

**SS MARGOL DEGREE COLLEGE OF**  
**ARTS SCIENCE & COMMERCE.**

**Shahabad-585228 (Karnataka)**

(GPS: 17.125709° N 76.928361° E)

**ENERGY AUDIT REPORT 2022-23**



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DETERMINED FOR INCREDIBLE EARTH

***A Widest Platform of Enviro Analysis***

G-37, CENTURY COMPLEX,  
OPP: SANGAM CINEMA, SB TEMPLE ROAD,  
KALABURAGI- 585101. KARNATAKA- INDIA.

gps: 17° 20' 24" N 76° 50' 6"

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***USE THE NATURE'S RESOURCES  
VERY CAUTIOUSLY,  
OTHERS HAVE THE SHARE IN IT***

## PREFACE

Life expectancy of those few who survive will be much shorter than what we have now. This is something we all agree to avoid. The students who are in schools and colleges now are to be the enlightened leaders of immediate tomorrow. Our national educational authorities, as in most developed countries, therefore insist that every student in our country should learn how damages to the environment occur and how to avoid such situations, emphasizing more on possible remedial measures. This green education should start from schools and colleges, and the insistence on Green Audit of higher education institutions on an annual basis is to make students and staff well informed of the extent of 'ecological footprints' each one creates, as well as on which areas one should concentrate to make his or her environs greener than before. The 2022-23 Energy Audit Report of **SS MARGOL DEGREE COLLEGE, SHAHABAD-585228, Karnataka**, is prepared in such a manner that it can educate every concerned member of this institution, on the major contributors tending to destroy and on every step helpful to restoration leading to further an ideal energy efficient institution status. A brief presentation of the contents of this report by the teachers to the other stakeholders would help in getting every one of them to start taking further steps to achieve a 'Ideal Green Energy Institutional campus directly and hence the region indirectly.



# Green Foundation

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## SS MARGOL DEGREE COLLEGE OF ARTS, SCIENCE & COMMERCE SHAHABAD-585228.

### VISION

To Preserve and Promote the finer innate qualities of a STUDENTS, then Citizens of our Nation for the eternal Human Values, the rich heritage of our Nation, to equip with her with knowledge and skills to meet the regional and global challenges with confidence. Apart from this, intends to be a transformational leader Environmental Education & its awareness, facilitating with day to day happenings and routine practices, the full flowering of Life in Abundance

### MISSION

The institution's Mission is to infuse the Ethical, Moral and Social Values to disseminate the unfolding and sensitizing the integrated personality of Womanhood. Providing and promoting the apt education to empower and assimilate all the innate human qualities to face the National and Global Challenges with confidence, apart from the sustainable livings, ensuring a learning environment of creativity, Adventure of ideas with Constant innovation, and State-of-the-art Technique, Information & Communication Technology



## SS MARGOL DEGREE COLLEGE OF ARTS, SCIENCE & COMMERCE SHAHABAD-585 228. (KARNATAKA)

### EXECUTIVE SUMMARY

This Report presents the results of Green Auditing conducted at **SS MARGOL DEGREE COLLEGE, SHAHABAD**, was established in the year 1967, and is affiliated to Gulbarga University, Kalaburagi. It offers three years Degree Courses in Arts, Science, Commerce, to Award of Bachelor Degree from the said University. The College with NAAC Accredited B Grade and has been co-educational since its establishment. Established by the Hyderabad Karnataka Education Society, Kalaburgi.

Account the Green/Energy/Enviro Auditing, is mutually respected with THE GREEN AUDIT are related to all the students, employees and administrators; Green Auditing is far less familiar to all stakeholders including students and general public. It is most of the time capable of evoking several doubts and misunderstandings on its need as well as on the methodology. Yet, Green Auditing is not to be understood as another name for ecological or environmental auditing. It is much broader and encompasses audit of the following aspects of an institution's normal functioning: Use of Water, Energy, Renewable and other Nature's Resources etc. and the state of Health (of all related persons), Environmental Quality, Transportation & Communication as well as assessment on Accessibility for differently-able, Gender Justice and **Carbon Footprint**, it leaves through all activities over a year. Green denotes a world full of all living beings – human, animals, insects and plants as well as all the useful and harmful micro-organisms that can go on forever in peace, happiness and equity. Teachers play an undeniable role in imparting knowledge to the students and the nature of future living on this planet is shaped by their hands. Hence, teachers are in a position to facilitate knowledge and promote the learners to achieve better awareness about what is happening in and around them. Teachers as professionals and influential individuals, supported by the managements of institutions, can play an important role in shaping up students' attitude through training and parading them to be the role models in their communities. Educational Institutions thus can offer an ideal service in molding the young minds in their impressionable age, towards promoting the health of nature, understanding the underlying causes of climate change and its impacts, and the conditions required to be maintained for sustaining life on earth. Green Audit is, therefore to make the entire





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college and the society understand through the trained students, as to how heavy is their carbon footprint, and help search for remediation and make their campuses and living surroundings 'as green as' one can make it. It is also in search of newer ways to climb up the ladder through continuous efforts in search of the green shade in appreciating their responsible behavior and admire the novel ways in which the campus team has strived to achieve their "shade of green". Green audit can also be a useful tool for a college to know how and where they are using the most energy, water and other Nature's resources. The college can thus plan for the needed changes and ensure savings. It can also be used to improvise their waste minimization strategy. Green auditing and the implementation of mitigation measures will be a win-win situation for the college, the learners and the planet. It can also create health consciousness and promote awareness on environment, ethics and values. Green auditing in such a situation, it is only logical that the college evaluate its own contributions toward a sustainable future for all. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to

Environmental sustainability is more apparent. Over a period, the green culture will pervade the society. In this College, the Green Audit process involved the creation of a student volunteer corps in the form of Green Guardians Club and an audit team with students, teachers, members from Administration, as well as a team of experts who have practiced greening for years including energy and environmental auditors and ecological administrators, through the Nature's and Earth Matters Green Foundation and other related team with the motto 'engineering green solutions'. The results showed that the austere ways of the college, with the cycles of green audits conducted, have helped in identifying opportunities for a number of refuse, recover, reuse, and recycle strategies for wastes as well as for increased energy efficiency and renewable energy use. The carbon footprint in 2021 is only at a very low level, which is less with the national benchmark. A more concrete strategy for students to interact with the communities around them and help them for building resiliency could be developed in the face of onslaughts from climate change and natural calamities on our EARTH which is only one.



**Er Ra Na Kathare**

BE; MIE; Ch E (Kolkata) L LB.

General Secretary,

Green Foundation;

Energy & Environment Consultant

IT Dept, Govt. Registered & Approved Valuer

& Founder Director:

Bhupavan Energy & Enviro

Projects Pvt Limited &

ARC Power Generation Limited

Dated: 21.02.2023

# Green Foundation

On behalf of Green Foundation's Green Auditing Team, very much thankful to :

Prof: Kankappa Bilav, Principal, SS Margol Degree College, Shahabad-585 228.

Prof: Basavaraj Hiremath, Dept of Chemistry, & Co Ordinator IQAC.

Sri SB Chanpally, Chief Engineer (Retd-KPCL); Bidar.

Smt: Sonali V M, M.Tech (Mech) Lecturer, Panchasheel Polytechnic College, Raj Rajeshwari Nagar, Bengaluru.

Sri: MG Kalekar, Manager (Retd), ACC Wadi.

The Photographer, Gardener, the respective care taker of RO water Unit and Nature Lovers among the College, Teaching & Non Teaching staff & the students.

Table

Sl No	ELECTRICAL ENERGY CONSUMING DEVICES	Quantity
1	COMPUTERS	34
2	FANS	70
3	NORMAL TUBE LIGHTS	55
4	LED TUBE LIGHTS	16
5	LED BULBS	18
6	NORMAL BBULBS	5
7	PROJECTOR	4
8	ELECTRIC GENERATOR	2
9	CCTV SET WITH ACCESSORIES OF 28	1
10	SOLAR GARDEN TOWER WITH BATTERY	3
11	SOLAR GARDEN TOWER WITHOUT BATTERY	7
12	BATTERYYS	2
13	INVERTOR	1



The GESCO Bill=Rs 4484.00 for Nov-2022 ; Rs 5238.00 for Dec-2022 & Rs 5017.00 for Jan-2023  
Average is Rs 4913 for three months & more than 60000.00 per annum



## ENERGY AUDIT

Year by year, the electrical energy of this college and Sustainability Audit identified immediate and no cost, low cost and high cost options that can be pursued in above Table. The College Authorities has advised to be act continuously on the first two opportunities during the year 2022-23, which are as follows:

1. Minimise the phantom load in the electrical system. Immediate returns will come with practically no investment. Replace the existing multiple units of UPS system for computers by properly optimized single unit UPS system.
2. Replace existing ordinary tube lights and CFLs with LED lights in the Guest House and in the Hostels. Bring down the consumption without reducing illumination levels or human comfort.

Phantom load is the energy that will be measured by energy meters, even when the equipment is out of use. Computers, LCD projectors, Printers, Photostat machines, Fridges, TV units etc. which are normally hooked to the power line all the 24 hours, may be active only for part of the day. When not in use, unless they are isolated by switching off (not stopping by remote electronic controls), a small percentage of the full load will still be consumed and felt by the energy meter.

Most of them were under-loaded and idled for hours every day. Also, the batteries were old and very weak. Failure of any one UPS unit used to totally disable the devices connected to it, till it is set right. With the suggested new system, a single unit of sufficient capacity is connected in parallel mode to all the user outlets.

The following housekeeping measures required for achieving the cited gains were introduced during the Audit year:

- a) Displayed stickers to switch off equipment - like Computers, Printers, Photocopiers, etc.- when not required; also to isolate them from power supply, whenever possible.
- b) Maintenance schedules for switchboards and distribution boards prepared and followed.
- c) Log Books for recording energy consumption, extent of power failures and running of standby generators were introduced.
- d). Meters for sub-units for monitoring monthly energy consumption in every building to be Implemented in the immediate future





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The college has its electrical installations in the various depts of the building and facilities and the connected load exceeds 33 KW, as indicated in Table above. The electrical energy consumption takes place during normal, peak time and off-peak time differently in different sub-areas. Electricity used is charged according to the energy charges. Which is on an average of more than Rs 60000.00 per year is made up of energy consumption during three tariff regimes – normal, peak and off-peak. Major part of it is as energy charges. Cost based on the maximum demand is not high in comparison. So, reducing consumption can bring in large reduction in **carbon footprint**. As three fourth of the charges are for kWh consumed, 'energy conservation' potential remains high. If demand can be restricted within the 'contract demand' limit (in kW), the demand charge component of electricity bill every month will remain predictable.

## Energy Efficiency tips:

The next attractive opportunity in the path of greening through energy management is the replacement of fluorescent tubes (1200 mm or 4 ft) and compact fluorescent lamps (CFLs). At present the buildings have some number of ordinary four feet tubes. Reduction in Carbon Footprint will arise due to electrical energy being saved by using LED tubes that require only less electricity for giving the same level of illumination. In this case, 20 W LED tubes can be used instead of 40 W ordinary tubes. 40 W tubes with magnetic choke and starter used to need 56 W (power) to light up. So, savings per tube will be 36 W.

In addition, recommend to replace all the Bulbs with tubes of 4' for older & inefficient lighting devices (other than tubes) during the year. This also helped in bringing down the **carbon footprint**. On a rough estimate, the energy consumed by these all the lamps has been reduced to half and the heat radiating from such lamps has also gone down considerably, giving a greener environment.



## ENERGY CONSUMPTION BILL FROM GESCOM FOR 3 MONTHS

(440011) 651 6100461000 44001110 SCIENCE COLLEGE		
LT201 00HP+11 00KU 01/11/22-01/12/22 05/12/22 6100461000-01/12/22		
4000012418 23814 23393 1.00 421		
1320 00 1460 00 1880 55 256 81 0 00 0 00 0 00 0 00 301 46 5227 82 0 00 0 00 5228 00 15/11/2022 15/11/2022 15/11/2022		

(440011) 651 6100461000 44001110 SCIENCE COLLEGE		
LT201 00HP+11 00KU 01/10/22-01/11/22 03/11/22 6100461000-01/11/2022		
4000012418 23393 23050 1.00 343		
1320 00 1460 00 1880 55 289 23 0 00 0 00 0 00 30 65 0 00 241 44 4483 57 0 00 0 00 0 00 4984 00 15/11/2022 15/11/2022 15/11/2022		

(440011) 651 6100461000 44001110 SCIENCE COLLEGE		
LT201 00HP+11 00KU 01/12/22-01/01/23 05/01/23 6100461000-01/01/2023		
4000012418 24216 23314 1.00 402		
1320 00 1460 00 1727 10 221 20 0 00 0 00 0 00 1 75 0 00 286 84 5815 78 0 00 0 00 5017 00 15/01/2023 15/01/2023 15/01/2023		





## ENERGY AUDIT

[Referred documents: The information furnished by the staff  
Prof: Basavara] Hiremath of Dept of Chemistry of the College, Photographs and  
my personnel visit to the premises on 30<sup>th</sup> January 2023]

### ENERGY CONSUMPTION BY VERTUE OF WHICH ITS IS MANDATORY IN AND OUT FOR THE COLLEGE PREMISES.

Sl No	Particulars	Nos	Watts consumption	Time in hours/day	Total watts	Remarks
1	Bore Pump for Lifting	1	1X1000=1000	3	3000	
2	Fridge	1	1X1000=1000	8	8000	
3	Computers	14	14X100=1400	3	4200	
4	All Kinds of Fans	70	70X60=4200	4	16800	
5	Printer/Scanners	4	4X1000=4000	0.5	2000	
6	LED/Tubes/bulbs	34	34X15=510	2	1020	
7	Projector	4	4X500=500	2	1000	
8	Other equipments LS	10	10X50=500	4	2000	
	Total	138	13110	26.50	38020 380.20	

Total Consumption considering 250 WD in the year is 380.20 KW per day

**Conclusion:** There is a less power consumption in the college premises. As compared o 1010 KW the National average and that of the college average 827.90

**Recommendation:** Use always the **BEE STAR Marked** electrical equipments for the less consumption with higher efficiency.







# Green Foundation (Regd)

G-37, Century Complex, SB Temple Road, **GULBARGA**-585101. Karnataka-India.  
Fax: +0091-08427-234808. Email: greenfoundation@ymail.com

## ENERGY AUDIT CERTIFICATE

This is to certify that the GREEN FOUNDATION (R), has conducted the Energy Audit its Resources and their compensation related to optimum use from all conventional & non conventional resources for the Campus of SS Margol Degree College of Arts, Science & Commerce, Shahabad-585228, Kalaburagi District of Karnataka State, for the year 2022-23.

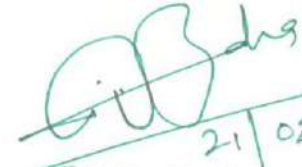
The Energy Audit for the, reviews of data and implementation of measures by our Audit Team was done.

The implementation of Green Measures by the Management, Faculties and students, environmental sustainability is partially commendable and satisfactory.

This audit is conducted to ensure that a Energy Policy is followed and implemented in the campus across all academic and non-academic departments and the need for individual efforts in perpetuating green living habits among the students and college related people.



21<sup>st</sup> February 2023.  
Place: KALABURAGI

  
21/02/2023

**Er Ra Na Kathare**  
BE; MIE; Ch E (Kolkata) L LB; FIV.  
General Secretary,

**For: Green Foundation;**  
Energy & Environment Consultant  
IT Dept, Govt. Registered & Approved Valuer  
Founder Director:  
Bhupavan Energy & Enviro Projects Pvt Limited &  
ARC Power Generation Limited.

*I agree with the data presented in this report, as true, and further express my willingness to implement the recommendations of this audit report after internal review, even if any or many of them are in excess of the relevant mandates.*

Principal,  
Date: 21-02-2023.



  
PRINCIPAL  
H.R.E.S. S.S. Margol College  
of Arts, Science & Commerce,  
SHAHABAD-585 228

  
PRINCIPAL  
Govt. College (Autonomous)  
KALABURAGI-585102

## ACKNOWLEDGEMENTS

I on behalf of Green Foundation are thankful to the Principal Prof: Kankappa Billava, IQAC Co Ordinator Prof: Basavaraj Hiremath, Dept of Chemistry of SS Margol Degree College, Shahabad, and the staff of the college, & Sri Chanpally Shivaraj Chief Engineer,(Retd.), Prof: Sri Mallappa Bothgi, Dept History, Smt: Sonali V M, Lecturer, Dept of Mechanical, in Panchashil Polytechnic College, Raj Rajeshwari Nagar, Bengaluru. Sri MG Kalekar-Works Manager(Rtd), Acc wadi. We thank all the participants of the auditing team, faculty and non-teaching staff who provided the information along with us during the survey. We also thankful to the office staff who helped us for the completion of this Green Audit Report. . . ..

### **Next Audit**

In order to promote continuous improvement it is recommended to conduct the next green auditing during the year 2023-24.





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## PHOTO GALLERY

