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TO WHOMEVER IT MAY CONCERN

Date: 29/08/2024

To,

The Principal
Sahyadri Science College,
SH 57,Vidya Nagar,
Shivamogga – 577203. Karnataka, India.

This is to certify that the Energy and Environmental Audit Report for the academic year 2022-23 at “Sahyadri Science College, Shivamogga” has been prepared by myself and our team members as follows:

1.Rana Pratap – EMS Auditor, Bengaluru.

The college has taken 'Good Green' initiatives in implementing water conservation through RWH and has made efforts to reduce energy consumption by using 76% lighting through LED bulbs. In addition, outreach activities were also carried out outside the campus in creating awareness among the society. The Green Campus initiative has been implemented at the College. The efforts of staff and students in the area of environment and sustainability are greatly appreciated.

Harisha K

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ENVIRONMENTAL CONSULTANT
BANGALORE

R. Pratap

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(Constituent College of Kuvempu University)
SHIMOGA, Karnataka State.



ENERGY AUDIT REPORT




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SHIMOGGA, Karnataka State.

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Sahyadri Science College, Shivamogga

Campus Energy Audit

Mr. Harisha. K

ENVIRONMENTAL CONSULTANT

Dr. Rajeshawari N	: Principal.
Dr. Rajeshawari N	: Eco Club President.
Dr. M N Chandrashekhar	: NAAC Coordinator.
Dr. Krishnaswamy	: IQAC Coordinator.
Dr. Nagaraj Parisara	: HOD, Department of Environmental Science.
Dr. M N Chandrashekhar	: HOD, Department of Physics.
Dr. Ramesh Babu	: HOD, Department of Botany & Seed Technology.
Dr. VidhyaShankara M H	: HOD, Department of Computer Science.
Dr. Mohanesha K M	: HOD, Department of Electronics.
Dr. Ibrahim khalilulla	: HOD, Department of English.

With Contributions from

All Stakeholders, Staff and Students


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Declaration

We the principal, faculty, staff and students of **SAHYADRI SCIENCE COLLEGE, SHIVAMOGGA** are deeply concerned of the fastest scale and movement of pollution, degradation and depletion of resources leading to many environmental problems.

Environmental problems like Green house gases, Global warming, Ozone layer depletion and Climate change are the main issues we see, we listen and we talk of that, everywhere at local, national and international levels but we are not serious about resolving the problems. We need to create awareness regarding such issues which threaten the survival of all living beings on this earth including the humans too. These environmental problems have been caused by unsustainable production and consumption patterns and inequitable use of resources across the world.

There is an urgent need to think of such issues globally in a sustainable way adopting green technologies in our life to have a better future for the next generations using equitable and proper resource management in developmental projects.

Environmental challenges can be solved by creating awareness at institutional level. This awareness is needed in education research and policy making to reach our goals towards sustainable environment.

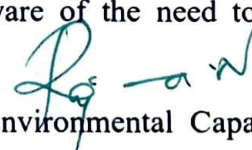
We therefore, agree to take the following actions at our institution for sustainable development:

1. Raising Awareness Of Environmentally Sustainable Development :- by conducting numerous programs (Local, Regional and National) with NGOs or institutions to create environmental awareness for a sustainable future.

2. Create An Institutional Culture Of Sustainability : - Encourage all institutions to engage in Education, Research, Policy making and information sharing on Overpopulation, Environmental issues and developments to move towards global sustainability.

3. Environmental Citizenship Education :- Environmental Education is imparted to students in the curriculum to create awareness and make them aware of the need to be responsible citizens.

4. Promote Environmental Literacy For All :- Create Environmental Capacity building programs to develop all students, faculty and staff at the college.


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5. Practice Institutional Ecology:- Maintain Environmental responsibility by establishing institutional ecology policies and practices for resource conservation, recycling, waste reduction, and environmentally sound operations.

6. Involve All Stakeholders:- Promote the participation of government, NGOs and industry in supporting interdisciplinary research, Education, Policy making and information sharing in the area of Environmentally sustainable development to solve Environmental problems.

7. Collaborate For Interdisciplinary Approaches:- Engage university faculty and administrators with Environmental practitioners to develop interdisciplinary approaches in curricula, research initiatives, operations, and outreach activities that support an environmentally sustainable future.

8. Improving the Capacity Of Primary And Secondary Schools:- Actively participate in creating awareness and responsibility in various schools and communities for a good and clean environment.

9. Expand Service At Local And Regional Levels:- Collaborate with other institutions and NGOs to adopt Environmentally friendly practices and promote Environmentally friendly activities to protect the Environment.

10. Keep Moving:- Continually maintain balance to inform and support each other in their efforts towards a sustainable future.



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Acknowledgements

The Energy Audit report could not have been completed without the assistance and support of several people on the SSC Campus. In particular, we need to acknowledge the enormous help provided by Prof. Sharath Ananthamurthy, Vice- Chancellor, Kuvempu University, Shri A.L.Manjunath, KAS (Super Scale Time), Registrar (Administration) & Finance Officer, Prof.S M Gopinath, Registrar (Evaluation), and Dr. Rajeshawari N, Principal & all the faculty and students particularly Coordinator and students of Eco Club, SSC.

The Energy Audit could not have been conducted effectively without the active participation and help from various groups of students particularly from the departments of physics and Computer Science. Others on campus who provided valuable information and help include –

Dr. M N Chandrashekhara, NAAC Coordinator, Dr. Krishnaswamy, IQAC Coordinator. Dr., Rajeshawari N, Eco club President, Dr. Nagaraj Parisara HOD, Department of Environmental Science, Mr.Harisha K Environmental consultant has provided guidance, ideas and helpful suggestions to make the audit more complete and robust. Although we were not able to accomplish all the facets of the audit that the experts challenged us to achieve, this audit report has been greatly enhanced by their expertise in Environmental Auditing, scientific acumen, unfailing persistence and support.

We would like to thank Mr. Harisha.K Environmental Consultant for both hosting a visit and coming to visit us at SSC campus and providing his experience and guidance.

Finally we would like to thank all the members of the SSC Campus Eco Club group who provided motivation and a critical outlet for this audit to use for future sustainability efforts on campus.


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2022-23 ENERGY AUDIT REPORT


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Executive Summary

SAHYADRI SCIENCE COLLEGE,SHIVAMOGGA is a leading Constituent Institution of Kuvempu University offering Under Graduate, Post Graduate Courses in the college. Latest environmental growth and an awareness is created in students, faculty and all staff towards becoming environmentally sound and a more sustainable eco-friendly campus.

The Campus is spread over 69 acres with a Good Green ambience. The college has nearly 150 Faculty, 1999 Students, 16 non teaching faculty, 13 House keeping staff and 2 Watchmen's. Education at the college is open to all young boys and Girls irrespective of religion, caste or community. It imparts quality education to the economically and socially backward classes, scheduled castes and scheduled tribe students and also to students from neighboring states of Karnataka and as well as rest of India. University education is provided not only to acquire knowledge but also to inculcate a sound philosophy of life for holistic living. To fulfill these objectives the College strives to create a scholastic environment through effective teaching, curricular and co-curricular activities and democratic disciplining.

Energy audit is carried out and the monthly electricity consumption by lighting system has been reduced by installing LED bulbs and tubes with reflectors in the campus. A solar roof top PV system of 20-35 KWp solar grid will be installed in the campus in the upcoming days. Suggestions are given to reduce minimum power consumption by switching of lights, computers and fans when not in use and to save energy in the future, electrical appliances with 4-star BEE Rating or higher must be purchased. Electrical Sensors can be used in office, staff room, Toilet and in staircase to save energy.

College is providing significant Environmental education, research, awareness both by faculty, students in the Departments of Physics and other departments.

These are few milestones of how **Sahyadri Science College,Shivamogga** is going Green campus, all documented in this detail report. However, the audit has started to make the institution an eco-friendly and sustainable campus in the coming years to become a model Green institution.


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Overview of Campus Environmental Audit

SAHYADRI SCIENCE COLLEGE, SHIVAMOGGA has committed to conservation of environment through sustainable and eco-friendly technologies.

The current Energy Audit represents the first phase of efforts to build a sustainable and environmentally friendly campus at SSC. It is true that the definition of sustainable development is defined in different ways, but for this project we define sustainable development as a development that affects the environment, economic and social issues; However, it is often differentiated as an environmental problem. In its early manifestations, sustainable development was largely a Green agenda, or the integration of environmental considerations into economic development.

The Audit was conducted with the active assistance of

Mr. Harisha K, Environmental Consultant.

Dr. Rajeshawari N, Principal and Eco club President,

Dr. M N Chandrashekhar , NAAC Coordinator, HOD, Department of Physics,

Dr. Krishnaswamy, IQAC Coordinator,

Dr. Nagaraj Parisara, HOD, Department of Environmental Science.


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Overview of Sahyadri Science College, Shivamogga

SCC was established in the year 1941 with the B.Sc Degree course, But today along with B.Sc ,BCA ,M.Sc courses with 1999 students, has crossed several barriers effectively on its way to impart quality education with un disputable physical infrastructure and learning models. This has been the legacy, for the past eight decades since its establishment and looking forward towards taking one more challenge to its stride in providing education with quality and styled to reach the mass with limited time and available resources. Achievements are big enough to be dreamt and successive dreaming leads to achievements accrued over a period of time. The Institution has been able to make remarkable progress in all spheres of the academics and has been able to mark these achievements in academics, event management, academic evaluation and results, quality in leadership, learning outcome with the use of infrastructure, the basic set of guidelines and way of looking at various aspects has made remarkable progress and has seen several changes as days have passed.

Today the institution is providing a quality education, offering from graduate, courses to economically and socially backward classes, scheduled castes and scheduled tribe students coming from different parts of the state and also from rest of India. The institution with an illustrious past, marches ahead with long strides having the vision to scale greater heights in the coming years.

Vision:

- To be the most preferred Institution for basic Education, Conducting Quality Research and Developing Sustainability in education to help the local to become ethically strong globally recognised manpower.
- Student-centric education system which contributes directly to transforming the youth power sustainably into an equitable and vibrant knowledge society by providing high-quality education to all.

Mission:

- To prepare students for professional accomplishments and responsible global citizenship while fostering continuous learning and to provide state-of-the-art education through the committed and highly skilled faculty by partnering and collaborating with industry and R&D institutes.


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- The institute believes in providing quality basic education ensuring that the students have strong fundamentals along with adequate practical exposure. Continuous efforts are made to nurture students to excel in their respective field.
- To be the best at serving society by creating basic knowledge and educating students for dynamic and global careers.



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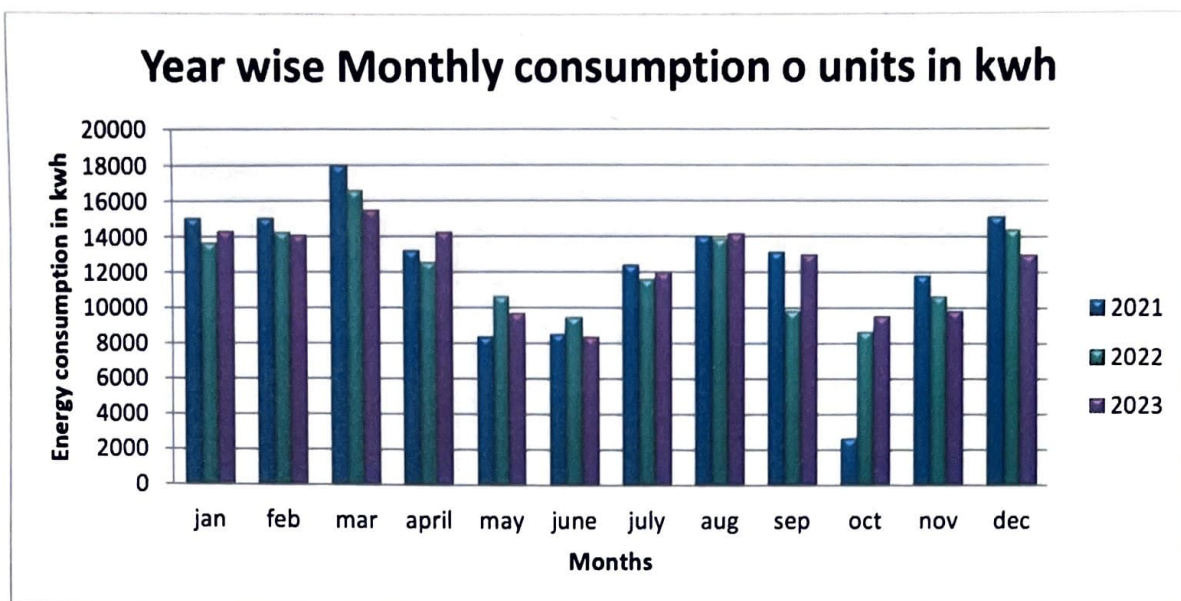
Energy Audit

Minimum energy consumption is the saving factor of energy conservation on campus. The information signs near the electrical panels prevent energy wastage. By using LED lamps instead of Tungsten lamps, Energy consumption could be reduced. The team and staff work in the same place and use an open auditorium, classroom, office room and conference room, equipped with LED lamps to reduce energy consumption, to conduct college events. And those involved were informed about the danger of depletion of natural resources and the need to save energy.

	2021	2022	2023
January	15094	13658	14322
February	15106	14259	14084
March	18036	16578	15515
April	13256	12546	14263
May	8384	10698	9687
June	8562	9486	8364
July	12444	11597	11965
August	14008	13875	14189
September	13178	9845	12987
October	2624	8649	9547
November	11858	10642	9872
December	15137	14421	12987
TOTAL	147687	146254	147782

Table : Data of 3 years monthly consumption of units in kWh

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Graph : Monthly consumption of units in kWh for 3 years

From the above graph, the total energy consumption was 147687 kWh in 2021 and 147782 kWh in 2023, showing an increase in energy consumption of around 0.05%. SCC building has Source of electricity from MESCOM Ltd and monthly energy consumption in current year was about 12000- 12500kWh averagely and used to pay monthly bill around Rs.168000-177000 averagely. 76% of lightings is by LED of the total lighting system in the campus. 3 solar street lights are installed in the campus, So the college decided to go for eco-friendly technology in a sustainable way to install a solar roof top PV system of 20-35 KWp GRID in the campus in future to reduce the monthly bill by around 30-35% nearly.



LED Light and Solar Street light

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Solar Panels and Solar Water Heater installed at Hostel

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FEED BACK : Satisfactory / ~~Need to Improve~~

Recommendations

Recommendations

Following are some of the key recommendation for improving campus Environment:

1. Introduce a solar grid to utilize renewable, clean energy on campus and achieve sustainability.
2. In the future, only purchase electrical appliances with a BEE rating of 4 stars or higher to achieve better efficiency and reduce power consumption.
3. Conduct shutdown exercises at regular intervals. Assign responsibility to teaching/non-teaching staff and students.
4. Use sensor switches in basement areas, offices ,Toilet and laboratories to save energy.
5. Provide energy efficient heating systems with adjustable controls for individual heaters wherever possible and ensure that clear instructions on the use of heating controls are available to staff and students (particularly for the science sector).
6. Save electricity through proper maintenance of wiring and electrical equipment, as well as maintenance of electrical appliances and fittings are essential .
7. The College should develop internal procedures to ensure compliance with environmental laws and responsibility for putting them into practice should be established.

DATE: 29-08-2024

Harisha . K

SIGNATURE

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