SIKKIM MANIPAL UNIVERSITY (SMU)

ENERGY AUDIT REPORT

2024-2025

Prepared by

EHS ALLIANCE

TABLE OF CONTENT

Contents

TABLE OF CONTENT 1

CERTIFICATE 2

ACKNOWLEDGEMENT 3

DISCLAIMER 4

ABBREVIATION 5

OVERVIEW OF THE UNIVERSITY 6

AUDIT PARTICIPANTS 10

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 17

5. FANS ANALYSIS 19

6. ANALYSIS OF LIGHTING SYSTEM 20

6.1 Brief description of existing system 20

6.2 Inventory of Lighting 20

6.3 Lux Measurement 21

7. OTHER POWER CONSUMPTION 23

7.1 Inventory of IT Infrastructure 23

7.2 Water pump details 23

7.3 Other Loads 24

8. CAPACITOR BANK 24

CERTIFICATE

EHS alliance

CERTIFICATE

PRESENTED TO

SIKKIM MANIPAL UNIVERSITY (SMU)

5th Mile Tadong Gangtok, East Sikkim -737102

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

01.11.2025
DATE OF AUDIT

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ACKNOWLEDGEMENT

EHS Alliance LLP would like to thank the management of Sikkim Manipal University (SMU), Gangtok 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 ***Air Vice Marshal (Dr.) Dilip Chandra Agarwal, VSM – Hon'ble Vice Chancellor*** for giving us an opportunity to evaluate the environmental performance of the campus.

We would also like to thank ***Mr. Premendra Mani Pradhan - Deputy Registrar, IQAC SMU,*** 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.) Karma S. Sherpa ***- Registrar***

Dr. Muralidhar V. Pai ***- Dean, SMIMS***

Prof. (Dr) G. L. Sharma ***- Director SMIT***

Col. V. S. Yadav (Retd) ***- Head General Services, SMU***

DISCLAIMER

EHS Alliance LLP Energy Audit Team has prepared this Energy Audit Report for Sikkim Manipal 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.

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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 Programme**
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	**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 metre**

OVERVIEW OF THE UNIVERSITY

The Sikkim Manipal University (SMU) was established in 1995. It is recognized by the University Grants Commission (UGC) and established under the Sikkim Manipal University of Health, Medical and Technological Sciences Act, 1995, enacted by the Government of Sikkim.

SMU is the first Public-Private Partnership (PPP) initiative in India in the fields of higher education and healthcare services, established with the objective of providing quality education and affordable healthcare services. The University has been instrumental in offering quality education to students from Sikkim, the North-Eastern Region, and other parts of India, while also providing advanced healthcare services at affordable costs through its teaching hospital.

Since its inception, SMU has achieved several significant milestones in academics, research, healthcare, innovation, and community engagement. Today, the University has evolved into a multidisciplinary institution and continues to expand its academic programmes, research initiatives, infrastructure, and national and international collaborations.

The University is supported by highly qualified, experienced, competent, and dedicated faculty members who are committed to ensuring that graduates are equipped with the knowledge, professional skills, ethical values, and practical competencies required to excel in their chosen professions and contribute effectively to society. SMU plays a significant role in contributing to the nation's skilled human resource pool through quality teaching, research, innovation, entrepreneurship, and community outreach. Transparency, merit-based admissions, academic excellence, student-centric learning, and state-of-the-art infrastructure have been the characteristic features of the University since its establishment.

All academic programmes offered by SMU are approved by the respective statutory and regulatory bodies wherever applicable, including the National Medical Commission (NMC), Indian Nursing Council (INC), All India Council for Technical Education (AICTE), University Grants Commission (UGC), and other relevant statutory bodies.
The engineering programmes like B.Tech. Computer Science Engineering, B.Tech. Civil Engineering and Master of Computer Applications (MCA) (subject to the applicable accreditation cycle and validity period) offered by the University at Sikkim Manipal Institute of Technology (SMIT) have been accredited by the National Board of Accreditation (NBA).

The University has also been accredited with an 'A+' Grade by the National Assessment and Accreditation Council (NAAC), reflecting its commitment to academic excellence, quality assurance, research, innovation, governance, and continuous institutional improvement.

Constituent units of Sikkim Manipal University

SMU operates through two of its main campuses:

Majhitar Campus: Located at Majhitar, Rangopo, Pakyong District, Sikkim.

This campus houses:

Sikkim Manipal Institute of Technology (SMIT)
Centre for Distance and Online Education (CDOE)

Tadong Campus: Located in Tadong, Gangtok District, Sikkim

This campus houses

Sikkim Manipal Institute of Medical Sciences (SMIMS)
Sikkim Manipal College of Nursing (SMCON),
Sikkim Manipal College of Allied & Healthcare Professions (SMCAHP)
Department of Hospital Administration
Department of Medical Biotechnology
Faculty of Humanities, Social Sciences and Liberal Arts

Programmes offered by the university:

Majhitar Campus		
S. No	**Programme Name**	
1	**B. Tech.**	Civil Engineering
		Computer Science & Engineering
		Electronics & Communication Engineering
		Electronics Engineering (VLSI)Design & Technology)
		Electrical & Electronics Engineering
		Mechanical Engineering
		CSE (Artificial Intelligence & Machine Learning)
		CSE (Data Science)
		CSE (IoT & Cyber Security including Blockchain Technology)
		Computer Science & Information Technology
		Computer Science & Technology
2	**M. Tech.**	Computer Science & Engineering (M. Tech)
		Structural Engineering (M. Tech)
		Hydrology & Water Resources Engineering (M. Tech)
3	**B. Sc.**	Physics
		Chemistry
		Mathematics
		Applied Psychology
4	**BPES**	Physical Education and Sports
5	**M. Sc.**	Physics
		Chemistry
		Mathematics
		Applied Psychology
6	**BBA**	Bachelor of Business Administration
7	**MBA**	Master of Business Administration

8	**BCA**	Bachelor of Computer Applications
9	**MCA**	Master of Computer Applications
Tadong Campus		
10	**MBBS**	Bachelor of Medicine, Bachelor of Surgery (MBBS)
11	**MD/MS**	Doctor of Medicine (MD) Master of Surgery (MS)
12	**Nursing**	B. Sc Nursing
		M. Sc Nursing
13	**Physiotherapy**	Bachelor of Physiotherapy (BPT)
		Masters of Physiotherapy (MPT)
14	**Paramedical Courses**	Bachelors in medical Radiology and Imaging Technology
		Bachelors in Anesthesia and Operation Theatre Technology
		Bachelors in medical laboratory science (BMLS)
		Bachelors in Cardiovascular Technology
15	**B. A.**	English
		Political Science
		Sociology
16	**M. A.**	English)
		Political Science
		Sociology
17	**B. Com**	Bachelor of Commerce
18	**M. Com**	Master of Commerce
19	**B. Sc.**	Medical Biotechnology
20	**M. Sc.**	Medical Biotechnology
21	**BHA**	Bachelor Of Hospital Administration
22	**MHA**	Master in Hospital Administration

MISSION | VISION | OBJECTIVES | COREVALUES

VISION

Global Leadership in Human Development, Excellence in Education and Healthcare.

MISSION

Develop professionals of excellent technical caliber in the field of Health Sciences, Engineering, Management and Social Sciences with a humane approach capable of shouldering the responsibility of building the nation and be globally competent.

OBJECTIVES

- To support, promote and undertake the advancement of academics
- To promote use of ICT and modern education technologies
- To encourage research, creation and dissemination of knowledge
- To facilitate extension and community service
- To empower people of Sikkim and contribute to human development in Northeast
- To create environmental and social responsibilities among students and employees
- To ensure steady growth of the University

CORE VALUES

Integrity and Honesty

We conduct ourselves ethically and legally in all situations upholding stakeholder trust.

Committed to Teams, Accountable for Results and Passion to Win

We are passionate about winning and hold ourselves accountable to organizational goals. We believe in teamwork and foster a performance driven culture across the organization.

Achieving Social Impact

We fulfil our responsibility to society, continuously contributing to build a better world.

Respect and Fairness

We trust every individual and treat them with dignity, respect and fairness. We practice open and honest communication at all times.

Excellence through Quality, Innovation and Leadership

We are committed to delivering superior programs and academic services through continuous innovation and leadership at all levels.

AUDIT PARTICIPANTS

On behalf of the university

Name	Designation
Air Vice Marshal (Dr.) Dilip Chandra Agarwal (VSM)	*Hon'ble Vice Chancellor, SMU*
Prof. (Dr) Karma S. Sherpa	*Registrar, SMU*
Dr. Muralidhar V. Pai	*Dean, SMIMS*
Prof. (Dr) G. L. Sharma-	*Director SMIT*
Col. V. S. Yadav (Retd.)	*Head General Services, Sikkim Manipal University*
Col. Surajit Debnath	*HES, SMIT*
Mr. Premendra Mani Pradhan	*Deputy Registrar, IQAC SMU*
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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 Energy Audit of Sikkim Manipal University was undertaken by the EHS Alliance Team to assess the University's existing energy-consumption patterns and identify practical opportunities for improving energy efficiency across the campus. The primary objective was to reduce energy consumption and associated costs while maintaining or enhancing the comfort, health, safety, and productivity of students, faculty, staff, and other campus users.

The audit extended beyond the assessment of energy consumption and included the identification and classification of energy-efficient equipment and appliances. It also examined operational practices, equipment usage patterns, maintenance procedures, and opportunities to minimize avoidable energy losses. Practical guidelines for the efficient day-to-day use of commonly operated appliances have been included to encourage energy-conscious behaviour throughout the University.

The assessment was carried out through physical surveys, review of available energy records, stakeholder consultations, and area-wise measurements using appropriate instruments. Major energy-consuming systems and facilities were evaluated to understand their performance and contribution to the University's overall energy demand. The cooperation and technical assistance provided by the University's management and staff contributed significantly to the successful completion of the audit.

Based on the observations and analysis, the report presents feasible energy-conservation measures, including operational improvements, preventive maintenance, behavioural interventions, and the phased replacement of inefficient equipment with energy-efficient alternatives. Wherever practicable, the energy-saving potential of the recommended measures has also been identified to support informed decision-making, effective resource allocation, and future energy-management planning.

The findings and recommendations are based on the conditions observed during the site survey, information and records provided by the University, instrument-based measurements, and discussions with relevant stakeholders. Where complete or continuous data were unavailable, reasonable engineering assumptions and approximations were applied. Therefore, the results should be considered in the context of the operational conditions prevailing during the audit period.

The successful implementation of the recommendations will require the active participation of the University's management, faculty, staff, and students. Regular monitoring of energy performance, periodic review of conservation measures, proper maintenance of equipment, and continued awareness programmes will be essential for achieving sustained energy and cost savings.

ENERGY AUDIT - ANALYSIS

1. ENERGY CONSUMPTION

To understand the Energy Consumption trends and for analyzing the average monthly consumption we have collected electricity energy bills from March 2024 to February 2025

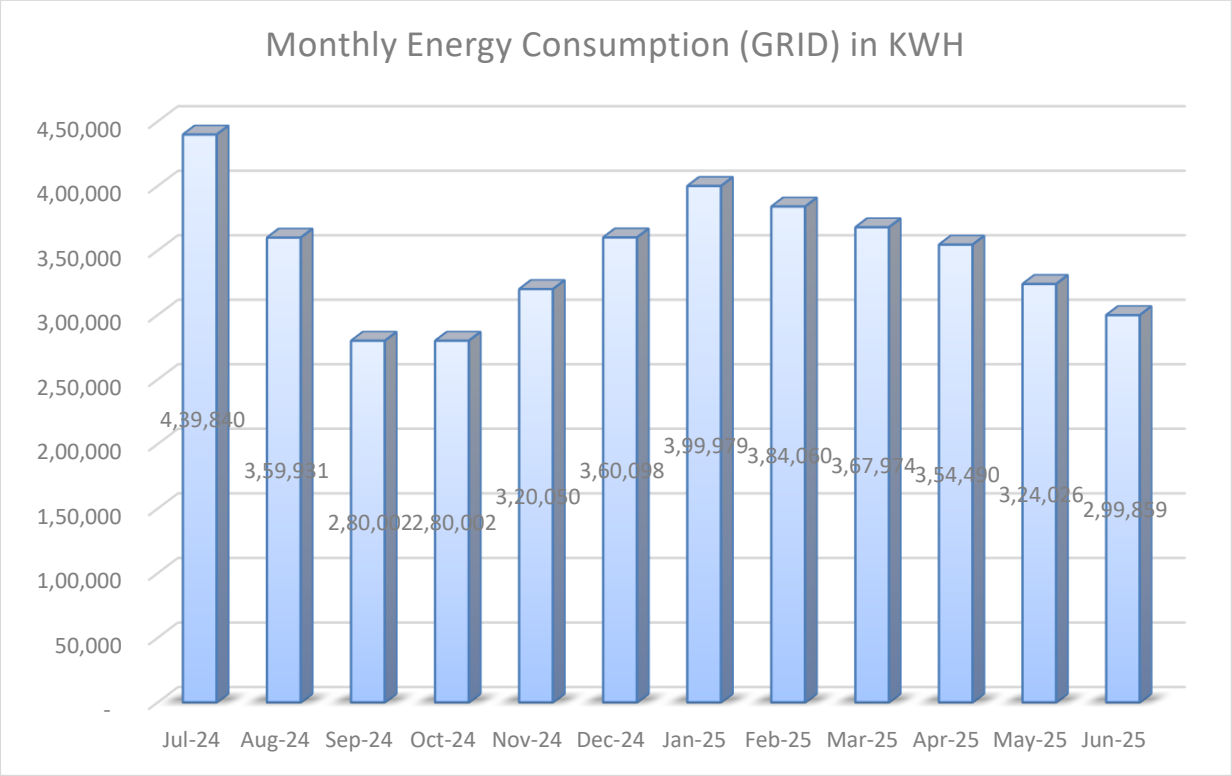
The details of **"Meter Connection"** at **"Sikkim Manipal University"** are as follows-

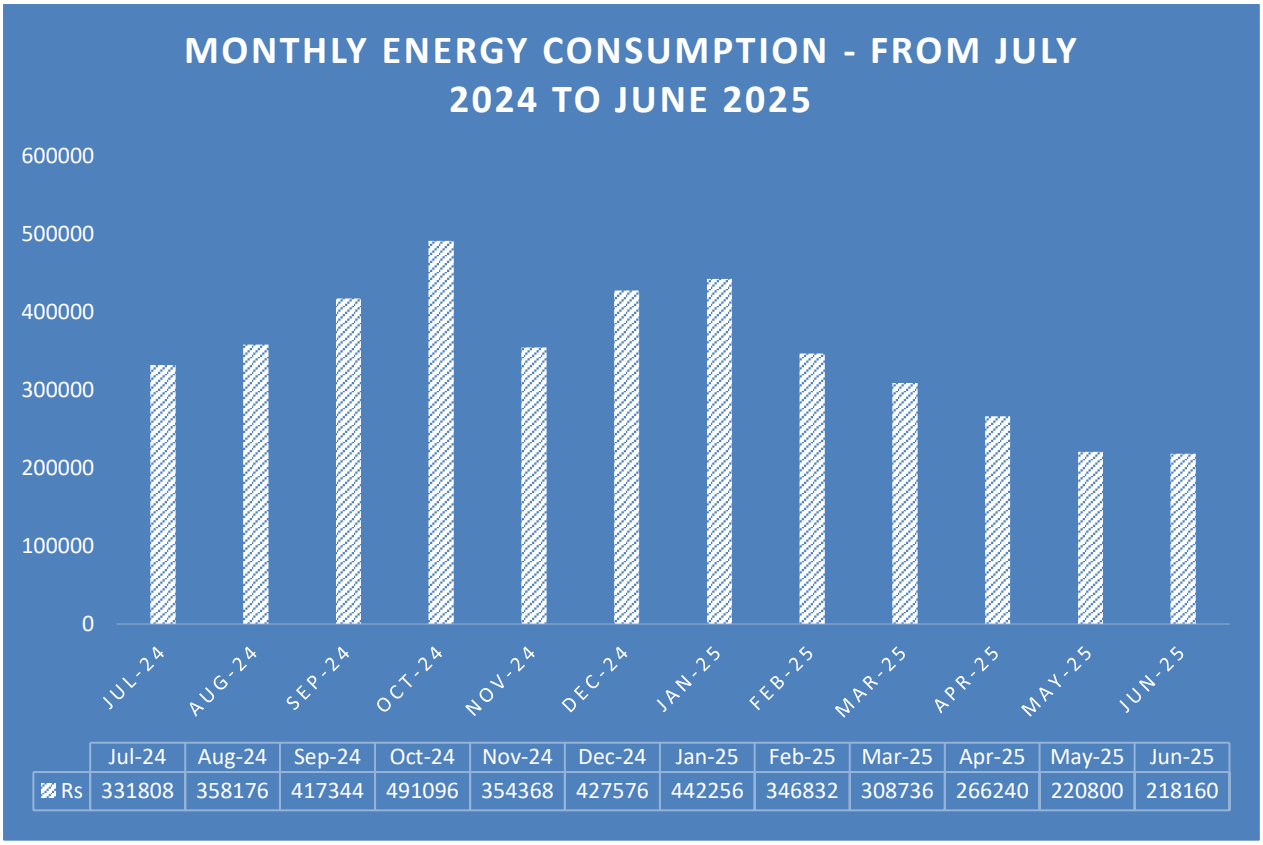
Name	-	Sikkim Manipal University
CA No.	-	121005A00DT30001
Name	-	Sikkim Manipal Institute of Technology
CA No.	-	000000038999

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	SMU	SMIT	Grid Power	Solar	Total	Rate INR	Amount in INR
Jul-24	439,840	262,185	702,025	9,000	711,025	8.50	6,043,713
Aug-24	359,931	271,125	631,056	9,000	640,056	8.50	5,440,476
Sep-24	280,002	260,550	540,552	9,000	549,552	8.50	4,671,192
Oct-24	280,002	177,000	457,002	9,000	466,002	8.50	3,961,017
Nov-24	320,050	182,970	503,020	9,000	512,020	8.50	4,352,170
Dec-24	360,098	151,470	511,568	9,000	520,568	8.50	4,424,828
Jan-25	399,979	205,920	605,899	9,000	614,899	8.50	5,226,642
Feb-25	384,060	194,850	578,910	9,000	587,910	8.50	4,997,235
Mar-25	367,974	185,108	553,082	9,000	562,082	8.50	4,777,697
Apr-25	354,490	265,065	619,555	9,000	628,555	8.50	5,342,718
May-25	324,026	253,440	577,466	9,000	586,466	8.50	4,984,961
Jun-25	299,859	208,185	508,044	9,000	517,044	8.50	4,394,874
SUM	**4,170,311**	**2,617,868**	**6,788,179**	**108,000**	**6,896,179**		**58,617,522**



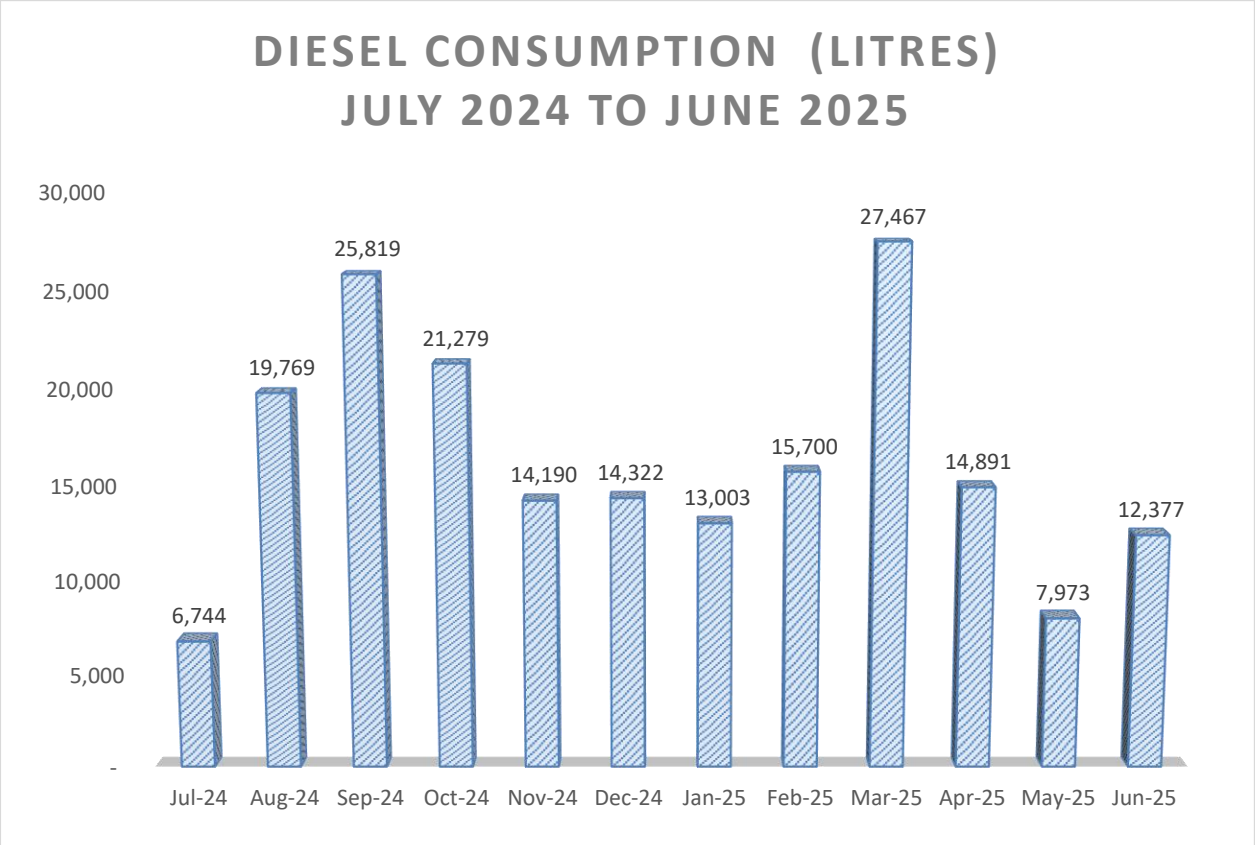


	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25
Rs	331808	358176	417344	491096	354368	427576	442256	346832	308736	266240	220800	218160

2. DIESEL CONSUMPTION

Below is the diesel consumption details in litres from July 2024 to June 2025.

Period	Diesel consumption (in litres)
Jul-24	6,744
Aug-24	19,769
Sep-24	25,819
Oct-24	21,279
Nov-24	14,190
Dec-24	14,322
Jan-25	13,003
Feb-25	15,700
Mar-25	27,467
Apr-25	14,891
May-25	7,973
Jun-25	12,377
	193,534



3. ANALYSIS OF DG SETS

In the campus, there are 9 Diesel Generator (DG) set for its electrical power needs in case of Grid power failure. DG sets capacity is 4475 kVA.

DG Set Performance										
Description	Unit	DG Station -1	DG Station -2	DG Station -3	DG Station -4	DG Station -5	DG Station -6	DG Station -7	DG Station -8	DG Station -9
Rated capacity	KVA	625	600	500	500	250	500	500	500	500
Hz	HZ	50	50	50	50	50	50	50	50	50
Sl No.		5AG01227	JHB00690	H5G00491	SKM00598	3T8652CW	FTJ00746	FTJ00752	SKM00486	SKM01052
Make		Caterpillar	Caterpillar	Caterpillar	Caterpillar	Caterpillar	Caterpillar	Caterpillar	Caterpillar	Caterpillar
Volts	Volts	415	415	415	415	415	415	415	415	415
PF		0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Phase		3	3	3	3	3	3	3	3	3
RPM		1500	1500	1500	1500	1500	1500	1500	1500	1500
Amps	Amps	870	835	696	696	348	688	688	688	688
Mfg.		2000	2011	2016	2019	2000	2013	2013	2019	2021

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.

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





4. AC SYSTEM

Energy Efficiency Ratio (EER): 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, Ductable, AHU, and Cassette ACs installed in Sikkim Manipal University in various areas of various capacity which detail is given below:-

Sl No.	Location/ Identification	Type (Window/ Split/ Ductable / cassette / AHU)	1 TR (Qty.)	1.5 TR(Qty.)	2 TR (Qty.)	3 TR (Qty.)	4 TR (Qty.)	5.5 TR (Qty.)	7.5 TR (Qty.)	8.5 TR (Qty.)	11 TR (Qty.)	4 TR COLD ROOM (Qty.)
1	Academic Building	S	8	17	73	5						
2	Academic Building	D						2	6	1	2	
3	Academic Building F-Block	A						13		12		
4	MSC Building	S			8							
5	Hostel-1	S		1								
6	Hostel-2	S		10								
7	Hostel-3	S		5								
9	Staff Housing New R	S		3								
13	Guest House	S		15								
14	Boys Mess	A						4	12			
16	Sport Complex	A						3	40			
22	MBBS College	S | C | D	11	9	8		9		1		2	2
27	CENTRAL REFERAL HOSPITAL	S | C | D	23	20	21	2	6	2	14			2
	TOTAL		42	80	110	7	15	24	73	13	4	4

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

Also, we recommend Sikkim Manipal University to organize periodic maintenance schedule and take corrective actions for insulating of AC's refrigerant lines in order to protect energy losses.





5. FANS ANALYSIS

In the Sikkim Manipal University, there are 5270 60W fans installed. The observation and suggestion are given below.

Sl No.	Location/Identification	Ceiling Fan-60W	Pedestal Fan	Bracket Fan
1	Staff Housing -A	64		
2	Staff Housing -B	72		
3	Staff Housing -C	40		
4	Staff Housing -D	88		
5	Staff Housing -E	48		
6	MBBS College	316	8	43
7	SMCPT	3		1
8	PG HOSTEL	316	8	43
9	NURSING HOSTEL	19		1
10	MBBS HOSTEL	275		
11	BIOTECHNOLOGY			1
12	CENTRAL REFERAL HOSPITAL	408	2	201
13	ANIMAL HOUSE			2
14	Academic Building	900	10	10
15	Academic Building F-Block	700	10	3
16	MSC Building	30		
17	Hostel-1	492		
18	Hostel-2	490		
19	Hostel-3	135		
20	Hostel-4	260		
21	Staff Housing New R	144		
22	Staff Housing New L	60		
23	Staff Housing Old R	144		
24	Staff Housing Old L	60		
25	Guest House	34	2	
26	Boys Mess	80		
27	Girls Mess	40		
28	Sport Complex	52		
	TOTAL	5270	40	305

Observation and Suggestions: -

In the university, all the ceiling fans are of 60 W but BEE 5 Star Rated of 30W Ceiling Fans are present in the market. We recommend to replace existing fans to BEE 5 Star rated 30W fans.

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

6. ANALYSIS OF LIGHTING SYSTEM

6.1 Brief description of existing system

For assessing energy efficiency of lighting system, 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 working level has been done.

6.2 Inventory of Lighting

Light (Wattage)	Count
200W-LED High Mast	2
190W-LED High Mast	17
60W LED	14
60W LED Outdoor	24
10W LED	144
18W LED Tube Light	6666
25 W LED	21
45W-Park Light	20
12 W LED Round	440
36W LED	305
72W LED	1650
32W LED	864
39W LED	208
150W LED	303
18W LED Flood	303
36W LED Flood	116
17W LED	36
20W LED	91
100W-RGP Light	43
160W-RGP 4 Feet Light	603
20W LED-FOB Aly Side	346
36WX2 Normal Tube	851
36W Normal Tube	2300
28X2 CFL Tube	512
28W CFL Tube	1050
9W Bulb LED	2640
2X11W PL	10
11W PL	520
18W PL	520
75W Street light	35
90W LED Light	12
125W LED HIGHBAY LIGHT	6
150 W Sodium Vapar	36
250 W MH Lamp	18
400W MH Lamp	122

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

SMU has initiated LED based lighting solution, but still there are 2300 (36W) tube lights. LEDs save energy, the life span is much greater and emit virtually no heat. We recommend to replace the tube lights with LEDs.

Additionally, we recommend to install motion sensor-based lights in common areas such as library, 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, car parking. flood lighting	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 ware houses, 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, spot lighting, flood lighting, 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

Location/Identification	Count
Desktop	1916
Laptop	171
Printers	322
Scanners	5
Servers	45
LCD PROJECTOR	63
SMART TV	7
MANAGED & UNMANAGED SWITCHES	94
NAS	8

7.2 Water pump details

Pump Details					
Description	Rated Power	Motor Eff. (%)	Discharge Head (m)	Suction Head (m)	Pump Type
Pump No.-1	15	60	70-75	90-110	Monoblock
Pump No.-2	15	55	70-75	90-110	Monoblock
Pump No.-3	7.5	58	70-75	50-60	Monoblock
Pump No.-4	7.5	61	70-75	50-60	Monoblock
Pump No.-5	7.5	42	70-75	50-60	Monoblock
Pump No.-6	7.5	39	70-75	50-60	Monoblock
Pump No.-7	7.5	56	70-75	50-60	Monoblock
Pump No.-8	7.5	52	70-75	50-60	Monoblock
Pump No.-9	7.5	56	50-60	48-53	Monoblock
Pump No.-10	7.5	46	50-60	48-53	Monoblock
Pump No.-11	7.5	58	50-60	48-53	Monoblock
Pump No.-12	7.5	56	50-60	48-53	Monoblock
Pump No.-13	3.7	55	55	48-53	Submersible
Pump No.-14	3.7	46	55	48-53	Submersible
Pump No.-15	3.7	42	55	48-53	Submersible
Pump No.-16	3.7	51	55	48-53	Submersible
Pump No.-17	3.7	42	55	48-53	Submersible

7.3 Other Loads

S. No	Equipment (Wattage)	Count
1	50W Exhaust Fan	69
2	60W Exhaust Fan	440
3	22W Exhaust Fan	158
4	35W Exhaust Fan	0
5	82W Exhaust Fan	8
6	160W Exhaust fan	23
7	Water Cooler-200W	45
8	180W-Desert Cooler	4
9	180W-Circulating Fan	28
10	180W-Circulating Fan	0
11	2KW Geyser	889
12	2.2 KW EX-System	4
13	2.2 KW EX-System	8
14	7.5 KW EX-System	4
15	1.5 KW EX-System	4
16	18KW STERLIZER	2

ANALYSIS

There should be regular maintenance schedule of equipment like pumps, exhaust fans and IT equipment. Electronics such as computers, printers, scanners, etc. more than 3 year or 5 years (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.	Campus	Location/ Identification	Capacity in KVAR
1	SMU	SUBSTATION	125
2	SMIT	Main LT Panel1 Room	100
3	SMIT	Main LT Panel2 Room	100
4	SMIT	Main LT Panel2 Room	200

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