

**2021**

**Green Audit Report**

**of**

**Adhiparasakthi Dental College  
and Hospital, Melmaruvathur**

**Green Audit Done by  
Sri Energy Solutions**

*21/01/2022*

**Project Report Title** : **Green Audit**

**Client Name** : **Adhiparasakthi Dental College and Hospital**

**College Location** : **GST Road,  
Cheyyur,  
Chengalpattu – 603 319**

**Date of Audit** : **21<sup>st</sup> January 2022**

**Green Audit by** : **M/s. Sri Energy Solutions, Dindigul**

**Green Audit Team** : **1. M.Rameshkumar., B.E, M.B.A, PGDEEM&EA,  
BEE Certified Energy Auditor**

**2. C.Chandrasekaran,  
Trainee Engineer – Energy Audit**



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## Acknowledgement

Sri Energy Solutions acknowledge with hearty thanks to **Dr.T.Ramesh.,Correspondent, Adhiparasakthi Dental College and Hospital.,Melmaruvathur** for their support for carrying out this audit.

Our special thanks to **Dr.S.Karthiga Kannan – Principal and Dr.V.Sudhagar., NAAAC coordinator** for their co-operation and support us to carry out the Green audit on time.

In addition with this, we are grateful to your staff **Dr.Ramya.,** for their co-operation and support us to carry out the green audit very effectively.



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## 1. Introduction

**Adhiparasakthi Dental College and Hospital** is one of the leading autonomous educational institution affiliated to the tamilnadu Dr.MGR medical university. This college was established by **Arul.Thiru.Padmashri Bangaru Adigalar** through **Adhiparasakthi Charitable, Medical, educational and cultural trust (ACMEC)** in the year of 2005.

This college is located in the prime location of Melmaruvathur city. This college is having lot of courses in Dental science with completely equipped. It has been providing quality education to the rural and urban students of Tamilnadu, Andhra and Kerala. This institution has one three LT TNEB services and three backup generators. High quality panels and switch gears are connected with this service for giving quality supply to the equipments. The capacity of generator is also well enough to meet the demand.

This college is located is well away from main road which leads to dust free environment. More over college is concentrating much on Green garden with enough trees and plants. The water supplied inside the campus is good. On the next step, the management decided to conduct the Green audit in their institution to provide effective environment.



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## 2. Objectives

The main objectives of the green audit are to promote the environment management and conservation in the college campus. The purpose of the audit is to identify, quantify, describe and priorities framework for the environment sustainability in compliance with the applicable regulations, policies and standards. The main objectives of carrying out Green Audit are,

- To introduce and make aware students to real concerns of environment and its sustainability.
- To secure the environment and cut down the threats posed to human health by analyzing the pattern and the extent of resource use on the campus
- To establish a baseline data to assess future sustainability by avoiding the interruptions in environment that are more difficult to handle and their corrections requires high cost
- To bring out a present status report on environmental compliance



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### 3. Methodology

In order to perform green audit, the methodology included different techniques such as physical inspection of the campuses, observation and review of the documentation, interviewing key persons, and data analysis, measurements and recommendations. The study covered the following area to summarize the present status of environment management in the campuses:

- Water quality assessment, consumption and management
- Air quality assessment and management
- Electricity consumption and management
- Sound pollution monitoring
- Waste management
- Biodiversity status of the campus



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#### **4. About the College**

##### **Institutional Vision**

The vision of the institution is to truly emerge as an internationally acclaimed institution by imparting the relevant practical knowledge and value educations through state-of-the-art technologies which will enrich the student's learning with a unique experience and suitably empower them to render their noble services for the well-being of the mankind.

##### **Mission of the College**

M/s.Adhiparasakthi Dental College and Hospital has the Missions of

- ❖ To render the services to the poor and needy
- ❖ To provide meaningful and comprehensive higher education through its undergraduate and post graduate doctoral programs, research and training programmes
- ❖ To impart higher technical skills, experiences and specialized academic excellence to the students thereby fostering innovation
- ❖ To create a rich and pleasant environment for studying, living and working where education and research go hand in hand
- ❖ To serve the under-served, nurture learner centric quality dental education, quality patient oriented services, community Centered research, excellence in knowledge, skills and strategic future oriented planning that meets the national, global dental educational standards.





## 5. Water Quality Assessment, Consumption and Management

Water quality analysis was conducted by Eutech PCS multi-parameter tester 35, uc turbidity meter 135 and Lutron DO-5509 meter.

### Kitchen Cooking Water

Parameter	Value
PH	7.5
P.Akalinity	Nil
M.Akalinity	50 ppm
Total Alkalinity	50 ppm
Total Hardness	30 ppm
Total Dissolved solids	110 ppm

### Kitchen RO Water

Parameter	Value
PH	6.5
P.Akalinity	Nil
M.Akalinity	50 ppm
Total Alkalinity	50 ppm
Total Hardness	90 ppm
Total Dissolved solids	120 ppm





**Ladies Hostel R.O. Water**

Parameter	Value
PH	7.5
P.Akalinity	Nil
M.Akalinity	50 ppm
Total Alkalinity	50 ppm
Total Hardness	20 ppm
Total Dissolved solids	120 ppm

**Boys Hostel R.O. Water**

Parameter	Value
PH	6.5
P.Akalinity	Nil
M.Akalinity	50 ppm
Total Alkalinity	50 ppm
Total Hardness	70 ppm
Total Dissolved solids	120 ppm



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### Hostel RO Treated Water

Parameter	Value
PH	7.5
P.Alkalinity	Nil
M.Alkalinity	50 ppm
Total Alkalinity	50 ppm
Total Hardness	30 ppm
Total Dissolved solids	70 ppm

### Raw Water

Parameter	Value
PH	7.5
P.Alkalinity	Nil
M.Alkalinity	350 ppm
Total Alkalinity	350 ppm
Total Hardness	600 ppm
Total Dissolved solids	1550 ppm



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### Admin Building RO Water

Parameter	Value
PH	7.5
P.Alkalinity	Nil
M.Alkalinity	50 ppm
Total Alkalinity	50 ppm
Total Hardness	30 ppm
Total Dissolved solids	120 ppm

Sample No	Location	MPN Index (per 100ml)	Water Quality
1	Class Room - GF	00	Outstanding (Potable)
2	Class Room - FF	00	Outstanding (Potable)
3	Class Room - SF	00	Outstanding (Potable)
4	Staffs Room	00	Outstanding (Potable)
5	Canteen	00	Outstanding (Potable)
6	Tap Water	17	Good (Non-potable)
7	Well water	72	Average (Non-potable)



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❖ **Main water uses in the campus**

- Drinking
- Canteen
- Toilet
- Garden
- Lab
- Cleaning
- Bathrooms
- Washing
- Construction works
- Bus maintenance

❖ There are water treatment system to purify the water

❖ Water cooler with drinking water filtration is installed

❖ Number of urinals and toilet – 130

❖ Number of waterless urinals – Nil

❖ Number of Bathroom – 36

❖ Number of water taps - 75

❖ Number of borewell - ..... Nil

❖ Number of Open well - ..... 3 Nos

❖ Water pumps ....3 Nos

❖ Quantity of water pumped - ....95 KL including agriculture purpose

❖ Number of water tanks for storage –8 Nos

❖ Amount of water stored – 1,20,000 Liters



- ❖ No meters fixed for water management
- ❖ Number of leaky water taps – 3 Nos
- ❖ Number of water fountain – Nil
- ❖ Drip irrigation system is used to water plants
- ❖ Time of watering plants – 9 AM to 5 PM
- ❖ Reasons for water wastage
  - Leakage from water taps
  - Over use of water
  - Overflow of water from motors
  - Unorganized watering of garden



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❖ Overall utilization of water in the college

Sections	Water use / day in KL
Garden	13 KL
College	7.7 KL
Hostel	10.3 KL
Bus wash	2 KL
Canteen	4.5 KL

Activity	Average use per activity (litres)	Number of activity /Per/ day	Number of persons using water	Total water consumption / day (litres)
Washing hands and face	1L	2 times a day	1247	2494
Urinals	1 L	2 times a day	1247	2494
Bath	10-30	once	20	400
Toilet flush	6-20	once	100	1000
Drinking (cup)	0.25	twice	1247	624
Washing dishes	5	Once	1321	6605
Leaking/dripping tap	10-30	continuous	3	720
garden use	All Uses	once		13000
Cooking (average )	All Uses	once		4500
Hostel uses	All uses	Twice	37	3700
Bus Wash	All Uses	Once		2000
Total Water Use				37537



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## 6. Air Quality Assessment, Consumption and Management

The following air quality parameters were measured using Airveda and government's official sites.

Parameter	Minimum Value ( $\mu\text{g}/\text{m}^3$ )	Maximum Value ( $\mu\text{g}/\text{m}^3$ )
PM 2.5	49	328
PM 10	68	224
O <sub>3</sub>	1	71
NO <sub>2</sub>	2	28
CO	18	47
NH <sub>3</sub>	2	9
NO	0.02	1.95
NOx	9.19 (ppb)	96.2 (ppb)
SO <sub>2</sub>	1	13
Temp	26	31
Pressure	823	1010
Humidity	48	75
Wind Speed	8	17

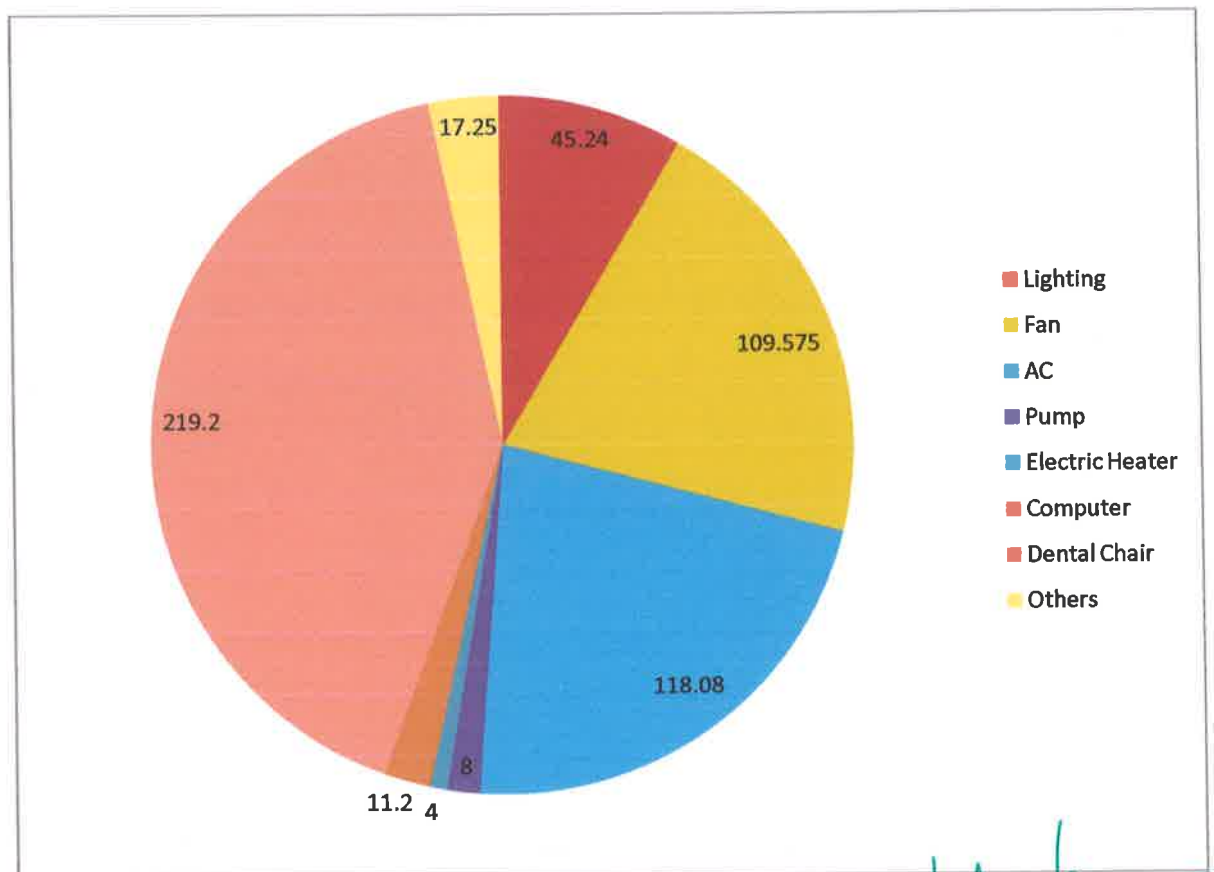


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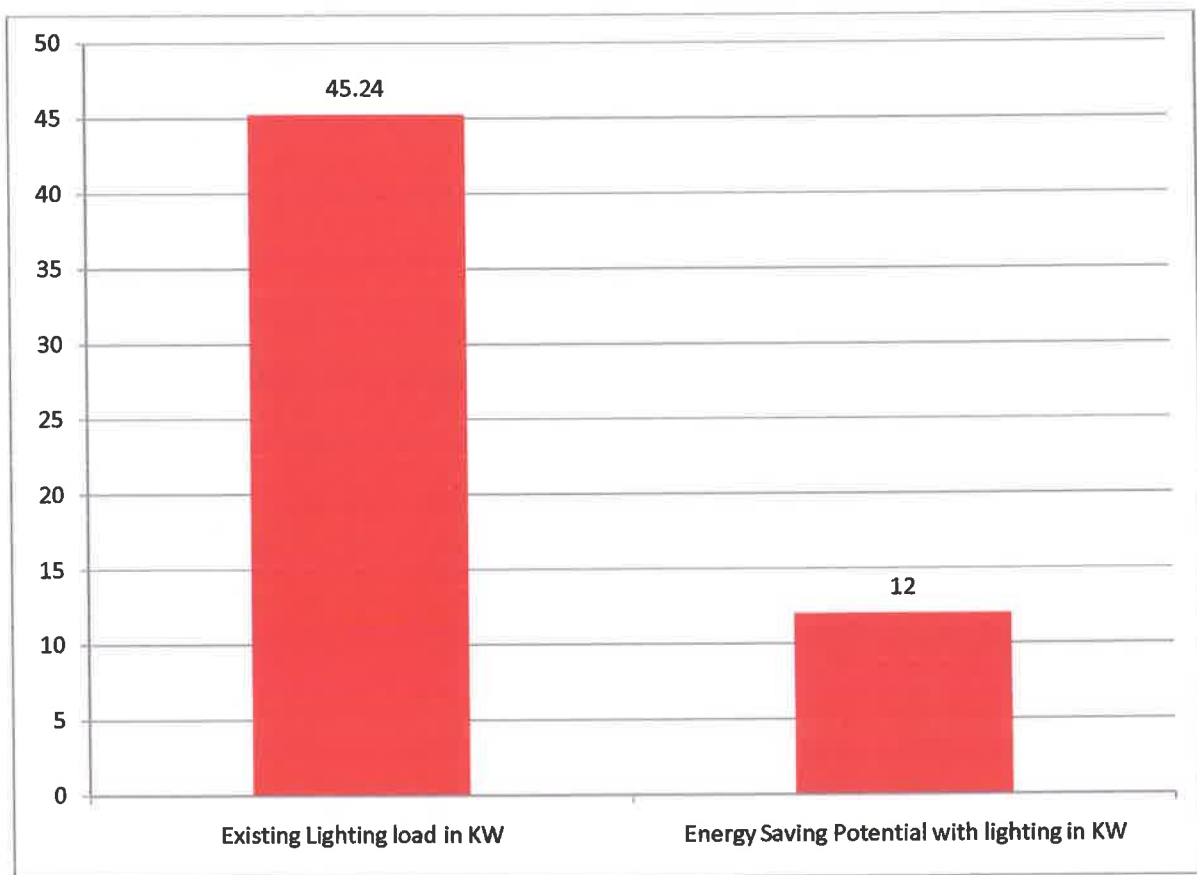
## 7. Energy Consumption Analysis

Load Type	Load In KW
Lighting	45.24
Fan	109.575
AC	118.08
Pump	8
Electric Heater	4
Computer	11.2
Dental Chair	219.2
Others	17.25
<b>Total</b>	<b>532.545</b>



**8. Lighting Power Consumption Analysis**

Item	Population	Existing Light in Watts	Proposed LED Light in Watts	ES Potential in watts	Energy saving in KWH
Tube Light	383	40	20	20	7.66
Night Lamp	312	15	3	12	3.74
Compound Light	30	50	30	20	0.6
<b>Total</b>					<b>12</b>



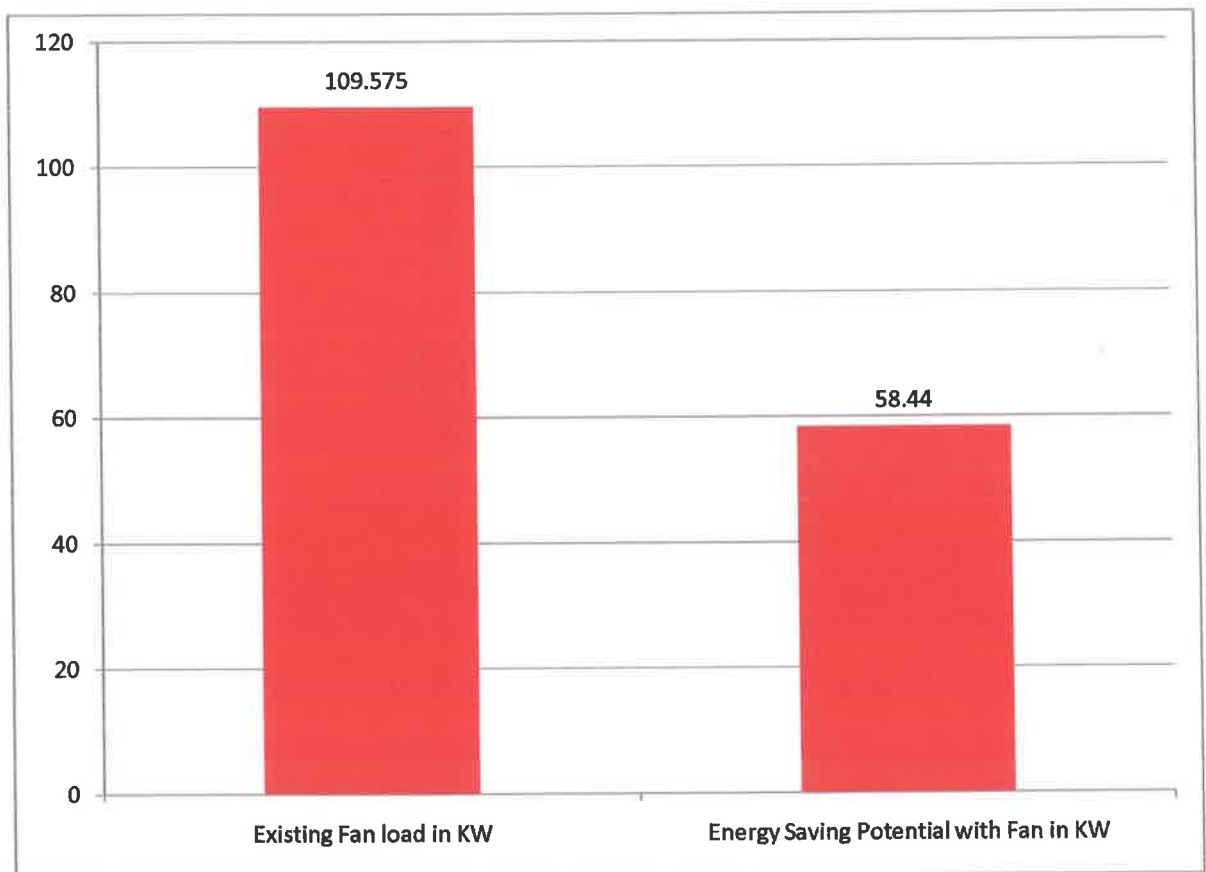
**Power consumption indicated in KWH**



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**9. Fan Power Consumption Analysis**

Particulars	Load in KW
Existing Fan load in KW	109.575
Energy Saving Potential with Fan in KW	58.44



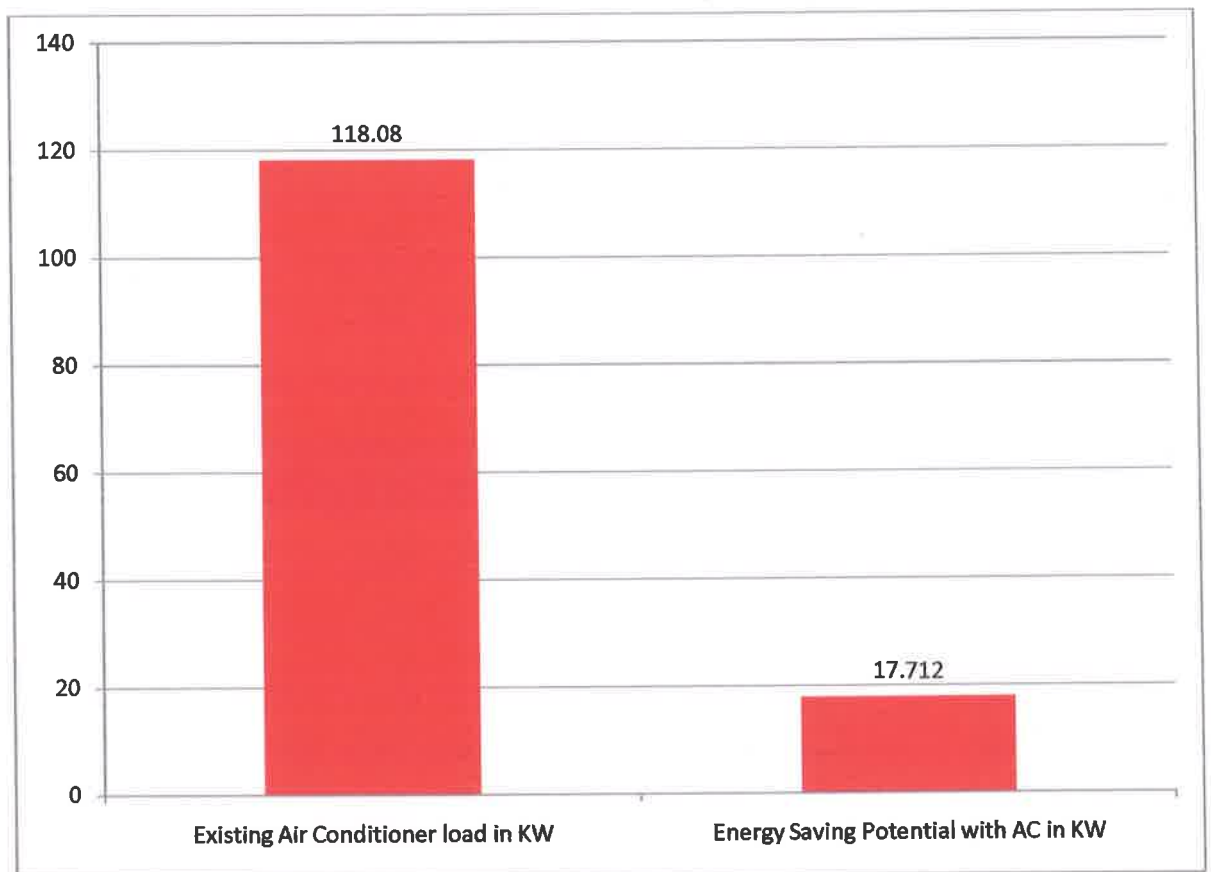
**Power consumption indicated in KWH**



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### 10. AC Power Consumption Analysis

Particulars	Load in KW
Existing Air Conditioner load in KW	118.08
Energy Saving Potential with AC in KW	17.712



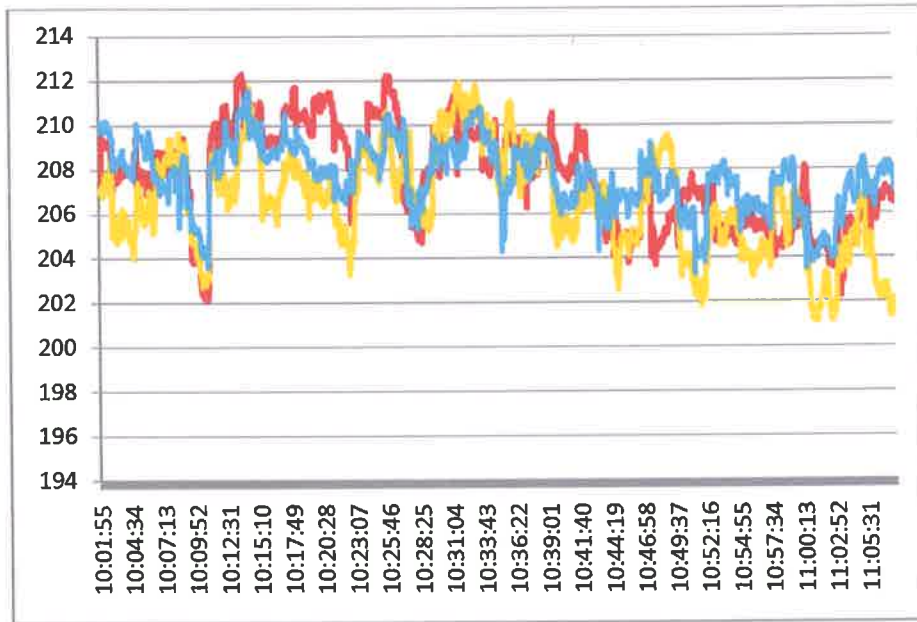
Power consumption indicated in KWH

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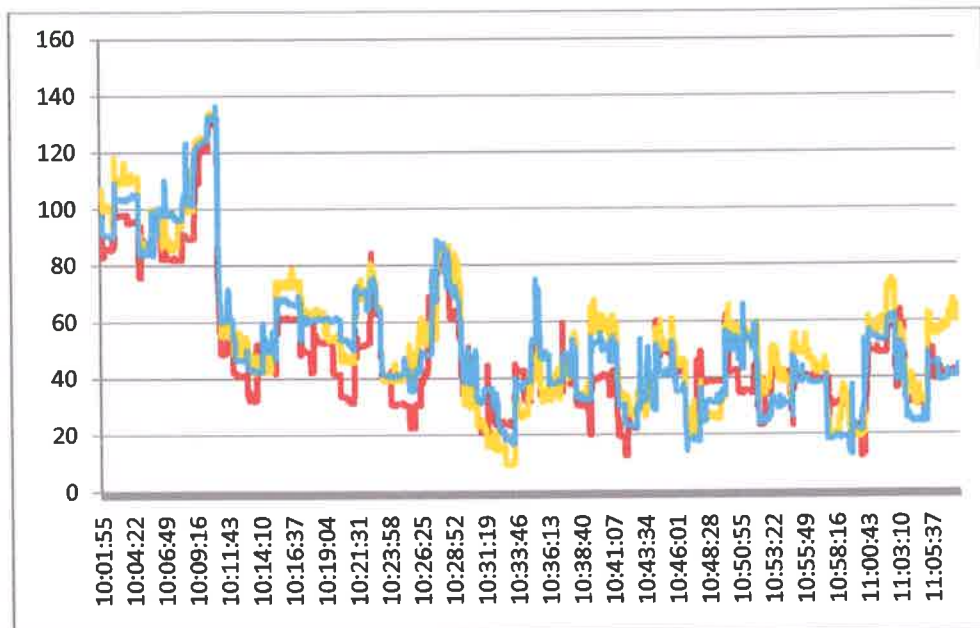
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## 11. Main Incoming Trends

### Voltage Trend

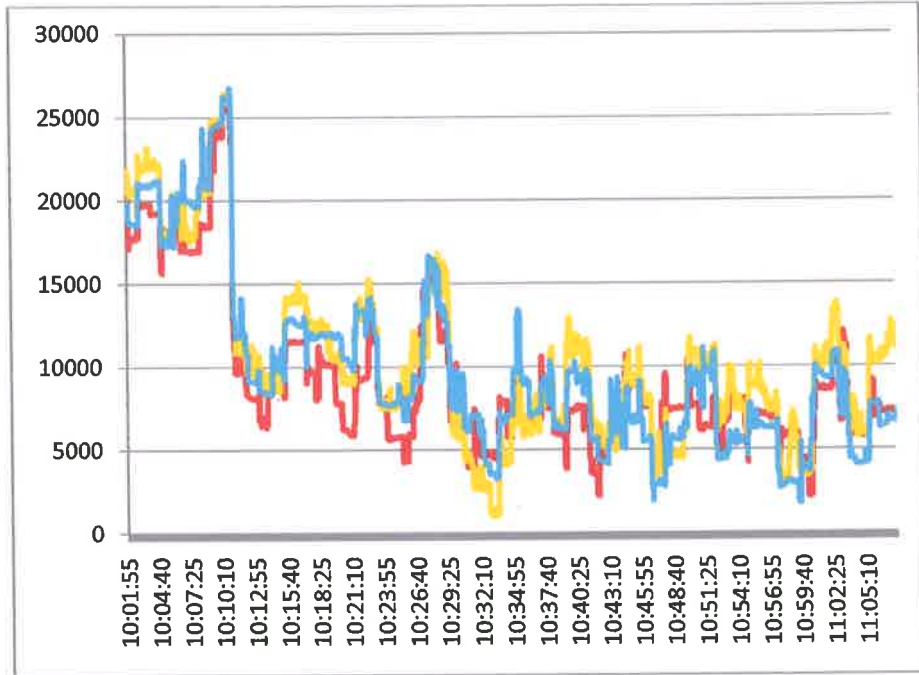


### Current Trend

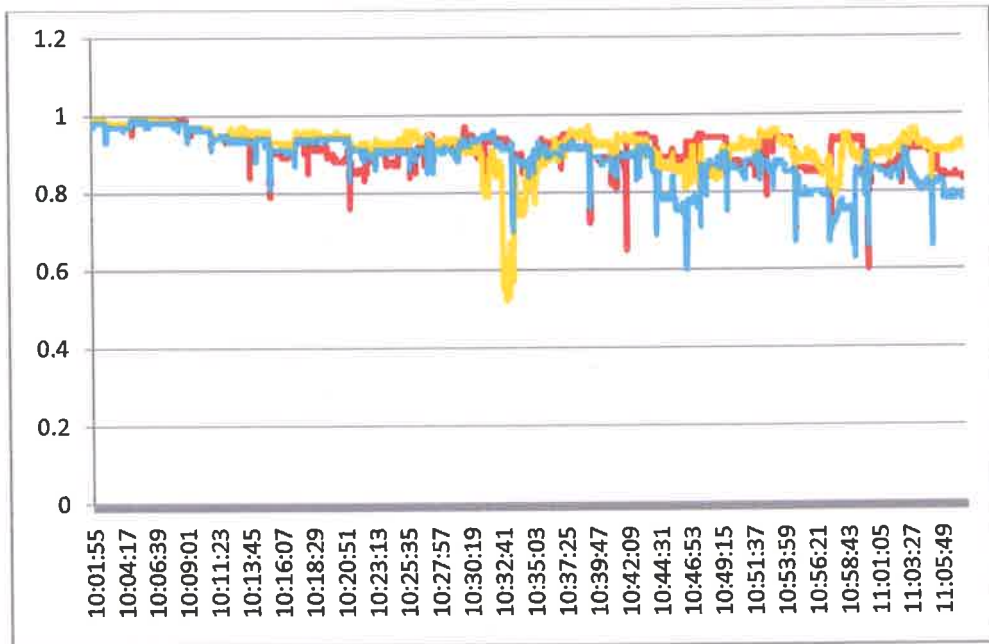


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**Power Trend**



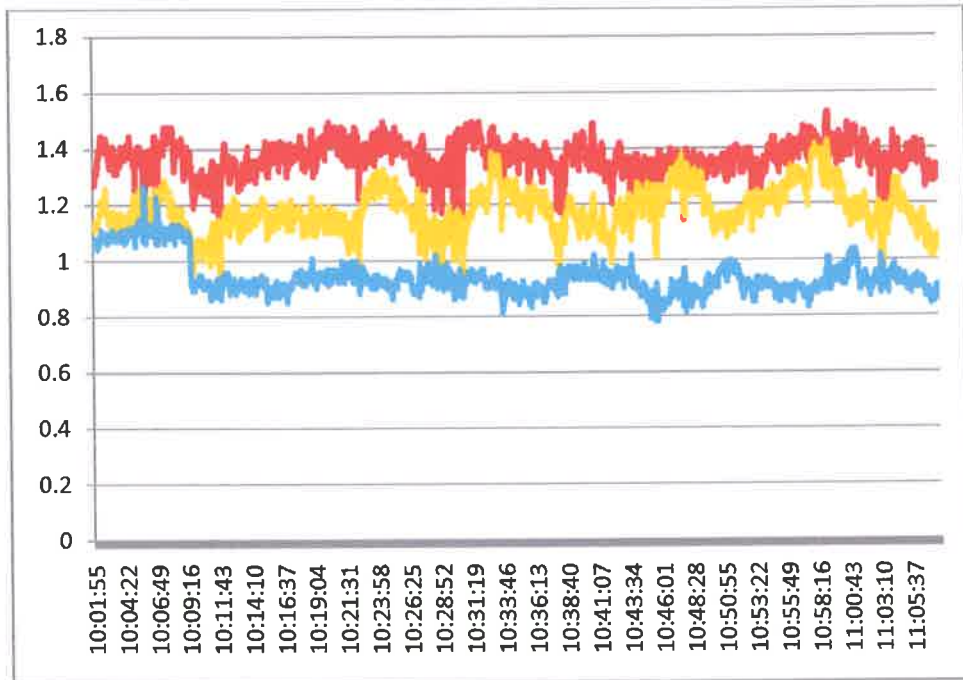
**Power Factor Trend**



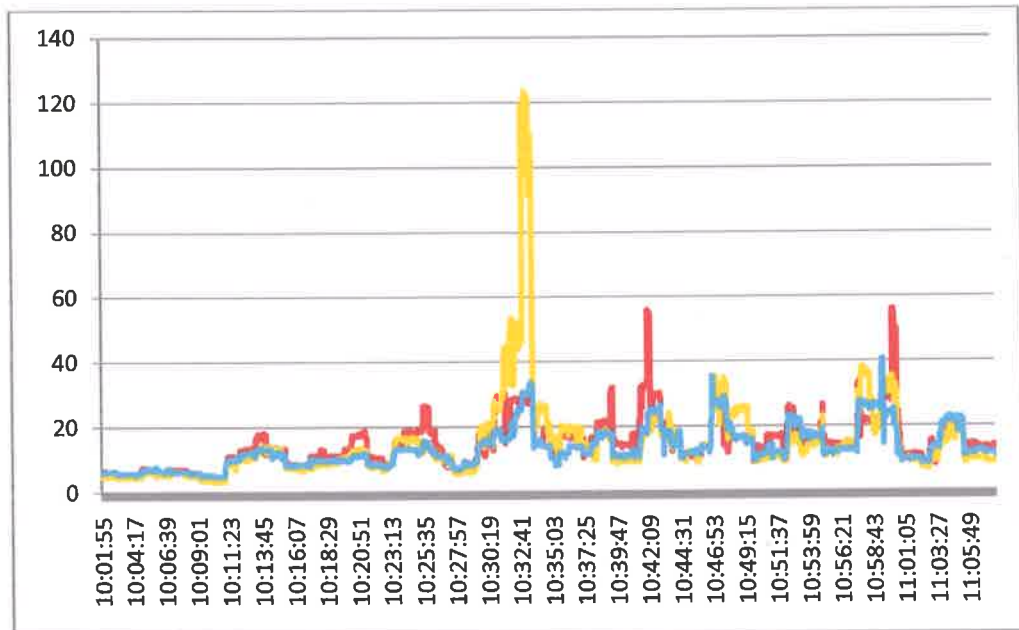
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### Voltage Harmonics Trend



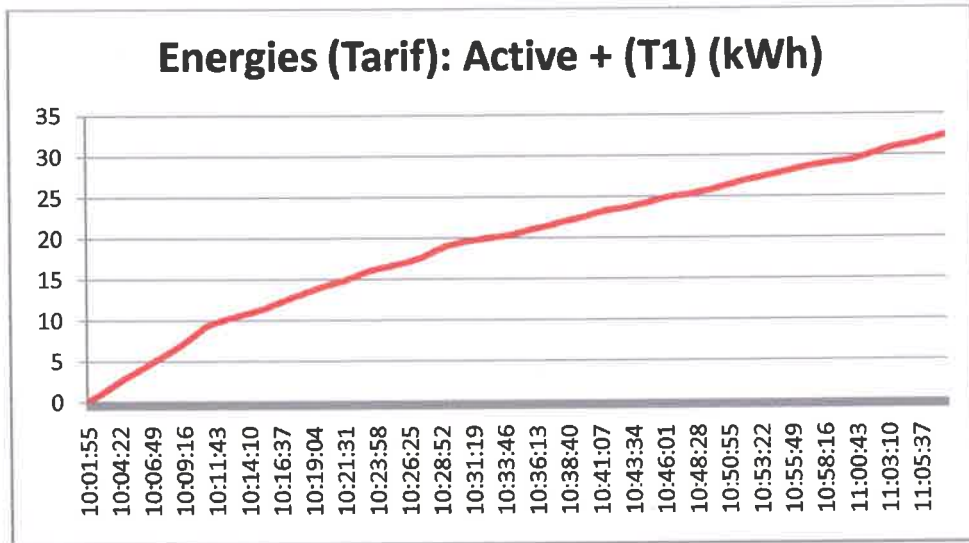
### Current Harmonics Trend



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## Active Energy Consumption



## Key Points

- Average energy consumption is 32 KWH per hour in day time
- Both voltage harmonics and current harmonics are on higher side requires harmonics mitigation equipments at all UPS and Lighting Circuits
- Isolated earthing is needed for all UPS and Lighting Circuits
- Some portion of the tube lights are conventional 40W bulbs and the same should be replaced with 20W LED tube light which gives same illumination. This saves 50% of energy bill.
- Most of the ceiling Fans used here are conventional type 75W fans and the same should be replaced with 35W BLDC Fan which saves 53% energy bill.
- Air conditioner can be operated with AC energy saver which saves 15% energy bill.
- We are utilising 50 KW solar power plant which is reducing the day time TNEB consumption
- We can go for solar water heater and thereby we can reduce water heater consumption
- Introduce the practice of conducting the leak test with compressor atleast once in a month.



## 12. Solar Power Plant

The maximum power consumption is between 9AM to 3 PM. College has 50 KW of Solar Power Plant. This solar power plant is reduces our TNEB power consumption and supports our green initiative. M/s.Adhiparasakthi Dental science and hospital maintains the solar power plant very effectively.



Solar power plant daily power generation	=	225 KWH
Annual Solar power plant generation	=	67500 KWH
Annual Co <sub>2</sub> Reduction by solar power plant	=	64125 Kgs

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### 13. Solar Water Heater

M/s.Adhiparasakthi Dental science and hospital maintains the solar water heater plants very effectively. Thereby this institution reduces the TNEB power consumption for hot water generation. Thereby it reduces Co<sub>2</sub> by solar water heaters.



Solar hot water generation quantity per day	=	6000 Liters
Heat generation by solar hot water plant per day	=	2,10,000 Kcal
Equivalent electricity requirement of 2,10,000 Kcal	=	244 KWH
Annual electricity reduction by solar water heater	=	73200 KWH
Annual Co <sub>2</sub> Reduction by Solar water heater system	=	69,540 Kgs

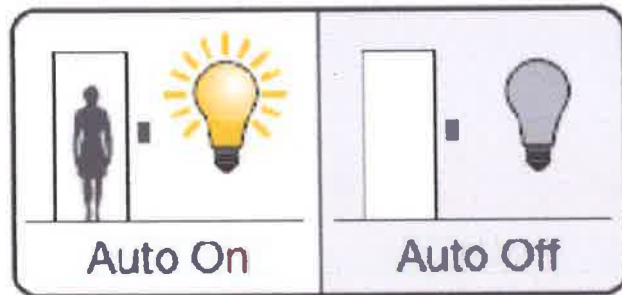


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## 14. Points for Improvement

- ❖ Provide double earth to all the motors and panel boards as a safety measures.
- ❖ Provide MPD in all pumping application which is will protect your pumps from dry run.
- ❖ Provide automatic lighting on-off and trim control in all Street light and Varandha lighting circuits. Occupancy sensors function by switching the lights ON and OFF based on the occupancy of the room and are a smart way to save energy in commercial organizations.



- ❖ Use 5 star rated AC's in all your purchase will yield energy saving in AC's Energy consumption

January 01, 2018, to December 31, 2020			January 01, 2021, to December 31, 2023		
Star Rating	Minimum	Maximum	Star Rating	Minimum	Maximum
1-Star	3.1	3.29	1-Star	3.3	3.49
2-Star	3.3	3.49	2-Star	3.5	3.79
3-Star	3.5	3.99	3-Star	3.8	4.39
4-Star	4.0	4.49	4-Star	4.4	4.99
5-Star	4.5		5-Star	5.0	

### Energy and Cost Savings for 1.5 Ton Window or Split Air Conditioner at Different Star Ratings (under standard test conditions and as per latest BEE regulations)

Star Rating	Minimum Energy Star (Approx.) Efficiency Ratio (EER)	Maximum Cooling Capacity (Watts)	Input Power (Watts)	Units Consumption/ Day (kWh)	Electricity Cost/Day	Electricity Cost/Month (Rs)	Savings per Month (w.r.t. 1 star) (Rs)
1*	2.7	5,200	1,926	15.4	108	3,234	0
2**	2.9	5,200	1,793	14.34	100	3,011	223
3***	3.1	5,200	1,677	13.42	93.94	2,818	416
4****	3.3	5,200	1,575	12.6	88	2,652	582
5*****	3.5	5,200	1,486	11.89	83	2,497	737



## 15. Sound Pollution Monitoring

Sound pollution is another important parameter that is taken into account for green auditing of the college campus. Different sites are chosen for the monitoring Sound is quantified by the Sound level meter (Lutron – SL4030)

Location	Average Sound Level (db)
Ground Floor	69
First Floor	65
Second Floor	61
Canteen	65
Main Gate	59
Hostel	57
Laboratory	61
Power House	47
Library	41
Office	50
Principal Room	49
Conference Room	47
Reception	54
Play ground	56



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## **16. Waste Management**

This indicator addresses waste production and disposal of different wastes like food, Paper, Plastic, glass, dust etc. Furthermore, solid waste often includes wasted material resources that could otherwise be channeled into better service through recycling, repair and reuse. For proper segregation and management, proper use of waste bins is the only solutions for waste management purpose in the college campus.



In M/s.Adhiparasakthi college of Dental science and Hospital, there is a practice of collecting the waste with colour coded bins. Each floor contains two or more sets of colour bins for proper waste management.



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Location	Number of Waste bins
College – Ground Floor	6 Nos
College – First Floor	6 Nos
College – Second Floor	6 Nos
Canteen	3 Nos
Hostel	6 Nos

- ❖ Total stake holders – 1247 Nos
- ❖ E-waste – Computer, Electrical and electronics parts – Disposal by selling
- ❖ Plastic Waste – Disposal by selling
- ❖ Food waste – Bio compost pit
- ❖ Solid wastes – to municipal waste collection center
- ❖ Glass waste – No treatment
- ❖ Waste water – Urinals, washing, bathroom in soak Pits
- ❖ Napkin incinerator – 2
- ❖ Incinerator – 2

#### Quantity of waste generated:-

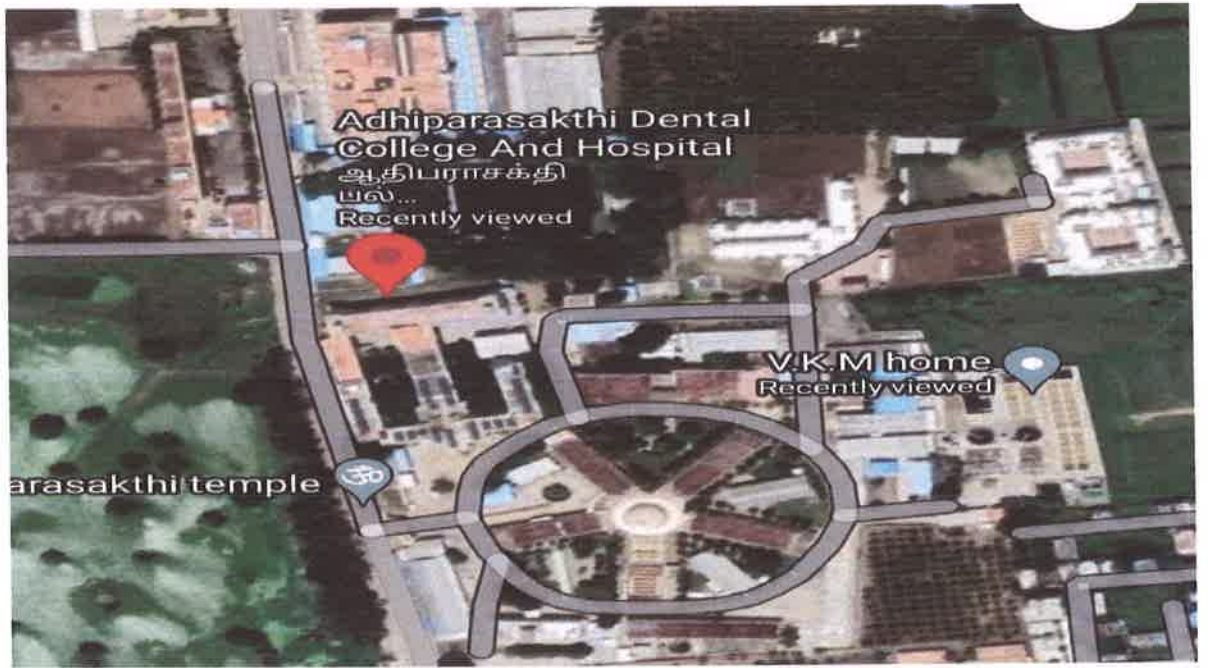
- ❖ Biodegradable – ½ kg/day (office)
- ❖ Non biodegradable – 0.1 kg/day (office)
- ❖ Biodegradable – 10 Kgs/day (Mess and Canteen)
- ❖ Non Biodegradable – 0.2 Kg/day (Mess and Canteen)
- ❖ Biodegradable – 0.3kg/day (labs)
- ❖ Non-biodegradable – 0.3 kg/day (including glass bottles)
- ❖ Hazardous waste – 50gm/day



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## 18. Green Campus



- ❖ Total number of Ornamental plants identified – 3,432 Nos
- ❖ Tree cover of the campus –682 m<sup>2</sup>
- ❖ Free space in the campus – 42800 m<sup>2</sup>
- ❖ Garden area inside the college – 1.52 acres

The college has maintaining lot of Plants and trees which helps the college surrounding looks more pleasant. This gives pleasant air with good thermal comfort to the students. In addition with all the class rooms were equipped with sufficient Window to floor ratio and enough number of ceiling fans



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## **19. Carbon Footprint**

- ❖ Petrol used by two wheelers/day – **300 L**  
(Per person to and fro 40 kms =1L)
  
- ❖ Fuel used by four wheelers (12 Persons) - **24L**  
(Per person to and fro 40 kms = 2L)
  
- ❖ Fuel for persons travelling by common transportation = **46.5 L**
  
- ❖ Fuel used by DG set – **0.5L**  
(Based on average consumption per day )
  
  
- ❖ Total fossil fuel use is **371 L / day**
  
  
- ❖ Total fuel cost per day for transportation = Rs 34,132/-  
(371 L x Rs 92 )
  
  
- ❖ Cost of Gas cylinders used Rs. 12600/month (6 cylinders)
  
  
- ❖ Amount spent for transportation (office) – Rs. 5600/month(Approx.)
  
  
- ❖ Amount spent for transportation (canteen) – Rs. 7200/month
  
  
- ❖ Amount spent for transportation (visitors) – Rs.7500/year
  
  
- ❖ Other expenditures for the energy – Rs.45/day



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Burning of fossil fuels is the main source and cause of carbon dioxide release to the atmosphere. Carbon dioxide release for the stakeholders to reach the college is very high. It is contributing to the global warming and increasing the pace of climate change. If a College bus is fully utilised for the staff and students means carbon dioxide released for the stakeholders' commutation can be reduced. More trees are planted in the campus in order to make a source of sink for the carbon dioxide and for other green house gases.

### **List of eco friendly activities going on in the campus**

- ❖ Planting and caring of trees in and around the campus.
- ❖ Timely disposal of wastes from the campus.
- ❖ Celebration of important days like World Environment Day, Ozone day, with great importance.
- ❖ Campus is declared plastic free.
- ❖ Management has decided to adopt green protocol
- ❖ Distribution of medicinal plant saplings among students



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## **20. Major Audit Observations**

- ❖ The environmental awareness initiatives are substantial.
- ❖ Solar plant generates enough power to reduce their internal energy consumption from TNEB Grid. Thereby we can reduce our TNEB bill
- ❖ Solar water heater is utilized for hot water generation and thereby it reduces TNEB power consumption is a good sign about environment
- ❖ Bio-gas plant is working well to reduce the LPG requirement. It is a good sign about environment protection
- ❖ Rain water harvesting is maintained with greater area and recharging of water is good enough
- ❖ Training in vegetable cultivation and composting practices are inadequate.
- ❖ Gardens inside the college premises are found well maintained.
- ❖ Programs on green initiatives have to be increased. Campus is declared plastic free, stringent actions should be taken to maintain this.
- ❖ Lot of NSS program conducted related cleaning activities in villages around the college are appreciable.
- ❖ Energy Conservation group also needed
- ❖ Separate group is needed to plan and cultivate location based plants to reduce the water consumption of the Garden
- ❖ College should take initiative to educate the nearby village peoples about global warming and waste management through their programs



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## **21. Water Audit Findings**

- ❖ Water consumption monitoring system in the college campus needs to be started.
- ❖ The college has sewage water treatment for waste water generated from laboratories, canteen, hostel kitchen, toilets, bathrooms and office rooms.
- ❖ Fixing aerators to water taps to reduce the water consumption is on the way
- ❖ Display boards against the misuse of water use are needs to be improved.

## **22. Energy Audit**

- ❖ The communication process for awareness in relation to energy conservation is found adequate.
- ❖ Monthly use of electricity in the college is very optimum
- ❖ Solar power plant, Solar Hot water plant and Bio-gas plants are great steps to reduce the energy consumption
- ❖ Objectives for reducing energy, water and fuel consumption are merged.
- ❖ There are fans of older generation and non energy efficient which can be phase out by replacing with new energy efficient fans.
- ❖ New projects are going out with Energy efficient product (LED) is a good sign
- ❖ Regular monitoring of equipments and immediate rectification of any problems needed and monitored.



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### **23. Waste Audit**

- ❖ Solid waste management systems established are needs to be improved.
- ❖ The college has proper communication with the local body for regular collection of solid waste from the campus.
- ❖ Waste bins in the class rooms, veranda, canteen and campus are adequate.
- ❖ Green chemistry labs are needs to be introduced.
- ❖ Bio-gas plants supports in a greater way to reduce the food wastes

### **24. Green Campus Audit**

- ❖ Tree cover of the college with respect to the stakeholder strength is needs to be strengthened.
- ❖ Regular planting of trees in the campus are adequate.
- ❖ Display boards to all plants identified are needs to be improved.
- ❖ Water uses for gardens are adequate. Still we can reduce.
- ❖ There is only very few fruit trees in the college to attract birds.
- ❖ Registry for flora and fauna on the campus is needs to be improved
- ❖ College needs to plant more herbal plants

### **25. Carbon Foot Print Audit**

- ❖ College has not yet taken any initiative for carbon accounting.
- ❖ Encourage students to use cycles.
- ❖ 371 liters of fossil fuel is burned every day for the functioning of the college. This is too high carbonemission, but it is compensated by high amount of Plants and trees
- ❖ Usage of 6 gas cylinders per month is high.



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## **26. Preparation of Action Plan**

Policies referring to college's management and approach's towards the use of resources need to be considered. The environmental policy formulated by the management of the college should be implemented meticulously. The college should have a policy on awareness raising or training programs (for ground staff or kitchen staff for example).

## **27. Follow Up Action and Plans**

Green Audits are exercises which generate considerable quantities of valuable management information. The time and effort and cost involved in this exercise is often considerable and in order to be able to justify this expenditure, it is important to ensure that the findings and recommendations of the audit are considered at the correct level within the organisation and that action plans and implementation programs result from the findings.

Audit follow up is part of the wider process of continuous improvement. Without follow-up, the audit becomes an isolated event which soon becomes forgotten in the pressures of organisational priorities and the passing of time.



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## **28. Environmental Education**

The following environmental education program may be implemented in the college before the next green auditing:-

- ❖ Training programs in solid waste management, liquid waste management, setting up of medicinal plant nursery, water management, vegetable cultivation, paddy cultivation, tree planting, energy management, landscape management, pollution monitoring methods, and rain water harvesting methods.
- ❖ Increase the number of display boards on environmental awareness such as save water, save electricity, no wastage of food/water, no smoking, switch off light and fan after use, plastic free campus etc.
- ❖ Set up model rainwater harvesting system, rainwater pits, vegetable garden, medicinal plant garden, paddy fields etc. for providing proper training to the students.
- ❖ Conduct exhibition of recyclable waste products
- ❖ Implement chemical treatment system for waste water from the laboratories.

## **29. Awareness on Carbon Consumption**

- ❖ Students and Staff members may be made totally aware of pollution caused by use of vehicles.
- ❖ The carbon consumption awareness programs on carbon emission at individual as well as social level will help to avoid air and noise pollution in the campus due to vehicles.



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### **30. Conclusion and Full List of Recommendations**

The green audit assists in the process of testing performance in the environmental arena and is fast becoming an indispensable aid to decision making in a college.

The green audit reports assist in the process of attaining an eco friendly approach to the sustainable development of the college. Hope that the results presented in the green auditing report will serve as a guide for educating the college community on the existing environment related practices and resource usage at the college as well as spawn new activities and innovative practices. A few recommendations are added to curb the menace of waste management using eco-friendly and scientific techniques. This may lead to the prosperous future in context of Green Campus and thus sustainable environment and community development.

It has been shown frequently that the practical suggestions, alternatives, and observations that have resulted from audits have added positive value to the audited organisation. An outside view, perspective and opinion often helps staff who have been too close to problems or methods to see the value of alternative approaches. A green audit report is a very powerful and valuable communications tool to use when working with various stakeholders who need to be convinced that things are running smoothly and systems and procedures are coping with natural changes and modifications that occur.



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### **31. Common Recommendations**

- ❖ Conduct more seminars and group discussions on environmental education
- ❖ Students and staff can be permitted to solve local environmental problems
- ❖ Renovation of cooking system in the canteen to save gas
- ❖ Establish water, waste and energy management systems

### **32. Criteria Wise Recommendations**

#### **Water**

- Remove damaged taps and install sensitive taps if possible.
- Drip irrigation for gardens and vegetable cultivation can be improved.
- Install Meters to monitor the water use
- Establish water treatment systems.
- Use waterless urinals
- Spray the water to the garden in the early morning of the day
- Use aerator in the taps to reduce the water consumption and wastage
- Use treated water for bus wash and other toilet use
- Conduct leak test at least once in two months
- Use water efficient garden techniques to reduce the water consumptions in garden
- Awareness programs on water conservation to be conducted.
- Install display boards to control over exploitation of water.



## Energy

- Conventional Fans needs to be replaced with energy efficient BLDC Fans.
- Conduct more save energy awareness programs for students and staff.
- Replace all conventional tube lights with LED lights
  
- Optimise the energy usage
- Automatic power on/off systems may be introduced.

## Waste

- A model solid waste treatment system to be established.
- Maintain a plastic free campus.
- Avoid paper plates and cups for all functions in the college.

## Green Campus

- All trees in the campus should be named scientifically.
- Create more space for planting.
- Grow potted plants at both verandah and class rooms.
- Create automatic drip irrigation system during summer holidays.
- Not just celebrating environment day but making it a daily habit.
- Beautify the college building with indoor plants
- Providing funds to nature club for making campus more green
- Encouraging students not just through words, but through action for making the campus green
  
- Conducting competitions among departments for making students more interested in making the campus green.



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## Carbon footprint

- Establish a system of car pooling among the staff to reduce the number of four wheelers coming to the college.
- Increase effective use of college bus services to the students and staff.
- Encourage students and staff to use cycles.
- Establish a more efficient cooking system to save gas.
- Discourage the students using two wheelers for their commutation.
- More use of generators every day should be discouraged.



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## 32.Audit Report

We have conducted the Green audit at all important areas up to our maximum possible extend. Overall performance of environment management in college is found satisfactory.

**For Sri Energy Solutions,**



**M.Rameshkumar**

**BEE Certified Energy Auditor – EA 22303**



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## Annexure – A

### Details of the Program offered

#### ❖ U.G.Courses

- B.D.S

#### ❖ P.G.Course

- M.D.S.,(Orthodontics)
- M.D.S.,(Dentofacial Orthopedics)
- M.D.S.,(Conservative Dentistry)
- M.D.S., (Endodontics)
- M.D.S., (Prosthodontics)
- M.D.S., (Crown and Bridge)
- M.D.S., (Oral and Maxillofacial Surgery)
- M.D.S., (Periodontics)
- M.D.S., (Pediatric and preventive dentistry)
- M.D.S., (Oral and Maxillo facial Pathology)



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## Annexure – B

### Bus Routes

The college has operates several buses in the following route for the convenience of the students and staffs

<b>Bus Number</b>	<b>Route</b>
TN19T9090	Melmaruvathur to Chennai
TN19V2232	Melmaruvathur to Pondicherry
TN31AD5443	APDCH to MAPIMS (Student Use)
TN19Z2727	APDCH to MAPIMS (Student Use)
TN19AM6336	Dental Camp



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## Future Support

Thanks for your co-operation to bring out this natural resources saving operation. We will give necessary support to achieve your needs at any time.

# THANK YOU

From,

**M/s.Sri Energy Solutions**

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