Sustainability energy and environment
Of
VIDYAVARDHAKA FIRST GRADE COLLEGE

Period of Study - 2021-22, 22-23, 23-24

Conducted By

RACHANA ENER CARE
Energy management Co
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Title of project:

Green audit report
Sustainability energy and environment of
VIDYAVARDHAKA FIRST GRADE COLLEGE-Mysore, Karnataka, India

Work order No:

P.O. NO. 148/2024-25 DATE 23-09-2024

Scope & Objective:

To conduct green auditing at the Vidyavardhaka First Grade college, Mysuru based on the following activities; Water management, Water conservation, energy conservation, green cover, Pollution control & sustainable practices

Period of study:

2021-22, 2022-23, 2023-24

Report submitted on:

September 2024

Study Conducted By;

Rachana Ener Care

Contact person:

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Email; rachanaenercare@ gmail.com, web www.rachanaenercare.com

Acknowledgement

We appreciate the initiation taken by Vidyavardhaka First grade college for taking interest to have energy environment & green audit. These will not only benefits institution, but society at large.

We are thankful for Vidyavardhaka first Grade College for giving this opportunity to us. This is a great opportunity for us to serve in our passionate area of energy & environment.

We are thankful to all the staff of Vidyavardhaka first Grade College who have supported us in data collections taking measurements during the course of audit

Sustainability in Energy & Environment is every one's need & its conservation is every one's responsibility. But practicing is a challenge. We are sure that Vidyavardhaka first Grade College will go ahead in this regard.

Thanking you.....

For **RACHANA ENER CARE**

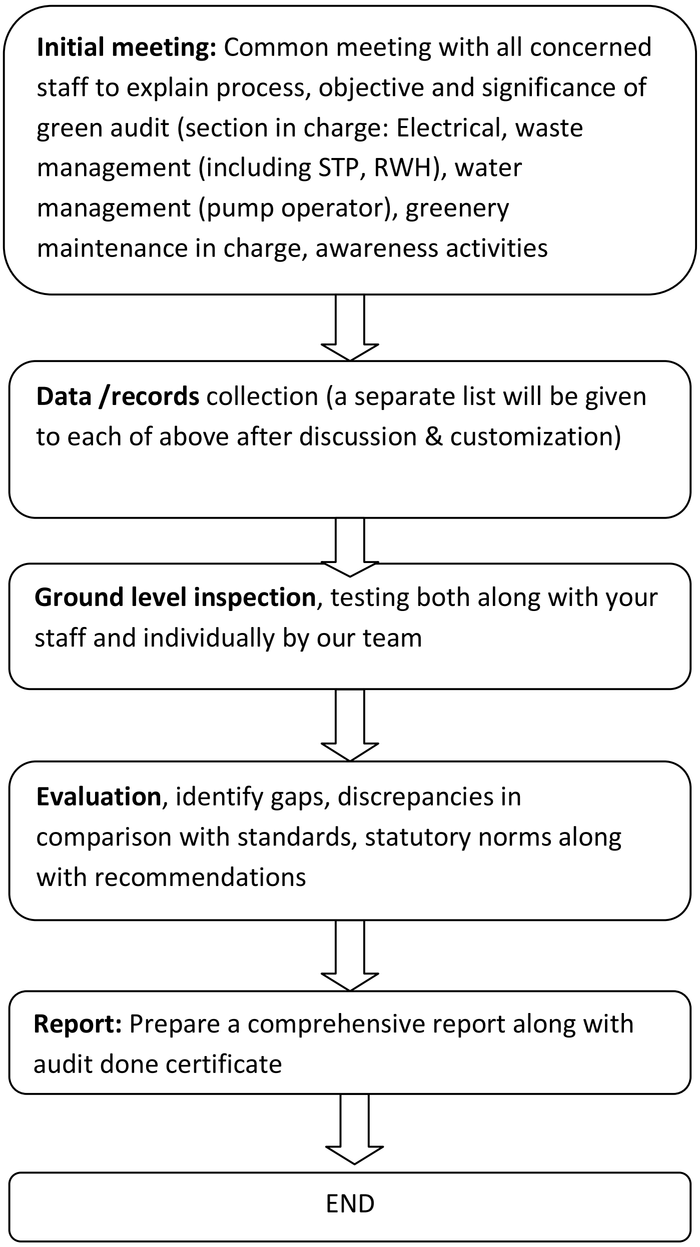
ANIL KUMAR NADIGER BE(E & E)M.I.E

(DIRECTOR & ENERGY SPECIALIST)

RACHANA ENERCARE

INDEX

Green audit flow chart



Initial meeting: Common meeting with all concerned staff to explain process, objective and significance of green audit (section in charge: Electrical, waste management (including STP, RWH), water management (pump operator), greenery maintenance in charge, awareness activities

Data /records collection (a separate list will be given to each of above after discussion & customization)

Ground level inspection, testing both along with your staff and individually by our team

Evaluation, identify gaps, discrepancies in comparison with standards, statutory norms along with recommendations

Report: Prepare a comprehensive report along with audit done certificate

END

Scope & Objective

Reduction in carbon foot print is a global need. Energy conservation plays a major role in this. Primary energy sources such as coal, gas, oil constitute 60% of source for electricity generation in India. Hence saving energy and use of renewable energy plays a critical role in this scenario.

Apart from energy conservation, waste management needs to be done in effective way. Urbanisation has resulted in generation of large quantity of different types of wastes. Reducing the waste, segregating and disposing in proper way is the only solution.

Energy, environment & green audits will evaluate best practices adopted by institutions and possibility to improve in coming days. Such initiatives will have multiple benefits such as creating an environment in the campus, educating the students and supporting society at large.

Energy conservation will focus on judicial use of energy without making any compromise on safety, productivity and comfort. This can be achieved by use of efficient equipment and reducing unnecessary use. Apart from conservation measures, use of renewable energy will help to reduce use of fossil fuels.

Environment audit will evaluate the present waste management system and will suggest the best way to dispose along with technological alternatives. Biodegradable, non biodegradable hazardous waste has to be managed as per guidelines. Technologies related Water conservation , rain water harvesting, biogas generation and composting are available easily.

Green audit will focus on the percentage of greenery on campus. It will also identify types of flora & fauna. Any natural or manmade water bodies will have an added advantage in green campus measures.

Knowledge enhancement is the main focus of an educational institution. In this connection, students are encouraged to understand the need for sustainability, social responsibility. It should reach society through them. Awareness activities conducted inside campus and outside campus involving students to be encouraged.

INTRODUCTION OF ORGANISATIONS

About us:

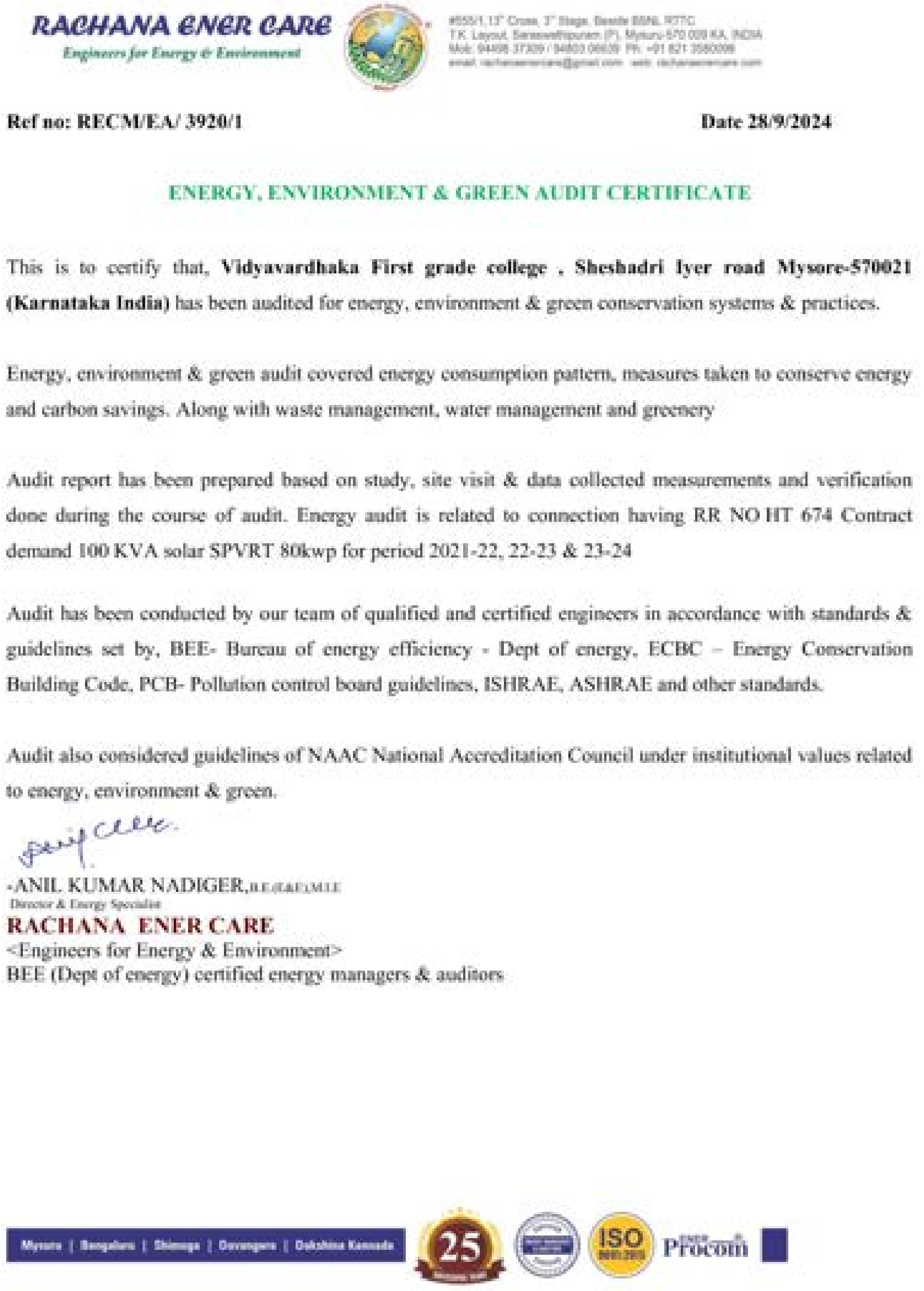
We are a team of engineers & professionals with knowledge & experience in various domains of **energy & environment.** It is both our passion & profession to explore in this domain. Team is headed by Mr Anil Kumar Nadiger, who is an energy expert. Our team members have undergone many trainings & certification examinations conducted by BEE (Govt of India) - Energy Managers & Auditors, NPC (National Productivity council),ASSOCHAM GEM and familiar with various standards such as ECBC , ASHRAE, ISHRAE, Green Building , ETC

We have conducted many energy & environment audits, electrical safety audits, power quality audits, renewable energy study, project management, workshops, for professionals, engineers ,etc

We also undertake training & conduct workshops for students, technicians, professional engineers related to energy efficiency, power conditioning, renewable energy, etc. Many such trainings were done through SIUD (Karnataka Government –ATI campus), BEE programs, engineering institutions and various professional bodies.

We are mentors for various ‘startups” and guide for various student projects, promoting design of innovative products in energy management, power conditioning

Our clientele includes South Western Railways Mysore Railway along with all other railway stations, Central works shops, KREDL (Renewable Energy Department), BSNL (Telecom), KWS&DB (Karnataka water supply Board),DRC,TERESIAN College, NIE, Agricultural University Yuvaraja college, Mahanarini’s college , KSIC (Mysore Silk),Industries Kluber lubrication, Bhoruka extrusions, Jogeetha pipes, railway workshops, etc



RACHANA ENER CARE
Engineers for Energy & Environment

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email: rachanaenercare@gmail.com web: rachanaenercare.com

Ref no: RECM/EA/ 3920/1 **Date 28/9/2024**

ENERGY, ENVIRONMENT & GREEN AUDIT CERTIFICATE

This is to certify that, **Vidyavardhaka First grade college , Sheshadri Iyer road Mysore-570021 (Karnataka India)** has been audited for energy, environment & green conservation systems & practices.

Energy, environment & green audit covered energy consumption pattern, measures taken to conserve energy and carbon savings. Along with waste management, water management and greenery

Audit report has been prepared based on study, site visit & data collected measurements and verification done during the course of audit. Energy audit is related to connection having RR NO HT 674 Contract demand 100 KVA solar SPVRT 80kwp for period 2021-22, 22-23 & 23-24

Audit has been conducted by our team of qualified and certified engineers in accordance with standards & guidelines set by, BEE- Bureau of energy efficiency - Dept of energy, ECBC – Energy Conservation Building Code, PCB- Pollution control board guidelines, ISHRAE, ASHRAE and other standards.

Audit also considered guidelines of NAAC National Accreditation Council under institutional values related to energy, environment & green.

-ANIL KUMAR NADIGER,B.E.(E&E),M.I.E
Director & Energy Specialist
RACHANA ENER CARE
<Engineers for Energy & Environment>
BEE (Dept of energy) certified energy managers & auditors

Mysore | Bengaluru | Shimoga | Davangere | Dakshina Kannada

25

ISO

Procom

Abbreviations & Glossary

AC – Alternating Current

AH- Ampere Hour (Used to define capacity of battery)

DC- Direct Current

BD – Billing Demand

BEE- Bureau of energy efficiency

BLDC – Brush less Direct Current

CD- Contract Demand

CFM – Cubic Feet per Minute

CHESCOM – Chamundeswari electricity Company

DG – Diesel Generator

DISCOMS- Distribution Company (electricity)

ECBC- Energy conservation building code

EER – Energy Efficiency Ratio

Efficacy – capacity to deliver desired out put

ENCON- Energy conservation

ESCOM – Electricity Company

HP - Horse power (1hp = 0.745 kw)

HT – High Tension (High voltage 11,000 Volts)

KWH – Kilo watt hour generally used as ‘Units’

LED – Light Emitting Diode

LPH – Liter per hour (related to flow)

Lumens- Unit to measure total output light

LUX – Illumination level in unit area

Mains- Electricity supply point

MD- Maximum Demand

PCB – Pollution Control Board

PF – Power factor

Refrigerant- Chemical used in refrigerator

RO – Reverse Osmosis

SHCG – Solar Heat Gain Coefficient

SMF – Sealed Maintenance Free

Star label – Indication of energy efficiency of any equipment

TDS- Total dissolved salts

UPS – Uninterrupted Power Supply

VA – Volts and amps multiple

Standards

Standards and guide lines set by following professional bodies, societies and government bodies were followed in this report.

BEE – Bureau of energy efficiency

Nodal agency under department of energy, government of India

NPC – National productivity council

Star label standards – beestarlabel.com

ECBC – Energy Conservation Building Code

ISHRAE- Indian Society of Heating Refrigerating & air conditioning Engineers

ASHRAE- American Society of Heating Refrigerating & air conditioning Engineers

PCB – Pollution Control Board

SEEM – Society of Energy Engineers & Managers

UNSDG- United Nation Sustainable Development Goals - https://sdgs.un.org/goals

KREDL-Karnataka State Renewable energy development ltd

SDA - State designated agency under BEE

NBC - National Building Code

CPWD general specifications for electrical works 2023

IGBC - Indian Green Building Council

CEA -Central Electricity Authority

INSTRUMENTS USED

- Power analyzer
- Power parameter data logger
- Multi meter
- Clamp meter
- TDS meter
- Lux Meter

Energy Audit

Energy sources

There are two main energy sources, CHESCOM & Solar. There are three Diesel generators of capacity 125kva ,30kva, 30kva. All these utilities are common for all the institutions in the campus. There are sub meters to record consumption of each institute. The FGC college is having five UPS and sufficient battery backup , hence it is not depending on above diesel generators.

Details main energy sources;

Source	**Details**
CHESCOM	Contract demand :100kva Type of supply HT- 11kv RR no: HT 694 Tariff ;HT2B TOD- Not applicable Min billing demand : 90kva Transformer capacity 200kva
Solar	Type; SPVRT on grid Installed capacity 80kwp Type of panel: Mono crystalline No of inverters- 2nos Capacity – 50kw + 30kw Panel capacity each 385WP Metering- net metering Installed on - June2021
Diesel Generator in regular use	Capacity : 30KVA Quantity : 2nos Phase: 3 Phase (125KVA DG is not in regular use)

Transformer centre

Transformer capacity	200kva
Input – HV	11kv delta
Output- LV	433 v star
HV amps	10.5 amps
LV amps	266.66 amps
Efficiency level	3
Loss at 50% load	670Watts
Loss at 100% load	2100watts
Tap changing	off load
Make	baba power control
Month Year	11/2019

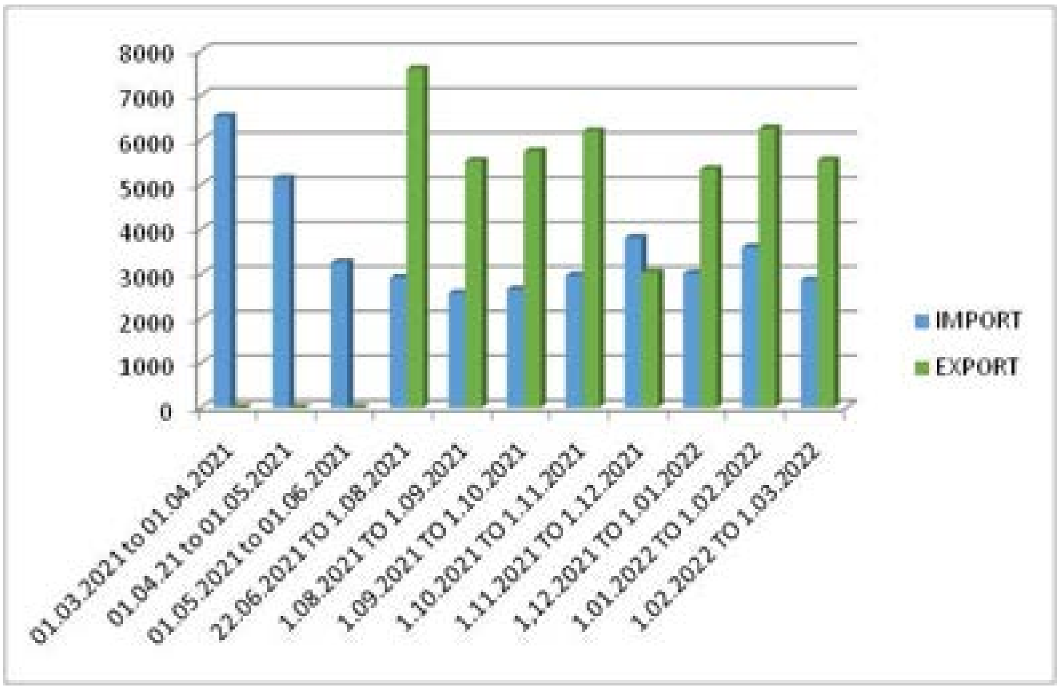
Energy Performance study 21-22, 22-23, 23-24

Energy analysis 21-22 (Note all energy values are in kwh)

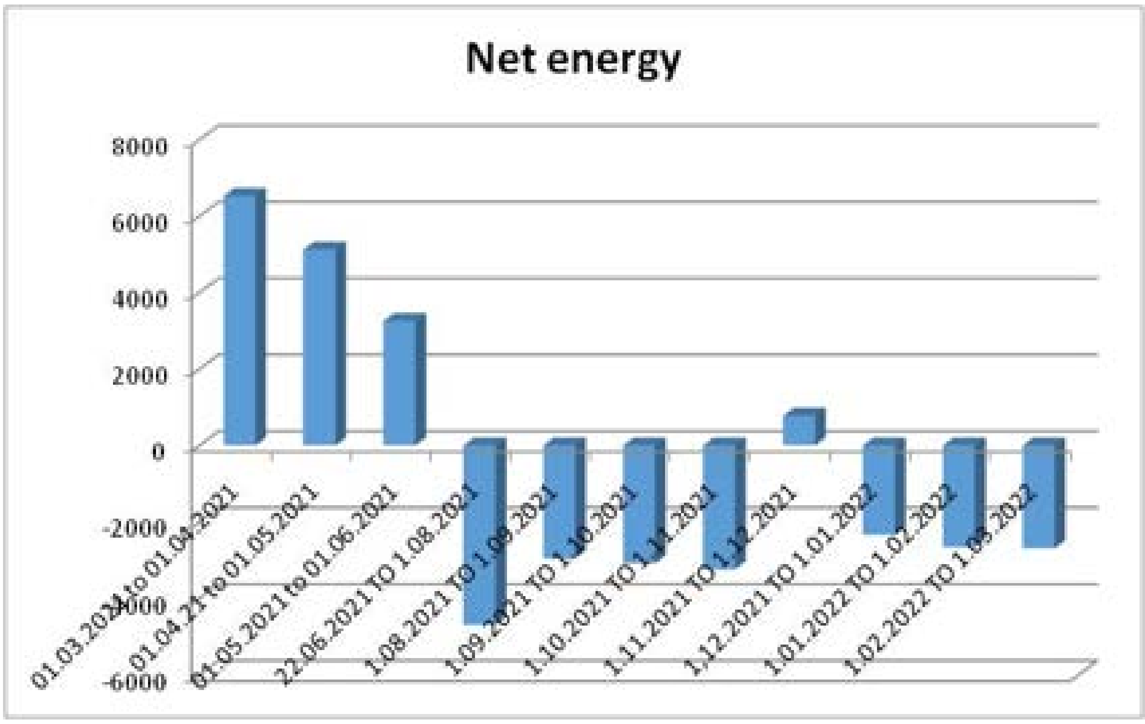
	PERIOD	IMPORT	EXPORT	#NET ENERGY
1	01.03.2021 to 01.04.2021	6527.5	0	6527.5
2	01.04.21 to 01.05.2021	5123.5	0	5123.5
3	01.05.2021 to 01.06.2021	3252.5	0	3252.5
4	22.06.2021 TO 1.08.2021	2,901	7593	-4,693
5	1.08.2021 TO 1.09.2021	2562.5	5524.5	-2,962
6	1.09.2021 TO 1.10.2021	2649	5735.5	-3,087
7	1.10.2021 TO 1.11.2021	2956.5	6194.5	-3,238
8	1.11.2021 TO 1.12.2021	3797	3023	774
9	1,12.2021 TO 1.01.2022	3000	5336	-2,336
10	1.01.2022 TO 1.02.2022	3588.5	6250	-2,662
11	1.02.2022 TO 1.03.2022	2847	5540	-2,693
	Total	**39204.5**	**45196.5**	**-5992**

two months merged # -negative value indicates export to grid

Graph grid import & export :



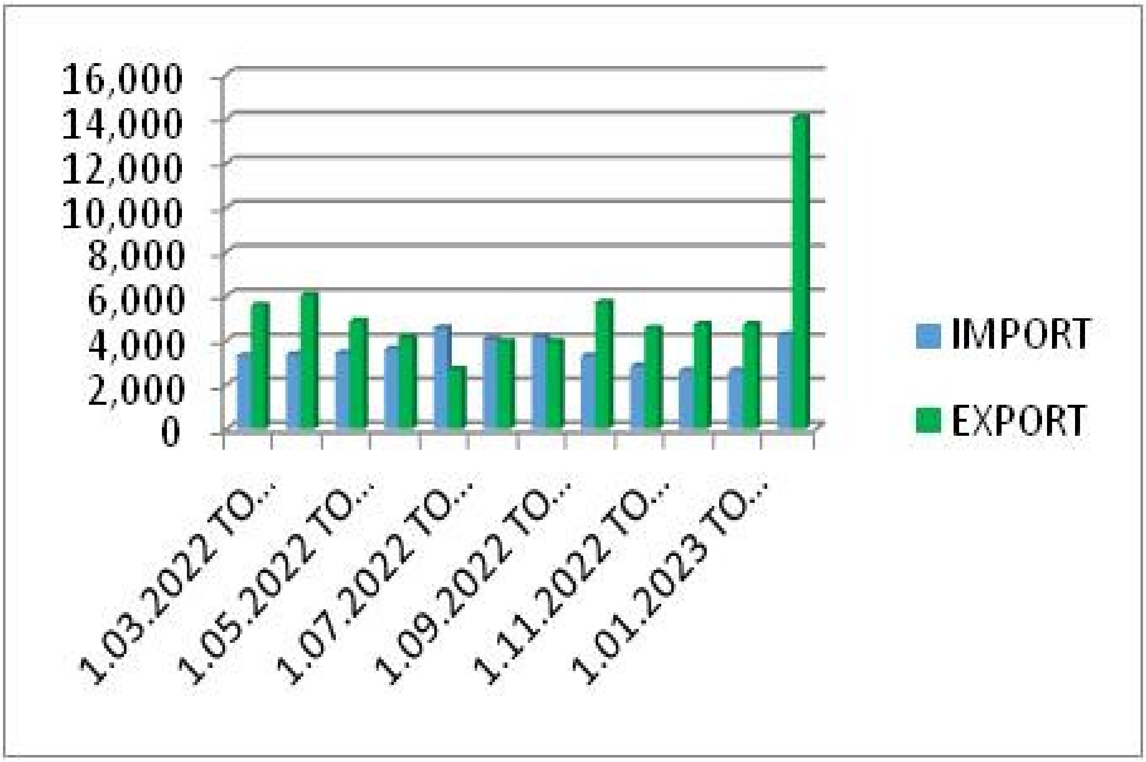
Graph net energy from grid:



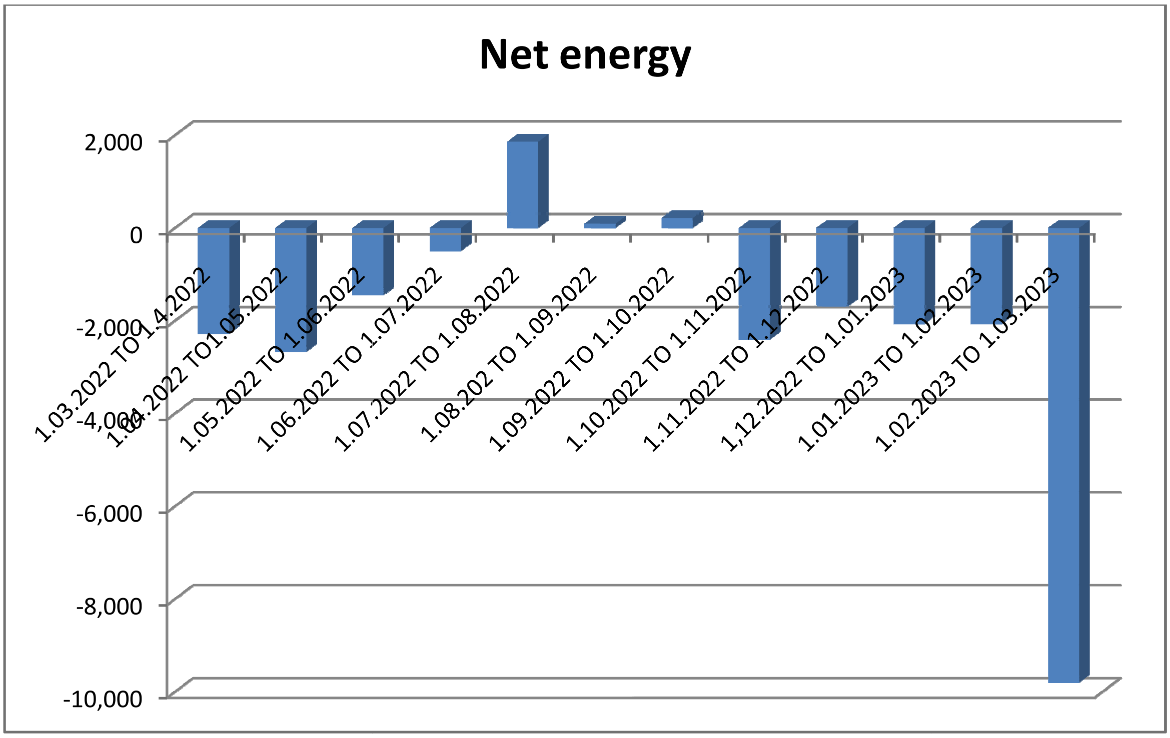
Energy analysis 22-23

	PERIOD	IMPORT	EXPORT	NET ENERGY
1	1.03.2022 TO 1.4.2022	3,317	5595	-2,279
2	1.04.2022 TO1.05.2022	3,369	6035	-2,666
3	1.05.2022 TO 1.06.2022	3,435	4883	-1,449
4	1.06.2022 TO 1.07.2022	3,615	4111.5	-497
5	1.07.2022 TO 1.08.2022	4,565	2707	1,858
5	1.08.202 TO 1.09.2022	4038.5	3946	93
3	1.09.2022 TO 1.10.2022	4158	3942.5	216
4	1.10.2022 TO 1.11.2022	3305.5	5705	-2,400
5	1.11.2022 TO 1.12.2022	2850.5	4550	-1,700
6	1,12.2022 TO 1.01.2023	2648.5	4715	-2,067
7	1.01.2023 TO 1.02.2023	2648.5	4715	-2,067
8	1.02.2023 TO 1.03.2023	4259	14061	-9,802
	Total	**42,208**	**64966**	**-22,758**

Graph of grid import & export:



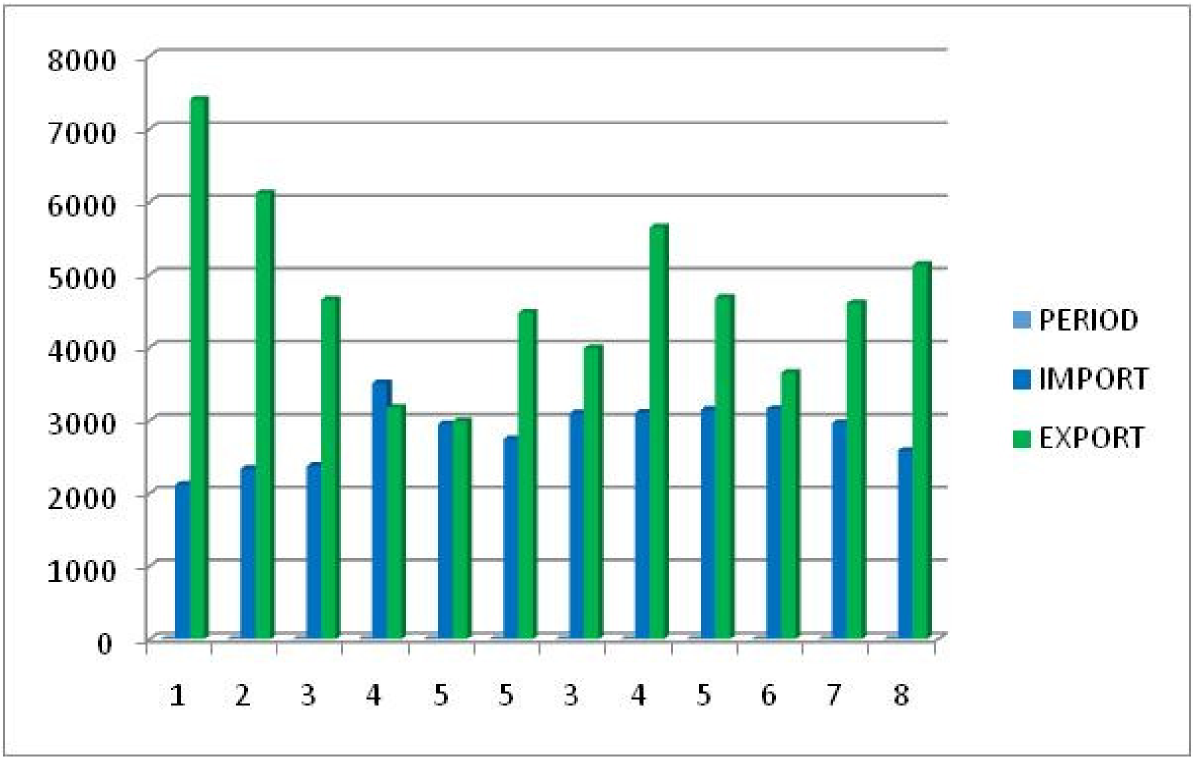
NET ENERGY



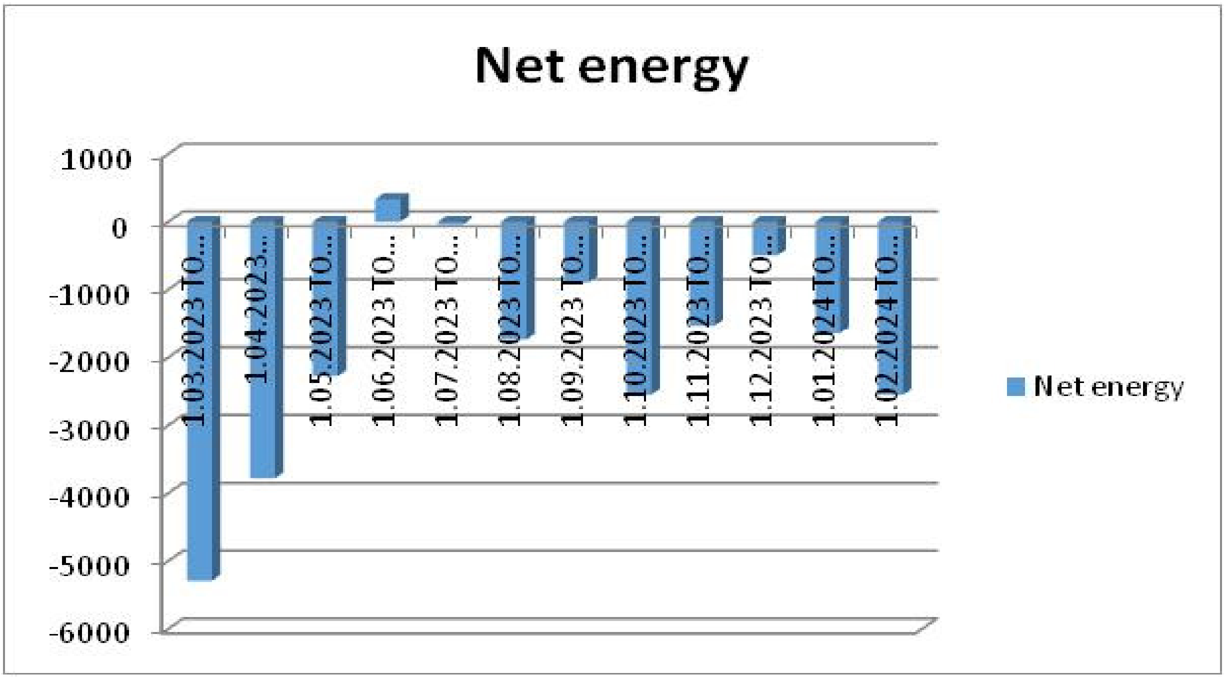
Energy analysis 23-24

	PERIOD	IMPORT	EXPORT	NET ENERGY
1	1.03.2023 TO 1.4.2023	2,117	7406.5	-5,290
2	1.04.2023 TO1.05.2023	2,340	6119.5	-3,780
3	1.05.2023 TO 1.06.2023	2,380	4655.5	-2,276
4	1.06.2023 TO 1.07.2023	3,514	3180	334
5	1.07.2023 TO 1.08.2023	2,956	2992	-36
5	1.08.2023 TO 1.09.2023	2748	4485	-1,737
3	1.09.2023 TO 1.10.2023	3101	3990	-889
4	1.10.2023 TO 1.11.2023	3110	5655	-2,545
5	1.11.2023 TO 1.12.2023	3150	4685	-1,535
6	1.12.2023 TO 1.01.2024	3160	3655	-495
7	1.01.2024 TO 1.02.2024	2970	4610	-1,640
8	1.02.2024 TO 1.03.2024	2585	5135	-2,550
	Total	**34,130**	**56568.5**	**-22,439**

GRAPH GRID IMPORT & EXPORT



NET ENERGY



Energy Performance comparison of three years

Solar Generation :

Year	solar generation*
2021-2022	80256KWH
2022-2023	107009KWH
2023-2024	107009KWH

* prorate calculation based on date of installation & generation till date

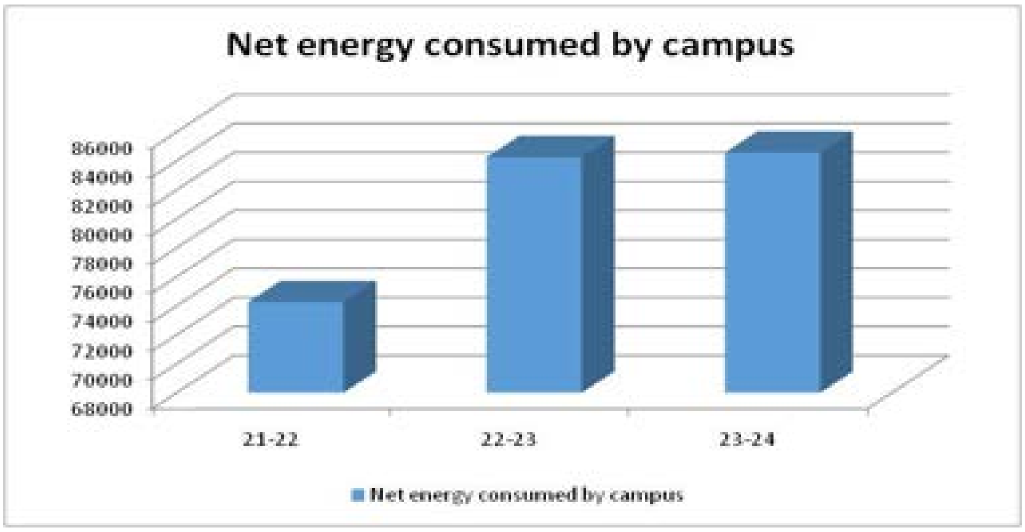
Energy performance analysis for three years

Year	solar generation*	import from grid	export to grid	import-export	Net energy consumed by campus
21-22	80256	39204.5	45196.5	-5992	74264
22-23	107009	42208	64966	-22758	84251
23-24	107009	34130	56568	-22438	84571

* prorate calculation based on date of installation & generation till date

Net energy exported to grid by the campus

Year	Net export
2021-2022	5992KWH
2022-2023	22758KWH
2023-2024	22438KWH
3 years	51188KWH



Analysis

- The institution's campus operates with a contract demand of 100 kVA, and as per KERC norms, the maximum permissible capacity for a solar plant is 80 kW. The institution has installed this maximum capacity.
- The solar plant was commissioned in June 2021.
- Based on self-consumption data, as well as energy export and import records, the campus’s entire energy needs are currently being met by the solar installation.
- The campus generated a surplus of energy, exporting 5,992 kWh to the grid during 2021-2022, 22,758 kWh during 2022-2023, and 22,438 kWh during 2023-2024.
- The total energy consumption of the campus was 72,264 kWh in 2021-2022, 84,251 kWh in 2022-2023, and 84,571 kWh in 2023-2024.
- From June 2021 to March 2024, the solar plant has generated a total of 294,274 kWh of energy, resulting in a total reduction of the campus’s carbon footprint by approximately 241,304 kg. Additionally, it is expected to reduce carbon emissions by around 87,747 kg annually for the next 22 years, based on the current emission factor provided by the Central Electricity Authority (CEA) of 0.82 kg per kWh.
- Apart from a brief reduction in energy demand due to the partial lockdown during the COVID-19 pandemic in 2021, the campus’s energy consumption has remained stable.
- The campus houses multiple institutions, including a First Grade College. Since the solar plant meets the total energy requirement, these institutions can be considered carbon neutral.

Solar performance study

The institution has installed an 80 kWp on-grid Solar Photovoltaic Renewable Technology (SPVRT) system in June 2021. This is the maximum capacity permitted as per KREC norms, based on contract demand. The solar plant utilizes high efficient mono-crystalline panels and is equipped with two inverters—one with a capacity of 50 kW and the other with 30 kW. The system operates under a net metering arrangement, allowing the institution to export surplus energy to the grid while meeting its energy requirements efficiently.

The energy generation varies seasonally, we accessed the plant performance based on the total energy generated till date.

Date of installation	Energy	Running hours
Energy generated by 50kwp plant till 26.4.2024	243.18 mwh	13817
Energy generated by 30 kwp plant till 26.4.2024	104.60 mwh	13578
Total energy	347.78 mwh	
Average monthly energy	8918 kwh	

Based on prorate calculation, annual energy is calculated as below

Year	solar generation*
2021-2022	80256KWH
2022-2023	107009KWH
2023-2024	107009KWH

Capacity utilization factor (CUF) alas Plant load factor (PLF)

= Total kwh generation per annum / plant capacity in kw/no of days

=107009/80/365

=3.664

The CUF 3.664 is nearer to standard bench mark of 4.0. However it is advised to periodically record and compare the performance of each plant. This will enable in early identification of any possible reduction in energy generation.


GPS Map C
Mysuru, Karnataka, India
1481, Medar Block, Yadavagiri, Mysuru, Karnataka 570020,
Lat 12.317484°
Long 76.647948°
24/09/24 12:41 PM GMT +05:30
Google


GPS Map Camera
Mysuru, Karnataka, India
1481, Medar Block, Yadavagiri, Mysuru, Karnataka 570020, India
Lat 12.317484°
Long 76.647948°
24/09/24 12:43 PM GMT +05:30
Google


DELTA
RPI Commercial
Alarm
Grid
Life Energy
E-Total: 104.68MWh
Runtime: 13570Hrs
EXIT
ENT


DELTA
RPI Commercial
Life Energy
E-Total: 243.18MWh
Runtime: 13817Hrs
EXIT
ENT


WhatsApp Image 2024-09-28 at 10.22.25 AM.jpeg
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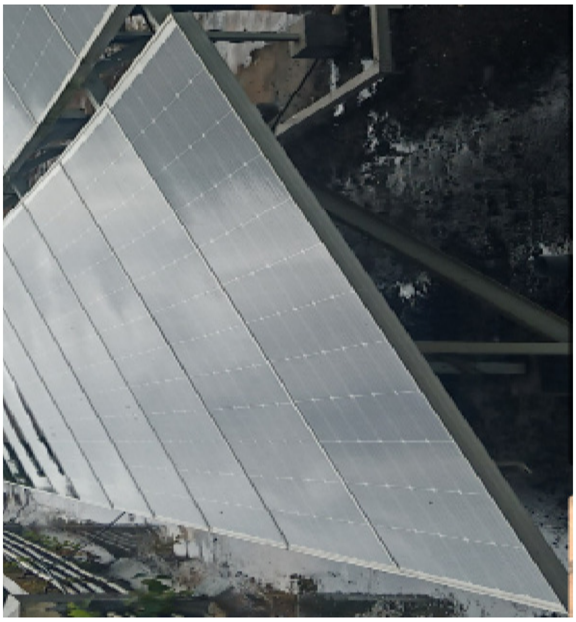


Energy requirement of FG College

Power measurements on normal working hours

Phase voltage	**Line current**	**Power factor**
		

Phase	**Voltage V**	**Current A**	**Power factor**	**Total power kw**
R phase	**252.1**	**36.68**	**0.888**	**8.21**
Y phase	**255.2**	**28.97**	**0.757**	**5.60**
B phase	**251.5**	**39.85**	**0.925**	**9.27**
			Total	**23.08**

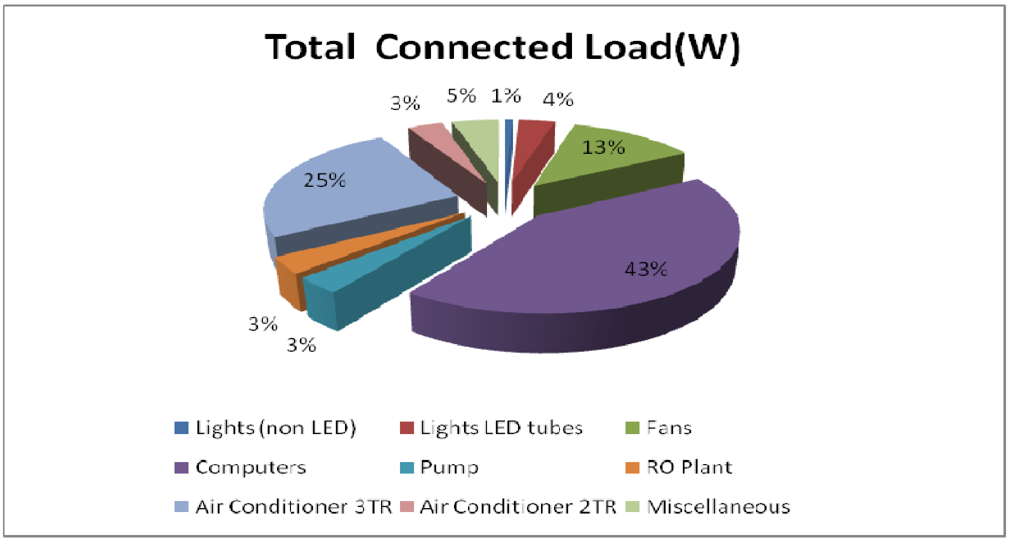
Energy requirement of FGC based the energy recorded by kwh meter at main panel is about 150kwh per working day

Total annual energy of the campus (calculations as above)	**84571 kwh per annum**
Accessed Energy annual requirement of FGC	45000 kwh
Percentage energy requirement of FGC	53%

Connected Load

The institution connected load is about 65kw. This includes lights, fans, computers, pumps & miscellaneous.

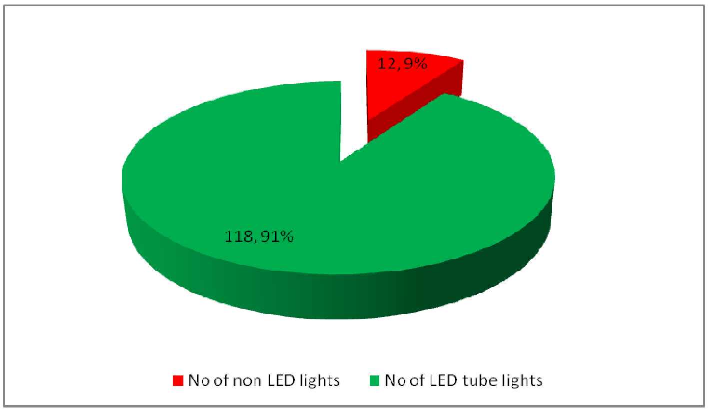
Type of load	nos	Watts	Total (KW)
Lights (non LED)	12	40	480
Lights LED tubes	118	20	2360
Fans	110	75	8250
Computers	280	100	28000
Pump	1	2200	2200
RO Plant	1	2200	2200
Air Conditioner 3TR	5	3300	16500
Air Conditioner 2TR	1	2300	2300
Miscellaneous	1	3000	3000
Total			65,290



The institution has undertaken a significant initiative to enhance energy efficiency by converting the majority of fluorescent lamps to LED lamps. Out of the 130 different lights on campus, 118 fluorescent lamps have been successfully replaced with LED tube lights. This transition has resulted in substantial energy savings, amounting to a maximum of 3894 KWH per year, while also significantly reducing the institution's carbon footprint by approximately 3193 kg annually.

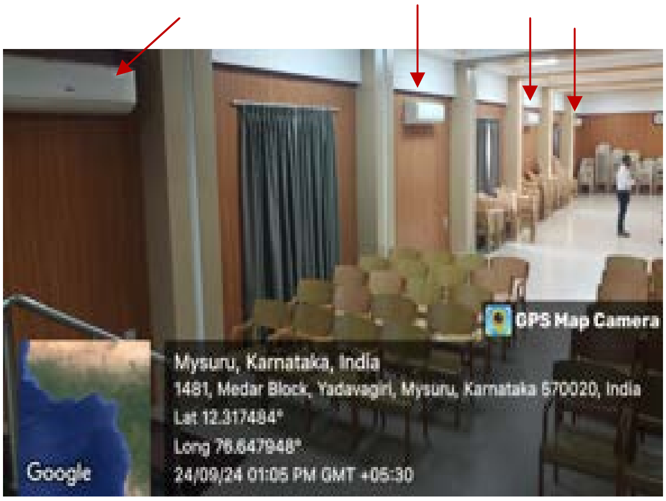
Each fluorescent lamp typically contains about 10 mg of mercury, and with the replacement of these 118 units with LED lights, the institution has effectively curtailed the generation of mercury waste by 1180 mg. This proactive approach not only contributes to cost savings and energy conservation but also underscores the institution's commitment to sustainable practices and environmental responsibility.

Type of Lights	Nos
LED	12
Non LED	118
Total	**130**



The institution is currently in the process of systematically replacing old fans with super energy-efficient BLDC technology fans. With approximately 110 fans throughout the campus, this phased upgrade aims to significantly enhance energy efficiency and reduce operational costs over time. Additionally, after measuring the electrical parameters of the water pump, it has been confirmed that they are within acceptable limits.

The institution has limited nos of Air conditioners. There is one 2TR capacity air conditioner at principal chamber and there are five 3TR capacity air conditioners at auditorium. The usage of air conditioners is very limited. All these air conditioners are 3 star rated and meets minimum efficiency recommended.



To further optimize water usage and energy consumption, The Institution has implemented automatic controls for the pump. This automation will help prevent water wastage and energy loss during potential overflow situations, while also minimizing the need for manual intervention.

Automated Pumping system to save energy and save water.

Regarding power backup systems, the institution maintains 5 UPS units: with a capacity of 20 KVA, 15KVA, 10KVA, 6KVA equipped with 78 batteries. UPS systems are in good condition and the batteries are well-maintained. Two UPS of capacity 6KVA and 20KVA units achieve an overall efficiency of more than 90% during normal working conditions, meeting the efficiency standards outlined by the Bureau of Energy Efficiency (BEE) in the Energy Conservation Building Code (ECBC). Each battery connected to the UPS has a capacity of 80 to 150 AH.

By the use of UPS systems, the institution has avoided need for generator. This has resulted in reduction of carbon footprint.

Upon review, it has been observed that the batteries currently installed in the UPS units exceed the required capacity. Therefore, it is recommended to replace these batteries with lower capacity units during the next replacement cycle. This adjustment not only aligns with the institution's energy efficiency goals but also promises cost savings and improved operational sustainability in the long term.

High Efficiency UPS

Review of Energy Conservation Measures Adopted

- Installed a solar plant with the maximum capacity permitted by regulations (80 kW).
- The entire campus , including FGC is producing excess energy than required.
- Utilized high-efficiency mono crystalline solar panels.
- Achieved 100% usage of a solar on-grid system.
- From June 2021 to March 2024, the solar plant has generated a total of 294,274 kWh of energy, resulting in a total reduction of the campus's carbon footprint by approximately 241,304 kg.
- Additionally, it is expected to reduce carbon emissions by around 87,747 kg annually for the next 22 years, based on the current emission factor provided by the Central Electricity Authority (CEA) of 0.82 kg per kWh.
- Approximately 90% of lighting consists of LED fixtures.
- Implemented 118 LED lights, resulting in an annual energy savings of 3,894 kWh.
- Energy-efficient UPS systems with a total capacity of 56 kVA, where 26 kVA have an efficiency rating exceeding 90%.
- All air conditioning units meet the minimum efficiency standard of a 3-star rating.
- Installed automatic controls for pumps.
- Overall power demand is below contract demand.
- Transformer operates at Level III efficiency.
- The institution does not rely on diesel generators for backup power.

Proposed Energy Conservation Measures

- Improve power factor through APFC settings and repairs.
- Transition to 100% LED lighting.
- Gradually replace standard fans with BLDC fans.
- Optimize battery capacity during the next replacement cycle.
- Upgrade UPS systems to high-efficiency models.
- Implement maintenance, monitoring, and recording of solar generation and all sub-meter readings.

Environment Audit

Water Usage & Conservation Measures

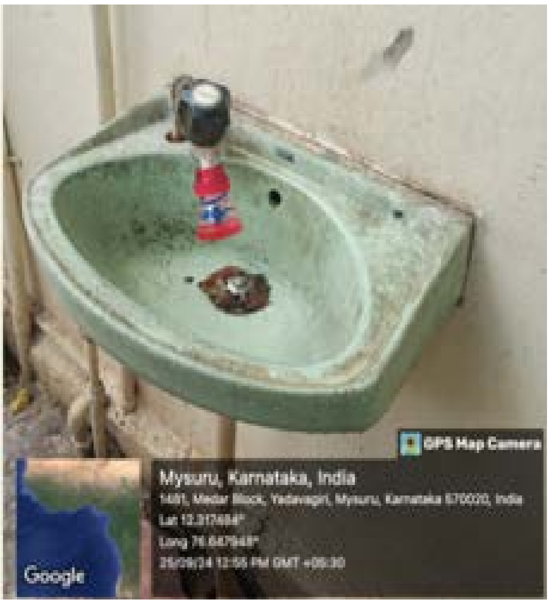
The institution is self-sufficient, with two bore wells that are not connected to the municipal supply. Additionally, the institution is in the process of implementing rainwater harvesting to recharge the bore wells. This harvested water plays a crucial role in replenishing groundwater levels directly via percolation pits, thereby still reducing dependence on external water sources and contributing to long-term water conservation goals. The initiative underscores the institution's commitment to environmental stewardship and resilience in water management practices.

The institution in process of establishing STP (Sewage treatment plant) of capacity 75, 000 litters per day. The work is in progress which is expected to be completed within couple of months.

The treated water is plan to reuse for gardening and for sanitary purpose

Other water conservation:

To enhance water conservation efforts, several Measures implemented. Firstly, installing pressure reduction valves for taps has significantly reduced water wastage by regulating and lowering water flow. Secondly, placing awareness boards strategically across the campus has educated and encouraged students and staff to adopt water-saving practices in their daily routines. Thirdly, implementing auto shut off to taps has effectively reduced water usage. Lastly, introducing automatic controls for pumps has ensured efficient water distribution and minimizes unnecessary water use. These measures have collectively promoted responsible water management and sustainability within the institution



Waste Management

The institution manages various types of waste with a structured approach aimed at environmental sustainability. Dry waste includes paper, dry leaves, and plastic, while wet waste primarily consists of food waste. E-waste, generated from computers and old electrical equipment, is handled separately to ensure proper disposal and recycling. Hazardous waste, such as lead and old tubes, undergoes specialized management protocols to minimize environmental impact. Emphasizing waste segregation, the institution focuses on efficiently managing food and leaf waste, with daily food waste, averaging around 1 kg, handed over to external agencies for disposal. Meanwhile, leaf waste undergoes natural decomposition onsite, supporting organic soil enrichment practices. These efforts reflect the institution's dedication to responsible waste management and conservation practices.

Waste segregation at source by dust bins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HAZARDOUS WASTE
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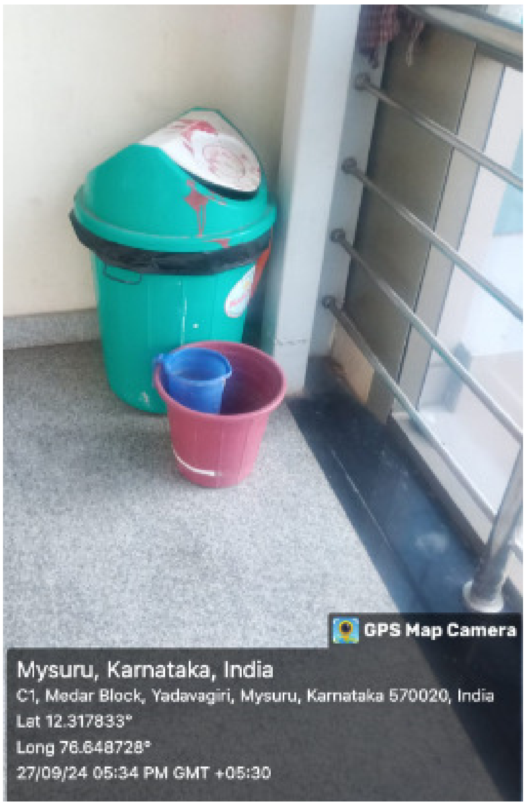
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DRY WASTE
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C1, Medar Block, Yadavagiri, Mysuru, Karnataka 570020, India
Lat 12.317833°
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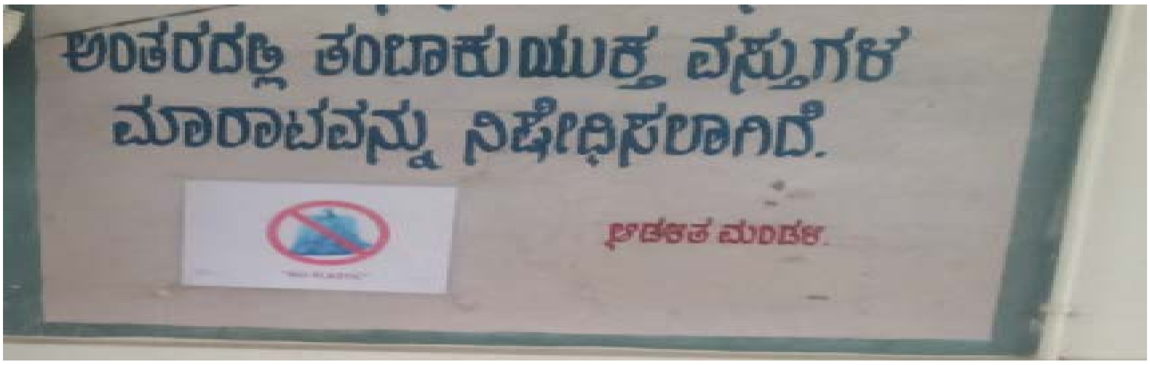
The dust bins were kept in the strategic locations depending on type of waste generation. The color coding, green color bin for wet waste, blue color bin for dry waste and Red color bin for Hazarder waste is followed. The majority waste generation is Dry waste in the campus.

Dry waste

Dry waste management at the institution encompasses majorly paper waste and plastic waste, the institution FGC produces approximately 1-1.5 kgs of paper waste and 1-1.5 kgs of plastic waste every day. All dry waste is meticulously collected and transferred to a common bin then to a designated facility operated by the corporation for proper disposal. This systematic approach ensures that these recyclable materials are handled responsibly, contributing to the institution's commitment to effective waste management and environmental sustainability.

Plastic free campus initiative:

The institution is moving towards 100 percent plastic free campus. In this regards all single us plastics are banned in the campus. Awareness boards have been fixed in strategic locations. Awareness programs also conducted**.**



E waste

E-waste management at the institution involves handling electronic waste generated from lights, fans, and computers. Recent efforts include the replacement of standard tube lights with energy-efficient LED lights. E-waste currently managed through a regular scrap vendor or corporation. Compliance with the PCB Environment Act of 1986 mandates that e-waste must be handed over to authorized recyclers, ensuring proper disposal and recycling practices are followed to minimize environmental impact. The MCC is shortly coming with collection centres, the E-waste can be handed over them.

Hazardous waste

Hazardous waste management at the institution focuses primarily on lead waste. Currently, the UPS produces approximately 1950 kg of lead waste during every cycle of UPS battery replacement(Normally once in 3-5 years), To reduce environmental impact, the institution plans to lower the UPS battery capacity, potentially cutting down lead waste.

Moreover, all fluorescent lamps replaced with energy-efficient LED lights have significantly reduced mercury waste generation by 1180 mg.

Battery disposal follows strict adherence to Pollution Control Board regulations, with old batteries exchanged during new purchases.

The institution maintains strict practices regarding biomedical waste; with any sanitary waste generated is disposed using sanitary pads incinerator. These measures ensure compliance with safety and environmental standards, promoting responsible waste management practices across the campus.

Pollution Control

Air Pollution

The institution effectively controls air pollution by enforcing a ban on vehicular traffic within its premises, thereby significantly reducing emissions. Exhaust pipes from two DG set are installed in compliance with PCB regulations, ensuring emissions meet prescribed standards. Furthermore, the adoption of solar energy in the 2021 has resulted in a substantial decrease of 40,836 kgs annually in carbon emissions. Moving forward, recommendations include encouraging staff to use electric vehicles to further mitigate carbon footprints. It is also advised to uphold air quality standards. Additionally, periodic checks on generator exhaust emissions will ensure continued compliance and contribute to maintaining a clean and healthy environment on campus.

There is one 125 DG Set, which one is old. The usage of their DG is limited and institution is in process of procuring new GD as per PCB norms. There are other two DGs of capacity 30KVA each. The institution is not much depending on DG power and it is having sufficient UPS capacity to get backup power.

The two DGs of capacity 30KVA are in accordance with PCB guidelines and meet PCB II norms.

Noise pollution

Noise pollution at the institution primarily originates from generators and limited vehicular activity on campus. Measures such as acoustic enclosures ensure that noise levels from DG sets remain within acceptable limits, minimizing disturbance to the environment and occupants.

- The generator is having acoustic enclosure and its exhaust is provided as per PCB norms
- The DG sets meets PCB II standards as per environmental act 1986

Water pollution

Regarding water pollution, the institution does not have any major chemical pollutants. Institution plans for sewage and used water treatment by STP is in processes as per PCB regulations, ensuring they are treated and reused without causing harm to the environment.

Soil pollution

Institution has small garden area. In terms of soil pollution prevention, the institution adopts practices to prevent the addition of pollutants to the soil. Proper disposal methods for mercury and lead waste are implemented to safeguard soil quality. Additionally, plans are in place to enhance soil fertility through the use of natural fertilizers. These initiatives aim to maintain healthy soil conditions while supporting sustainable practices on campus.

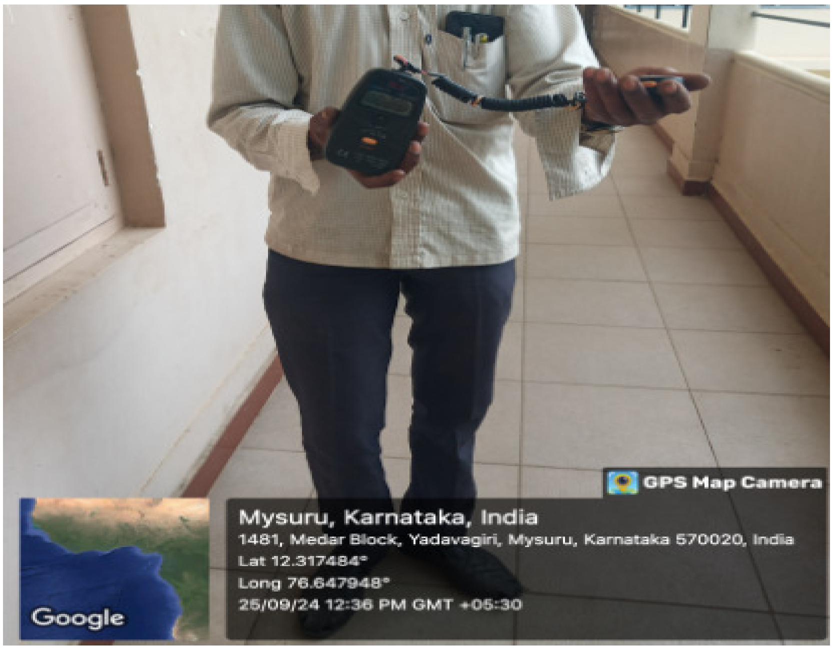
The institution demonstrates proactive measures in environmental sustainability through comprehensive water conservation, efficient waste management, pollution control strategies, and soil preservation efforts. Recommendations aim to further enhance these initiatives, promoting a greener and more sustainable campus environment.

TDS level(Total Dissolved solids)

The bore well water sample measured using TDS meter and found having TDS of 496PPM.Th RO output measured at 300PPM. The RO output fed to additional filter at kitchen, which has TDS level of 238 PPM.

LUX Level

The light level (Lux level) measured at different locations in the building and found meeting the standards recommended by NBC. The measured values with artificial illumination are 192 lux in Principal Chambers, 180 lux in Office, 195 lux in Classrooms. The corridor is having sufficient natural light, which is measured at 968 lux.

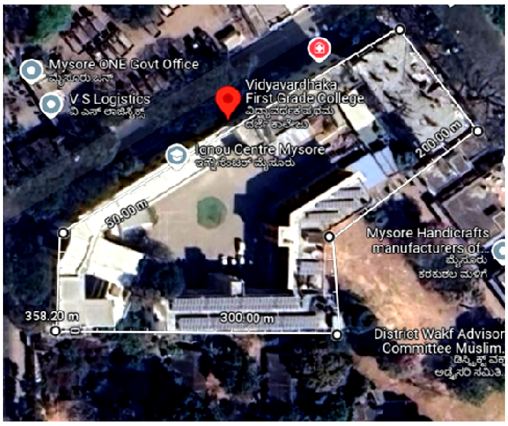


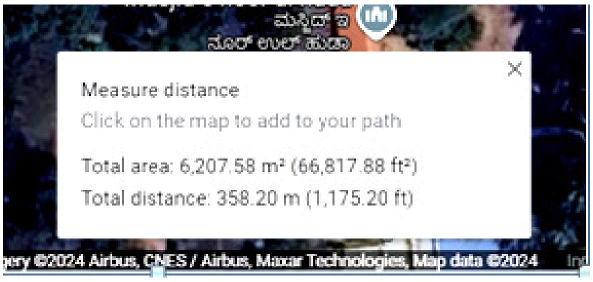
Green Audit

Green coverage

The institution is located in central place of the city, Covered by trees on the periphery . Due to space constraint, less area left inside the campus for plantation. The institution has maintained greenery filled with lawns and ornamental plants. The greenery area inside is about sqmtrs, which is 7.48% of the campus area.

There are two large teak tress inside the campus. These trees attracts verities of small creatures and birds. This includes squirrel s, garden lizards and birds like crows, mynas, parrots, etc




Measure distance

Click on the map to add to your path

Total area: 6,207.58 m² (66,817.88 ft²)

Total distance: 358.20 m (1,175.20 ft)

Total area 6207 sqmtrs
Garden area; 464 sqmtrs
% garden area ; 7.48%


Teak (Tectona grandis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Awareness Activities

The institution's students have actively engaged in a variety of environmental conservation activities, demonstrating a strong commitment to sustainability. These efforts underscore the institution's ongoing initiative to educate and empower students about the importance of preserving natural resources. Moving forward, it is recommended to expand these awareness activities both within the campus premises and beyond. Placing more informative awareness boards at strategic locations can effectively communicate practices such as energy conservation by switching off lights and fans when not in use, minimizing water consumption through responsible usage, and advocating for plastic-free zones to reduce environmental impact. These initiatives not only promote eco-friendly behaviours among the student community but also install a sense of environmental responsibility that extends into their daily lives and future endeavours. By fostering a culture of environmental stewardship through proactive education and practical initiatives, the institution can further enhance its role in creating a sustainable and conscientious campus environment.

Swachhata Pakhwada: Students clean steps to Chamundi Hill

Mysuru, Sept. 30 (RK&TRR)- As part of World Tourism Day-2023 and Swachh Bharat Mission, Swachhata Pakhwada programme was organised by Tourism Department in association with Mysuru City Corporation (MCC) and Vidyavardhaka First Grade College, at the foot of Chamundi Hill in city yesterday.

Union Minister of State for Tourism Ajay Bhatt, who was in city, congratulated the students for participating in the event.

On account of 'Swachhata Hi Seva,' students of Vidyavardhaka College cleaned all the steps from the foot of Chamundi Hill to the top and also cleaned the premises of Goddess Chamundeshwari temple, besides disposing the waste. The pourakarmikas of MCC also helped the students.

Joint Director of Tourism Department M.K. Savitha, Assistant Director Raghavendra, Manager of Karnataka State Tourism Development Corporation (KSTDC) Das, President of Mysore Tourist Guides Association Ashok, MCC Assistant Executive Engineer (AEE) Mruthyunjaya, Revenue Inspectors Shivaprasad and Preethi, Vidyavardhaka Degree College's Dr. B.S. Sriharsha, Prof. Siddaraju and V. Ramesh, Military Officer Subedar Balwant Singh, cadets of NCC 13 Karnataka Battalion and students of Vidyavardhaka Degree College, all numbering over 150 people participated in the Swachhata Pakhwada programme.

ಕನ್ನಡಪ್ರಭ

ಸಾವಯವ ಕೃಷಿ ನಮ್ಮೆಲ್ಲರ ಬದುಕಿನ ಅವಿಭಾಜ್ಯ ಅಂಗ

ಕೃಷಿ ಸಂಶೋಧನ ಕೇಂದ್ರದ ವಿಸ್ತರಣಾಧಿಕಾರಿ ಡಾ. ರಾಮಚಂದ್ರ

ಕನ್ನಡಪ್ರಭ ವಾರ್ತೆ ಮೈಸೂರು

ಕನ್ನಡಪ್ರಭ

ನಿಸರ್ಗದತ್ತ ಮಾರ್ಗೋಪಾಯದಿಂದ ಬದುಕು ಹಸನು

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End of Report