



SRI RAMAKRISHNA
Dental College and Hospital

ENERGY AUDIT REPORT

AUDIT DONE BY

Dr.S.U.Prabha , Professor and Head/EEE

Dr.C.Kathirvel, Associate Professor/EEE

Mr.P.SebatianVindro Jude , Assistant Professor (Sl.G.)/EEE

Mr.R.Krishnakumar, Assistant Professor (Sr.G.)/EEE

Department of Electrical and Electronics engineering

Sri Ramakrishna Engineering College

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This report has been prepared by:

1. Dr.S.U.Prabha , Professor & Head/EEE
2. Dr.C.Kathirvel, Associate Professor/EEE
3. Mr.P.SebatianVindro Jude , Assistant Professor (Sl.G.)/EEE
4. Mr.R.Krishnakumar, Assistant Professor (Sr.G.)/EEE

**Department of Electrical and Electronics engineering
Sri Ramakrishna Engineering College**

With the guidance of



Sivaprakasam Kandasamy
BEE Certified Energy Manager
Regd. No. 13365

Sivaprakasam Kandasamy
Registration No : 13365
Certified BEE Energy Manager

PREFACE

An energy audit is a study of a plant or facility to determine how and where energy is used and to identify methods for energy savings. There is now a universal recognition of the fact that new technologies and greater use of some of it, that already exists provide the most hopeful prospects for the future. The opportunities lie in the use of existing renewable energy technologies, greater efforts at energy efficiency and the dissemination of these technologies and options. This report is just one step, a mere mile marker towards our destination of achieving energy efficiency and we would like to emphasize that an energy audit is a continuous process.

We have compiled a list of possible actions to conserve and efficiently utilize our scarce resources and identified their savings potential. The next step would be to prioritize their implementation. We look forward with optimism that the institute authorities, staff and students shall ensure the maximum execution of the recommendations and the success of this work.

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1. INTRODUCTION

S.N.R Sons Charitable Trust was founded in 1970 by the illustrious sons of Sri S.N. Rangasamy Naidu; being an ardent devotee of Sri Ramakrishna Paramahansa, all the institutions started by the trust, bear the name of the holy sage, Sri Ramakrishna

The trust runs various Hospitals and institutions namely Sri Ramakrishna Hospital, Sri Ramakrishna Dental College and Hospital, Sri Ramakrishna College of Nursing, Sri Ramakrishna College of Physiotherapy, Sri Ramakrishna College of Pharmacy, S.N.R. Sons College, Sri Ramakrishna College of Arts and Science for Women, Sri Ramakrishna Engineering College, Sri Ramakrishna Institute of Technology, Sri Ramakrishna Polytechnic College, Sri Ramakrishna Advanced Training Institute, Sri Ramakrishna Matriculation Higher Secondary School - Avarampalayam, Sri Ramakrishna Matriculation Higher Secondary School – Vattamalaipalayam, Sri Ramakrishna Vridhasramam, Sri Ramakrishna Rural Health Centre, Vattamalaipalayam, Sri Ramakrishna Rural Health Centre, Pachapalayam and Community Halls in Coimbatore

The vision of this trust is to offer social service in a selfless manner, to give relief to the needy and the poor. To provide efficient health services and to facilitate the development of professionals who will demonstrate excellence in the respective disciplines. Enlightenment through education to produce graduates in different fields viz. General, Technical and Professional Education including Dental, Paramedical Sciences and Engineering imparting a competitive spirit and competence, to serve the society and the country. It was not just growth but growth with innovation is the epitome of this institution

Sri Ramakrishna Dental College and Hospital has a quality policy and it implements quality systems to become a world class institution. The annual intake of students in the institution was initially 60 for UG course and since 2011 it's increased to 100 students for UG course. By 2009 the college was affiliated to have intake of MDS students in 5 clinical specialities

1.1 Objective of the energy audit

This energy audit assumes significance due to the fact that the SRDCH electricity bill had crossed Rs 9,35,254 during 2020 and it was aimed at obtaining a detailed idea about the various end use energy consumption activities and identifying, enumerating and evaluating the possible energy savings opportunities. The target is to achieve savings in the electrical energy consumption to the extent of 20%. The audit was also aimed at giving the students a feel of the practical problems and difficulties in carrying out energy audits. As Electrical engineers, the students of the department enthusiastically participated in the endeavor.

1.2 SRDCH Present Energy Scenario

The energy consumption on campus is mainly in the form of electricity, apart from the use of LPG as cooking fuel in the hostels. The campus had a connected electrical load of 112 KW on January 2020. The monthly recorded peak demand for the year 2020 is given in Fig. 1.3.1. The SRDCH energy bill for the year 2020 was Rs. 9,35,254. The electricity bill comprises two parts: one related to the energy consumed (per kWh or per unit energy consumed) and the other is the maximum demand charge (per kVA of maximum demand during the month). There also exists a penalty for low power factor.

Table 1.2.1 SRDCH Electricity Bill

Sl. No.	Month/ Year	Unit Consumed (Service No.03-027-010-710)	Total Amount in Rupees
1	Jan'20	19825	1,63,044
2	Feb'20	21532	1,76,537
3	March'20	21532	1,76,537
4	April'20	26231	43,944
5	May'20	2196	24,254
6	June'20	3288	32,673
7	July'20	3094	31,127
8	Aug'20	2533	26,714
9	Sep'20	3500	34,340
10	Oct'20	2876	29,414
11	Nov'20	7262	64,043
12	Dec'20	15968	1,32,627

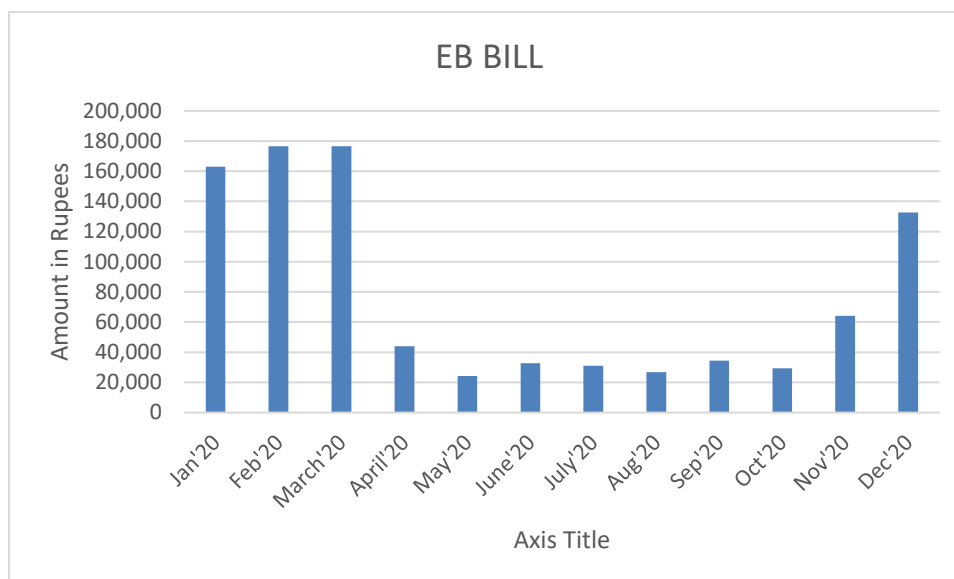


Figure 1.2.1 SRDCH Electricity Bill

1.3 Energy Consumption

The recorded monthly units consumption of the college in the year 2020 is given in the following table.

Table 1.3.1 SRDCH Energy Consumption

Month	112 KW TNEB Units	Total Units Consumed
Jan'20	19825	19825
Feb'20	21532	21532
March'20	21532	21532
April'20	26231	26231
May'20	2196	2196
June'20	3288	3288
July'20	3094	3094
Aug'20	2533	2533
Sep'20	3500	3500
Oct'20	2876	2876
Nov'20	7262	7262
Dec'20	15968	15968
Total		1,29,837

1.4 Specific Energy Consumption (SEC)

The Specific Energy Consumption (SEC) is defined as the energy consumption per unit of product output. The specific energy consumption considering students, faculty and staff members were calculated which forms the institute SEC and was taken as reference for comparison. The SRDCH was calculated to be 189 kWh/person/annum and Rs. 1361 per person per annum in 2020.

2. ENERGY AUDIT

2.1 Energy Audit Methodology

The methodology adopted for this audit was

- Formation of audit groups for specific areas and end use
- Visual inspection and data collection
- Observations on the general condition of the facility and equipment and quantification
- Identification / verification of energy consumption and other parameters by measurements
- Detailed calculations, analyses and assumptions
- Validation
- Potential energy saving opportunities
- Implementation

As a first step in this regard, the team of Faculty members of EEE department of Sri Ramakrishna Engineering College were formed and each team was assigned a particular area/application of energy in the campus. The activity was organized as a Project during March 2021.

2.2 Grouping and Strategy

The following groups were formed with specific target areas and end uses assigned.

Group 1: Lighting and fans in SRDCH

Group 2: Room air conditioners in main departments and labs.
Computers/printers – In Department, labs
Benchmarking of electricity consumption

The groups were allowed the use of various measuring instruments like Power quality analyzers and meters to assist in the auditing activity. Also, cooperation of the Electrical Maintenance Section was sought to collect past data and for taking measurements.

3. QUANTIFICATION BY END USE

The loads were segregated based on the end use as lighting and fans, air conditioning, Computer/printers. Quantification, types and necessary measurements were carried out. The details are given here.

3.1 Distribution of connected load by end use in SRDCH LT

S.No.	Particulars	Connected Load in Watts
1.	Ground Floor	1,50,250
2.	First Floor	60,542
3.	Second Floor	1,82,545
4.	Third Floor	39,640
5.	Ladies Hostel	37,730
6.	Gents Hostel	7,270
Total		4,77,977

3.2 Electricity use in SRDCH

3.2.1 Lighting, Fans, UPS and Air Conditioners

- The SRDCH has about 1273 Fluorescent tube lights in different departments and labs.
- The SRDCH is having 871 fans in different class rooms and labs. All Fans are not fitted with electronic regulator.
- The total lighting load from the above is 42946 W and the connected fan load is 6825 W.

Table 3.2.1 Total Lighting load

S. No	Fluorescent Lamp	Quantity	Total Power(in Watts)
1.	9w	11	99
2.	11w	20	220
3.	15w	83	1245
4.	18w	2	36
5.	20w	71	142
6.	36w	559	20124
7.	40w	527	21080
Total lighting load			42946
Total Power Consumption for 8 hours			3,43,568
Total Energy Consumption for 8 hours			343.6 units

Table 3.2.2 Total Fan load

S. No	Fan Load	Quantity	Total Power (in Watts)
1	75 watts	871	65325
Total Power Consumption for 8 hours			522600
Total Energy Consumption for 8 hours			522.6 units

UPS Load 1

5 KVA UPS (1 No.) – 5 KVA

80 % of 5 KVA Load- 4 KVA

4 KVA * Hour= 4 Units

4 Units* 8 Hour =32 Units

UPS Load 2

1 KVA UPS (3 No.) – 3 KVA

80 % of 3 KVA Load- 2.4 KVA

2.4 KVA * Hour= 2.4 Units

2.4 Units* 8 Hour =19.2 Units

UPS Load 3

600 VA UPS (31 No.) – 18.6 KVA

80 % of 18.6 KVA Load- 14.88 KVA

14.88 KVA * Hour = 14.88 Units

14.88 Units* 8 Hour = 119 Units

Table 3.2.3 Total UPS Load

S. No	UPS Load	Load connected	Quantity	Total Energy Consumed in Units
1	1 KVA UPS	80 % of full load	3	2.4
2	5 KVA UPS	80 % of full load	1	4
3	600 VA UPS	80 % of full load	31	14.88
Total Power Consumption per hours				21.28
Total Power Consumption for 8 hours				170.24
Total Power Consumption per month				4086

3.2.2 Air Conditioners

On using the rated capacity details supplied by the manufacturers, the total room AC is 17.

AC Load

1 Ton AC = 8

1.5 Ton AC = 5

2 Ton AC = 4

Table 3.2.4 Rating of Air conditioner

S.No	Rating of Air conditioner	Quantity	Total Energy Consumed
1	1 Ton AC	8	8*8 Hours*1 KW=64 Units
2.	1.5 Ton AC	5	5*8 Hours*1.5 KW=60 Units
3.	2 Ton AC	4	4*8 Hours*2 KW=64 Units
Total Energy consumption per day			188 Units
Energy consumed in 24 working days			4512 Units

Table 3.2.5 Distribution of connected load

Load	KW
Lighting	42.9
Fan	65.3
UPS	21.3
A/C	23.5

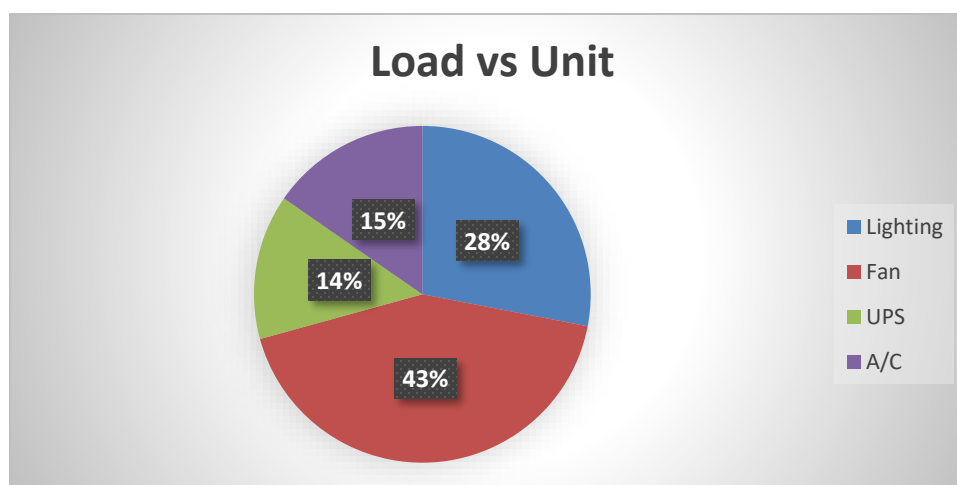


Figure 3.2.1 Total Units consumed in KW

3.2.3 Computers/ Printers

Computers and monitors account for 30%-40% of the energy used by office equipments. Their energy consumption is next to the office lighting. It is estimated that a power managed computer consumes less than half the energy of a computer without power management. The total number of computers and printers in SRDCH is shown in Table 3.2.5. Thus there are a total of about 344 computers and about 58 printers in the college.

Table 3.2.5 Computers and printers in SRDCH

S No	Department/Building	Computers Monitor	LCD Monitor	Printers	Projectors
1.	Laboratory, Staff room, HoD room	10	3	3	7

3.3 Lighting and Common Area Lighting

All lights and corridor lights were accounted. The connected load is **8,944 watts**, and about 60% of this includes the illumination, and these lights are normally operational only in the Day time. The quantification is as follows.

Table 3.3.1 Lighting loads

S. No	Fluorescent Lamp	Quantity	Total Power(in Watts)
1.	9w	11	99
2.	11w	20	220
3.	15w	83	1245
4.	18w	2	36
5.	20w	71	142
6.	36w	559	20124
7.	40w	527	21080
Total lighting load			42946

3.4 Laboratory loads in Main Block

The SRDCH has a rating of 2,46,735 W Laboratory loads and mostly operates at part load. The savings could not be quantified due to difficulties in taking measurements. However, considerable potential for energy savings may exist as the efficiency of the system will be lower at laboratory loads. The laboratory loads also plays major role in the power consumption.

Table 3.4.1 Laboratory loads

Loads	Wattage	Nos.	Total Watts
Dental Hydraulic Chairs	400	141	56400
Dental Electric Chairs	1550	85	131750
Auto Claves	350	14	4900
Ultra Cleaner	300	4	1200
Sterilization	750	10	7500
Mobile Suction	350	4	1400
Incubator	300	3	900
Hot Air Oven(Big)	750	3	2250
Hot Air Oven(Small)	350	2	700
Fridge	350	5	1750
X-ray Unit	1600	1	1600
Ceramic Lab	29515	-	29515
Conservation X-ray unit	1600	1	1600
Water Purifier	1200	1	1200
Lab Miro motor	185	22	4070
Total Laboratory load in watts			2,46,735

4. MEASUREMENTS PERFORMED

4.1 Energy Consumption of SRDCH

Table 4.1 Energy Consumption of SRDCH

Month	Unit Consumed (Service No.03-027-010-710)
Jan 2021	12602
Feb 2021	18630
March 2021	18880

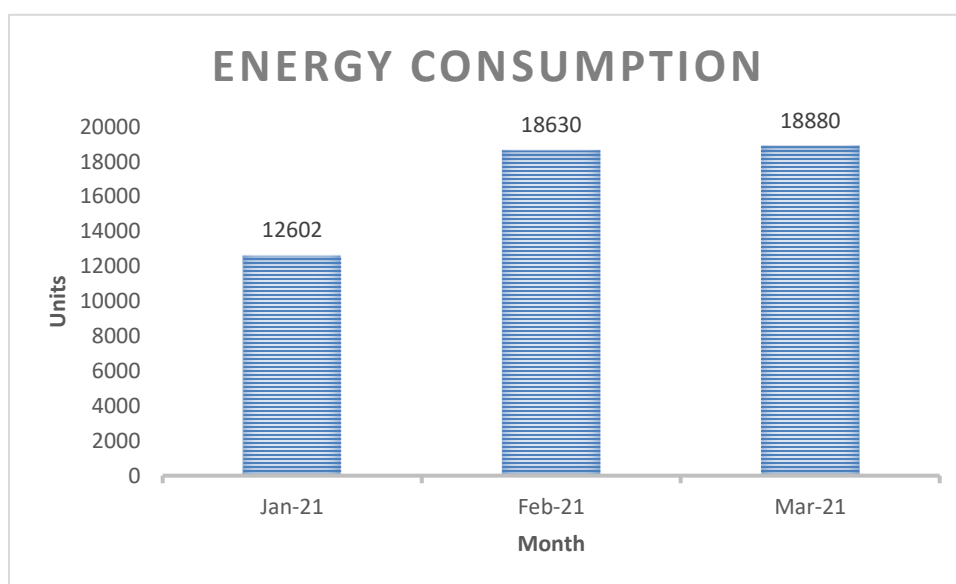


Figure 4.1 Energy Consumption of SRDCH

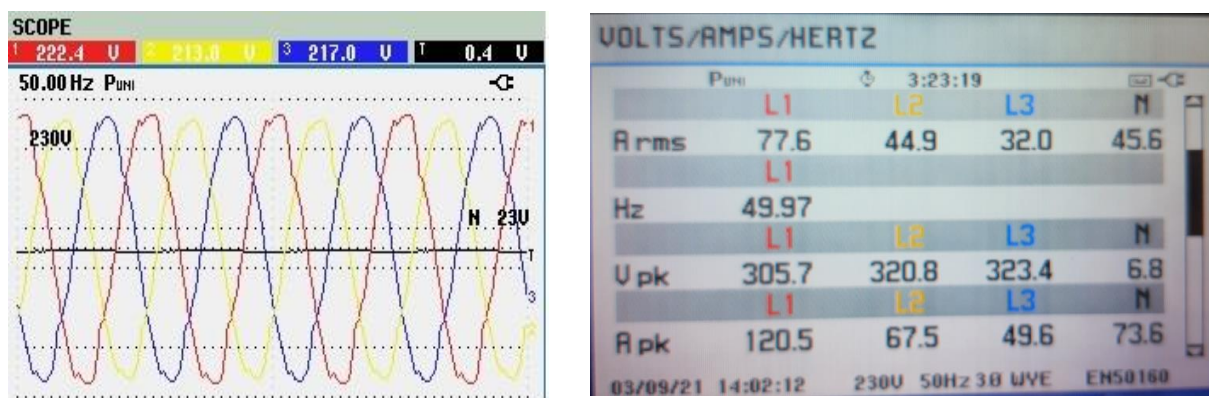


Figure 4.2 Power Consumption of SRDCH

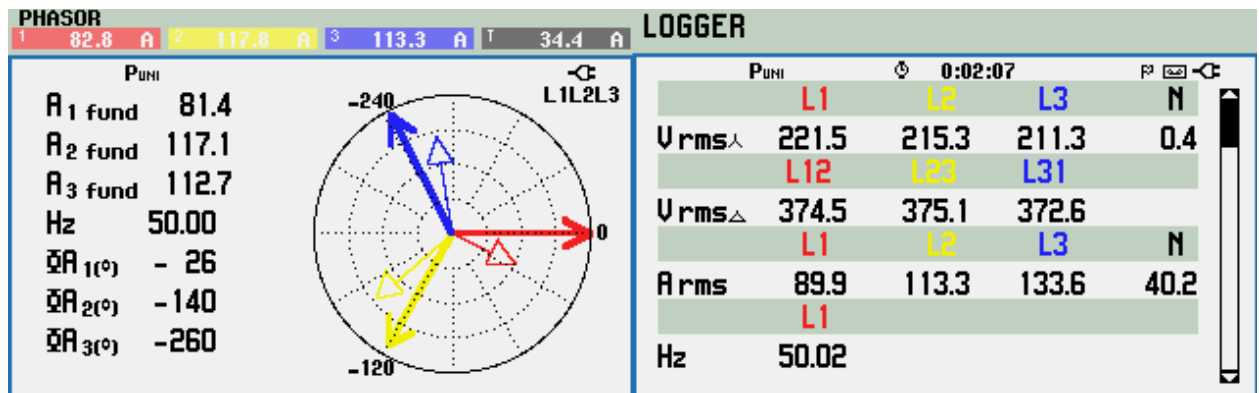


Figure 4.3 Power Consumption of SRDCH

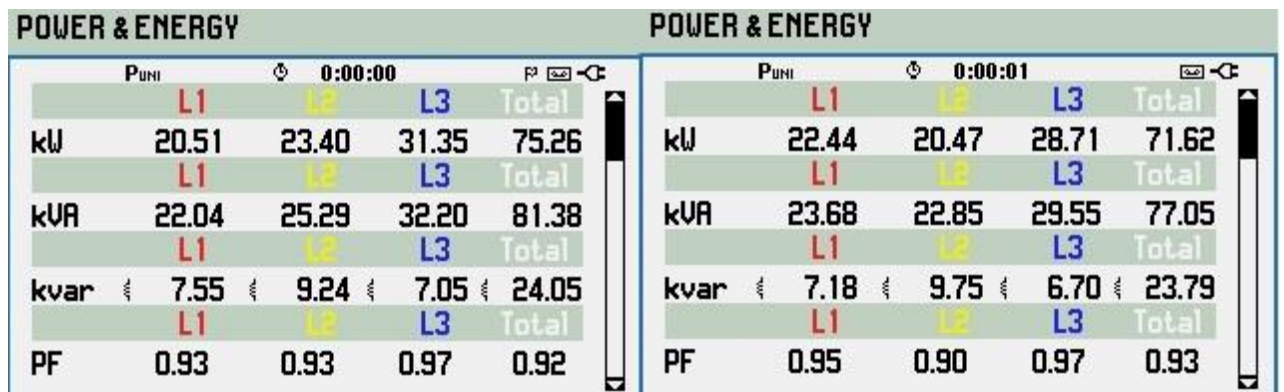


Figure 4.4 Power Consumption of SRDCH

4.2 Computers & Printers

The power consumption by the computer and printer under different modes of operation are shown below.

Table 4.2.1 Measured power consumption for computers and printers in different operating modes

S No.	Equipment	Mode of operation	Power (W)	Power factor
1	Monitor	On	29.8	0.596
2	CPU	On	56	0.62
3	Monitor & CPU	On	105.5	0.65
4	CPU	On	60	0.65
5	Monitor	On	53.4	0.62
6	CPU	On	48	0.56
7	System	Hibernate	2.5	0.2
8	Monitor	On	55	0.634
9	System	Sleep Mode	3	0.225
10	Laser Printer	On	3	0.36

5. BENCHMARKING

Energy benchmarking involves the development of quantitative and qualitative indicators through the collection and analysis of energy-related data and energy management practices. Benchmarking in simplistic terms is the process of comparing the performance of a given process with that of the best possible process and to try to improve the standard of the process to improve quality of the system, product, services etc. It allows organizations to develop plans on how to adopt such best practices, usually with the aim of increasing some aspect of performance. Benchmarking may be a one-off event, but is often treated as a continuous process in which organizations continually seek to challenge their practices. Benchmarking is a method which should be used on a continual basis as best practices are always evolving.

Benchmarking of energy consumption is a powerful tool for performance assessment and logical evolution of avenues for improvement. Historical data, well documented, helps to bring out energy consumption and cost trends month-wise / daily. Trend analysis of energy consumption, cost, relevant production features, specific energy consumption, help to understand effects of capacity utilization on energy use efficiency and costs on a broader scale. The basis for benchmarking the energy consumption at SRDCH is energy consumed per person (includes teaching staff and students). The benchmarking parameters here are,

- Departmental energy performance
- kWh consumed per sq.m of area and
- kWh consumed per capita

5.1 SRDCH Energy Performance

The details of the annual energy consumption of Sri Ramakrishna Dental College and Hospital in the year 2020 is shown here in Fig. 5.1.1

Table.5.1.1 Total Annual Energy Consumption of the campus in 2020

Sl. No.	Month/ Year	Unit Consumed (Service No.03-027-010-710)
1	Jan'20	19825
2	Feb'20	21532
3	March'20	21532
4	April'20	26231
5	May'20	2196
6	June'20	3288
7	July'20	3094
8	Aug'20	2533
9	Sep'20	3500
10	Oct'20	2876
11	Nov'20	7262
12	Dec'20	15968

5.2 Per Unit Area Energy Consumption

The energy consumption per sq. m for the college (30301 sq. m) is determined and it is normalized with respect to average value of per sq. m energy consumption of the college, which was set as the basis. For normalizing, the college average of 4.28 kWh/sq.m./year is taken as the denominator.

5.3 Per Capita Energy Consumption for SRDCH

The per capita (537 student + 150 faculty) consumption for the college is determined based on the total energy consumption of the college per year

The average Per capita energy consumption = 189 kWh per person per year

5.4 ECBC Standards and Comparison

As per the Energy Conservation Building Code (ECBC) – 2006, published by the Bureau of Energy Efficiency (BEE), Govt. of India, and the recommended levels of lighting power density are as given below in Table 5.4.1

Table 5.4.1 ECBC recommended levels for lighting power density

Space/ application	Lighting power density in W/Sq.m.
Enclosed offices	11.8
Offices-open plan	11.8
Conferences/meeting rooms/ multipurpose	14.0
Classrooms/ lecture theatres	15.1
Lounge	12.9
Dining area	09.7
Food preparation	12.9
Library stacks	18.3
Library reading area	12.9
Workshops	15.1
Cafeteria	15.1

Table 5.4.2 Measured values of lighting power density at select locations in SRDCH

Space/ application	Lighting power density in W/ Sq.m.
office	07.8
Seminar Hall	14.8
Classrooms Building	13.5
Library reading area	07.3

It can be seen that the lighting power density values in the Institute are not higher than the ECBC standards.

6. ENERGY CONSERVATION AND EFFICIENCY

6.1 Implementation Measures

Table 6.1.1 Implementation Measures

Sl. No.	Recommended Measures	Energy savings per Month in kWh	Savings in Rs. Per Month	Capital Investment in Rs	Simple Pay Back Period
1	Replacing 160 Nos. of 36 W using 18W LED	552	4,416	25,600	6 Months
2	Connecting Electronic speed Regulator for 871 Fans	262	2,096	69,680	33 Months
3	Replacing Existing 8 Units of 1 ton 3 Star AC's into 1 ton 5 star inverter AC's	200	1,600	3,20,000	200 Months
4	If 17 AC users can be made to switch of the ACs 15 mins. prior to leaving the office.	150	1,200	Nil	Nil
5	Adopting a normal energy saving power setting for computers	100	800	Nil	Nil
	Total savings	1,264	10,112	4,15,280	3.4 years

Implementation of all the above measures can bring about a **total saving of around** Rs.1,21,344 per year, i.e. 7.7 % of the present electricity bill. The total investment required would be to the extent of Rs. 4,15,280 and an average simple payback period of around 3.4 years.

6.2 Energy Management Structure

In order to streamline the use of energy in the **SRDCH** campus and to ensure its efficient utilization, we propose three possible energy management structures. A final decision on the type of energy management structure suitable for the institute should be taken by the Institute management.

- I. Implementation Energy Conservation measures proposed in the report need to be implemented with the help of management to save Electrical energy.
- II. The Electrical maintenance in-charge should himself take over the responsibility of ensuring efficient energy use on the campus. This will ensure prompt implementation of measures. This system may also require additional staff. A performance related incentive in the form of a bonus can be provided to the Electrical Maintenance staff based on savings achieved.

III. Formation of an Institute level committee headed by the Principal to review the implementation of energy conservation measures. All department heads should submit a bi-annual report of compliance for review and action.

An annual review of the implementation of the energy saving measures should be taken up and performance should be monitored. A report of the same should be sent to the Principal.

SRI RAMAKRISHNA DENTEL COLLEGE AND HOSPITALS.

SOLAR POWER UTILIZATION AND POWER SAVING DETAILS

SL NO	DESCRIPTION	POWER PRODUCTION/SAVING	COST SAVING
1	USING SOLAR POWER BY INSTALLING 15 KW SOLAR POWER GENERATING STATION(FROM AUG-2019 TO NOV - 2020)	23420 GENERATING UNITS	187360 RUPEES
2	LED TUBE LIGHTS REPLACED INSTEAD OF 36 WATTS FLOURESENT TUBE LIGHTS (235 NOS)	15889.5 SAVING UNITS / YEAR	127125 RUPEES PER YEAR
3	LED STREET LIGHTS FITTINGS REPLACED INSTEAD OF 500 WATTS HPMV LAMPS (9 NOS)	8100 UNITS PER YEAR	64800 RUPEES PER YEAR
4	SOLAR WATER HEATERS 2 NOS PROVIDED IN THE Capacity of 1000 LITERS EACH	6000 UNITS PER YEAR	48000 RUPEES PER YEAR

TOTAL UNITS GENERATED IN OUR SOLAR POWER GENERATING UNITS
(SLNO 1 + SLNO 4)

29420 UNITS /YEAR

TOTAL POWER SAVING USING LED LIGHTS CONVERSION (SL NO 3 + SL NO 4)

23989.5 UNITS / YEAR

TOTAL POWER COST SAVING PER YEAR

427285 RUPEES / YEAR

PREPARED BY

A.SENTHILKUMAR

ELECTRICAL DEPARTMENT

APPROVED BY

THE PRINCIPAL

SRDCH

SRDCH - 15 KW SOLAR POWER UNIT PRODUCTION -2019 in KWH

COMPARITION DETAILS OF POWER FROM GRID AND SOLAR PRODUCTION DETAILS

	POWER GENERATED FROM SOLAR PANELS	POWER CONSUMED FROM TNEB GRID	TOTAL POWER CONSUMPTION
JANUARY		18760	18760
FEBRUARY		24920	24920
MARCH		29580	29580
APRIL		25720	25720
MAY		14394	14394
JUNE		26440	26440
JULY		25240	25240
AUGUST	solar installation work	20960	20960
SEPTEMBER	1250	19880	21130
OCTOBER	1750	20080	21830
NOVEMBER	1685	23270	24955
DECEMBER	1770	18480	20250
TOTAL	6455	267724	274179

SRDCH - 15 KW SOLAR POWER UNIT PRODUCTION -2020 in KWH

COMPARITION DETAILS OF POWER FROM GRID AND SOLAR PRODUCTION DETAILS

	POWER GENERATED FROM SOLAR PANELS	POWER CONSUMED FROM TNEB GRID	TOTAL POWER CONSUMPTION
JANUARY	1625	19240	20865
FEBRUARY	1655	22940	24595
MARCH	1520	21532	23052
APRIL	1600	26230	27830
MAY	1720	2196	3916
JUNE	1400	3288	4688
JULY	1350	3094	4444
AUGUST	1485	2533	4018
SEPTEMBER	1755	3500	5255
OCTOBER	1440	2676	4116
NOVEMBER	1415	7562	8977
DECEMBER			0
TOTAL	16965	114791	131756

1) Upto date power production by the 15 KW solar panels IN KWH

23420

2)UPTODATE POWER SAVING COST (15 months) IN RUPEES

187360

MAKE - ALTUS SOLARPOWER SYSTEM ,COIMBATORE - 641013

Prepared BY

A.SENTHIL KUMAR
Electrical Department
SRCAS

APPROVED BY

THE PRINCIPAL
SRDCH

J. D. Dinesh
7/12/20

SRI RAMAKRISHNA DENTAL COLLEGE AND HOSPITALS

POWER /COST SAVING DETAILS OF LED TUBE LIGHT FITTING CONVERSION

SLNO	DESCRIPTION		
1	NO OF LED BULBS CHANGED FROM 2018	235 NOS	
2	POWER CONSUMPTION BEFORE LED BULB CHANGING (235NOS X50 WATTS)	11750 WATTS	11.75 UNITS / HOUR
3	POWER CONSUMPTION AFTER LED BULB CHANGING (235NOS X20 WATTS)	4700 WATTS	4.7 UNITS/HOUR
4	POWER CONSUMPTION FOR ONE DAY UTILIZATION FOR 235 FLOURECENT BULBS 10 HRS / DAY	117500 WATTS	117.5 UNITS
5	POWER CONSUMPTION FOR ONE DAY UTILIZATION FOR 235 LED BULBS 10 HRS / DAY	47000 WATTS	47 UNITS
6	POWER SAVING PER DAY UTILIZATION	70500 WATTS	70.5 UNITS
7	POWER SAVING PER MONTH (25 WORKING DAYS)	1762500 WATTS	1762.5 UNITS
8	COST SAVING PER DAY (SAVED UNITS* 8.00 RUPEES)	565 RUPEES PER DAY	
9	COST SAVING PER MONTH	14125 RUPEES PERMONTH	
10	COST SAVING PER YEAR (FOR 9 MONTHS)	127125 RUPEES PER YEAR	

COST SAVING PER YEAR 127125 RUPEES PER YEAR

PREPARED BY

SENTHIL KUMAR A 7/12/2020
SRDCH

APPROVED BY

THE PRINCIPAL

SRDCH

J. Linet
7/12/20

SRI RAMAKRISHNA DENTAL COLLEGE AND HOSPITALS

POWER /COST SAVING DETAILS OF SOLAR LED STREET LIGHT FITTING CONVERSION

SLNO	DESCRIPTION		
1	NO OF SOLAR LED STREET LIGHT CHANGED	9 NOS	
2	POWER CONSUMPTION BEFORE SOLAR LED STREET LIGHT FITTING CHANGING (9 NOS X250 WATTS)	2250 WATTS /HOUR	2.25 UNITS /HOUR
3	POWER CONSUMPTION AFTER SOLAR LED BULB CHANGING (9 NOS X12 WATTS)	0	0
4	POWER CONSUMPTION FOR ONE DAY UTILIZATION OF SVMF FOCUS LAMPS RS / DAY	22500 WATTS/DAY	22.5 UNITS / MONTH
5	POWER CONSUMPTION FOR ONE DAY UTILIZATION FOR SOLAR LED STREET LIGHT FITTING (15 WATTSX 10 HRS / DAY)	0	0
6	POWER SAVING PER DAY UTILIZATION	22.5 UNITS /DAY	
7	POWER SAVING PER MONTH (25 WORKING DAYS)	675 UNITS /MONTH	
8	COST SAVING PER DAY (SAVED UNITS* 8.00 RUPEES)	180 RUPEES PER DAY	
9	COST SAVING PER MONTH	5400 RUPEES PERMONTH	
10	COST SAVING PER YEAR (FOR 9 MONTHS)	64800 RUPEES PER MONTH year	

COST SAVING PER YEAR 64800 RUPEES PER YEAR

PREPARED BY

SENTHIL KUMAR.A

SRDCH

APPROVED BY

THE PRINCIPAL

SRDCH

J. Linet
8/12/20

SRI RAMAKRISHNA DENTAL COLLEGE AND HOSPITALS

POWER /COST SAVING DETAILS OF SOLAR POWER WATER HEATERS 1000 LITERS

SLNO	DESCRIPTION		
		FOR ONE UNIT	FOR TWO UNITS
1	NO OF SOLAR WATER HEATERS		
2	APPROXIMATE POWER SAVINGS PER DAY (5 KW X 4 HRS)	20 KW	40 KW
3	POWER SAVING PER DAY	20 KWH	40KWH
4	POWER SAVING COST PER DAY (20 KW X 8 RUPEES)	160 RUPEES	320 RUPEES
8	COST SAVING PER DAY (SAVED UNITS* 8.00 RUPEES)	320 RUPEES PER DAY	
9	COST SAVING PER MONTH	9600 RUPEES PERMONTH	
10	COST SAVING PER YEAR (FOR 9 MONTHS)	115200 RUPEES PER MONTH	

COST SAVING PER YEAR 115200 RUPEES PER YEAR

PREPARED BY

SENTHIL KUMAR A 8/12/2020

SRDCH

APPROVED BY

THE PRINCIPAL

SRDCH

J. D. M. 8/12/2020