# ENERGY, ENVIRONMENT & GREEN AUDIT – FOLLOW UP AUDIT

## *DETAILS OF THE CLIENT*

**SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY**

(AUTONOMOUS)

Kuniamuthur, Coimbatore – 641 008, Tamil Nadu, India.

SRI KRISHNA INSTITUTIONS COIMBATORE

## *DATE OF AUDIT*

**03 JUNE 2025**

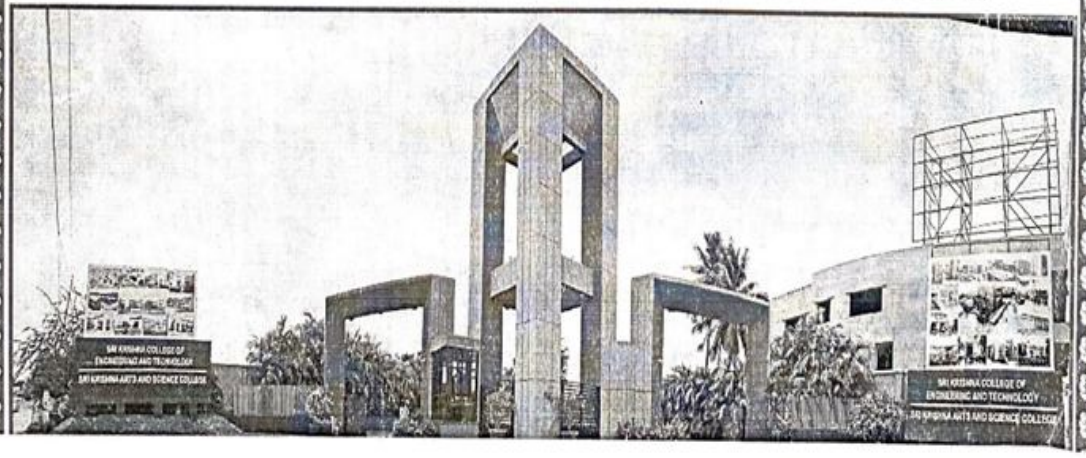
(Audited and Accounted from June 2024 to May 2025)

## *AUDIT CONDUCTED AND SUBMITTED BY*

RAM-KALAM CENTRE FOR ENERGY CONSULTANCY AND TRAINING

(An ISO 9001 : 2025 Certified Company & Registered Under MSME, GoI)

Mobile: +91- 80567 19372, 99420 14544 (Whatsapp) E-mail: ramkalamcect@gmail.com



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**(AUTONOMOUS)**

**Kuniamuthur, Coimbatore – 641 008, Tamil Nadu, India.**

# 1. ACKNOWLEDGEMENT

Energy Earns or Simply Burns: Choice is yours....

# *ACKNOWLEDGEMENT*

**RAM KALAM CENTRE FOR ENERGY CONSULTANCY AND TRAINING** Coimbatore - 641 062 is thankful to the Management, Faculty and Technical team members of **M/s. SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY**, Kuniamuthur, Coimbatore - 641 008, Tamil Nadu, India for providing an opportunity to conduct the **follow-up Energy, Environment and Green Audit for college promises.**

It is our great pleasure which must be recorded here that the management of **M/s. SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY** all possible support and assistance resulting in expeditious completion of the audit process. The audit team appreciates the cooperation and guidance extended during course of site visit and measurements. We are also thankful to the all those who gave us the necessary inputs and information to carry out this very vital exercise of green audit.

Finally, we offer our sincere thanks to all the members in the engineering division/ technical/non-technical and office members who were directly and indirectly involved with us during collection of data and conducting field measurements.

| ***Management Team Members*** | |
|---|---|
| **Smt. S. MALARVIZHI** | Chairperson and Managing Trustee |
| **Sri. K. ADITHYA** | Trustee |
| **Dr. K. SUNDARARAMAN** | Chief Executive Officer |
| **Dr. K. PORKUMARAN** | Principal |
| ***Audit Team Member*** | |
| **Dr. S.R. SIVARASU** | **BEE Certified Energy Auditor (EA-27299)**<br>Lead Auditor-ISO-14001:2015 (EMS),<br>IGBC AP, GRIHA CP<br>Email: ramkalamcect@gmail.com<br>**Mobile: 80567 19372, 99420 29372** |

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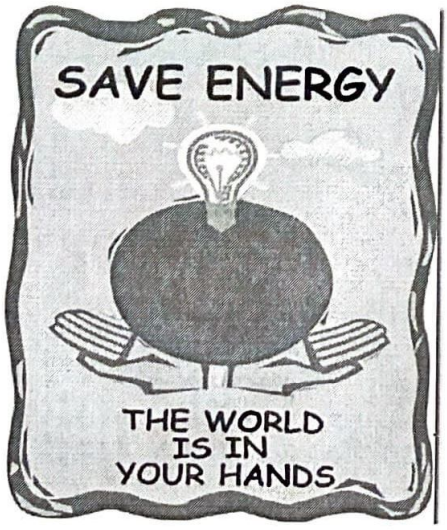
## 2. INTRODUCTION TO ENERGY-ENVIRONMENT-GREEN AUDIT PROCESS



## *2.1: Preface about the Institution:*

- **Sri Krishna College of Engineering and Technology** is the most sought after Institution among the premier technical Institutions in South India. Since its **establishment in the year 1998,** the Institution has marched towards the pinnacle of glory through its remarkable achievements in the field of Engineering Education.
- It is an Autonomous Institution, Affiliated to Anna University with 7 programmes being accredited by NBA and it offers **11 UG programmes, 4 PG programmes, 1 integrated programme** and **8 research programmes.**
- The Institution offers an exciting academic environment with well qualified dedicated faculty members to inspire and nurture the student fraternity.
- With industry drafted **Choice Based Credit System (CBCS)** curriculum and syllabi, the Institution takes every effort to bring its students to the forefront of the society as skilful and responsible engineers.

## *2.2: Vision:*

- To Produce Globally Competitive Engineers with High Ethical Values and Social Responsibilities.

## *2.3: Mission:*

- To impart highest quality state-of-the-art technical education by providing impetus to innovation, Research and Development and empowering students with Entrepreneurship skills.
- To instil ethical values, imbibe a sense of social responsibility and strive for societal wellbeing.
- To identify needs of society and offer sustainable solutions through outreach programs.

## *2.4: Quality Policy:*

We are committed to produce globally competitive and ethical Engineers through

- Innovative Teaching Learning Process
- Accelerated Research
- Industry Based Curriculum
- Practicing Moral and Ethical Values
- Continuous Process Improvement

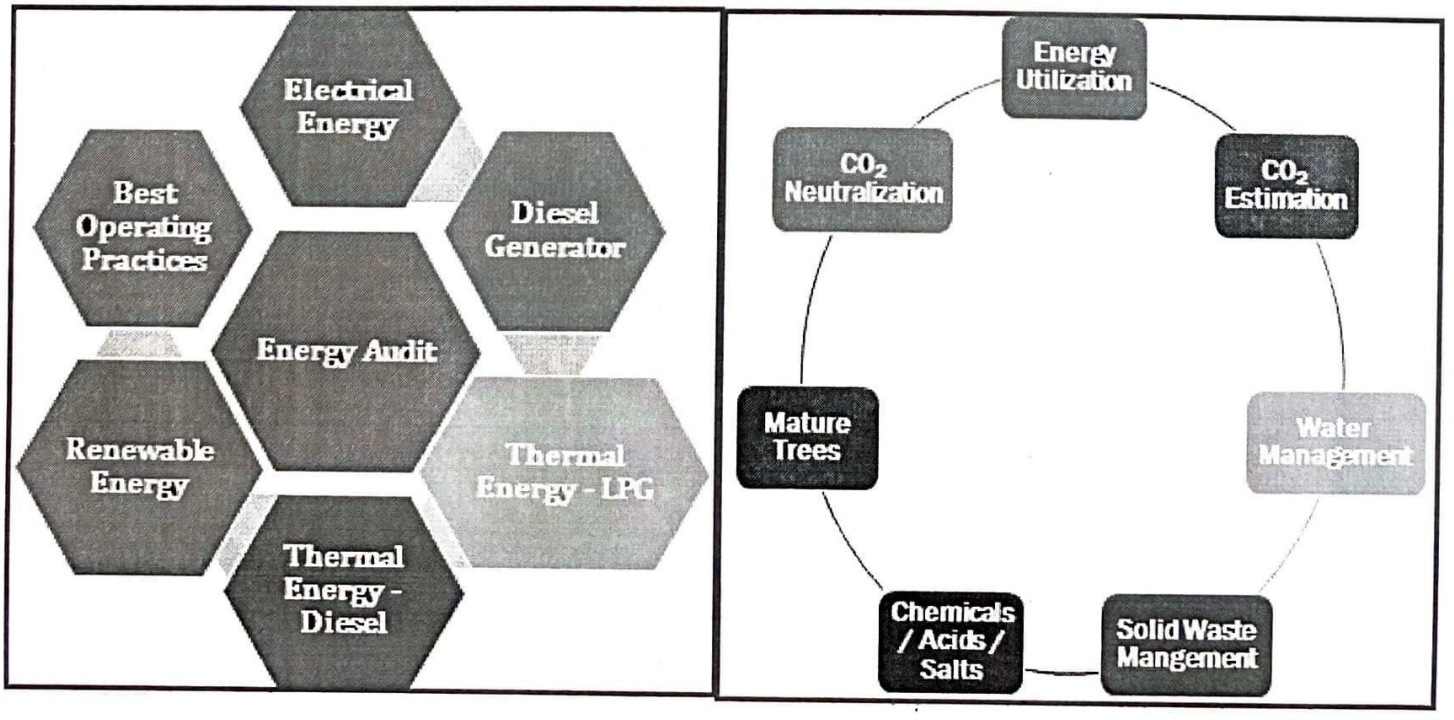
***2.4: Major Activities in the Institution:***

1. • Knowledge Transferring through teaching learning process
2. • Innovative research and development activities
3. • Training programs( Academic & Industry)
4. • Value added and certification courses
5. • Career and Placement opportunities

***2.5: Scope of the Audit Process:***

- **Energy Audit:** To conduct a detailed energy audit in the college campus with a main focus to identify judicious usage of electrical and thermal energy (where, when, why and how energy is being utilized).
- **Environmental Audit:** Identification of history of activities, present environmental practices followed, monitoring records and known sources of environmental issues inside the college.
- **Green Audit:** Assessment on Campus greenery in terms of mature trees, flowering shrubs, bushes, medicinal plants, adoption of green energy generation and utilization, reduction of $CO_2$ due to green energy system and identification of possible implementation and enhancement of current greenery practices.

***2.6: Coverage in Energy, Environment & Green Audit Process:***



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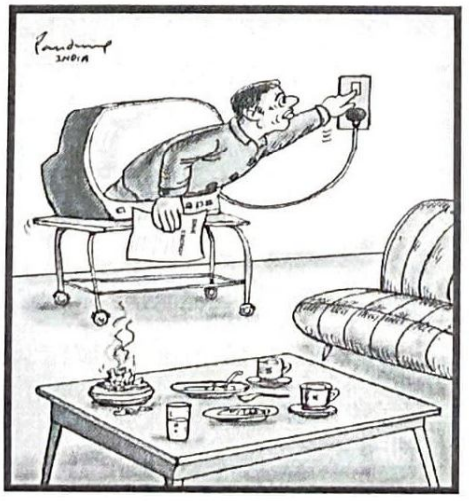
(AUTONOMOUS)

Kuniamuthur, Coimbatore – 641 008, Tamil Nadu, India.

## 3. ESTIMATION OF $CO_2$ EMISSION & NEUTRALIZATION ($CO_2$ BALANCE SHEET)



***3.1: Assessment of Annual Energy Usage:***

Table-1 shows the types of energy carriers used for their regular operation in the college campus along with application area and their source.

**Table-1: Energy Carriers, Application area and their sources used for Colle**

| S. No. | Type of Energy Carrier | Application Area | Source of Procurement |
|---|---|---|---|
| 1. | Electricity (HT Service) | Powering to all electrical / electronic / HVAC equipment's | From TANGEDCO |
| 2. | Diesel | Transport vehicles and Diesel Generator (Captive Generation) | From authorised distributor |
| 3. | Liquefied Petroleum Gas (LPG) | Used only for cooking | |
| 4. | Mature Trees, Bushes & shrubs | The college has nearly **7,925** mature trees of different varieties which are more than 10 years old. | |

**Table-2: Analysis of Annual Energy Consumption of all types of Fuels**

| S. No. | Month | Electricity Consumption (kWh) | LPG Consumed (kg) | Diesel Consumed (L) | | |
|---|---|---|---|---|---|---|
| | | | | DG | Transport | Total |
| 1. | Jun-23 | 2,18,628 | 950 | 1,510 | 4,100 | 5,610 |
| 2. | Jul-23 | 2,19,657 | 1,140 | 2,270 | 4,220 | 6,490 |
| 3. | Aug-23 | 2,53,347 | 1,330 | 740 | 4,370 | 5,110 |
| 4. | Sep-23 | 2,31,401 | 1,235 | 4,500 | 4,300 | 8,800 |
| 5. | Oct-23 | 2,53,546 | 1,140 | 1,530 | 3,870 | 5,400 |
| 6. | Nov-22 | 2,30,488 | 1,235 | 1,740 | 4,150 | 5,890 |
| 7. | Dec-22 | 2,42,670 | 1,330 | 1,170 | 4,300 | 5,470 |
| 8. | Jan-24 | 2,14,607 | 1,330 | 2,520 | 4,370 | 6,890 |
| 9. | Feb-24 | 2,43,124 | 1,235 | 2,480 | 4,350 | 6,830 |
| 10. | Mar-24 | 2,99,361 | 1,235 | 2,310 | 4,260 | 6,570 |
| 11. | Apr-24 | 2,59,078 | 1,425 | 1,500 | 4,370 | 5,870 |
| 12. | May-24 | 1,67,312 | 570 | 1,050 | 4,100 | 5,150 |
| Total | | 28,33,219 | 14,155 | 23,320 | 50,760 | 74,080 |

- **The cost of the electricity is Rs. 11.40 /kWh.**
- **The cost of the LPG is Rs. 100.0/kg**
- **The average Unit Per Litre (UPL) of the DG is 3.1 kWh/Litre of Diesel.**

## 3.2 : Environmental System: $CO_2$ Balance Sheet (2024-25):

**Table 3: $CO_2$ Balance Sheet Indicating its Emission and Neutralization**

| S. No. | Annual Energy Consumption & $CO_2$ Emission | | | Annual $CO_2$ Neutralization | | |
|---|---|---|---|---|---|---|
| | Description | Energy | $CO_2$ Emission (Tons) | Description | Parameters | $CO_2$ Neutralized (Tons) |
| 1. | Electricity | 26,22,078kWh | 2,150.10 | SolarHotWater | 2,17,000kWh[1] | 177.9 |
| 2. | Diesel | 62,125Litres | 164.01 | Mature Tree | 7,925Nos | 172.8 |
| 3. | LPG | 14155kg | 42.5 | Electricity(DG) | 89,687.10kWh | 73.54 |
| **Cumulative Emission** | | | **2,356.61** | **Cumulative Neutralized** | | **424.24** |
| **Net amount of $CO_2$ to be Neutralized = 1,932.37Tons/Annum** | | | | | | |

([1]Electrical equivalent is considered)

### *3.3: Calculation Table:*

| |
|---|
| For Electricity = $\left[\text{kWh} \times \frac{0.82 \text{ kg of CO2 emission}}{\text{kWh}}\right]$ |
| For Diesel = $\left[\text{Diesel Consumption (Litre)} \times \frac{2.64 \text{ kg of CO2 emission}}{\text{Litre of Fuel Consumption}}\right]$ |
| For LPG = $\left[\text{LPG Consumption (kg)} \times \frac{3.0 \text{ kg of CO2 emission}}{\text{kg of LPG Consumption}}\right]$ |
| A mature tree is able to absorb nearly $CO_2$ at a rate of 21.8 kg/annum; $\frac{(21.8 \times 7925)}{1,000} = 172.8 \frac{\text{Tons}}{\text{Annum}}$ |

### *3.4: References:*


[1] https://ecoscore.be/en/info/ecoscore/co2

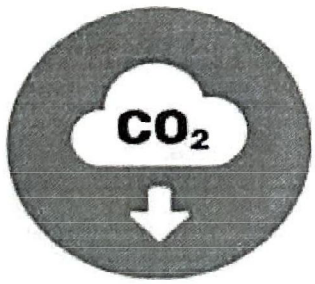
[3] http://www.tenmilliontrees.org/trees/#:~:text=A%20mature%20tree%20absorbs%20carbon,the%20average%20car's%20annual%20mileage





**$CO_2$ Emission:**

**2356.61 Tons/ Annum**




**$CO_2$ Reduction**

**424.24 Tons/ Annum**




**$CO_2$ to be Neutralized**

**1932.37 Tons/ Annum**

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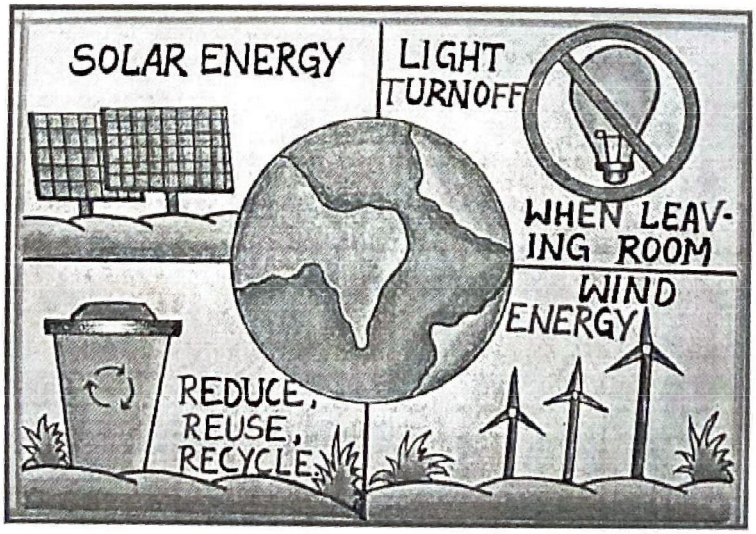
(AUTONOMOUS)
Kuniamuthur, Coimbatore – 641 008, Tamil Nadu, India.

# 4. ACTIVITIES COMPLETED & RECOMMENDATIONS

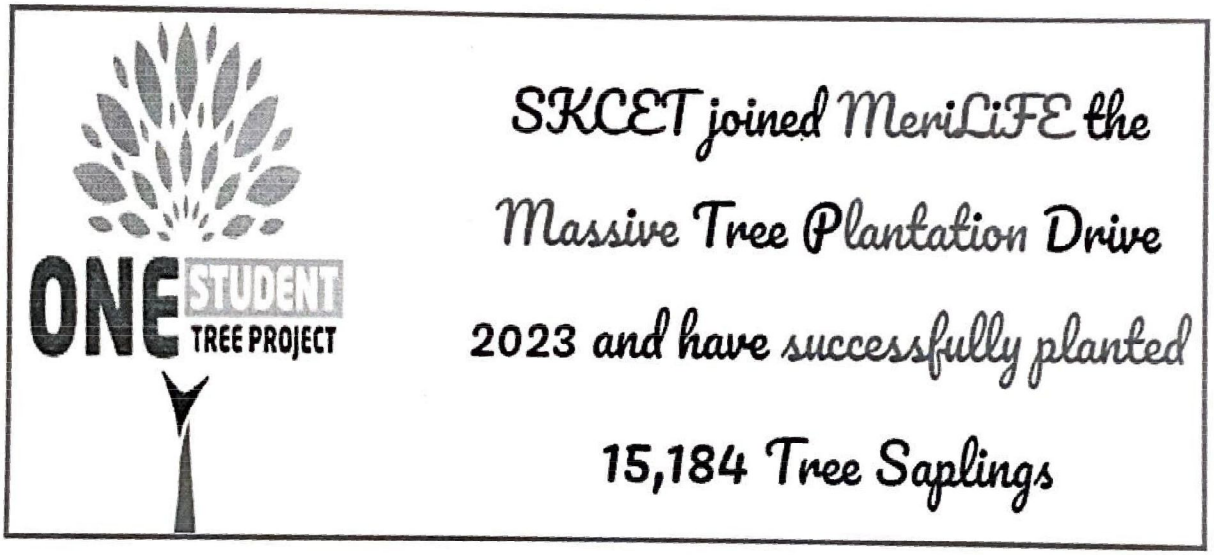


*4.1: ACTIVITIES COMPLETED:*

The audit team appreciates that the management of **SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY** has taken several measured to save energy and to protect the environment inside the college campus. The followings are the activities completed accounted for the last one year.

A. One Student – One Tree Campaign:

- Sapling plantation is not merely a symbolic gesture; it is a concrete step towards safeguarding the environment and ensuring a sustainable future. The significance of trees in maintaining ecological balance, mitigating climate change, and fostering biodiversity cannot be overstated.
- In line with the **Hon'ble Prime Minister's** idea of a green and healthy environment initiative the **'One student - One tree 2023'** campaign, a mega plantation drive to plant 15,000 saplings has been successfully launched




B. Monitoring the growth of the plants via QR codes:

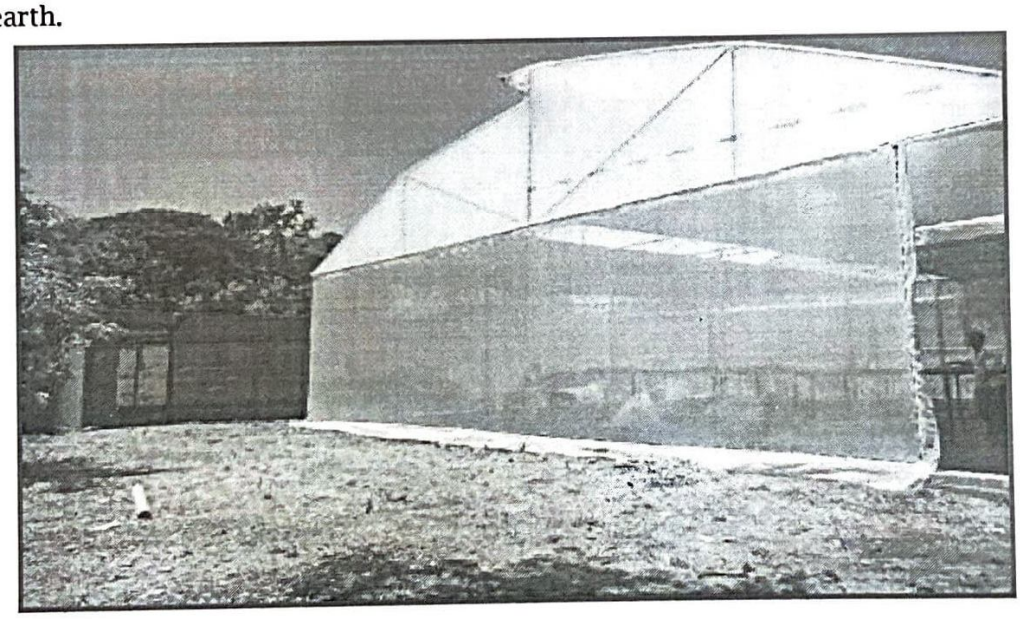
- Several new species of plants and trees are also planted to honor dignitaries who visit the campus. **Go-Green certificates** with QR codes are also given to the dignitaries to view and monitor the growth of the plant.

C. Greenhouse Crop Cultivation at SKCET:

- A 12 cent **Smart polyhouse** actively functioning at SKCET, serves as a wonderful place for students to learn the art of loving nature.
- Students are trained to do the cultivation, and students are actively involved in the monitoring of the growth of the plants.
- Crops like tomato and green chilly are cultivated in the smart polyhouse. Recently, 68 Kgs of Green Chilli harvested in two cycles was handed over to the public.
- Also around **400 Chilli and tomato plants** have been handed over to the public and faculty of SKCET

**D. Greenhouse tree seedling Growing:**

- A **5 cent greenhouse** actively functioning at SKCET, cultivates healthy tree saplings which is then distributed to the nearby villages.
- In this this year around **2,000 tree saplings** have been successfully grown and distributed to the nearby villages to promote afforestation and preserve mother earth.



**E. My earth - My responsibility- Students growing plants in their houses:**

- Involving students in tree plantation projects not only benefits the environment but also nurtures a generation of environmentally responsible and conscious individuals who will contribute positively to society and the planet's future.
- Students of **SKCET planted 4,032 saplings** in their residence to combat desertification and drought and inspire others in the community to take action as well.

**F. Distribution of Saplings and planting of sapling at Selvapuram, Attapadi, Anaikatti, Coimbatore:**

- As a part of the **One Student - One Tree campaign**, World Environment Day was celebrated on 5th of June that encourages awareness and action for the protection of the environment.
- Our students actively participated and planted around **600 saplings** at Selvapuram and **1,000 saplings in Attapadi**, Anaikatti village.

**G. Awareness Campaign and Distribution of Saplings to school students:**

- Around **500 Saplings** were distributed to the students of the Government school at Mayilkal, Coimbatore.

**H. Awareness Campaign, Saping distribution and plantation at Palathurai Village, Coimbatore:**

**Sri Krishna College of Engineering and Technology, Coimbatore** under the **National Service Scheme** organized a tree plantation drive at Palathurai Village in Coimbatore and planted more than **400 trees** in and around the village.

**I. Mega Tree Sapling Plantation:**

- → Around **6,000 tree saplings** were planted by the students of SKCET in Mailkal to Sundarapuram near Pillayarpuram, Coimbatore using the **Miyawaki Method.**
- → The **Miyawaki Method** of cultivation has been implemented to create dense forests with native plants. It gained popularity worldwide as a sustainable and effective way to restore degraded lands, create urban green spaces, combat climate change, and enhance biodiversity.
- → It has been implemented in various countries and has shown promising results in terms of rapid growth and ecosystem restoration.

**J: List of Trees:**

- Criteria of Choice: Careful selection of trees for this mega plantation drive of **15,184** saplings was done based on their pollution tolerance level and ascorbic acid index with focus on minimum water consumption.
- The following trees which are helpful to mankind in several ways are selected and planted.
    - Kumil Tree
    - Magilam Tree
    - Nagalinga Tree

- Neem Tree
- Tamarind Tree
- Naval Tree
- Badam Tree
- Mahogany
- Silver Oak Tree
- Vengai Tree
- Peepal Tree
- Ashoka tree
- Poonga Oil Tree
- Poovarasan Tree
- Mullu Murungai Tree
- Kattu Nelikai Tree

K: Milestones towards a Greener Nation:

- **10,050 tree saplings** planted in the mega plantation drive at SKCET yielded the **"National Third Rank"** for the One Student-One Tree Initiative 2019 **Jal Shakti Abhiyan .**
- SKCET was Conferred with **Second National Rank in SWACHH Campus Rankings 2018** and in **2019** amongst the Higher Educational Institutions in the country by the Ministry of Human Resource Development, Government of India.

*4.2: RECOMMENDATIONS:*

- Prepare a schedule to clean the air filters of AC indoor units at regular intervals
- Measure the earth resistance at regular interval and maintain within the standard.
- Voltage drop at the load end cam be improved by load end capacitors compensation
- Battery voltage of each UPS must be measured and monitored.
- Prepare and adhere a cleaning schedule for UPS
- Conduct awareness programmes on Energy Conservation to all the stake holders.
- Foot valve of all the submersible and open well pipes must be cleaned at regular intervals and this ensure i) free flow of water and ii) reduced power consumption.

**Audit Conducted and Verified by,**

S.R. Sivarasu

**Dr. S.R. SIVARASU**
**BEE Certified Energy Auditor (EA-27299)**
**Lead Auditor – ISO 14001: EMS; IGBC AP, GRIHA CP**
**CII Certified Professional in SWM**
**ISO-14064: Implementor & Auditor - Carbon Footprint Management**

# COMPLETION OF THE REPORT

This report is prepared as a part of the **Follow-Up Energy, Environment and Green Audit** process conducted at **M/s. SRI KRISHNA COLLEGE OF ENGINEERING AND TECHNOLOGY (AUTONOMOUS)**, Kuniamuthur, Coimbatore - 641 008, Tamil Nadu, India by **RAM-KALAM CENTRE FOR ENERGY CONSULTANCY AND TRAINING**, Coimbatore-641 062, Tamilnadu, India.

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SRI KRISHNA COLLEGE OF

ENGINEERING AND TECHNOLOGY

(AUTONOMOUS)

Kuniamuthur, Coimbatore – 641 008, Tamil Nadu, India.

## *ANNEXURE:*

## AUTHORISED CERTIFICATES OF THE AUDITOR

A Thing which Burns Never Returns....

ZERTIFIKAT ◆ CERTIFICATE ◆ 認証証書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

South Asia

# CERTIFICATE

**The Certification Body**
**of TÜV SÜD South Asia Private Limited**

certifies that

## M/S RAMKALAM CENTRE FOR ENERGY CONSULTANCY & TRAINING

**No.8, VPK Garden, Velanaipatti, Coimbatore – 641 062, India**

has implemented Quality Management System

in accordance with **ISO 9001:2015**

for the scope of

**Providing Energy, Environment, Green audits to industry, Academic institutions and organizations**

The certificate is valid from **2023-11-22** until **2026-11-21**

Subject to successful completion of annual periodic audits

The present status of this certificate can be obtained through TUV SUD website by scanning below QR code and by entering the certificate number (without spaces) on web page. Further clarifications regarding the status & scope of this certificate may be obtained by consulting the certification body at info.in@tuvsud.com

Certificate Registration No. **99 100 23573**

Date of Initial certification: **2023-11-22**

Issue Date: **2023-11-22** Rev. **00**

Rahul Kale
Head of Certification Body
of TÜV SÜD South Asia Private Limited,
**Mumbai**
Member of TÜV SÜD Group

NABCB QM011

Reg No.: EA-27299

Certificate No.: 9645/19

# National Productivity Council

## (National Certifying Agency)

## PROVISIONAL CERTIFICATE

*This is to certify that Mr./ Mrs./ Ms.* **SIVARASU SULUR RATHINAVELU**

*son / daughter of Mr.* **P RATHINAVELU** *has passed the National certification Examination for Energy Auditors held in September 2018, conducted on behalf of the Bureau of Energy Efficiency, Ministry of Power, Government of India. He / She is qualified as* ***Certified Energy Manager*** *as well as* ***Certified Energy Auditor.***

*He / She shall be entitled to practice as Energy Auditor under the Energy Conservation Act 2001, subject to the fulfillment of qualifications for Accredited Energy Auditor and issuance of certificate of Accreditation by the Bureau of Energy Efficiency under the said Act.*

*This certificate is valid till the Bureau of Energy Efficiency issues an official certificate.*

Digitally Signed by K V R RAJU
Mon Apr 22 16:22:42 IST 2019
Controller of Examination, NPC AIP Chennai

Place : Chennai, India
Date : 22nd April, 2019

Controller of Examination

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TÜV NORD

**ISO 14001:2015 Lead Auditor**
**(Environmental Management Systems)**
**Training course**

it is hereby certified that

**Dr. S. R. Sivarasu**

has successfully completed the above mentioned course and examination

08th - 12th December 2017

Coimbatore, India

Certificate No. 3521 2982 02

Delegate No. 71968

for TÜV NORD CERT GmbH

Essen, 2018-01-11

Course 18125 is certified by CQI/IRCA and meets the training requirements for those seeking certification under the IRCA EMS auditor certification scheme.

TÜV NORD CERT GmbH Langemarckstraße 20 45141 Essen www.tuev-nord-cert.com

CQI | IRCA CERTIFIED COURSE

CQI | IRCA APPROVED TRAINING PARTNER

IGBC

CII
Confederation of Indian Industry

## The Indian Green Building Council

hereby certifies that

**Sivarasu S R**

has successfully demonstrated knowledge on the Green Building Design & Construction, Building Standards & Codes, IGBC Resources & Processes and Green Design Strategies & their Impacts, required to be awarded the title of

## IGBC Accredited Professional

**K S Venkatagiri**
Executive Director
CII-Godrej GBC

**V Suresh**
Chairman
Indian Green Building Council

**Gurmit Singh Arora**
Vice-Chairman
Indian Green Building Council

200239

20 June 2020

GRIHA

# GREEN RATING FOR INTEGRATED HABITAT ASSESSMENT

## GRIHA CERTIFIED PROFESSIONAL CERTIFICATE

This is to certify that

*Sivarasu sr*

has qualified as a **GRIHA** Certified Professional For V. 2015

Date of issue: 18th September 2020

**Note : This certification is valid only for GRIHA version 2015.**

Chief Executive Officer
GRIHA Council

CII

Confederation of Indian Industry

This is to certify that

**SIVARASU S R**

is a

**CII Certified Professional in Sustainable Waste Management**

**K S Venkatagiri**
Executive Director
CII - Godrej GBC

**Pradeep Bhargava**
Chairman
CII GreenCo Council

IGBC

e-Learning

Issued by CII Sohrabji Godrej Green Business Centre

Issued on 9 June 2021

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HSSERisk Academy

# CERTIFICATE

## OF APPRECIATION

EMPOWERING PEOPLE THROUGH KNOWLEDGE TRANSFER

THIS CERTIFICATE IS AWARDED TO

*Swarasu Rathinavelu*

FOR SUCCESSFUL COMPETION OF TRAINING COURSE ON

ISO 14064-1:2018
ISO 14064-2:2019
ISO 14064-3:2019
ISO 14066:2011
ISO 14067:2018

AND CERTIFY HIM/ HER AS

**IMPLEMENTOR & AUDITOR**
**CARBON FOOTPRINT MANAGEMENT**

This certificate is awarded for successful completion of Global Virtual Training course conducted from August 27, 2021 to September 01, 2021. It's serves as a proof of his/her knowledge, competence and ability to implement, verify and validate carbon footprint as per above mentioned standards and methods. This certificate was awarded on August 01, 2021

01.09.21
DATE

SIGNATURE

0109202110O6

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