Green Audit Report

(2023-24)

Mahatma Basweshwar Education Society's

M. S. Bidve Engineering College

Barshi Road, Pakharsangvi, Latur - 413531 Maharashtra

Green Audit Conducted by

KEDAR KHAMITKAR & ASSOCIATES

Energy Auditor & Planner

(Empanelled Mahaurja, Govt. of Maharashtra Institution)

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ACKNOWLEDGEMENT

We express our sincere gratitude to the management of M.S. Bidve Engineering College for awarding us the assignment of Green Audit of their Latur Campus.

We are thankful to Principal Dr. Suresh Hallali Sir given opportunity to conduct audit.

We are also thankful to various Head of Departments & other Staff members for helping us during the field measurements.

Green AudIT

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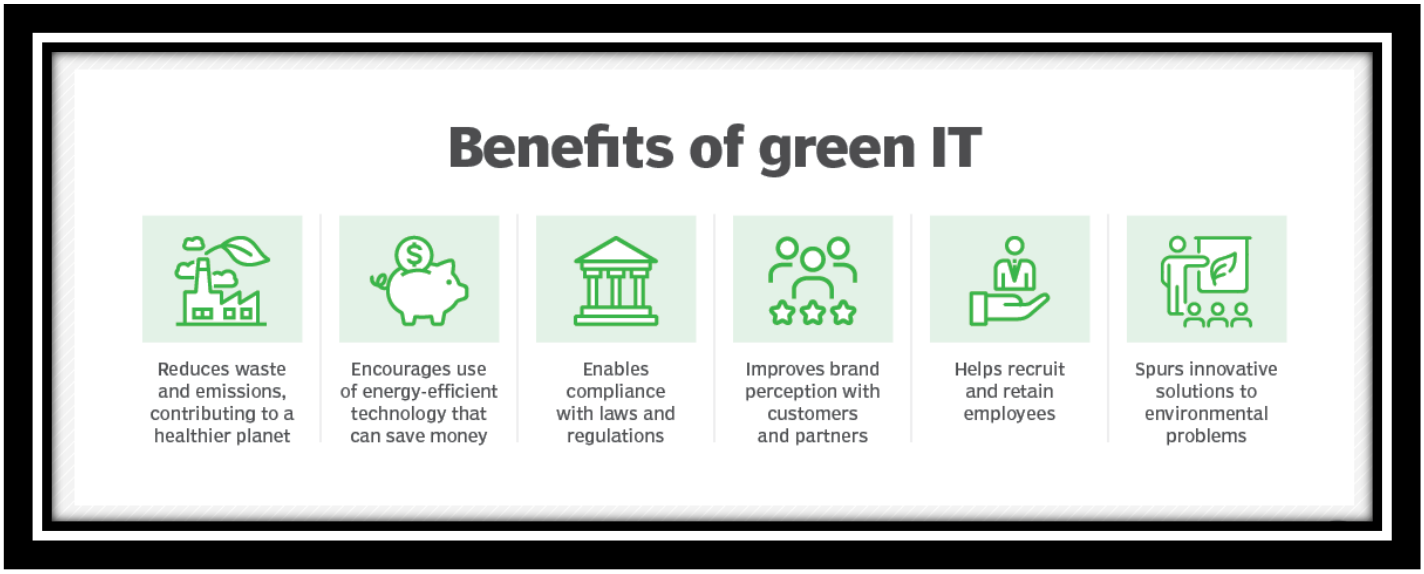
Energy Auditor
Certified by Bureau of Energy Efficiency, Ministry of Power, Gov. of India
Empanelled Consultant MAHAURJA (Govt. of Maharashtra Institution)

Date : 24.08.24

Executive Summary:

Objective	Observation	Suggestion's
Green Cover - Plantation of Trees	At Present **27%** area campus is having the Green cover.	Good Initiative
Use of Renewable Energy	Institute has been installed Rooftop Solar Power Plant of 100 KWp Capacity in the campus. (Attached Photo)	Good Initiative
Rain Water harvesting	Rainwater Harvesting has been installed (Attached Photo)	Good Initiative
Misuse/ wastage of water	RO water providing safe drinking water, Need awareness for Conservation.	Recommended for waste water treatment plant.
Bio Waste Management	The Bio Waste – Food Waste generated in the campus is proposed to be feed stock for Bio Gas plant	Recommended for Bio gas plant.
Non Bio Waste	Non Bio Waste – Plastic Bottles / Paper Waste Metals waste is being collected in the dust bins placed across the campus.	It is proposed to install plastic bottle crusher, which can be sold as a Feed stock for the Plastic industry.
E Waste	E Waste – All Electronic Junk is generated in the campus in the form of Used Computer key boards/ Mouse/ CPU's/ Damaged Printers etc.	The collected e-waste is handed to vendors which were chosen by college management.
Carbon Foot Print	**Transportation :** Few Students commute in the ST Bus from City / rural Areas - Mostly Students & Staff using EV vehicles	Recommended to install EV Charging station.



Chapter No.1 Scope of Work & Green Audit Methodology

M.S. Bidve Engineering College, Latur entrusted the work of conducting a detailed Green Audit of campus with the main objectives are as bellows:

Objectives of Green Audit:

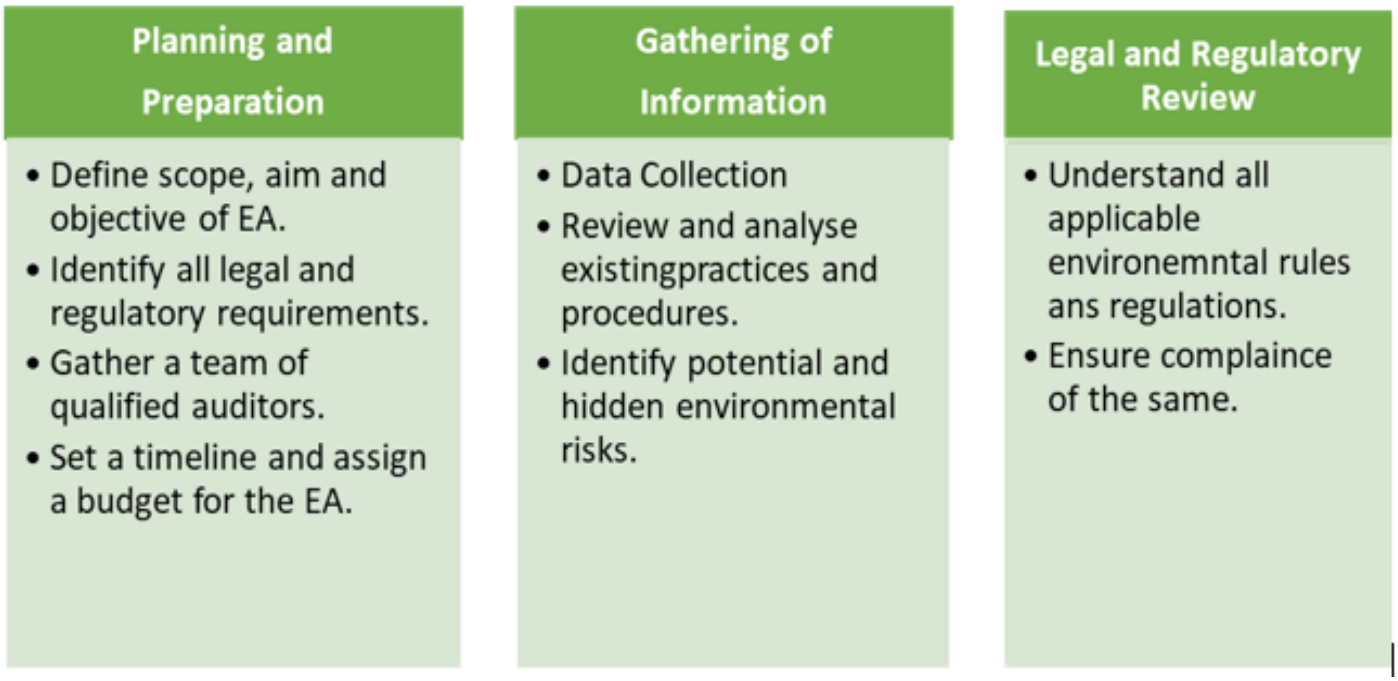
1. To examine the current practices, which can impact on environment such as of resource utilization, waste management etc.
2. To identify and analyze significant environmental issues.
3. Setup goal, vision, and mission for Green practices in campus.
4. Establish and implement Environment Management in various departments.
5. Continuous assessment for betterment in performance in green

Need of Green Audit:

Green auditing is the process of identifying and determining whether institutions practices are eco-friendly and sustainable. Green audit regulates all such practices and gives an efficient way of natural resource utilization. In the era of climate change and resource depletion it is necessary to verify the processes and convert it in to green and clean one. Green audit provides an approach for it. It also increases overall consciousness among the people working in institution towards an environment.

Methodology of Green Audit:

Green Audit of M.S. Bidve Engineering College, Latur Campus has been conducted with specific methodology as follows:



Goals of Green Audit:

Conducted a green audit of M.S. Bidve Engineering College, Latur Campus with specific goals as:

1. Identification and documentation of green practices followed by the Institute.
2. Identify strength and weakness in green practices.
3. Analyze and suggest solution for problems identified.
4. Assess facility of different types of waste management.
5. Increase environmental awareness throughout campus
6. Identify and assess environmental risk.
7. Motivates staff for optimized sustainable use of available resources.
8. The long-term goal of the environmental audit program is to collect baseline data of environmental parameters and resolve environmental Issue before they become problem.

Chapter No.2 Introduction about the Institute

Mahatma Basweshwar Education Society has been established in 1963 at Latur. This Society is one of the oldest & reputed educational societies in Marathwada region. In the era of globalization, to create engineering graduates having knowledge with global insight, meeting the needs of industry, M.B. Education Society started M. S. Bidve Engineering College in 1983 at Latur, affiliated to Swami Ramanand Teerth Marathwada University, Nanded and approved by AICTE, New Delhi.

Courses offered

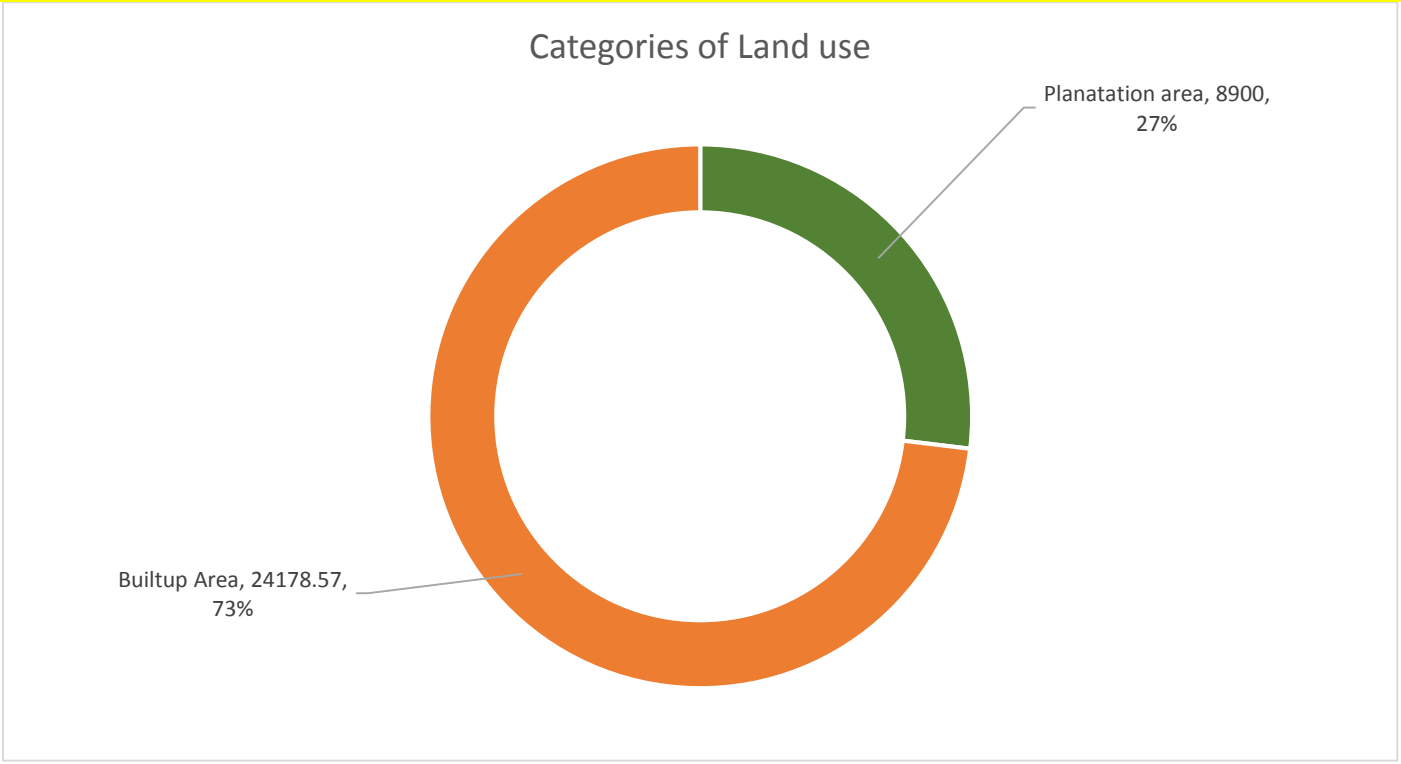
Sr.	UG Courses :
1	Civil Engineering
2	Mechanical Engineering
3	Electronics Engineering
4	Computer Science and Engineering
5	Electrical Engineering [Electrical and Power]
6	Information Technology
	PG Courses :
7	Civil Engineering (Structure)
8	Mechanical Engineering (Machine Design)
9	Electronics & Communication Eng.
10	Computer Engineering
11	Master of Computer Application(MCA)

Chapter No.3 Categories of Land Use

Plantation of trees is started in the campus and the green cover is extended every year in the campus. At Present **27%** area campus is having the Green cover.

Built up Area	**24178.57**	SQM
Plantation Area	**80900**	**SQM**

Audit Framework and detailed findings of the Audit:



Green Landscaping with Trees and Plants – the campus is beautifully landscaped.

Observations: Plantation area 27%

Chapter No. 4 Green Cover - Plantation of Trees

List of Plants in the Campus:

Sr.	Botanical Name	Common Name	Total
1	Azadirachta Indica	नीम	160
2	Moringa oleifera	शेवगा	9
3	Pithecellobium dulce	जंगली	118
4	Magnoliaceae	चाफा	13
5	Alstonia scholaris	सात पान	21
6	Aegle marmelos	बेल	12
7	Ficus benghalensis	वड	22
8	Annona squamosa	सिताफळ	4
9	Annona reticulata	राम फळ	2
10	Syzygium cumini	जांभूळ	19
11	Citrus limon	लिंबू	20
12	Murraya koenigii	कडीपाला	2
13	Manilkara zapota	चक्कू	1
14	Carica papaya	फफइ	2
15	Limonia acidissima	कवट	1
16	Alstonia scholaris	सात पान	10
17	caesalpinia pulcherrima	संकेश्वर	17
18	Ficus religiosa	ravi tree	1
19	Tectona grandis	sagwan	10
20	Saraca asoca	अशोक	98
21	Bauhinia racemosa	आपटा	8
22	Simarouba glauca	laxmi taru	38
23	Ficus religiosa	पिंपळ	13
24	Nyctanthes arbor-tristis	पारिजात	7
25	Psidium guajava	पेरू	3
26	Platycladus orientalis	मोरपंख	31
27	Hibiscus rosa-sinensis	जास्वंदी	16
28	Bauhinia racemosa	बदाम	12
29	Mangifera indica	आंबा	87
30	Phyllanthus emblica	आवळा	21
31	Tamarindus indica	चिंच	20
32	Hyophorbe lagenicaulis	bottelpalm	15
33	Cocos nucifera	नारियल	8

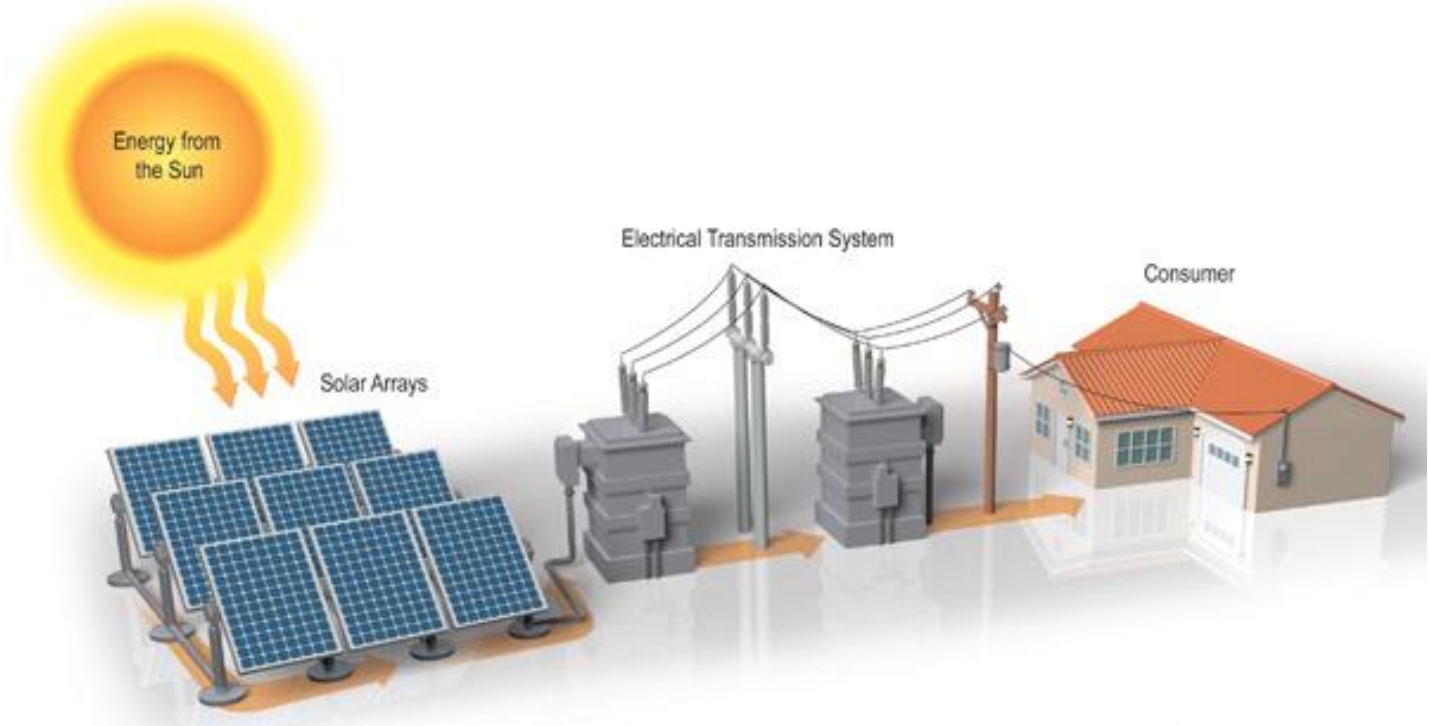
34	Bambusa	बांबू	8
35	Ficus racemosa	उंबर	3
36	Magnolia champaca	फुलाची झाडे	38
37	Lantana	tantanee	31
38	Tridax procumbens	samdad	3
39	Carissa carandas	karandee	3
40	Santalum album	चंदन	12
41	Eucalyptus	निलगिरी	31
42	Hyophorbe lagenicaulis,	Palm tree	28
43	Butea monosperma	padas	1
44	solanium indicum	kateri pan	22
45	Epipremnum aureum	Money plant	10
46	**Total**		**1011**

Chapter No. 5: Use of renewable Energy

Institute has been taken good initiative for energy conservation.

Installed Solar Power generation plant of 100 KWp

Observations : Annual Generation @96000 KWh/year



Chapter No. 6: Study of Waste Management

Environmental consciousness and sustainability friendly initiatives

1. Solid waste management

- The college is taking utmost care of cleanliness and hygiene. Daily waste is collected by the cleaning staff and segregated into degradable and non-degradable waste.
- Solid waste is generated in the form of plastic, glass, metal, newspapers, lab manuals, etc. is stored at one place and scrapped periodically for recycling.
- Non degradable waste (Dry and wet) is collected separately empty bottles, cartons are collected regularly at one place and handed over to the municipal vehicle for collection and proper disposal.
- College is using number of software's Tally for digitalization concept that made steps towards way to less paper use.

Observations: Institute has been done Good Management of the various types of degradable and non-degradable waste

2. Biomedical waste management

Biomedical waste is generated in the form of animal experimentation, bioassays, micro biological cultures, fluid and blood at the institute. Waste like cotton gauze, bandage, textiles, syringes, needles, blades and lancets are disposed along with degradable waste.

3. Water Management

Institute has been taken good initiative for water conservation.

Water scarcity is serious problem throughout the world for both urban & rural community. Urbanization, industrial development & increase in agricultural field & production has resulted in overexploitation of groundwater & surface water resources and resultant deterioration in water quality. The conventional water sources namely well, river and reservoirs, etc. are inadequate to fulfill water demand due to unbalanced rainfall. While the rainwater harvesting system investigate a new water source.

Soak Pit Functions and Design : Installed rainwater harvesting in the college campus

Chapter No. 7 : Study of Carbon Footprint

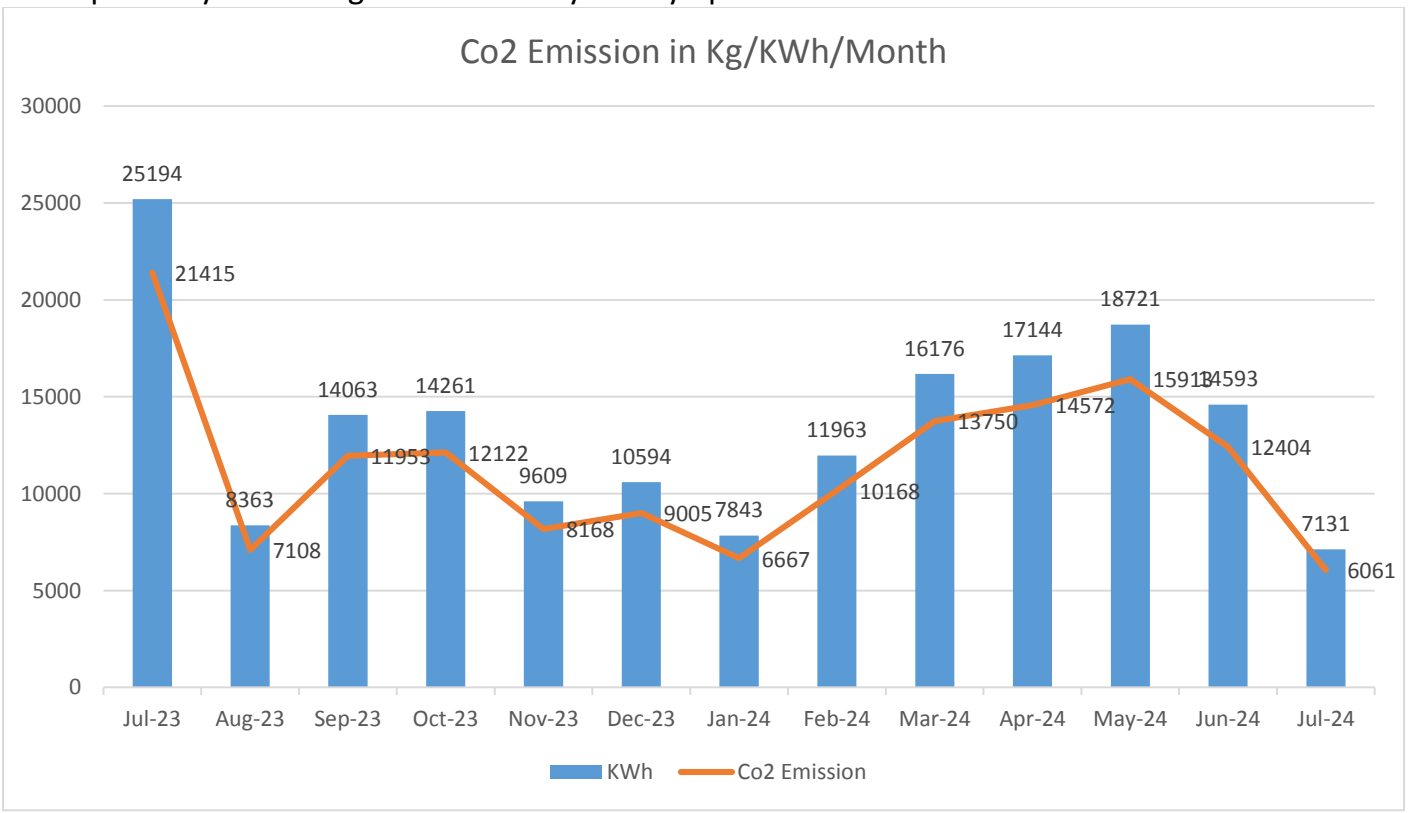
A Carbon Foot print is defined as the Total Greenhouse Gas emissions, emitted due to various activities. In this we compute the emissions of Carbon-Di-Oxide, by usage of the various forms of Energy used by the College for performing its day to day activities. The College Imports Electrical Energy during Night for various Electrical gadgets.

Basis for computation of CO2 Emissions:

The basis of Calculation for CO2 emissions due to Electrical Energy are as under

1 Unit (kWh) of Electrical Energy releases **0.8 Kg of CO2** into atmosphere

Based on the above Data we compute the CO2 emissions which are being released in to the atmosphere by the College due to its Day to Day operations



Observations: Annual Electricity Import from MAHAVITRAN:

The College Imports Electrical Energy during Day & Night for various Electrical gadgets.

Annual Electricity Import = @**175655** KWh/year

Calculations:

Electricity: **Input value (in KWh/Yr) X 0.85 (Emission Factor)**

= Output value in (Kg of CO_2)

Calculation for CO2 emissions due to Electrical Energy = @149306 Kg of CO_2 /year

Suggestions: Install Occupancy Sensors to minimize losses in Lighting System

Chapter No. 8 : Best Practices & Activities

Institute has been declared their Environment Policy

Policy Document On Environment and Energy Usage

- To install LED bulbs in the complete campus to save energy
- To operate institute building in most efficient energy manner.
- Maximum use of Renewable Energy.
- Encourage a culture of Energy conservation on campus.
- To take additional measures to continuously improve our energy consumption.
- To develop and maintain Energy Management System based on ISO: 50001.
- To encourage use of advanced technology to minimize energy consumption.
- To engage in dialogue with the government agencies, and actively work with the local organizations in the areas of environment, energy efficiency and sustainable development.
- To strengthen our employees' and students' environmental knowledge and skills in order to improve our own environmental performance.
- To provide information and training opportunities on energy saving measures.
- To train our employees and students through our Enviro Club to make them 'Go Green Specialists' and partners to plant trees each year.

Principal

Best Practices & Activities at MSBECL

Several significant and fruitful awareness programs both students and staff of the Campus are arranged every year in the campus. Reflections from students are Evident how effective such awareness programs conducted in the campus. Major programs conducted in the campus during the last Five years.

Campaigns: Nature camps, field trips and some of these activities are year round programs and others are regular year wiser semester wise or any other stipulated time bound programs.

Joint Initiative between MEDA Gov. of Maharashtra & MSBECL for Energy Conservation

Environmental education through systematic environmental management approach.

NATIONAL ENERGY CONSERVATION WEEK 14th Dec to 20th Dec.

The National Energy Conservation Day is celebrated on December 14 every year, in order to spread the message on the importance of conserving energy and to showcase the achievements of the nation in energy efficiency and conservation.

Use of EV Vehicles:

Observations : Mostly Students and staff started using EVs for transportation.

Suggestion's: Install EV Charging Station at College Campus

College can reduce the environmental impact of charging their vehicle further by choosing renewable energy options in day by charging station.

Media report:

1. National Energy Conservation day 14th Dec. 2023

महाऊर्जातर्फे लातुरात जनजागृती कार्यक्रम

लातूर : प्रतिनिधी

येथील एम. एस. बिडवे अभियांत्रिकी महाविद्यालय आणि महाऊर्जा संयुक्त विद्यमाने दि. १९ डिसेंबर रोजी संस्थात्मक प्रशिक्षण कार्यक्रम आयोजित करण्यात आले. या वेळी महाऊर्जा लातूर विभागीय कार्यालय महाव्यवस्थापक समीर घोडके यांनी मार्गदर्शन केले. ऊर्जा ऑडिटर केदार खमितकर यांनी ऊर्जा ऑडिट आणि व्यवस्थापनावर पॉवर प्रेझेंटेशन सादर केले. प्राचार्य बी. व्ही. धरणे, प्रा. सी. ए. पटनायक, प्रा. एल. आर. मंत्री, प्रा. राहुल व्यवहारे, शिक्षकेतर कर्मचारी व विद्यार्थी विद्यार्थिनी मोठ्या संख्येने सहभागी झाले होते. महाऊर्जा महाराष्ट्र शासन यांच्या विविध योजनांची माहिती या कार्यक्रमात देण्यात आले.

राष्ट्रीय ऊर्जा संवर्धन सप्ताहानिमित्त जनजागृती

एम.एस. बिडवे अभियांत्रिकी महाविद्यालयात कार्यक्रमासंदर्भ मान्यवर.

प्रतिनिधी | लातूर

दैनंदिन जीवनात मोठ्या प्रमाणावर वापर होत असलेली विजेची निर्मिती देखील मोठ्या प्रमाणावर कोळशापासून केली जाते. ग्लोबल वॉर्मिंग सारख्या जागतिक स्तरावर गंभीर समस्येला सामोरे जात असताना विजेच्या काटकसरीने व कार्यक्षमतेने वापर होणे गरजेचे आहे, आज विजेचाही मूलभूत गरजांमध्ये समावेश झाला आहे,असे प्रतिपादन महा ऊर्जा लातूर विभागीय कार्यालय महाव्यवस्थापक समीर घोडके यांनी केले.

राष्ट्रीय ऊर्जा संवर्धन सप्ताह १४ ते २० डिसेंबर या कार्यक्रमांतर्गत शहरातील एम.एस. बिडवे अभियांत्रिकी महाविद्यालय आणि संस्थात्मक प्रशिक्षण कार्यक्रम आयोजित करण्यात आला. यावेळी समीर घोडके बोलत होते. मानवी जीवनात सामान्यतः अन्न, वस्त्र व निवारा या मूलभूत गरजा म्हणून ओळखल्या जातात. परंतु जागतिकी करणाच्या आजच्या युगात ऊर्जा अर्थात विजेचाही मूलभूत गरजांमध्ये समावेश झालेला आहे. आज ऊर्जेची गरज नैसर्गिक इंधनाचे साठे जसे कोळसा, खनिज तेल, वायू यावरच भागवली जाते, असे यावेळी सांगण्यात आले. ऊर्जा ऑडिटर केदार खमितकर यांनी ऊर्जा ऑडिट आणि व्यवस्थापनावर पॉवर प्रेझेंटेशन सादर केले. प्रमुख उपस्थितीत प्राचार्य बी.व्ही. धरणे, संयोजक विद्युत विभाग प्रमुख प्रा. सी. ए. पटनायक, प्रा. एल. आर. मंत्री, प्रा. राहुल व्यवहारे व इतर

2. Green Club Activities MEDIA report - World Water day Awareness Project

BEST PRACTICES AWARDS

देशोन्नती

जागतिक जल दिन स्पर्धेत एम एस बिडवेचे यश

लातूर : ग्रीन क्लबच्या माध्यमातून जागतिक जल दिन २०२४ मोठ्या उत्साहात साजरा साजरा करण्यातआला होता. या निमित्ताने घेण्यात आलेल्या विविध गटातील स्पर्धांचे पुरस्कार जाहीर झालेले आहेत. पुरस्कार प्राप्त महाविद्यालयाचे प्राचार्य डॉक्टर सुरेश हल्लाळी, ग्रीन क्लब फॅकल्टी कोऑर्डीनेटर प्राध्यापक रतन सिंह राजपूत यांनी केलेल्या कार्याबाबत विशेष अभिनंदन करण्यात आले.

सर्वांनी केलेल्या या कार्याची दखल घेत युनिसेफ कडून जागतिक स्तरावर प्रकाशित करण्यात येणाऱ्या वार्षिक अहवालात अभियानाअंतर्गत केलेल्या कार्याचा उल्लेख करण्यात आलेला आहे. हे कार्य आत्ता जागतिक स्तरावर पोहोचले आहे. राज्यस्तरीय व? जिल्हास्तरीय पोस्टर स्पर्धा पुरस्कारांमध्ये एम एस बिडवे अभियांत्रिकीची विद्यार्थीनी श्वेता भडके हिने प्रथम पारितोषिक पटकावले असून जिल्हास्तरीय स्पर्धेमध्ये महाविद्यालयास सर्वातम ग्रीन क्लबचा पुरस्कार प्राप्त झाला . जिल्ह्याचा बहुमान वाढवणा-या बिडवे अभियांत्रिकी प्राचार्य, ग्रीन क्लब समन्वयक प्राध्यापक व विद्यार्थ्यांचे कौतुक केले जात आहे.


#HAPPY EARTH
PCRA
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