 2024, Janki Devi Memorial College has consumed 215 litres of fuel. Three-year usage pattern is shown below





3. ANALYSIS OF DG SETS

In the campus, there are three Diesel Generator (DG) set for its electrical power needs in case of Grid power failure. DG sets capacity is 347.5 kVA.

DG Set Design Details				
Description	Unit	DG at Station 1	DG at Station 2	DG at Station 3
Rated capacity	kVA	125	160	62.5
Hz		50	50	50
Sl No.		6H.3516/0801590	1308061708370	1308031807948
Make		kirloskar	Greaves	Greaves
Volts	Volts	415	415	415
PF		0.8	0.8	0.8
Phase		3	3	3
RPM		1500	1500	1500
Amps	Amps	173.9	223	87
Mfg.		8-Aug	17-Aug	18-Jul

DG Set Operation details		
Operating hours during testing	Hours	0.50
% Loading	%	62.76
Energy Generation	kWh	34.98
Load	kVA	91.74
Fuel consumption during testing	Litre	9
Specific energy generation	kWh/litre	3.19

Observation and Suggestions: -

Soundproof silent generators are an efficient tool to keep both noise and vibration at low levels. For the power backup of the institution, the soundproof model is installed in the institution.

As per the trial taken during the energy audit the percentage loading of DG set is 62.76% which is ok and specific energy consumption of DG Sets 3.19 kWh/Litre which is satisfactory because as per manufacturer recommendation, best practices for SEC in DG sets range from 3.0 to 3.5 kWh/Litre and above.

We recommend college to initiate stack monitoring of DG set through authorized lab.



4. AC SYSTEM

Energy Efficiency Ratio (EER): The performance of smaller chillers and rooftop units is frequently measured in EER rather than kW/ton. EER is calculated by dividing a chiller's cooling capacity (in Btu/h) by its power input (in watts) at full-load conditions. The higher the EER, the More efficient the unit. The cooling effect produced is quantified as tons of refrigeration (TR). The above TR is also called as air-conditioning tonnage.

There are 100 ACs installed in Janki Devi Memorial College in various areas of various type and capacity, details are given below: -



Sl No.	Location/ Identification	AC Type	Count	TR in Tons	Room Temp. (°C)	AC-Tout (°C)	AC-Tin (°C)	Room-RH (%)	Area (m2)	Air velocity (m/s)	Enthalpy Hout	Enthalpy Hin	Heat Load in TR	KW supplied	(Eff.) Power per Ton (KW /TON)	EER
1	Library	s	4	1.5	24	11	20	52	0.03	2.2	22	38	0.39	0.63	1.61	2.18
2	Library	w	7	1.5	24	12	20	52	0.03	2.2	25	38	0.32	0.55	1.72	2.04
3	GCR	w	1	1.5	24	11	19	52	0.03	2.6	24	37	0.38	0.57	1.52	2.31
4	Seminar	c	7	1.5	24	10	18	52	0.03	2.4	24	37	0.35	0.53	1.53	2.3
5	Staff Room	c	6	1.5	23	12	20	52	0.03	2.3	25	38	0.33	0.55	1.67	2.11
6	Committee	s	1	1.5	23	11	19	52	0.03	2	22	37	0.33	0.58	1.74	2.02
7	Committee	w	2	1.5	23	13	20	52	0.03	2.3	26	38	0.31	0.53	1.74	2.02
8	Medical	s	1	1.5	23	12	20	52	0.03	2.2	25	38	0.32	0.55	1.74	2.03
9	Audi Control room	w	1	1.5	23	12	19	52	0.03	2.3	24	37	0.33	0.58	1.74	2.02
10	Bank	s	2	1.5	24	11	20	52	0.03	2.3	22	38	0.38	0.65	1.69	2.08
11	Union Room	w	1	1.5	24	12	20	53	0.03	2.5	25	38	0.34	0.6	1.79	1.97
12	Principal Anty Room	s	1	1.5	24	12	20	53	0.03	2.4	25	38	0.33	0.58	1.78	1.98
13	Lab II,III	s	3	1.5	23	12	20	52	0.03	2.5	25	38	0.34	0.63	1.86	1.89
14	Lab II,III	w	2	1.5	23	13	20	52	0.03	2.5	26	38	0.31	0.59	1.87	1.88
15	Server room	s	4	2	23	12	20	52	0.03	2.5	25	38	0.34	0.63	1.87	1.88
16	Admin	s	2	1.5	23	11	19	53	0.03	2.4	22	38	0.4	0.81	2.02	1.74
17	AO	s	1	1.5	22	11.5	22	52	0.03	2.1	23	43	0.44	0.77	1.77	1.99
18	SO	s	1	1.5	23	11	21	52	0.03	2.4	24	40	0.4	0.72	1.8	1.95
19	AUDIO VIDEO ROOM	s	2	2	22	10	19	52	0.03	2.2	20	37	0.39	0.78	1.99	1.77
20	Music	s	1	1.5	23	11	21	53	0.03	2.5	24	40	0.42	0.74	1.77	1.99
21	Music	w	1	1.5	22	12	20	52	0.03	2.6	25	38	0.35	0.71	2.02	1.74
22	Staff Room	s	2	1.5	24	11	20	52	0.03	2.2	22	38	0.39	0.63	1.61	2.18
23	Staff Room	w	2	1.5	24	12	20	52	0.03	2.2	25	38	0.32	0.55	1.72	2.04
24	STA Room	s	1	1.5	24	11	19	52	0.03	2.6	24	37	0.38	0.57	1.52	2.31
25	PA	s	1	1.5	24	10	18	52	0.03	2.4	24	37	0.35	0.53	1.53	2.3
26	Principal Office	s	2	1.5	23	12	20	52	0.03	2.3	25	38	0.33	0.55	1.67	2.11
27	Account	s	1	1.5	23	11	19	52	0.03	2	22	37	0.33	0.58	1.74	2.02
28	Account	w	2	1.5	23	13	20	52	0.03	2.3	26	38	0.31	0.53	1.74	2.02
29	Sports	s	1	1.5	23	12	20	52	0.03	2.2	25	38	0.32	0.55	1.74	2.03
30	Sports	w	1	1.5	23	12	19	52	0.03	2.3	24	37	0.33	0.58	1.74	2.02
31	PIO	w	1	1.5	24	11	20	52	0.03	2.3	22	38	0.38	0.65	1.69	2.08
32	Department	w	1	1.5	24	12	20	53	0.03	2.5	25	38	0.34	0.6	1.79	1.97
33	Research Room Lib2	s	3	2	24	12	20	53	0.03	2.4	25	38	0.33	0.58	1.78	1.98
34	Research Room staff room	s	1	1.5	23	12	20	52	0.03	2.5	25	38	0.34	0.63	1.86	1.89
35	Hostel	s	5	1.5	23	13	20	52	0.03	2.5	26	38	0.31	0.59	1.87	1.88
36	All department	s	7	1.5	23	12	20	52	0.03	2.5	25	38	0.34	0.63	1.87	1.88
37	Hostel	w	18	1.5	23	11	19	53	0.03	2.4	22	38	0.4	0.81	2.02	1.74

Remarks: - We have checked the Energy Efficiency Ratio of AC's and the EER of AC's is fairly OK. But in the future, you should purchase 5-Star rated inverter-based split AC's because the power consumption of inverter-based BEE 5-Star rated AC's is less than non-star rated AC's.

Also, we recommend Janki Devi Memorial College to organize a periodic maintenance schedule and take corrective actions for insulating of AC's refrigerant lines to protect against energy losses.



5. FANS ANALYSIS

In the Janki Devi Memorial College, there are 339 Fans installed, out of which 174 fans are of 240W, 160 fans are 70W and 5 pedestal fans. The observations and suggestions are given below.

Fan Wattage	Fan Count
240 Watt Ceiling fans	174
70 Watt Ceiling fans	160
Pedestal fans	5
Total	339

Total no of Ceiling Fans (240W)	174	Nos.
Total no of ceiling Fans (70W)	160	Nos.
Total wattage of BEE 5 Star rated Fans (30W)	10020	Watt
Total saving in Wattage after replacement	42940	Watt
Operating hours per day	6	Hours
Operating days per annum	180	Days
Energy charges per unit in Rs.	10	INR
Saving in Rs./annum	463752	INR
Investment INR	835000	INR
Payback period: -	1.80	YEARS

Observation and Suggestions: -

In the college, most of the ceiling fans are of 240 W but BEE 5 Star Rated of 30W Ceiling Fans are present in the market. We recommend replacing existing fans with BEE 5 Star rated 30W fans.

Note:- Energy savings will increase or decrease if the operating hours of the machine /equipment are increased or decreased and the payback period will also increase or decrease if the cost of investment (Cost of machine/equipment/accessories of the machine) will increase or decrease because cost of investment is taken on a tentative basis.

6. ANALYSIS OF LIGHTING SYSTEM

6.1 BRIEF DESCRIPTION OF EXISTING SYSTEM

For assessing the energy efficiency of the lighting system, an Inventory of the Lighting System has been noted/collected, with the aid of a lux meter, measurement and documentation of the lux levels at various locations at the working level have been done.

6.2 INVENTORY OF LIGHTING

Light Wattage	Count
20 Watt LED	872
200 Watt LED	13
Total	909

6.3 LUX MEASUREMENT

Description	Lux	Remark
Class Rooms	120 to 235	Acceptable
Offices	130 to 240	Acceptable
Corridors	35 to 90	Acceptable
Washrooms	45 to 76	Acceptable
Outdoor	36 to 95	Acceptable
Computer Lab	150 to 289	Acceptable
Parking area	45 to 94	Acceptable
Canteen	69 to 185	Acceptable

Observation

The college has opted LED-based lighting solution, LEDs save energy, the life span is much greater, and emit virtually no heat. We recommend replacing the tube lights with LEDs.



Additionally, we recommend increasing motion sensor-based lights in common areas such as libraries, washrooms, corridors, etc.

Table - Luminous Performance Characteristics of Commonly Used Luminaries					
Type of Lamp	Lumens/Watt		Colour Rendering Index	Typical Application	Typical Life
	Range	Avg.			
Incandescent	8-18	14	Excellent (100)	Homes, restaurants, general lighting emergency lighting	1000
Fluorescent lamps	46-60	50	Good w.r.t coating (67-77)	Offices, shops, hospitals, homes	5000
Compact fluorescent Lamps (CFL)	40-70	60	Very Good (85)	Hotels, shops, homes, offices	8000-10000
High-pressure mercury (HPMV)	44-57	50	Fair (45)	General lighting in factories, garages, and car parking. floodlighting	5000
Halogen lamps	18-24	22	Excellent (100)	Display, flood lightening, stadium exhibition grounds, construction areas	2000 - 4000
High-pressure sodium (HPSV) SON	67-121	90	Fair (22)	General lighting in warehouses, factories, street lighting	6000 - 12000
Low-pressure sodium (LPSV) SOX	101-175	150	Poor (10)	Roadways, tunnels, canals, street lighting	6000 - 12000
Metal halide lamps	75-125	100	Good (70)	Industrial bays, spotlighting, floodlighting, retail stores	8000
LED Lamps	30-50	40	Good (70)	Reading lights, desk lamps, night lights, spotlights, security lights, signage lights, etc.	40000 - 100000



7. OTHER POWER CONSUMPTION

7.1 INVENTORY OF IT INFRASTRUCTURE

Sl. NO.	Descriptions	Laptops	Desktop System	Total (laptop + Desktop)
2	CL1	60		60
3	CL2	14	48	62
4	CL3		16 hp Compaq	16
5	CL4		6 Assembled	6
6	CL5		28 Acer	28
6	Research Room		8	8
7	E resource Centre	43		43
8	In-Store	648		648
9	Library	24		24
10	Distributed to students	99		99
11	Distributed to Teaching & Non-Teaching	38		38
	TOTAL	926	56	1032

7.2 WATER PUMP DETAILS

Sr. No.	Description	Unit	Pump No.-1	Pump No.-2	Pump No.-3
1	Rated Power of Motor	KW	3.5/5.0	0.75/1.0	5
2	Motor Eff.	%	60%	60%	70%
3	Discharge Head	m	6.1/0.6 LPH	2800-880 LPH	10-42 LPH
4	Suction Head	m	36/52	18-45	15-50
5	Pump Type	Submersible/ Monoblock/ Centrifugal Etc.	submersible	Submersible	Monoblock

7.3 OTHER LOADS

Sl No.	Location/ Identification	60W Exhaust Fan	160W Exhaust Fan	Other 3phase	Single phase 230 W	180W- Circulating Fan
1	Composting Machine			415-440 Volts / 50 Hz		
2	Canteen		3			
3	Toilet/Library	15				



4	Drinking water cooler 8				8	
5	Fridge				8	
6	Water dispenser				4	
7	Auditorium					2

ANALYSIS

There should be a regular maintenance schedule of equipment like pumps, exhaust fans, and IT equipment. Electronics such as computers, printers, scanners, etc. more than 3 years or 5 years old (as per their life) should be replaced with new computers/laptops. Ideal temperature should be maintained for all electronic appliances.

8. CAPACITOR BANK

Sl. No.	Identification	Capacity in KVAR
1	Main Busbar Electrical Panel Parking	25 KVAR

***** **END OF THE REPORT** *****