PowerTech Energy Solutions
Conserve to Consume

Energy & Green Audit Report
of
Sir Visvesvaraya Institute of Technology Nashik for the AY 2021-22 & 2022-23

Submitted By

PowerTech Energy Solutions

Our Certificates

BEE Certified Energy Auditor Certificate

Regn. No. EA-20121

Certificate No. 8299

National Productivity Council

(National Certifying Agency)

PROVISIONAL CERTIFICATE

This is to certify that Mr. / Mrs./ Ms. Swapnil Sanjay Gaikwad

son / daughter of Mr. Sanjay J. Gaikwad

has passed the National Certification Examination for Energy Auditors held in August - 2014, conducted on behalf of the Bureau of Energy Efficiency, Ministry of Power, Government of India.

He / She is qualified as Certified Energy Manager as well as Certified Energy Auditor.

He / She shall be entitled to practice as Energy Auditor under the Energy Conservation Act 2001, subject to the fulfillment of qualifications for the Accredited Energy Auditor and issue of certificate of Accreditation by the Bureau of Energy Efficiency under the said Act.

This certificate is valid till the issuance of an official certificate by the Bureau of Energy Efficiency.

Place : Chennai, India

Date : 9th January, 2015

Controller of Examination

Lead Auditor Certificate – ISO 50001: Energy Management System

TÜV NORD

PR366: ISO 50001:2018 Lead Auditor (Energy Management System) Training Course

Certificate of Achievement

Atul Kakad

has successfully completed the above mentioned course and examination.

26th - 30th November 2019

PUNE, INDIA

Certificate No. 35258395 07

Delegate No. 222777

for TÜV NORD CERT GmbH

Essen, 2020-01-08

The course is certified by CQI and IRCA (Certification No. 2088). The learner meets the training requirements for those seeking certification under the IRCA EnMS Auditor certification scheme.

TÜV NORD CERT GmbH Langemarckstraße 20 45141 Essen www.tuev-nord-cert.com

CQI | IRCA CERTIFIED COURSE

MEDA Registration Certificate

MAHARASHTRA ENERGY DEVELOPMENT AGENCY

Maharashtra Energy Development Agency

(A Government of Maharashtra undertaking)
Aundh Road, Opposite Spicer College,
Near Commissionerate of Animal Husbandry, Aundh, Pune – 411 067
Ph No: 020-26614393/266144403
Email: eee@mahaurja.com, Web: www.mahaurja.com

ECN/2022-23/CR-44/3803 — 4th October, 2022

CERTIFICATE OF REGISTRATION
FOR CLASS 'A'

We hereby certify that, the firm having following particulars is registered with ***MAHARASHTRA ENERGY DEVELOPMENT AGENCY (MEDA)*** under given category as "Energy Planner & Energy Auditor" in Maharashtra for Energy Conservation Programme of MEDA.

Name and Address of the firm	:	M/s PowerTech Energy Solutions Office No. 10, B-wing, 3rd floor, Phuge Prima, Bhosari Dighi Road Bhosari, Pimpri Chinchwad- 411 039.
Registration Category	:	*Empanelled Consultant for Energy Conservation Programme for Class 'A'*
Registration Number	:	***MEDA/ECN/2022-23/Class - A/EA-31***

- Energy Conservation Programme intends to identify areas where wasteful use of energy occurs and to evaluate the scope for Energy Conservation and take concrete steps to achieve the evaluated energy savings.
- MEDA reserves the right to visit at any time without giving prior information to verify quarterly activities performed by the firm and canceling the registration, if the information is found incorrect.
- This empanelment is valid till **3rd October, 2024** from the date of registration, to carry out energy audits under the Energy Conservation Programme
- The Director General, MEDA reserves the right to cancel the registration at any time without assigning any reasons thereof.

General Manager (EC)

1 Executive Summary – Energy Audit

Below table shows the identified energy / cost saving measures which will help college to reduce their energy cost and carbon emission

ECM	Area/Parameter	Observations	Remark	Estimated Annual Energy Saving	Estimated Annual Carbon Emission Reduction	Estimated Annual Monetary Saving	Estimated Investment	Payback Period
				kWh	Tones	Rs	Rs	Month
1	Contract Demand	Existing contract demand is 500 kVA Maximum demand recorded in last 12 month is 143 kVA Avg. MD is 103 kVA Monthly billed demand is 350 kVA which is much higher than actual maximum demand	It is recommended that to reduce the contract demand from 500 kVA to 200 kVA It will reduce the demand charges in electricity bill	0	0	1144080	500000	5.24
2	Power Factor	Avg. power factor of last 12 month is 0.963 which is good but can improve further to RkAVh lag component is significant which shows requirement of additional capacitors	It is recommended to add 30 kVAR capacitators in APFC panel to improve the power factor from 0.963 to 0.995 It shall be ensured that APFC panel is having steps of 1,2,3 & 5 kVAR in system to avoid leading kVARh component	0	0	120000	85000	8.50
3	Lights	Conventional lights of 36 watts are being used in	It is recommended to replace existing 36-watt	4829	3.8	69032	65500	11.39

ECM	Area/Parameter	Observations	Remark	Estimated Annual Energy Saving	Estimated Annual Carbon Emission Reduction	Estimated Annual Monetary Saving	Estimated Investment	Payback Period
				kWh	Tones	Rs	Rs	Month
		following areas Priyadarshini Building Mechanical Block	tube lights with 18 W LED lights					
Total				**4829**	**4**	**1333112**	**650500**	**5.86**

2 Executive Summary – Green Audit

Sr.No	Area	Observations	Remark
1	Tree Plantation	College has carried out tree plantation activity. Several type of trees has been planted by students and staffs	Good initiative taken by college toward green campus
2	Use of renewable energy – Solar PV system for power generation	Solar PV system of 100 kW has been installed by college to generate the electricity from solar energy. It helps to reduce 15 tons of CO_2 emission annually	Good initiative taken by college towards use of renewable energy Must ensure that system is working with its full efficiency
3	Liquid Waste Management	At present, no any waste disposal system to reuse the waste water. Also, no any standard operating procedure to dispose the chemicals used in laboratories	Sewage treatment plant can be installed in future to reuse the flushed water. Refer the guidelines mentioned in report for disposal of laboratory chemicals
4	E waste Management	At present, E -waste generated by college is sent to their Head office	College shall ensure that e-waste generated by them is channelised through collection Centre or dealer of authorized producer or dismantler or recycler
5	Rain Water Harvesting	At present, rain water harvesting system is not available in the college campus. College has planned to make the system in coming months	Rain water harvesting system will help to make the water available in summer seasons Also, same water can be used for gardening purpose
6	Plastic and Paper free campus	Till date, college has not issued any notification for plastic free and paper free campus. However, staff and students are taking initiatives to reduce the use of plastic and papers in college campus	Management should make policy to avoid the use of plastic and paper wherever possible and publish to the student's staffs, etc.

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Acknowledgement

PowerTech Energy Solutions extends gratitude to Sir Visvesvaraya Institute Of Technology for extending us the opportunity to conduct the Energy & Green Audit.

We are thankful to the professors & supporting staff of the college for their transparency & consistent support in sharing relevant information and for providing data about policies and projects along with their other valuable information. This report would have not been possible without their support.

The study team would like to acknowledge the following distinguished personnel's of Sir Visvesvaraya Institute Of Technology in person for the diligent involvement and cooperation.

Prof. Dr. G B Shinde	Principal
Prof. Dr. Abhang	Co-ordinator

3 About College

The Pravara Rural Education Society grew, fostered and evolved during the life time of Padmashri Dr. Vitthalrao Vikhe Patil. After him all the multifarious and multifaceted activities initiated by him are continued and infact, taken to greater height by the illustrious son Hon'ble Shri. E.V. alias Balasaheb Vikhe Patil, a veteran and Public Enterprises, Govt. Of India. The Seed laid by the Padmashri is bloosming into sylvan symphony with a large chain of educational institutions through the meticulous planning and dynamic leadership of Shri Balasaheb Vikhe Patil 'the worthy son of worthy father'. He is taking keen interest in the progress of various institutions of various institution of Pravara Rural Education society and has taken up the Herculean task of modernizing the System and Processes. He has new knowledge with suitable blend of Indian culture and is working day and night to impart programmatic dimensions to Pravara Rural Education Society and the institution under this.

Vision:

Sir Visvesvaraya Institute of Technology is committed to usher in socio – economic transformation by providing inclusive innovative quality education of global standards to fully meet the expectations of the stake holders as initiated by the founding fathers.

Mission:

To recruit and retain well qualified motivated faculty and staff and provide adequate infrastructure, equipment’s and machinery. To provide amenities and sports facilities in harmony with nature. Nurture industry institute interaction to provide adequate exposure to the students to the world of work. Enrich library and provide latest teaching gadgets and process to promote effective teaching, learning. To provide holistic value based education and inculcate entreprenerd abilities so that the students are well groomed in knowledge, skills and values to have the ability to face the challenges of the corporate world and life.

Faculty Details

Dr. Smt. Vidya P. Waje	Principal
Dr. Gajanan Madhavrao Mandhare	Assistant Professor
Mr. Raju Baliram Morey	Assistant Professor
Dr. Sachin Machindra Bhosale	Assistant Professor

4 Energy Audit

An energy audit is an inspection, survey and analysis of energy flows, for energy conservation in a building, process or system to reduce the amount of energy input into the system without negatively affecting the output(s). In commercial and industrial real estate, an energy audit is the first step in identifying opportunities to reduce energy expense and carbon footprints.

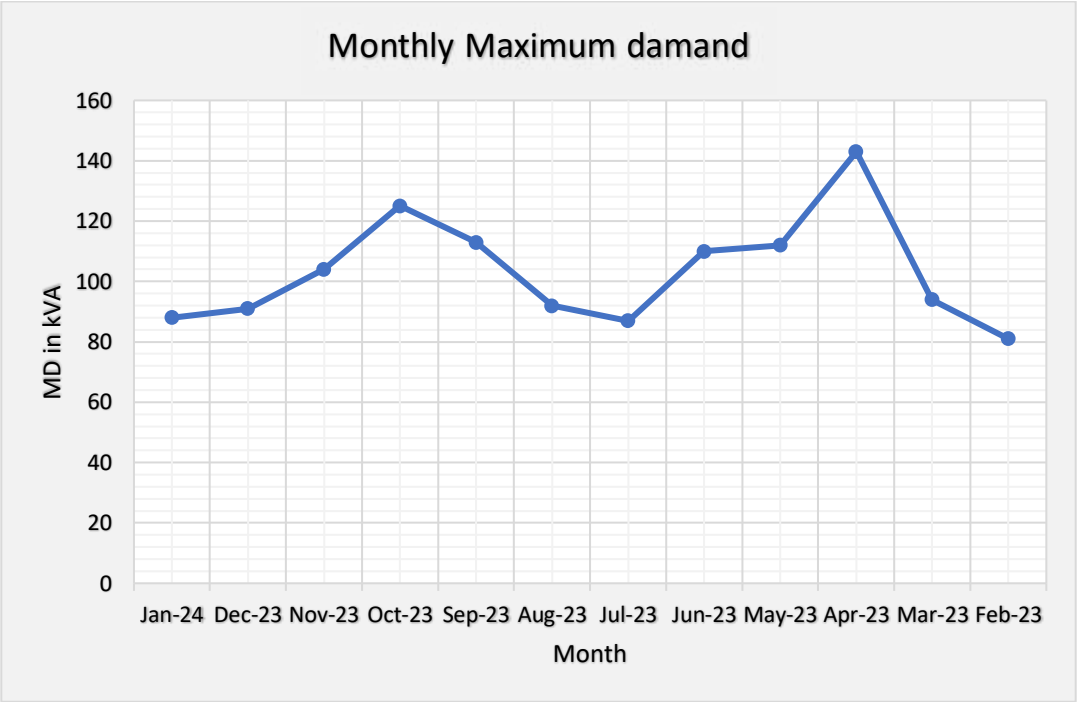
4.1 Electricity Bill Analysis

There is one numbers of electricity connection being power supplied by MSEDCL. Monthly electricity bill is served by MSEDCL against electricity used & is paid by college. A cost of power is worked out by summing up total KWH of all connections & their amount over the year 2023-2024.

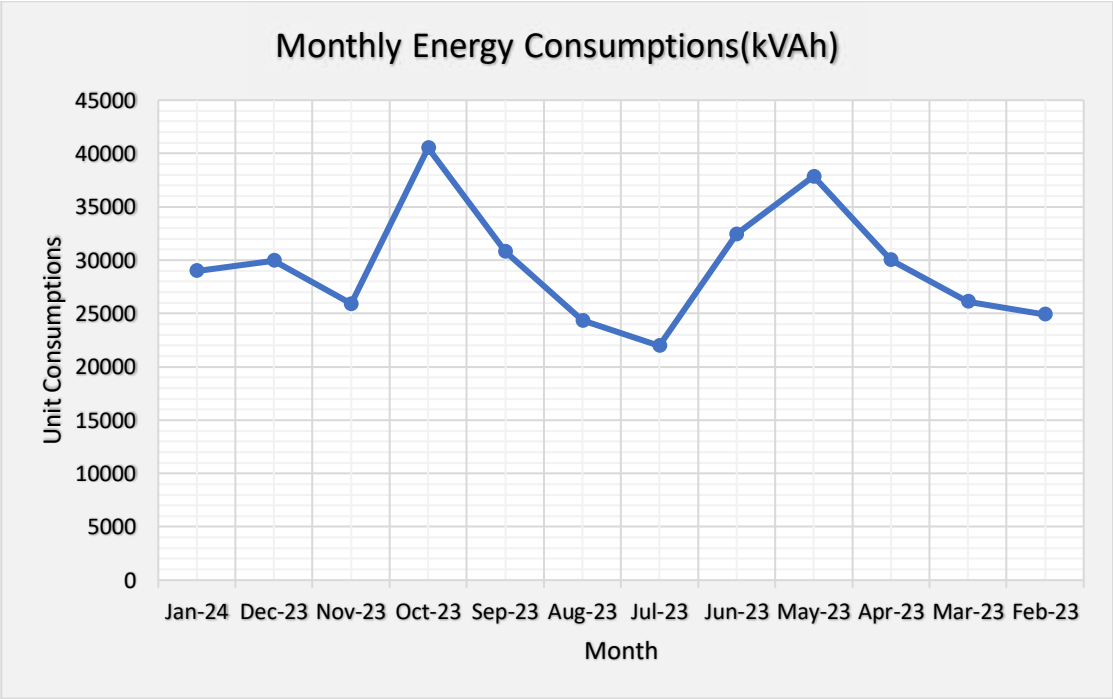
Consumer Name	**:**	**PRINCIPAL SIR VISVESWARAYA MEM ENG COLLEGE**
Consumer Number	**:**	**75949015560**
Sanctioned Load	**:**	**400 kW**
Contract Demand (KVA)	**:**	**500 kVA**
Connected Load	**:**	**200 kW**
Tariff	**:**	**146 HT-VIII B**
Category	**:**	**PUBL. SERVICES OTH**

Month	Maximum Demand	Billed Demand	Unit Consumption (Industrial)		Bill Power Factor	Demand Charges	Energy Charges	Units Consumption from Solar System	Total Unit Consumption	Total Current Bill	Avg. Unit Rate	Solar % Use	Net Unit Rate
	kVA	kVA	kWh	kVAh		Rs	Rs	kVAh	kVAh	Rs. Lakh	Rs/kVAh		
Jan-24	88	350	28015	29001	0.966	1,58,900	301610	2717	31718	5.82	14.4	9%	14.6
Dec-23	91	350	28910	29959	0.965	1,58,900	311574	2730	32689	5.94	14.4	8%	14.5
Nov-23	104	350	24949	25908	0.963	1,58,900	269443	2296	28204	5.39	14.5	8%	14.7
Oct-23	125	350	39433	40527	0.973	1,58,900	421481	2880	43407	7.24	14.1	7%	13.9
Sep-23	113	350	30045	30784	0.976	1,58,900	320154	1761	32545	5.99	14.4	5%	14.3
Aug-23	92	350	23700	24333	0.974	1,58,900	253063	2296	26629	5.08	14.6	9%	14.4
Jul-23	87	350	21313	21972	0.97	1,58,900	228509	1898.9	23870.9	4.78	14.7	8%	14.5
Jun-23	110	350	31420	32459	0.968	1,58,900	337574	2643	35102	6.07	14.1	8%	13.8
May-23	112	350	36303	37855	0.959	1,58,900	393692	3925	41780	6.75	14.0	9%	13.6
Apr-23	143	350	28593	30003	0.953	1,58,900	312031	3554	33557	5.76	14.2	11%	13.9
Mar-23	94	325	24782	26114	0.949	1,47,550	233981	3949	30063	5.29	12.8	13%	14.6
Feb-23	81	325	23383	24902	0.939	1,47,550	223122	3704	28606	5.13	13.0	13%	14.7
Min	**81**	**325**	**21313**	**21972**	**0.939**	1,47,550	228509	**1761**	**23871**	**4.8**	**12.8**	**5%**	**13.6**
Avg	**103**	**346**	**28404**	**29485**	**0.963**	1,57,008	306641	**2863**	**32348**	**5.8**	**14.1**	**9%**	**14.3**
Max	**143**	**350**	**39433**	**40527**	**0.976**	1,58,900	421481	**3949**	**43407**	**7.2**	**14.7**	**13%**	**14.7**

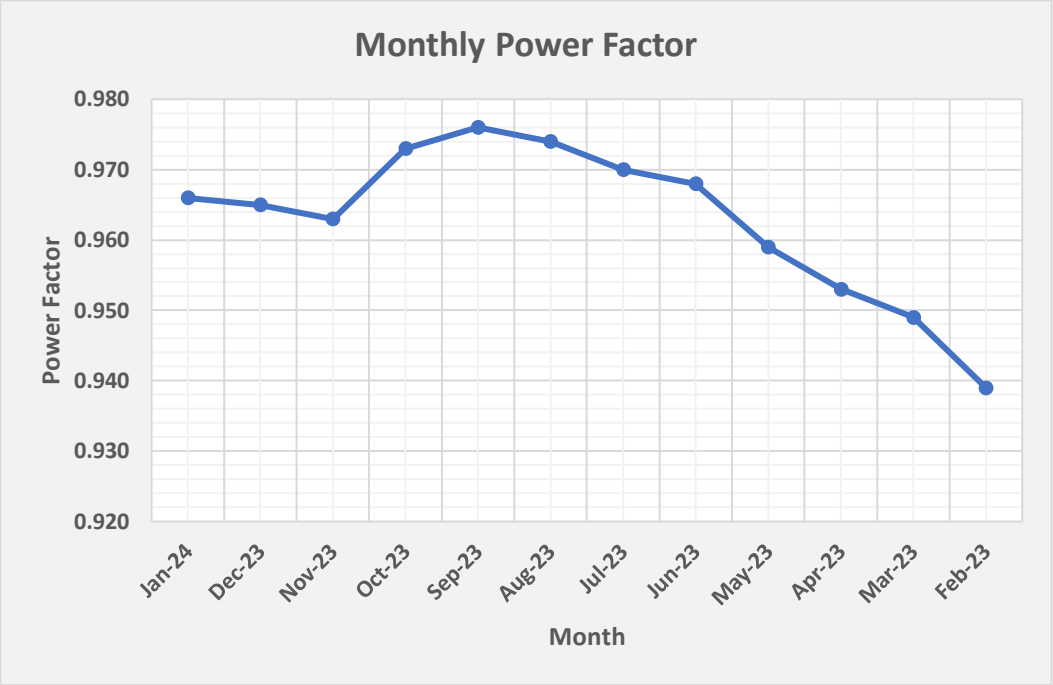
Below graph shows the monthly maximum demand



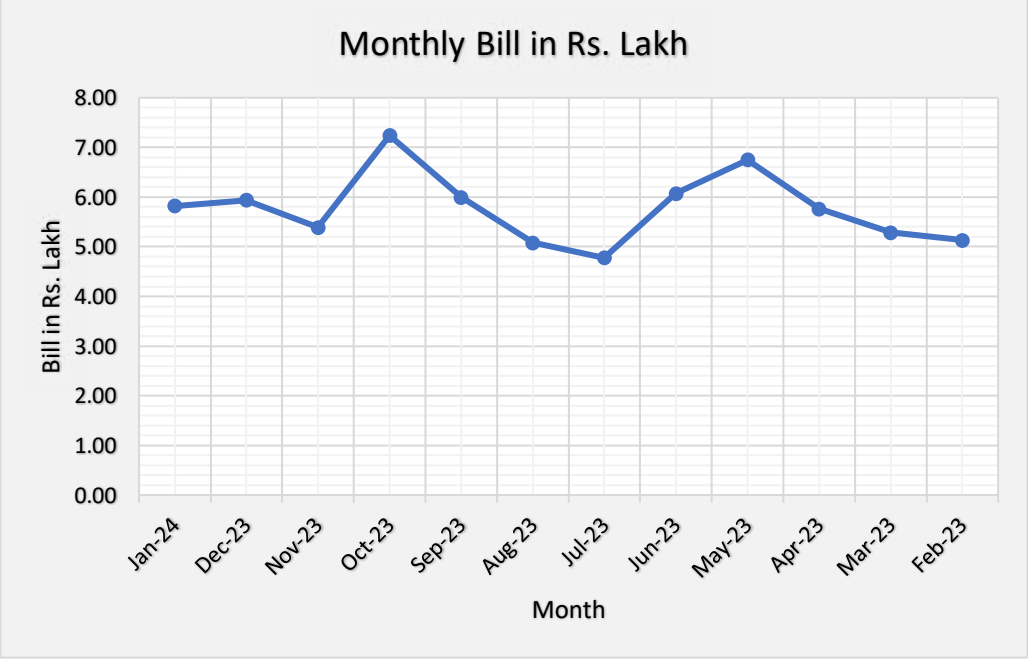
Below graph shows the monthly energy consumption pattern



Below graph shows the monthly power factor



Below graph shows the monthly billing Rs. In Lakh



4.2 Observations & Remark

Sr.No.	Parameter	Observation	Remark
1	Contract Demand	Contract demand of the college is 500 kVA	Contract demand can be reduced from 500 kVA to 200 kVA to reduce the demand charges in bill . Please refer section ECM 1
2	Sanctioned Load	Sanction load of the college is 400 kW	No action required
3	Connected Load	Connected load of plant is 200 kW	No action required
4	Maximum Demand	Minimum demand recorded is 81 kVA in the month of Feb-23	No action required
		Avg. demand recorded is 103.3333333 kVA	Avg. MD is less than contract demand. No action required
		Max. demand recorded is 143 kVA in the month of Apr-23	Max. MD is less than contract demand. No action required
5	Billed demand	Avg. billed demand recorded is 345.8333333 kVA	No action required
6	Unit consumption	Minimum unit consumption recorded is 21972 kVAh in the month of Jul-23	No action required
		Avg. unit consumption recorded is 29484.75 kVAh	No action required
		Maximum unit consumption recorded is 40527 kVAh in the month of Oct-23	No action required
7	Power factor	Avg. power factor recorded is 0.963	Power factor is somehow on lower side. It can be improved from 0.96 to 0.99. Please refer section ECM 2
8	Total bill	Avg. monthly electricity bill is 5.77 Rs. Lakh	No action required
		Total annual electricity bill is 69.2 Rs. Lakh	No action required
9	Solar Energy Usage	Avg. solar generation is 2863 units	No action required
		Annual solar generation is 34354 units	
		Total % contribution of solar energy in total energy usage is 10%	

4.3 Performance Assessment of Lighting System

Lighting system analysis is taking the data from college building areas. Most of the system is in energy efficient LED system. There are total 102 lights installed in the college building at different location and for different purposes. Out of 102 lights, 102 lights are of LED type.

Sr.No	Location	Type of Light	Qty	Wattage	Load	Daily Working Hrs	Monthly Working Days	Monthly Energy Consumption
				watt	kW	Hrs	Days	kWh
1	Priyadarshini Building	FTL	112	36	4.03	4	24	387
2	Mechanical Block	FTL	150	36	5.4	4	24	518
3	Workshop	LED	60	36	2.16	4	24	207
4	Boys Hostel	LED	245	20	4.9	6	30	882
5	Ladies Hostel	LED	80	20	1.6	6	30	288
6	Street Light	LED	33	45	1.48	12	30	535
7	Academic Block	LED	150	20	3	4	24	288
Total					**22.58**			**3105**

4.4 ECM 3

Replacement of conventional lights with LED lights in Priyadarshini building and mechanical block. Below table shows the estimated saving potential

Sr.No	Location	Type of Light	Qty	Wattage	Load	Recom. Type of Light	Recom, Wattage	New Estimated Load	Estimated Monthly Energy Consumption	Estimated Monthly Energy Saving	Estimated Monthly Monetary Saving	Estimated Investment	Payback Period
				watt	**kW**		**Watt**	**kWh**	**kWh**	**kWh**	**Rs**	**Rs**	**Months**
1	Priyadarshini Building	FTL	112	36	4.032	LED	20	2	215	172	2459	28000	11
2	Mechanical Block	FTL	150	36	5.4	LED	20	3	288	230	3294	37500	11
Total					**9.43**			**5**	**503**	**402**	**5753**	**65500**	11

4.6 Observation & Remark

Sr. No.	Area	Observation	Remark
1	Lighting	There are total 830 lights are used in college campus Out of which 262 lights are of conventional types	It is recommended to replace existing FTL lights with LED lights Estimated monthly energy saving is 503 units Estimated monthly monetary saving is Rs. 5753 Estimated investment is Rs. 65500 Payback period is 11 months

5 Requirements of NAAC

5.1 Alternative Energy Initiative

Percentage of power requirement met by renewable energy sources

= (Power requirement met by renewable energy sources / Total power requirement) X 100

= (34532/340846) X 100

= 10 % (Energy generated from 100 kW Solar PV system)

5.2 Percentage of lighting power requirement met through LED bulbs

= (Lighting power requirement met through LED bulbs / Total lighting power requirement) X 100

= (262/830)

= 70 %

6 Green Audit

Green audit was initiated with the beginning of 1970s with the motive of inspecting the work conducted within the organizations whose exercises can cause risk to the health of inhabitants and the environment. It exposes the authenticity of the proclamations made by multinational companies, armies and national governments with the concern of health issues as the consequences of environmental pollution. It is the duty of organizations to carry out the Green Audits of their ongoing processes for various reasons such as; to make sure whether they are performing in accordance with relevant rules and regulations, to improve the procedures and ability of materials, to analyze the potential duties and to determine a way which can lower the cost and add to the revenue. Through Green Audit, one gets a direction as how to improve the condition of environment and there are various factors that have determined the growth of carrying out Green Audit. Some of the incidents like Bhopal Gas Tragedy (Bhopal; 1984), Chernobyl Catastrophe (Ukraine; 1986) and Exxon-Valdez Oil Spill (Alaska; 1989) have cautioned the industries that setting corporate strategies for environmental security elements have no meaning until they are implemented.

Green Audit is assigned to the Criteria 7 of NAAC, National Assessment and Accreditation Council which is a self-governing organization of India that declares the institutions as Grade a, Grade B or Grade C according to the scores assigned at the time of accreditation.

The intention of organizing Green Audit is to upgrade the environment condition in and around the institutes, colleges, companies and other organizations. It is carried out with the aid of performing tasks like waste management, energy saving and others to turn into a better environmentally friendly institute.

6.1 Goals of Green Audit

- The objective of carrying out Green Audit is securing the environment and cut down the threats posed to human health.
- To make sure that rules and regulations are taken care of
- To avoid the interruptions in environment that are more difficult to handle and their correction requires high cost.
- To suggest the best protocols for adding to sustainable development

6.2 Benefits of Green Audit

- It would help to shield the environment
- Recognize the cost saving methods through waste minimizing and managing
- Point out the prevailing and forthcoming complications
- Authenticate conformity with the implemented laws
- Empower the organizations to frame a better environmental performance
- It portrays a good image of a company which helps building better relationships with the group of stakeholders
- Enhance the alertness for environmental guidelines and duties

7 Initiatives by College towards Sustainable Environment

7.1 Tree Plantation

Tree-planting is the process of transplanting tree seedlings, generally for forestry, land reclamation, or landscaping purpose. It differs from the transplantation of larger trees in arboriculture, and from the lower cost but slower and less reliable distribution of tree seeds.

In silviculture the activity is known as reforestation, or afforestation, depending on whether the area being planted has or has not recently been forested. It involves planting seedlings over an area of land where the forest has been harvested or damaged by fire, disease or human activity. Tree planting is carried out in many different parts of the world, and strategies may differ widely across nations and regions and among individual reforestation companies. Tree planting is grounded in forest science, and if performed properly can result in the successful regeneration of a deforested area. Reforestation is the commercial logging industry's answer to the large-scale destruction of old growth forests, but a planted forest rarely replicates the biodiversity and complexity of a natural forest.

Because trees remove carbon dioxide from the air as they grow, tree planting can be used as agro engineering technique to remove $CO_2$from the atmosphere. Desert greening projects are also motivated by improved biodiversity and reclamation of natural water systems, but also improved economy and social welfare due to increased number of jobs in farming and forestry.

College has planted the trees campus area to make it more environments friendly

7.2 Use of Solar PV System for power Generation

SVIT has installed 100kW solar PV plant to generate the electricity through solar energy.

Following are some actual images of installed solar PV plant

7.3 Scope for Improvement

7.3.1 Liquid Waste Management

The proper disposal of liquid waste is a must in order to maintain a good human and animal health. Because liquid waste has a high amount of dangerous compounds such as salts and metals, it is important for companies to get rid of it in a timely manner. Industrial wastes, including dangerous and hazardous liquids, can be disposed of by using a wide variety of techniques and methods.

Present Condition

There is an improvement opportunity for college. Sewage treatment facility can be provided to re-use the waste water for applications other than drinking. It is recommended that to make standard operating procedure (SOP) for disposal of chemicals which has been used in laboratories for practical purpose

Following details are given for guidance to dispose the laboratory chemical waste

Solution

Disposal Procedures for Laboratory Chemicals

It is the clear responsibility of all research workers to ensure the safe and correct disposal of all wastes produced in the course of their work. Improper and irresponsible disposal of chemical wastes down drains, to the Local Authority refuse collection, or into the atmosphere is forbidden by law.

Wash down drains with excess water

- Concentrated and dilute acids and alkalis
- Harmless soluble inorganic salts (including all drying agents such as CaCl2, MgSO4, Na2SO4, P2O5)
- Alcohols containing salts (e.g. from destroying sodium)
- Hypochlorite solutions from destroying cyanids, phosphines, etc.
- Fine (tlc grade) silica and alumina

It should be noted in particular that no material on the "Red List" should ever be washed down a drain. This list is as follows:

- compounds of the following elements:- antimony, arsenic, barium, beryllium, boron, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, silver, tellurium, thallium, tin, titanium, uranium, vanadium and zinc.
- organ halogen, organophosphorus or organonitrogen pesticides, triazine herbicides, any other biocides.
- cyanides
- mineral oils and hydrocarbons
- poisonous organosilicon compounds, metal phosphides and phosphorus element
- fluorides and nitrites

Incineration (Solvent Waste collection)

- all organic solvents including water miscible ones
- soluble organic waste including most organic solids

- paraffin and mineral oil (from oil baths and pumps)

Laboratory waste bins and controlled waste

All waste suitable for the Local Authority refuse collection, except recyclable paper and glass, is termed 'controlled waste'. Items in this category which includes dirty paper, plastic, rubber and wood, should generally be placed in the waste bins available in each laboratory and will be collected by the cleaners. However, each laboratory must also have a container for certain items which are not allowed to be put in the normal waste bins. In this special controlled waste container should be put:- all broken laboratory glassware, any sharp objects of metal or glass, all fine powders (preferably inside a bottle or jar) and dirty sample tubes or other items lightly contaminated with chemicals (but not any syringes or needles). Laboratory controlled waste containers must be emptied regularly and never allowed to overflow. Under no circumstances must any item of glass, sharp metal or fine powder ever be put in a normal laboratory waste bin. The tops must be removed from all bottles put out for disposal and there should be no detectable smell of chemicals from any bottle put for disposal.

For more information, please visit

https://www.standrews.ac.uk/staff/policy/healthandsafety/publications/waste/waste-disposaloflaboratorywastesguidance/

7.3.2 E Waste Management

Electronic waste or e-waste describes discarded electrical or electronic devices. Used electronics which are destined for reuse, resale, salvage, recycling, or disposal are also considered e-waste. Informal processing of e-waste in developing countries can lead to adverse human health effects and environmental pollution.

Electronic scrap components, such as CPUs, contain potentially harmful components such as lead, cadmium, beryllium, or brominated flame retardants. Recycling and disposal of e-waste may involve significant risk to health of workers and communities in developed countries and great care must be taken to avoid unsafe exposure in recycling operations and leaking of materials such as heavy metals from landfills and incinerator ashes.

College need to have E-waste management policy and all the E-waste disposals generated in the college campus should be disposed/ reuse as per standard procedures/norms

The environmental impact of the processing of different electronic waste components

E-Waste Component	Process Used	Potential Environmental Hazard
Cathode ray tubes (used in TVs, computer monitors, ATM, video cameras, and more)	Breaking and removal of yoke, then dumping	Lead, barium and other heavy metals leaching into the ground water and release of toxic phosphor
Printed circuit board (image behind table – a thin plate on which chips and other electronic components are placed)	De-soldering and removal of computer chips; open burning and acid baths to remove metals after chips are removed.	Air emissions and discharge into rivers of glass dust, tin, lead, brominated dioxin, beryllium cadmium, and mercury
Chips and other gold plated components	Chemical stripping using nitric and hydrochloric acid and burning of chips	PAHs, heavy metals, brominated flame retardants discharged directly into rivers acidifying fish and flora. Tin and lead contamination of surface and groundwater. Air emissions of brominated dioxins, heavy metals, and PAHs
Plastics from printers, keyboards, monitors, etc.	Shredding and low temp melting to be reused	Emissions of brominated dioxins, heavy metals, and hydrocarbons
Computer wires	Open burning and stripping to remove copper	PAHs released into air, water, and soil.

7.3.3 Rain Water Harvesting

There is a good potential for rain water harvesting in a college. This water can be used for purposes like gardening, bores, wells, etc.

Feasibility study can be carried out to know the actual potential from rain water harvesting project

7.3.4 Plastic Free and Paper Free Campus

Concept of plastic free and paper free campus can be successfully implemented in the college. Management need to take initiative to make the policy for same. It will help to do reduce the use of plastic and papers which will be a good contribution towards sustainable environment