SWAMI VIVEKANAND SUBHARTI UNIVERSITY

ENERGY AUDIT REPORT

2024-2025

Prepared By :

EHS ALLIANCE

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CERTIFICATE

EHS alliance

CERTIFICATE

PRESENTED TO

SWAMI VIVEKANAND SUBHARTI UNIVERSITY

Subhartipuram, NH-58, Delhi-Haridwar Bypass Road, Meerut-250005

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

ENERGY AUDIT

ACADEMIC YEAR 2024-25

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.

EHS ALLIANCE LLP * GURUGRAM *

SIGNATURE

03.11.2025
DATE OF AUDIT

EHS ALLIANCE SERVICES, PLOT A-72, SURYA VIHAR, GURUGRAM, 122001
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ACKNOWLEDGEMENT

EHS Alliance Services would like to thank the management of Swami Vivekanand Subharti University 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 **Prof. (Dr.) Pramod K. Sharma - Vice Chancellor** for giving us an opportunity to evaluate the environmental performance of the campus.

We would also like to thank **Prof. (Dr.) Mukesh Ruhela - Professor & Head Department of Environmental Engineering** 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

Prof. (Dr.) Shalya Raj	*CEO, Subharti University*
Group Capt. M. Yakoob	*Registrar*
Mr. Syed Zafar Hussain Registrar	*Registrar (Academics)*
Prof. (Dr.) Kapil Kumar	*Director, IQAC*

DISCLAIMER

EHS Alliance Services Energy Audit Team has prepared this Energy Audit Report for Swami Vivekanand Subharti University based on input data submitted by the representatives of university 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.

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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 UNIVERSITY

Swami Vivekanand Subharti University is a University under Section 2(f) of the University Grants Commission Act, 1956 set up under the Swami Vivekanand Subharti Vishwavidyalaya Uttar Pradesh Adhiniyam, 2008 (U.P. Act No. 29 of 2008) as passed by the Uttar Pradesh Legislature and assented to by the Hon'ble Governor of Uttar Pradesh in September 2008.

The University has been established under the aegis of Subharti K.K.B. Charitable Trust, Meerut, which has acquired a commendable record of service in the field of Education, Health care and Social welfare.



The main campus of the University is in the National Capital Region, strategically situated on National Highway 58, Delhi-Meerut-Haridwar Bypass Road, Meerut. The campus, aptly called Subhartipuram, is spread over a sprawling area of about 250 acres of land comprising magnificent buildings, lush green lawns and vibrant surroundings with over 8000 people, determined to make this a 'Jewel' in the Crown of the Nation.

The University has several constituent colleges which provide higher education in almost all the disciplines like Medical, Dental, Paramedical, Pharmacy, Engineering, Management, Law, Journalism, Education, Arts and Science, thus engaged in creating highly qualified, academically and technically proficient professionals. The University has also started a number of courses through Distance Education, approved by Joint Committee of UGC, AICTE and DEC.





The university offer following programs

- Undergraduate
- Postgraduate
- Ph.D. Programs
- Diploma Programs
- PG Diploma Programs
- Certificate Courses

VISION & MISSION

VISION	To be an acclaimed University that provides contemporary Technical and Professional knowledge, skills as well as research opportunities befitting global scenarios while maintaining Service, Sacrament, and Nationality.
MISSION	To develop programs of the highest standards, and to produce confident, self-reliant, responsible youth having skills, social values, leadership, and entrepreneurship bent of mind in highly competitive technologically advanced, ever-changing needs of society.

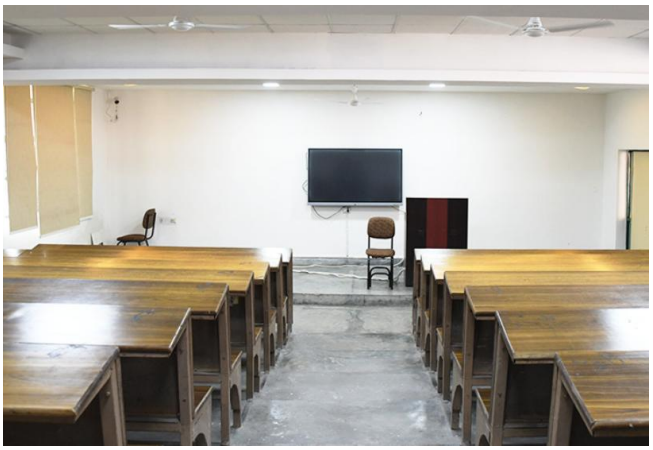
Facilities in the campus

Amenities at Subharti University provides far more than academic and administrative facilities on campus. It is dedicated to provide students with an exceptional infrastructure for learning as well as facilities for simplifying the procurement of fundamental skills. To accomplish the goal, Swami Vivekanand Subharti University offers the following:

CENTRAL LIBRARY: SVSU library system consists of two central libraries, seven college libraries, and departmental libraries in various disciplines of Medical Sciences, Engineering, and Technology, Management, Education, Science, Library Science, Fine Arts, Law, Journalism and Mass-Communication. These libraries are located in various centralized locations in the University. These are fully air-conditioned with a seating capacity of more than 2000 library patrons at a time.

SMART CLASSROOMS: ICT enabled classrooms integrate smart boards, projectors, and high-speed internet, fostering interactive and engaging lessons. Teachers can utilize digital resources and collaborative tools, accommodating diverse learning styles and encouraging student participation.





SEMINAR ROOM: Seminar Rooms equipped with audio-visual technology and video conferencing capabilities, seminar rooms facilitate dynamic discussions and presentations. They allow remote participation, enabling experts to contribute, enriching the learning experience.

AUDITORIUM: Auditoriums are designed for larger gatherings, featuring advanced sound systems and multimedia displays. This space supports live streaming and interactive audience engagement, creating an immersive experience for attendees during lectures and events.

CONFERENCE ROOM: Conference Rooms are crucial for effective collaboration in professional settings, equipped with video conferencing systems and interactive displays. They enable seamless communication and real-time document sharing, enhancing productivity and ensuring that meetings are efficient and outcomes-focused.

SPORTS FACILITY: There is a Huge Olympic Size Sports Open Stadium in the University Campus which has top Sports Facilities including the 400-metre all-weather athletics track, Football Ground, Cricket Ground, Hockey Field, Handball Field, Tennis Court, Basketball Courts, Baseball Court, Volleyball Courts, Kabaddi Courts, Kho-kho Court,

Indoor Sports Facilities – University equally provides Badminton Courts, Table tennis Room, Well-equipped Boxing Arena, Carom and Chess Room.

FITNESS CENTRE: University offers these Fitness facilities overall development of students.

Gymnasium - There are two well-equipped Gymnasiums on the University campus for Boys and one Gym is for Girls, there are separate coaches in GYM for Boys and Girls.

Yoga – Yoga has been recognized as the best exercise for Body to Soul level development of an individual. The Department of Naturopathy and Yogic Sciences, Subharti University, conducts Yoga Classes at the University campus on a regular basis.

SPA- There is a modern SPA at University campus where students can enjoy this ancient therapy for their well-toned and healthy body.





HOSTEL: There are 16 hostels for undergraduates including 2 NRI hostels along with 3 hostels for postgraduates including a hostel for married couples within the University Campus. Strict timings of entry are enforced at all the hostels. Each hostel has a resident warden along with a chief warden (Girls/Boys Separate) for the proper management & care of the students.

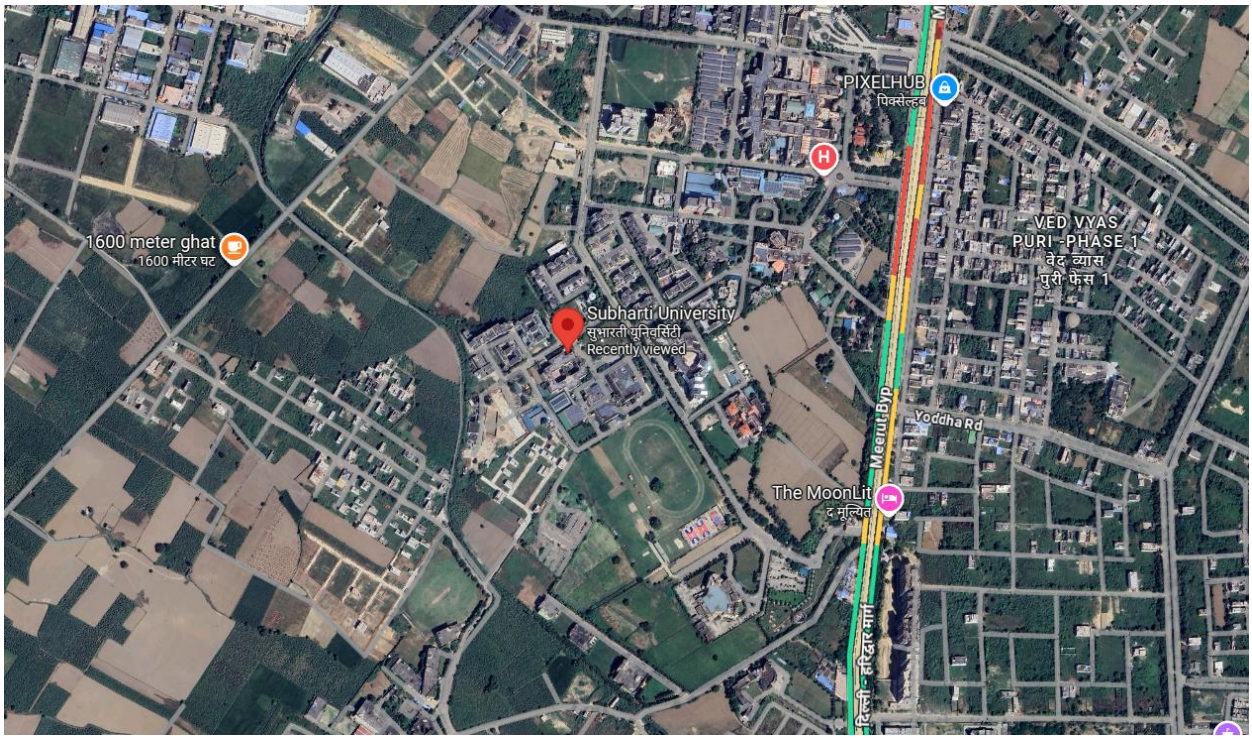
CAFETERIA: Swami Vivekanand Subharti University offers an excellent choice of places to eat within the University campus. University houses six canteens offering multi–cuisine menus ranging from Indian to Continental and Chinese in a Modern and Hygienic ambiance, with one exclusively for Girls. For Snacks, Juices, Beverages and other Indian and Continental fast foods, there are three Modern Cafeterias in the University Campus. All types of hard drinks and drugs are strictly prohibited. Intake of any hard drink is a punishable crime as per the university norms.





CAMPUS LAUNDRY: The University provides laundry service to all residents on the campus. The students are free to choose between the Laundry provider or the 'Self Operated' Machine service. The hostellers have the convenience of reaching the 'dhobi' right at their doorstep. For those who prefer doing things on their own, we have the 'Haier' Self Washing centre! Students can visit the centre, use the washing machines themselves, and get washed clothes after a set period of time.

BATTERY OPERATED VEHICLES: The university is using battery-operated rickshaws, scooters, and carts for in-campus transportation.



Google map Coordinates: 28.9572679,77.6347462

AUDIT PARTICIPANTS

On behalf of the University

Name	Designation
Prof. (Dr.) Pramod K. Sharma	*Vice Chancellor*
Prof. (Dr.) Shalya Raj	*CEO, Subharti University*
Prof. (Dr.) Mukesh Ruhela	*Professor & Head Department of Environmental Engineering*
Group Capt. M. Yakoob	*Registrar*
Mr. Syed Zafar Hussain	*Registrar (Academics)*
Prof. (Dr.) Kapil Kumar	*Director, IQAC*
Mr. Manoj Kumar	*Maintenance Department*
Mr. Sunil Kumar Sharma	*Addl. Manager, Horticulture*
Mr. Hariom	*Manager Maintenance*
Mr. V. K. Nagar	*Engineer*
Mr. Anand Pal Singh	*Manager, Horticulture*
Prof. (Dr.) Pramod K. Sharma	*Vice Chancellor*
Prof. (Dr.) Mukesh Ruhela	*Professor & Head Department of Environmental Engineering*

On behalf of EHS Alliance Services

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

EXECUTIVE SUMMARY

The purpose of this Energy Audit was to seek opportunities to improve the energy efficiency of the Swami Vivekanand Subharti University. 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 Swami Vivekanand Subharti University. 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 Swami Vivekanand Subharti University.

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 2024 to June 2025.

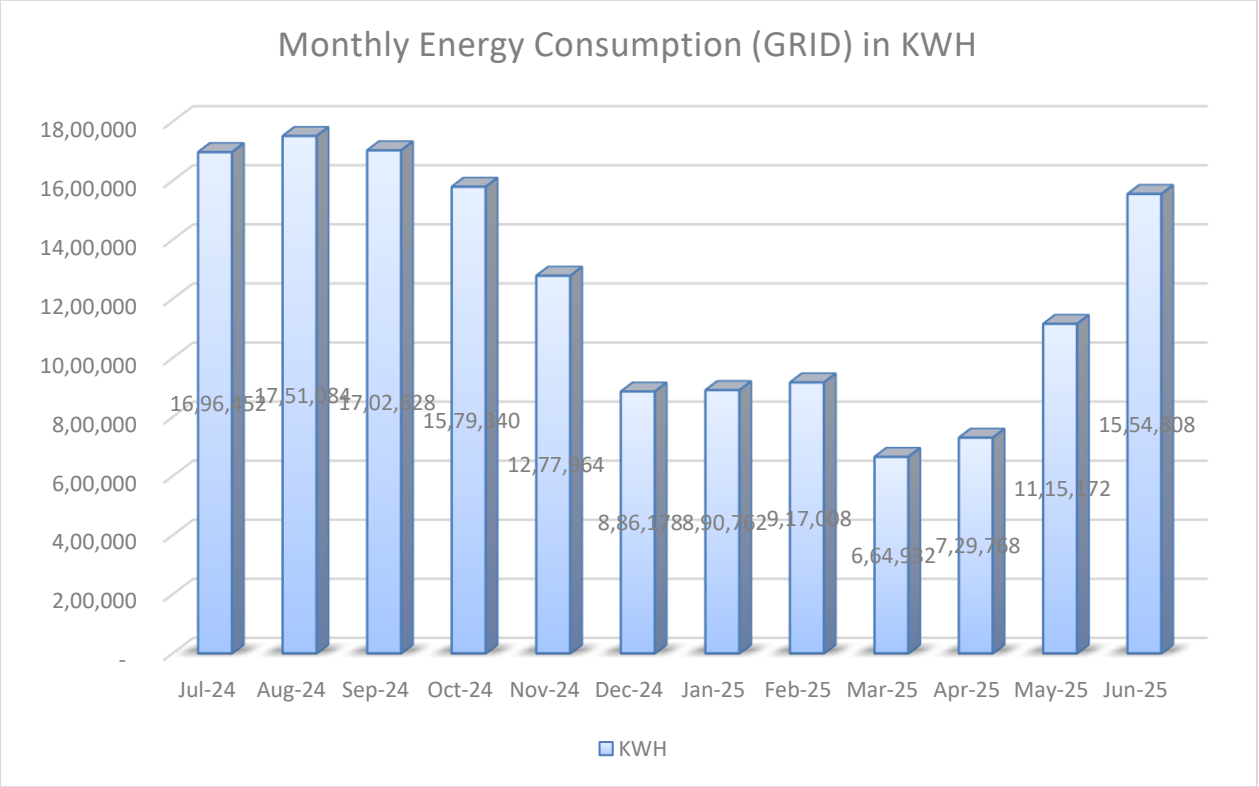
The details of **"Meter Connection"** at **"Swami Vivekanand Subharti University"** are as follows-

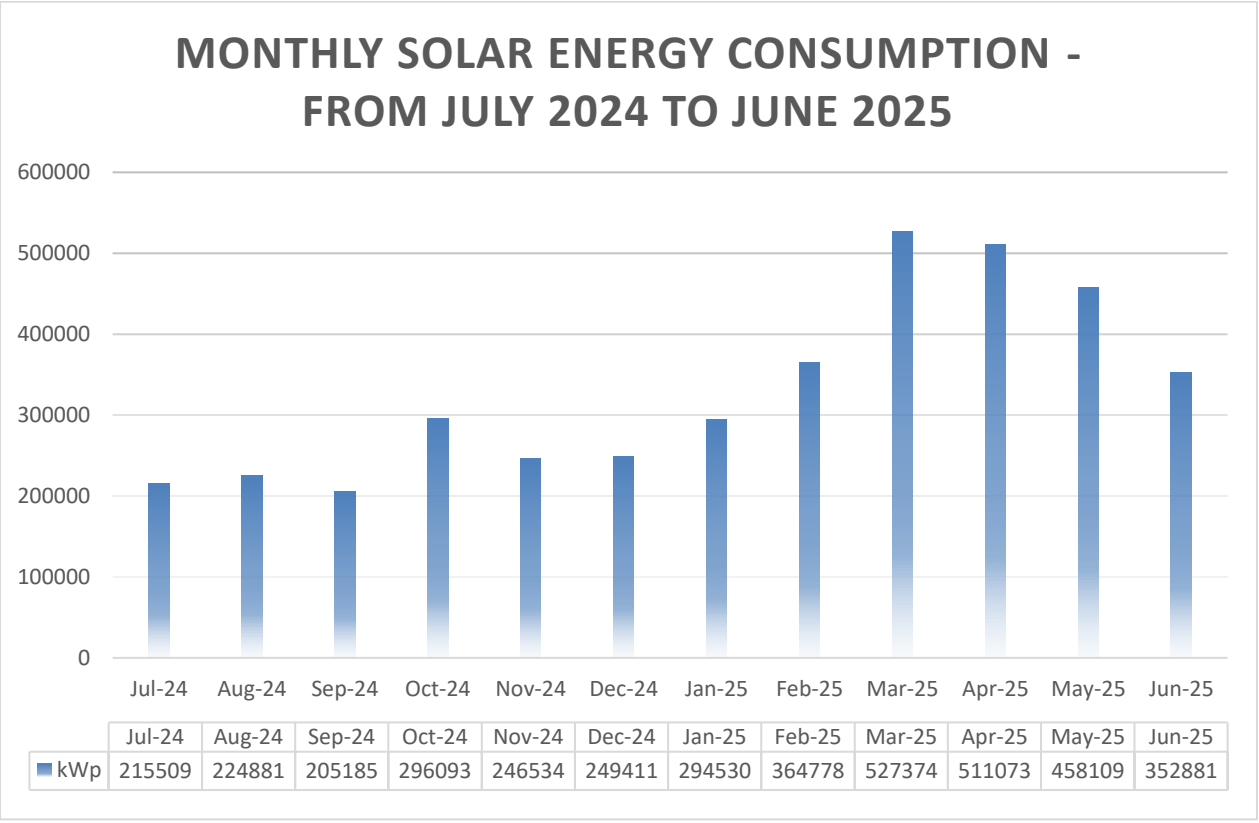
Name	Mahayana – Theravada-Vajryana Buddhist Religious & Charitable Trust
CA No.	1476183000

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 2024 to June 2025

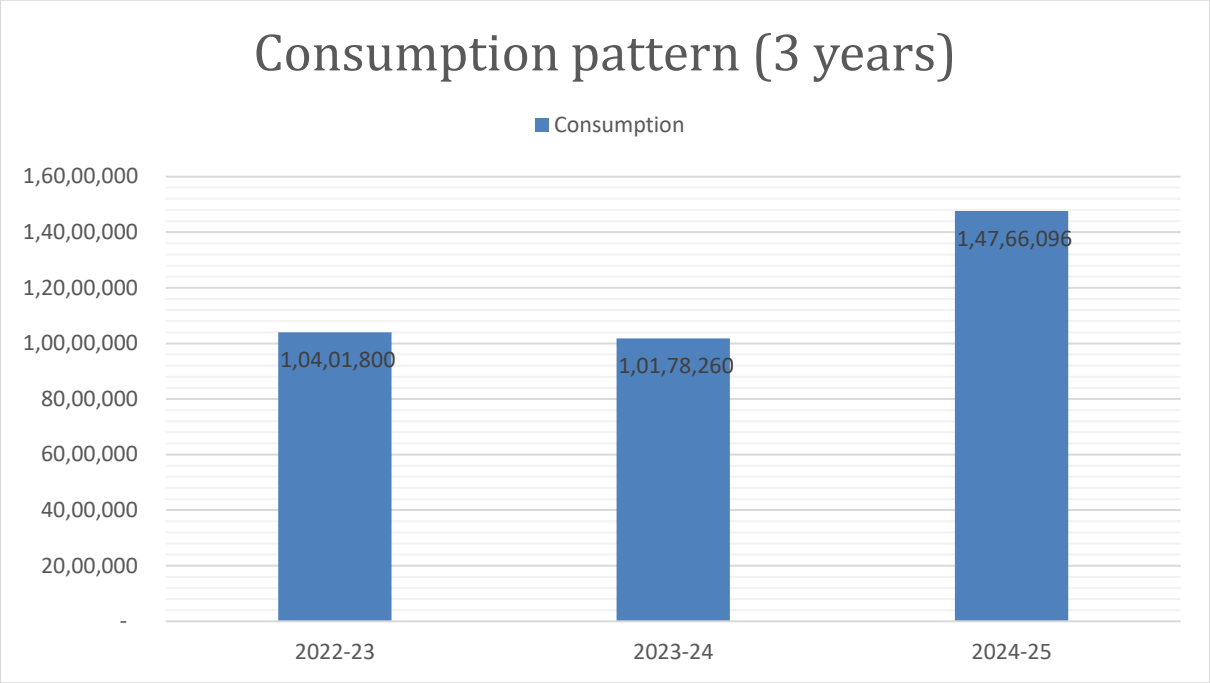
Month	Grid Units	Amount	Solar Units	Export kWh	Amount
Jul-24	1,696,452	10.00	215509	0	16,964,520.00
Aug-24	1,751,084	10.00	224881	0	17,510,840.00
Sep-24	1,702,628	10.00	205185	0	17,026,280.00
Oct-24	1,579,340	10.00	296093	0	15,793,400.00
Nov-24	1,277,964	10.00	246534	0	12,779,640.00
Dec-24	886,178	10.00	249411	0	8,861,776.00
Jan-25	890,762	10.00	294530	0	8,907,624.00
Feb-25	917,008	10.00	364778	0	9,170,080.00
Mar-25	664,932	10.00	527374	0	6,649,320.00
Apr-25	729,768	10.00	511073	0	7,297,680.00
May-25	1,115,172	10.00	458109	0	11,151,720.00
Jun-25	1,554,808	10.00	352881	0	15,548,080.00
SUM	**14,766,096.00**		**3,946,359**	**-**	**147,660,960.00**





	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25
kWp	215509	224881	205185	296093	246534	249411	294530	364778	527374	511073	458109	352881

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



2. DIESEL CONSUMPTION

From July 2024 to June 2025, Swami Vivekanand Subharti University has consumed 310093 litres of fuel.

Below is month wise consumption details:

Month	Diesel (Liters)
Jul-24	28,769
Aug-24	44,987
Sep-24	32,201
Oct-24	25,967
Nov-24	19,021
Dec-24	20,022
Jan-25	18,090
Feb-25	16,949
Mar-25	12,882
Apr-25	28,565
May-25	38,399
Jun-25	24,241
Total	**3,10,093**

Three-year usage pattern is shown below

3. ANALYSIS OF DG SETS

In the campus, there are multiple Diesel Generator (DG) sets in different departments for its electrical power needs in case of Grid power failure. Total DG sets capacity is 8765 kVA.

DG Set Performance		Dental		Hospital	
Description	Unit	DG Station -1		DG Station -2	
Design details:					
Rated capacity	kVA	500 KVA	500 KVA	1500 KVA	810 KVA
Hz		50 Hz	50 Hz	50 Hz	50 Hz
Sl No.				N12K485827	N10J19297
Make		Kriloskar	Cummins	Cummins	Cummins
Volts	Volts	440 V	440 V	440 V	440 V
PF		0.85	0.85	0.85	0.85
Phase		3 Phase	3 Phase	3 Phase	3 Phase
RPM		High Speed	High Speed	High Speed 1500	1500
Amps	Amps	650A	650A	2086.8 A	1113 A

DG Set Performance	Hotel Management			Mangalam Auditorium		Medical	
Description	DG Station -3			DG Station -4		DG Station -5	
Rated capacity	1250 KVA	1250 KVA	1250 KVA	1010 KVA	320 KVA	250 KVA	125 KVA
Hz	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz
Sl No.	CIK-14020650						
Make	Cummins	Cummins	Cummins	Cummins	Cummins	Cummins	Kirloskar
Volts	440 V	440 V	440 V	440 V	440 V	440 V	440 V
PF	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Phase	3 Phase	3 Phase	3 Phase	3 Phase	3 Phase	3 Phase	3 Phase
RPM	1500	1500	1500	High Speed	High Speed	High Speed	High Speed
Amps	1739 A	1739 A	1739 A	1300 A	400 A	325 A	150 A
Mfg.							



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.

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 Split and Windows ACs installed in Swami Vivekanand Subharti University in various areas of various capacity which detail is given below: -

Location/Identification	Type (Window/Split)	Qty	1 Ton	1.5 Ton	2 Ton
Media	Window	13	1	12	-
	Split	5	1	-	4
Law College	Window	38	-	36	2
	Split	3	-	1	2
II Deptt.	Window	7		7	
	Split	3		1	2

Mass Comm College	Window	6		6	
	Split	6		4	2
Library Art College	Window	4		2	2
	Split	4		4	
Distance	Window	11		11	
	Split	8		7	1
Boddisth College	Window	3		3	
	Split	12		9	3
Mgt College	Window	6		5	1
	Split	6		5	1
Home Sc. College	Window	3	1	2	
	Split	1			1
Siff College	Window	30	2	27	1
	Split	5		2	3
Foe	Window	18	3	11	4
	Split	14	1	5	8
Dca Park	Window				
	Split	8		6	2
G S Dhillan Library	Window	22		22	
	Split	7		7	
R & D Lab Dhillan Library	Window	1	1		
	Split	31		6	25
Polytechnic	Window	6		6	
	Split				
Pharmacy College	Window	4		4	
	Split	6		5	1
Science College	Window	12		12	
	Split				
Site Placement	Window	5		5	
	Split	6			6
Site College	Window	25		24	1
	Split	18		4	14
Vhr Hostel	Window	1	1		
	Split				
Ad Hostel	Window	18	17	1	
	Split				
Mld Hostel	Window	71	71		
	Split				
Icc Office Gate No 6	Window	4	3	1	
	Split	4		2	2
Admission Cell Old	Window	3	1	2	
	Split	3	1	2	
Admission Cell New	Window	1		1	
	Split	6		6	
Devki Nandan Dairy	Window				

	Split	1		1	
India Siff College Soap	Window				
	Split	1		1	
Purchase	Window				
	Split	3		3	
Chief Security	Window	2		2	
	Split				
Wellness Center	Window	3		3	
	Split				
V C Office	Window	10	3	7	
	Split	23	1	12	10
Coe	Window	8		8	
	Split	8	3	3	2
Dental Chair Room	Window	1			1
	Split				
Conservative	Window	23		17	6
	Split	2			2
Pathology	Window	16		16	
	Split	1			1
Prosthodontics	Window	16		14	2
	Split	2			2
Orthodontics	Window	14		12	2
	Split	5		4	1
Pediatrics	Window	15		15	
	Split	3		1	2
Public Health	Window	5		5	
	Split				
Oral Surgery	Window	8	1	5	2
	Split	2		1	1
Parodontology	Window	17		17	
	Split	2	1	1	
Administrative Block	Window	8		5	3
	Split	4	1	3	
Oral Medicine	Window	10		10	
	Split	1	1		
Telecom Room	Window	1	1		
	Split				
Dental	Window	1		1	
	Split				
Medical College -Cen. Lib	Window	35		22	13
	Split	15		1	14
Pharmacology	Window	8	7	1	
	Split				
Community Medicine	Window	13	8	1	4
	Split	3	1		2

Microbiology Lab	Window	16	6	10	
	Split	3	1	2	
Pathology	Window	20	4	10	6
	Split				
Crs Lab	Window	15	3	9	3
	Split	5		2	3
Physiology	Window	9	6	3	
	Split				
Councelling Hall	Window	8		8	
	Split	4		4	
Bio Chemistry Lab	Window	10	6	4	
	Split	1		1	
Medical Education Unit	Window	6	1	4	1
	Split				
Forensic	Window	4	3	1	
	Split				
Girls Common Room	Window	7	1	6	
	Split	2			2
Administrative Block	Window	9	1	8	
	Split	5		5	
Anatomy	Window	6	1	5	
	Split				
Conduction	Window	4	1	3	
	Split				
Animal House	Window	4		4	
	Split	2		2	
Gtb Auditorium	Window	11		11	
	Split				
Sanskriti Deptt	Window	1		1	
	Split	4		4	
Guest House	Window	6	1	5	
	Split				
Account	Window	12		12	
	Split	7		1	6
Earthen Bowl	Window				
	Split	6		6	
Mars Café	Window				
	Split	4		4	
Cssh Emergency Icu	Window				
	Split	4			4
Cssh Emergency Rediology	Window				
	Split	2		2	
Emergency Ward	Window	4			4
	Split				
Icu I	Window	3		1	2

	Split				
Icu Ii	Window	4		1	3
	Split				
Triage Room	Window				
	Split	3		3	
New Charak Strore	Window				
	Split	3		3	
Emergnecy Doctor Room	Window	5	5		
	Split				
Labour Room	Window	8		8	
	Split				
Gynae Ot	Window	1			1
	Split				
Pedia Opd	Window				
	Split	4	4		
Bill Section	Window				
	Split	2			2
Gynae Opd	Window				
	Split	2	1	1	
Opd Reception	Window	1	1		
	Split	1			2
Opd Medical Store	Window				
	Split	3		2	1
Tpa Cghs	Window	1		1	
	Split				
Cardio Opd	Window	5	2	3	
	Split				
Medicine Opd	Window	6	2	4	
	Split				
Atrey Medical Store	Window				
	Split	1		1	
Tb Chest Opd	Window	2	2		
	Split	6		5	1
Rediology Deptt	Window	7	1	6	
	Split	13		10	3
Ortho Opd	Window	2	2		
	Split				
Gas Plant	Window				
	Split	1		1	
Surgery Opd	Window	6	3	3	
	Split	3	3		
Eye Opd	Window	8	5	3	
	Split				
Psy Opd	Window	4	2	2	
	Split				

Psy Ward	Window	1		1	
	Split				
Eye Bank	Window	1	1		
	Split				
Charak Medical Store	Window				
	Split	3		2	1
Picu I	Window	2		2	
	Split				
Picu Ii	Window	2			2
	Split	2			2
Picu Doctor Room	Window	1	1		
	Split				
Nicu	Window	4			4
	Split				
Nicu Doctor Room	Window	1		1	
	Split				
Micu	Window	5		1	4
	Split				
Micu Doctor Room	Window	1		1	
	Split				
Ricu	Window	3	1		2
	Split	2			2
Ricu Doctor Room	Window	1		1	
	Split				
Ent Opd & Deptt	Window	3		3	
	Split	2		2	
Blood Bank	Window	10		6	4
	Split	1		1	
Skin Opd	Window	4	4		
	Split	2		2	
Ms Office	Window	7	1	6	
	Split	7	1	3	3
Tpa Ground Floor	Window				
	Split	2		2	
Tpa I Floor	Window				
	Split	4		2	2
Tpa Ii Floor	Window				
	Split	2		2	
Dialysis	Window	2	1		1
	Split	2		1	1
N S Office	Window	4	2	2	
	Split				
House Keeping	Window	1	1		
	Split				
It Deptt Cssh	Window	2		2	

	Split				
Dms Office	Window	3	1	2	
	Split	1		1	
Account Cssh	Window	3		2	1
	Split				
Rediotherephy	Window	1		1	
	Split				
New Micu	Window	1		1	
	Split	6		6	
Ricu	Window	2		2	
	Split	4		4	
Psc Room Ot I Floor	Window				
	Split	1		1	
Ot Store I Floor	Window				
	Split	1	1		
Ot I Floor	Window	5		5	
	Split	7		5	2
Central Lab	Window	2			2
	Split				
Pedia Ward Ii	Window	5			5
	Split				
Neuro Deptt	Window	4	4		
	Split				
Cardio Deptt	Window	2	2		
	Split				
Female Ortho Ward	Window				
	Split	1		1	
Female Surgery Ward I	Window	5			5
	Split				
Ot Ii Floor	Window	6		6	
	Split	6		4	2
Dean Office	Window	4		4	
	Split	3		1	2
Anesthesia Deptt	Window	4		4	
	Split				
Gynic Hdu	Window	4		4	
	Split	1		1	
General Surgery Ward	Window	6		4	2
	Split	1			1
Bmb Deptt	Window				
	Split	1		1	
Male Surgery Ward Ii	Window	1		1	
	Split				
Emergency Reception	Window	1	1		
	Split				

Pvt Ward Ii	Window	4		4	
	Split	3	2		1
Pvt Ward Iii Floor	Window	35	17	13	5
	Split				
Bbd Store	Window				
	Split	1		1	
General Medicine Icu	Window	5			5
	Split				
Tb Chest Ward	Window				
	Split	2		1	1
Clinical Research	Window	2			2
	Split	3			3
Dieting Deptt	Window				
	Split	1	1		
Sushrut Medical Store	Window	2			2
	Split				
Swaraj Medicalstore	Window				
	Split	4		2	2
Quality Deptt	Window				
	Split	1			1
Mha	Window	3	3		
	Split	2		2	
Female Medicine Ward Ii	Window	8	8		
Lecture Theater 4	Window	6		6	
	Split	2		2	
Anandibai Hostel	Window	2		1	1
Male Medicine Ward I	Window	4			4
Cardiology Ward	Window				
	Split	2			2
Ccu	Window	3			3
	Split	3	1	1	1
Cath Lab	Window	2		2	
	Split	7			7
Ctvs Icu I	Window	3		3	
	Split				
Nauro Icu	Window	4			4
	Split	3	1		2
Ctot Doctor Room	Window	1	1		
	Split				
Medicine Deptt	Window	6	1	4	1
	Split				
Skill Lab	Window	7	1		6
	Split				
Pedia Deptt	Window	2		2	
	Split	1			1

Psy Deptt	Window	3	1	2	
	Split				
Eye Deptt	Window	5		5	
	Split				
Ortho Deptt	Window	1	1		
	Split	1		1	
Gynic Deptt	Window	4		4	
	Split	1			1
Oncology Surgery	Window				
	Split	2		2	
Surgery Deptt	Window	3		3	
	Split	2	2		
Para Medical Sc College	Window	11	1	10	
	Split	4			4
Nursing College	Window	6		6	
	Split	5	3	2	
Physiotherapy College	Window	5		3	2
	Split	6		4	2
Physiotherapy Opd	Window	2		2	
	Split	2		2	
Yoga College	Window	8		8	
	Split	4			4
Yoga Hospital	Window	22	18	4	
	Split	2		2	
Yoga Hall	Window	5	5		
Hotel Mgt College	Window	4		4	
	Split	9		7	2
Crech	Window	4		4	
Dr Kotnis Hostel	Window				
	Split	2	2		
Lachit Hostel	Window	2	2		
	Split				
Udam Singh Hostel	Window	1	1		
Boys Zim	Window				
	Split	7			7
Student Market	Window				
	Split	2		1	1
Pvt Opd	Window				
	Split	1			1
Charak Medical Store	Window				
	Split	3		2	1
Nuclear Medicine Ii Floor	Window				
	Split	3		3	
Central Store	Window	40	31	6	3
	Split	9	4	2	3

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 invertor-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 Swami Vivekanand Subharti University 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 Swami Vivekanand Subharti University, there are 11115 Fans installed. The details of the same are given below.

Sl. No.	Location/ Identification	60W Ceiling Fan	45W Bracket Fan	60W Pedestal Fan
1	Dental College	702	40	8
2	Management College	740	35	6
3	Engineering College	750	31	5
4	Law College & Monglaya Auditorium	810	31	7
5	Fine Arts College	775	30	6
6	Polytechnic College	750	34	5
7	BCA College	600	35	6
8	Buddhist College	575	32	5
9	Rani Chninimya Girl's Hostel	640	33	4
10	Bhagwati Nivedia Girl's Hostel	525	31	5
11	Rani Gurgawati Girl's Hostel	600	31	4
12	Begam Hazrat Girl's Hostel	550	32	6
13	Savitri BaiGirl's Hostel	650	34	5
14	Sangha Boy's Hostel	680	28	7
15	Madan Lal Dhingra Boy's Hostel	550	31	5
16	Veer Hakikat Rai Boy's Hostel	615	27	4
	TOTAL	**10512**	**515**	**88**

Total no of Ceiling Fans (60W)	=	10,512	Nos.
Total wattage of 60W Ceiling Fans	=	6,30,720	Watt
Total wattage of BEE 5 Star rated Fans (30W)	=	3,15,360	Watt
Total saving in Wattage after replacement	=	3,15,360	Watt
Operating hours per day	=	8	Hours
Operating days per annum	=	180	Days
Energy charges per unit in Rs.	=	10	INR
Saving in Rs./annum	=	45,41,184	INR
Investment INR		2,10,24,000	INR
Payback period: - Months		**4.63**	**Years**

Observation and Suggestions: -

In the university, most of the ceiling fans are of 60 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. No recommendation for immediate change of existing 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 has been done.

6.2 INVENTORY OF LIGHTING

Sl. No.	Location/ Identification	20W LED Tube Light	100W Street Light (LED)
1	Dental College	750	20
2	Management College	900	14
3	Engineering College	740	15
4	Law College & Monglaya Auditorium	880	18
5	Fine Arts College	830	16
6	Polytechnic College	800	17
7	BCA College	665	14
8	Buddhist College	800	16
9	Rani Chninimya Girl's Hostel	725	17
10	Bhagwati Nivedia Girl's Hostel	590	14
11	Rani Gurgawati Girl's Hostel	675	13
12	Begam Hazrat Girl's Hostel	630	16
13	Savitri BaiGirl's Hostel	780	17
14	Sangha Boy's Hostel	790	15
15	Madan Lal Dhingra Boy's Hostel	620	14
16	Veer Hakikat Rai Boy's Hostel	715	14
	TOTAL	11890	250

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

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

We also recommend to use solar lights for open areas like parking, ground, street lights, etc. and motion sensor lights for common areas such as library, corridors, washrooms, etc. Table below shows the performance characteristics comparison of all luminaries.

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, retail stores, floodlighting	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

S/No	College Name	Office Pc Detalis	Pc Details Of Deptt	Lab Pc Detalis	Total Pc Details	Projector	Server	Printer/ Scanner
1	Faculty Of Science	5	24	61	90	20		12
2	Pharmacy College	4	8	10	22	2		6
3	Management College	4	11	40	55	14		8
4	Site College	9	44	175	228	21		12
5	Law College	11	6	25	42	13		7
6	Mass com	2	2	31	35	3		4
7	Polytechnic College	6	6	70	82	2		13
8	Fine Art College	14	14	60	88	4		10
9	Home Science	2	10		12	7		2
10	Buddhist Education	3	5		8	3		4
11	It Infotech	21			21	-	3	4
12	Political & Sociology	2	12	11	25	-		3
13	Distance Education	4	60		64	4	4	8
14	Ol	2	2		4	-		1
15	Fm Radio	5	2		7	-		1
16	Dental College	30	20		50	14		18
17	Nursing College	10	11	40	61	15		12
18	Physiotherapy	6	8		14	3		7
19	Naturopathy	8	30		38	4		5
20	Hotel Management	6	10	15	31	4		5
21	Paramedical	3	5	20	28	3		4
22	Medical College	13	52	14	79	14		15
23	Central Library	11		44	55	1		4
24	Exam Section	40			40	-		4
25	Account Section	62			62	-		8
26	Purchase	8			8	-		3
27	Transport	2			2	-		1
28	Maintenance	1			1	-		1
29	Construction	2			2	-		1
30	Security	2			2	-		1
31	Jim	1			1	-		-
32	Cctv Camera	5			5	-		-
33	Girsl Hostel	11			11	-		1
34	Boys Hostel	6			6	-		1
35	Legal	2			2	-		1
37	Electrical	1			1	-		1
38	Dispatch	1			1	-		1
39	Vc Office	15			15	1		1

40	Admin Block	15			15	-		8
41	Iqac	12			12	1		14
42	Ppd	7			7	-		2
43	President Office	6			6	-		3
44	Fire	1			1	-		1
45	Hospital	330			330	8	6	18
46	Cric	2	5	14	21	1		3
47	Dhillon Library	3	10	29	42	-		2
48	Defence Academy	7			7	-		
49	Foe	6	29	41	76	10		12
50	Library Science	5			5	1		8
51	Language Deptt.	6			6	1		2
52	Placement Cell	4			4	-		2
53	Polytechnic College	6	6	70	82	2		7
54	Disability	6			6	-		1
55	Security					-		1
56	Scholarship Deptt.	2			2	-		1
57	Isgr Deptt.	5			5	-		1
58	Admission Cell	14			14	-		6
	Total	**777**	**392**	**770**	**1939**	**176**	**13**	**282**

7.2 WATER PUMP DETAILS

Sr. No.	Description	Unit	Pump No.-1	Pump No.-2
1	Rated Power of Motor	KW	33 HP	33 HP
2	Motor Eff.	%	99%	99%
3	Discharge Head	m		
4	Suction Head	m	8" Outlet	6" Outlet
5	Pump Type	Submersible/Monoblock/Centrifugal Etc.	Monoblock	Monoblock

7.3 OTHER LOADS

Sl. No.	Location/ Identification	60W Exaust Fan	160W Exaust Fan	200W Water Cooler	180W Desert Cooler
1	Dental College	32	40	3	10
2	Management College	30	38	2	6
3	Engineering College	26	30	4	12
4	Law College & Monglaya Auditorium	20	28	3	10
5	Fine Arts College	19	29	2	7
6	Polytechnic College	18	26	4	13

7	BCA College	22	30	4	12
8	Buddhist College	19	27	3	10
9	Rani Chninimya Girl's Hostel	6	14	2	6
10	Bhagwati Nivedia Girl's Hostel	8	12	3	10
11	Rani Gurgawati Girl's Hostel	10	16	2	7
12	Begam Hazrat Girl's Hostel	9	13	4	12
13	Savitri BaiGirl's Hostel	9	17	3	9
14	Sangha Boy's Hostel	7	12	4	12
15	Madan Lal Dhingra Boy's Hostel	9	15	3	9
16	Veer Hakikat Rai Boy's Hostel	8	13	2	7
	TOTAL	**252**	**360**	**48**	**152**

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.	Location/ Identification	Capacity in KVAR
1	Dental D. G. Set 1000 KVA	320 KVAR
2	Dental D. G. Set 630 KVA	200 KVAR
3	Hospital D. G. Set 1000 KVA	320 KVAR
4	Hospital D. G. Set 1000 KVA	320 KVAR
5	Hospital D. G. Set 630 KVA	200 KVAR
6	SPICE Canteen 630 KVA	200 KVAR
7	Media 400 KVA	200 KVAR
8	Chiller Plant 1000 KVA	320 KVAR
9	Chiller Plant 1000 KVA	320 KVAR
10	Chiller Plant 1000 KVA	320 KVAR

9. ANNEXURE I – PHOTOGRAPHS



Battery operated vehicles inside capus



Solar PV installed at parking area



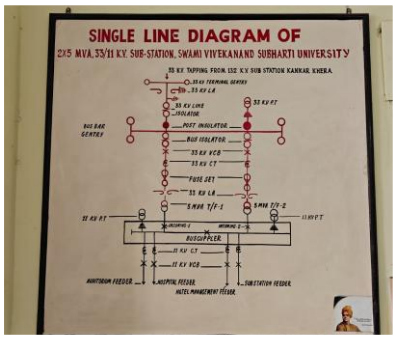
Solar Geysers



Sensor Based Lights



LT Panels



SLD

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