



KUMAUN UNIVERSITY

ENERGY AUDIT REPORT

2022-2023

**PREPARED BY
EHS ALLIANCE SERVICES**



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CERTIFICATE



CERTIFICATE

PRESENTED TO

KUMAUN UNIVERSITY

Sleepy Hollow, Nainital-263001, Uttarakhand, India.

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 2022-23

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 appreciated and noteworthy.

SIGNATURE



08.04.2024

DATE OF AUDIT

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ACKNOWLEDGEMENT

EHS Alliance Services would like to thank the management of Kumaun University for assigning this important work of Energy Audit. We appreciate the cooperation to the teams in the completion of the assessment.

First of all, we would like to thank **Prof. D. S. Rawat Hon'ble Vice – Chancellor and Prof. Neeta Bora Sharma Director, D.S.B. Campus** for giving us an opportunity to evaluate the environmental performance of the campus.

We would also like to thank **Dr. Geeta Tewari, Professor – Audit Coordinator**, for her 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. Neelu Lodhiyal	<i>Professor</i>
Prof. Ashish Tewari	<i>Professor</i>
Dr. Deepakshi Joshi	<i>Asst. Professor</i>
Dr. Harsh K. Chauhan	<i>Asst. Professor</i>
Dr. Hardesh Kumar	<i>Asst. Professor</i>
Mr. Virendra Singh Bisht	<i>Helper</i>



DISCLAIMER

EHS Alliance Services Energy Audit Team has prepared this Energy Audit Report for Kumaun 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 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

Established in 1973, Kumaun University, nestled in Uttarakhand, emerged from the merger of two eminent government colleges, namely, D.S.B. Government P.G. College, Nainital and Almora Government P.G. College. Kumaun University earned its recognition from the University Grants Commission (UGC) in New Delhi under Section 12-B of the UGC Act, 1956. This recognition enabled the University to receive consistent support from the UGC. Over time, the University transformed from a mere institution to a leading academic beacon for thousands in the Kumaun Region of Uttarakhand. Recognizing the diverse educational needs of Kumaun's remote areas, the State Legislature implemented the SSJ University Act (Act No. 20 of 2019). This decision led to the bifurcation of Kumaun University and the establishment of SSJ University Almora. This pivotal change was officially announced by the Uttarakhand Government on **22nd June 2020** through **Order No. 168/XXXVI (3) 2020/ 771/ 2019**.

Now, the Kumaun University's sprawling campuses at D.S.B., Nainital and Sir J C Bose at Bhimtal cover an area of approximately 160 acres, featuring state-of-the-art facilities. With affiliations to 20 government colleges, 61 private institutions, and a government-aided college, the university supports around 1,50,000 students, making it Uttarakhand's largest.

A key feature that sets Kumaun University apart is its unwavering commitment to delivering an inclusive educational environment, irrespective of background, race, or faith. The institution diligently fosters a spirit of innovation, civic responsibility, and personal integrity. Its endeavors to bridge the gap between academia, government, and industry are commendable.

Over the past three years, the university has focused on establishing recognized departments for both scientific and social research. This initiative has garnered attention from faculty members and students countrywide. Pre-Uttarakhand state formation, Kumaun University set benchmarks for state universities in terms of academic rigor, student discipline, resource generation, and maintaining a conducive



learning environment. Such standards earned the university an 'A' Grade accreditation from the National Assessment and Accreditation Council (NAAC) in 2015.



The University is imparting quality education and research facilities in all the ten faculties:

- Faculty of Arts (Drawing and Painting, Economics, English, Geography, Hindi, History, Home Science, Music, Political Science, Psychology, Sanskrit, Sociology and Tourism)
- Faculty of Science (Botany, Forestry, Chemistry, Computer Science, Geology, Mathematics, Physics, Statistics, Zoology, Biotechnology and Information Technology)
- Faculty of Commerce (B.Com., B.Com.(Hon.), M.Com.)
- Faculty of Management (BBA, MBA, P.G. Diploma in Tourism, MBA in Tourism, MBA Executive, MBA Rural Management)
- Faculty of Education (B. Ed. and M. Ed.)
- Faculty of Law (LL.B. and LL.M.)
- Faculty of Technology (B. Pharma, and M. Pharma.)
- Faculty of Visual Arts (B.F.A. and M.F.A.)
- Faculty of Agriculture (B.Sc. and M.Sc.)
- Faculty of Biomedical Science (M.Sc.)



MISSION, VISION & CORE VALUES

VISION

Our vision is to create an inclusive educational ecosystem where all stakeholders benefit from knowledge creation and transmission, driven by innovation, creativity and skilling, leading to radical personal and social transformation for nation-building.

MISSION

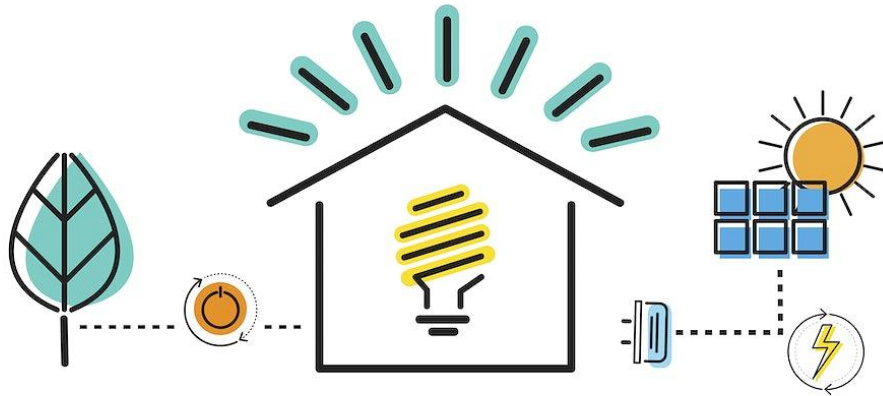
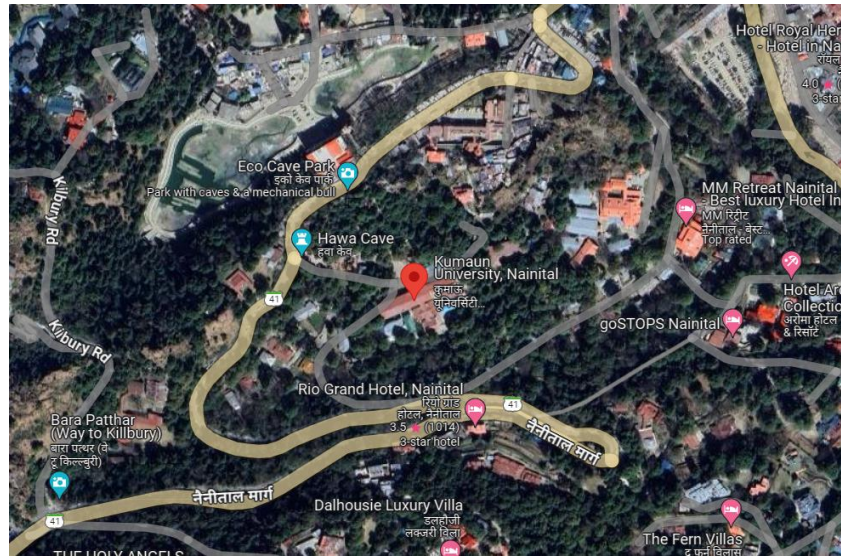
To empower stakeholders for social development with relevant knowledge and skills needed for employability, providing access to lifelong learning opportunities, ensuring partnership with the local community, providing equity and inclusion to the socio-economic disadvantaged groups while conserving the traditional knowledge and cultural fabric of the region.

CORE VALUES

- *Integrity and transparency in all our activities*
- *Pursuit of excellence in all academic activity-Teaching and Research.*
- *Embracing diversity, ensuring inclusion and promoting equity*
- *Efficient administration through e-governance adopting the latest ICT initiatives*
- *Environmental Conservation and sustainability through green practices*
- *Promotion and conservation of regional culture and diverse heritage*



Geo Location
Geo Coordinates from Google maps:
29.391165, 79.44591



energy saving



AUDIT PARTICIPANTS

On behalf of Kumaun University

Name	Designation
Prof. D. S. Rawat	<i>Vice - Chancellor</i>
Prof. Neeta Bora Sharma	<i>Director</i>
Prof. Neelu Lodhiyal	<i>Professor</i>
Prof. Ashish Tewari	<i>Professor</i>
Dr. Geeta Tewari	<i>Professor</i>
Dr. Deepakshi Joshi	<i>Asst. Professor</i>
Dr. Harsh K. Chauhan	<i>Asst. Professor</i>
Dr. Hardesh Kumar	<i>Asst. Professor</i>
Ms. Vartika Joshi	<i>Ph.D. Scholar</i>
Mr. Inder Singh Rautela	<i>Ph.D. Scholar</i>
Ms. Nirmala	<i>Ph.D. Scholar</i>
Ms. Neelam Bisht	<i>Ph.D. Scholar</i>
Ms. Kunjika Durgapal	<i>Ph.D. Scholar</i>
Ms. Charu Joshi	<i>Ph.D. Scholar</i>
Ms. Vashundhra Lodhiyal	<i>Ph.D. Scholar</i>

On behalf of EHS Alliance Services

Name	Position	Qualifications
Mr. Vijay Singh	Lead Auditor	<i>M.Sc. M. Tech (Environment Science & Engineering), Energy Auditor, Post Diploma in Industrial Safety Management</i>
Dr. Uday Pratap	Co-Auditor	<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 Kumaun 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 Kumaun University. The report provides a list of possible actions to preserve and efficiently access the available source, and 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 Kumaun 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 2022 to June 2023

The details of “**Meter Connection**” at “**Kumaun University**” are as follows-

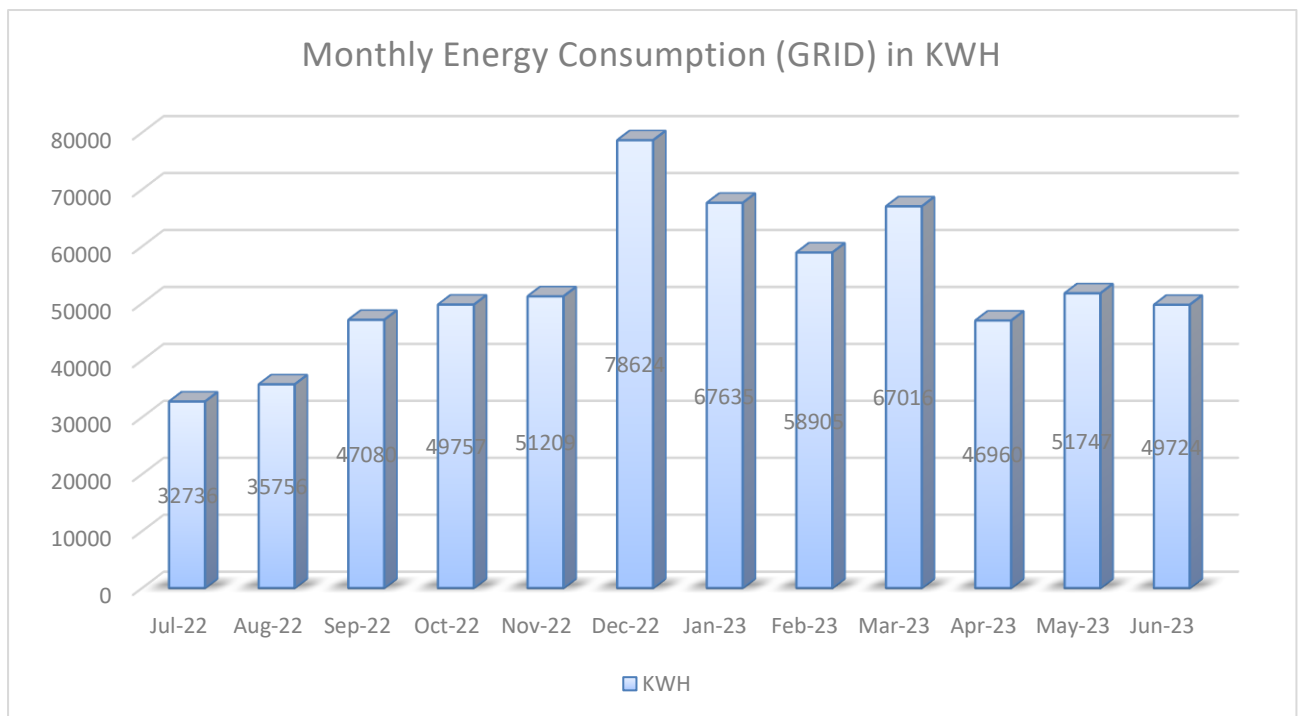
KU Premises	Name	CA No.
Administrative Block, Nainital	Registrar, Kumaun University	40118951532
D.S.B. Campus, Nainital	Director, DBS Campus	40100680124
	Nano Technology & Nano Science	41900856316
	Head, Geology Department	40100279294
	Law Department	596A105901586 8(40100279284)
Community College, Bhimtal	Community College	596B161099054
J.C. Bose Campus, Bhimtal	Department of Pharmaceutical Science	590K000025825
	Department of Biotechnology	590K000007891



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 2022 to June 2023

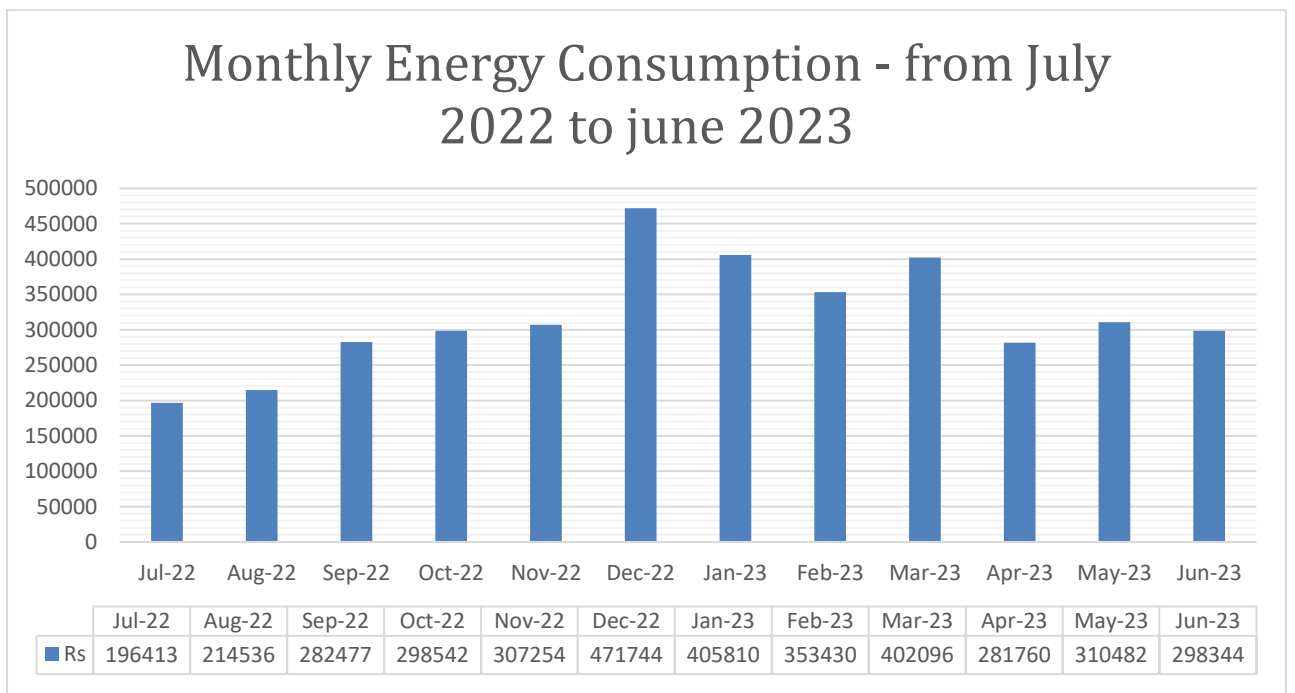
Month	Grid Units	Charges	Solar Units	Total Units	Amount
Jul-22	32736	6.00	0.00	32736	196413
Aug-22	35756	6.00	0.00	35756	214536
Sep-22	47080	6.00	0.00	47080	282477
Oct-22	49757	6.00	0.00	49757	298542
Nov-22	51209	6.00	0.00	51209	307254
Dec-22	78624	6.00	0.00	78624	471744
Jan-23	67635	6.00	0.00	67635	405810
Feb-23	58905	6.00	0.00	58905	353430
Mar-23	67016	6.00	0.00	67016	402096
Apr-23	46960	6.00	0.00	46960	281760
May-23	51747	6.00	0.00	51747	310482
Jun-23	49724	6.00	0.00	49724	298344
SUM	637148		0.00	637148	3822888



Detailed department-wise records are provided in below table:



Month wise Electricity Consumption (Units) of one year	Department of Pharmaceutical Sciences, Bhimtal	Kumaun University, Administrative Block, Nainital	Department of Biotechnology, Bhimtal	Department of Management, Bhimtal	Community College, Bhimtal	DSB Campus Nainital	Law Department Nainital
Period	Grid Electricity Consumption (kWh)	Grid Electricity Consumption (kWh)	Grid Electricity Consumption (kWh)	Grid Electricity Consumption (kWh)	Grid Electricity Consumption (kWh)	Grid Electricity Consumption (kWh)	Grid Electricity Consumption (kWh)
Jul-22	2784.5	12960	4860	987	0	10644	500
Aug-22	2784.5	12414	4300	719.5	0	15138	400
Sep-22	2784.5	13840	4440	1105	8600	15810	500
Oct-22	1891	17396	4420	1105	9307	15138	500
Nov-22	4298	23820	5500	1253	0	15810	528
Dec-22	5306	30150	6400	1841	9903	24606	418
Jan-23	3740	30946	5600	1585	10233	15264	267
Feb-23	3839	23802	4940	874	10575	14508	367
Mar-23	3251	29709	4920	1245	10883	16506	502
Apr-23	3073	11794	4160	1245	11325	15030	333
May-23	3014	17110	3980	4277	11768	11100	498
Jun-23	2645	11876	4020	1441	11992	16932	818
Total	39410.5	235817	57540	17677.5	94586	186486	5631

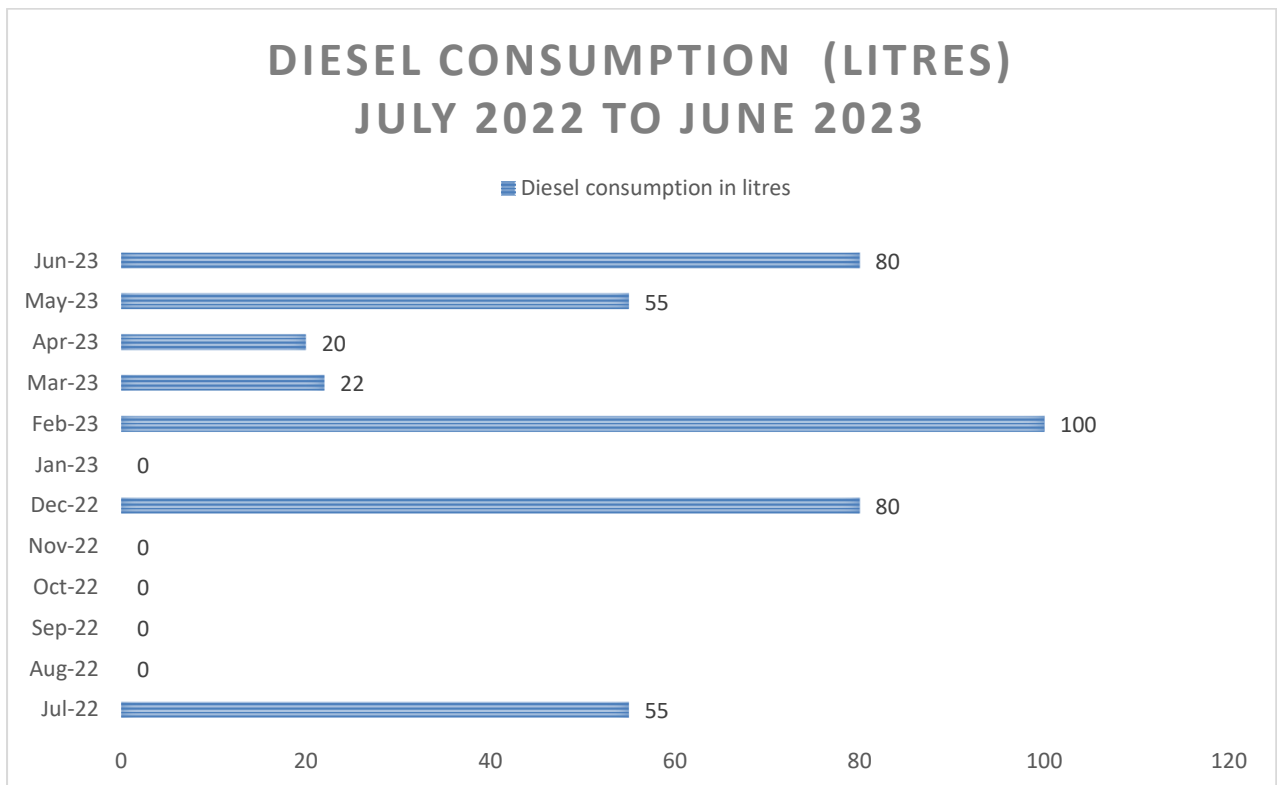




2. DIESEL CONSUMPTION

Below is the diesel consumption details in liters from July 2022 to June 2023.

	Period	Diesel consumption (in litres)
D.S.B. Campus, Nainital	Jul-22	55
	Aug-22	0
	Sep-22	0
	Oct-22	0
	Nov-22	0
	Dec-22	80
	Jan-23	0
	Feb-23	100
	Mar-23	22
	Apr-23	20
	May-23	55
	Jun-23	80
J.C Bose Campus, Bhimtal	Jul 22-Jun 23	33
Community College, Bhimtal	Jul 22-Jun 23	--
Administrative Block, Nainital	Jul 22-Jun 23	--
	Total	445





3. ANALYSIS OF DG SETS

In the campus, there are 7 Diesel Generator (DG) set for its electrical power needs in case of Grid power failure. Total DG sets capacity is 310 kVA. Details of individual DG set is provided in below table:

DG Set Design Details							
Description	DG Station -1	DG Station -2	DG Station -3	DG Station -4	DG Station -5	DG Station -6	DG Station -7
Design details:	Kirloskar	Cummins India Ltd.	CG Newage	Electrical LT 8	Kirloskar	Kirloskar	Mahendra
Rated capacity	20	100	60	60	30	10	30
Hz	50	50	50	50	50	50	50
Sl No.	QMC 12000-68	CJ01031255	53.8G2/08824384	8824067	33000-XT-15	14L1848 3-H	GIR30/43.34-H
Make	Kirloskar	Cummins India Ltd.	CG Newage	Electrical LT 8	Kirloskar	Kirloskar	Mahendra
Volts	415	415	415	415	415	230	415
PF	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Phase	3	Three	Three	Three	3	1	3
RPM	1500	1500	1500	1500	1500	1500	1500
Amps	27.8	139	76	76	41.7	43.4	42
Mgf.	2005	2001	2001	2000	2005	2005	2011

DG Set Operation details		
Operating hours during testing	Hours	0.50
% Loading	%	62.75
Energy Generation	kWh	33.55
Load	kVA	90.74
Fuel consumption during testing	Litre	7
Specific energy generation	kWh/litre	3.11

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 62.75% which is ok and specific energy consumption of DG Sets 3.11 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 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 ACs installed in Kumaun University in various areas of various capacity which detail is given below: -

SI No.	Location/ Identification	Type(Window/Split)	Qty	RR. Tonnage	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	Department of Pharmaceutical Sciences, J.C. Bose Campus, Bhimtal	Split	1	1.5	23	12	20	52	0	2	25	38	0	1	1.67	2.11
	Department of Biotechnology, J.C. Bose Campus, Bhimtal	Split	16	1.5	24	11	20	52	0	2	22	38	0	1	1.77	2.03
	Department of Management, J.C. Bose Campus, Bhimtal	Split	0	1.5	24	10	18	52	0	2	24	37	0	1	1.53	2.30
2	Community College, Bhimtal	Nil														
3	Kumaun University, Administrative Block, Nainital	Split	8	1.5	23	11	19	52	0	2	22	37	0	1	1.74	2.02
4	D.S.B. Campus	Nil														

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 Kumaun University to organize a periodic maintenance schedule and take corrective actions for insulating AC's refrigerant lines to protect against energy losses.





5. FANS ANALYSIS

In the Kumaun University, there are 348 fans installed, out of which, 89 are 50W ceiling fans, 133 are 60W ceiling fans, 115 are 70W ceiling fans, 1 pedestal fan and 10 bracket fans. Location wise details are shown below:

SI No.	Location/ Identification	Ceiling Fan-50W	Ceiling Fan-60W	Ceiling Fan-70W	Pedestal Fan 60W	Bracket Fan 45W
1	Department of Pharmaceutical Sciences, <i>J.C. Bose Campus</i> , Bhimtal	-	109	-	-	5
	Department of Biotechnology, <i>J.C. Bose Campus</i> , Bhimtal	89	-	-	-	2
	Department of Management, <i>J.C. Bose Campus</i> , Bhimtal	-	-	115	1	3
2	Community College, Bhimtal	-	24	-	-	-
3	<i>D.S.B. Campus, Nainital</i>	Nil				
4	<i>Administrative Block</i>	Nil				
Total		89	133	115	1	10

Observation and Suggestions:-

In the university, all the ceiling fans are of 50W, 60W and 70 W but BEE 5 Star Rated of 30W Ceiling Fans are present in the market. But the payback period of investment is 6.92 years, so we don't recommend to replace existing fans to BEE 5 Star rated 30W fans, but university should consider buying BEE 5 star rated fans for all future purchases.

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

Sl. No.	Location/ Identification	10W LED	18W LED Light	12 W LED Round	30W LED	40W Tube light	30 W LED Flood	20W LED	LED Bulb	100W-LED High Mast	18 W LED Flood	40W Tube light	18 W Tube light
1	Department of Pharmaceutical Sciences, J.C. Bose Campus Bhimtal	3	-	-	6	18	2	135	47				
	Department of Biotechnology, J.C. Bose Campus Bhimtal	-	-	-	-	125	1	32	40				
	Department of Management, J.C. Bose Campus Bhimtal	-	-	-	-	-	-	68	-				
2	Community College, Bhimtal	-	-	25	-	33	-	-	-				
3	Kumaun University, Administrative Block, Nainital	25	20	20	30	80	4	336	-				
4	D. S.B. Campus, Nainital	55	664	25	14	33	2	142	1,005	23		55	
	Faculty of Law	13	-	-	-	-	-	-	-	38	32		38
	Total	96	684	70	50	289	9	713	1092	61	32	55	38



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

University has initiated LED based lighting solution, but still there are 55 (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.

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

Sl No.	Location/ Identification	Desktop	Laptop	Printers	Scanners	Servers	Other
1	<i>Department of Pharmaceutical Sciences, J.C. Bose Campus, Bhimtal</i>	67	1	14	2	1	2
	<i>Department of Biotechnology, J.C. Bose Campus, Bhimtal</i>	34	3	5	-	1	2
	<i>Department of Management, J.C. Bose Campus, Bhimtal</i>	43	1	6	-	-	-
2	<i>Community College, Bhimtal</i>	8	-	2	-	1	-
3	<i>D. S. B. Campus, Nainital</i>	224	14	75	21	5	9
	<i>Law Department, Nainital</i>	4	-	2	-	-	-
4	<i>Kumaun University, Administrative Block, Nainital</i>	119	7	90	7	1	-
	Total	438	26	194	30	9	13



7.2 WATER PUMP DETAILS

	Description	Rated Power of Motor	Motor Eff.	Discharge Head	Suction Head	Pump Type - Submersible/ Monoblock/ Centrifugal Etc.
KU Premises	Unit	KW	%	m	m	
Administrative Block	Pump No.- 1	1.1	90%	80-24	32	Monoblock
	Pump No.- 2	1.1	90%	80-24	32	Monoblock
	Pump No.- 3	0.75/1.0	190%	80-25	33	Monoblock
	Pump No.- 4	0.75/1.0	290%	80-26	34	Monoblock
	Pump No.- 5	0.75/1.0	390%	80-27	35	Monoblock
	Pump No.- 6	0.75/1.0	490%	80-28	36	Monoblock
D.S.B. Campus	Nil					
J.C. Bose Campus	Nil					
Community College	Nil					





7.3 OTHER LOADS

Sl No.	Location/ Identification	60W Exhaust Fan	160W Exhaust Fan	Water Cooler- 200W	Room Heaters
1	Department of Pharmaceutical Sciences, J.C. Bose Campus, Bhimtal	15	9	1	30
	Department of Biotechnology, J.C. Bose Campus, Bhimtal	1	-	1	5
	Department of Management, J.C. Bose Campus, Bhimtal	10	5	-	17
2	Community College, Bhimtal	-	-	-	4
3	Kumaun University, Administrative Block, Nainital	6	2	-	232
4	D. S. B. Campus, Nainital	15	-	-	160
	Law Department, D.S.B. Campus	10	-	-	7
Total		57	16	2	455

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.

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