



# SRI BHARATHI

ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)  
Kaikkurichi, Pudukkottai -622 303

[www.sbec.edu.in](http://www.sbec.edu.in)

## NAAC DOCUMENTS



Quality Indicator Frame Work

Criterion – 7

**Institutional Values and Best Practices**

Submitted by

**IQAC**

**Internal Quality Assurance Cell**

**Sri Bharathi Engineering College for Women**



# SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)

Pudukkottai - Aranthangi Road,

**Kaikkurichi, Pudukkottai - 622 303.**

Date : .....

## TO WHOMSOEVER IT MAY CONCERN

7.1.3 Quality audits on environment and energy regularly undertaken by the Institution. The institutional environment and energy initiatives are confirmed through the following

1. Green audit / Environment audit
2. Energy audit
3. Clean and green campus initiatives
4. Beyond the campus environmental promotion and sustainability activities

*Options:*

- A. All of the above
- B. Any 3 of the above
- C. Any 2 of the above
- D. Any 1 of the above
- E. None of the above

**Response:** *Option A. All of the above*

**PRINCIPAL**

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SRI BHARATHI ENGINEERING  
COLLEGE FOR WOMEN  
KAIKKURICHI - 622 303.  
PUDUKKOTTAI DISTRICT



**SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN**  
(Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai-25)  
Kaikkurichi, Pudukkottai, Tamil Nadu – 622 303, India

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## **7.1 Institutional Values and Social Responsibilities**

**7.1.3 Quality audits on environment and energy regularly undertaken by the institution. The institutional environmental and energy initiatives are confirmed through the following**

1. Green audit / Environmental audit
2. Energy audit
3. Clean and green campus initiatives
4. Beyond the campus environmental promotion activities

**GREEN AUDIT / ENVIRONMENTAL AUDIT  
REPORT FROM THE RECOGNIZED BODIES**



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Criterion 7	Institutional Values and and Best Practices	100
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**Key Indicator 7.1 - Institutional Values and Social Responsibilities**

**7.1.3 Quality audits on environment and energy regularly undertaken by the institution. The institutional environmental and energy initiatives are confirmed through the following**

1. Green audit / Environmental audit
2. Energy audit
3. Clean and green campus initiatives
4. Beyond the campus environmental promotion activities

Responses : **Option A. All of the above**

**GREEN AUDIT / ENVIRONMENTAL AUDIT REPORT FROM  
THE RECOGNIZED BODIES**

# ENVIRONMENT & GREEN AUDIT REPORT



**SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN  
KAIKURICHI, PUDUKKOTTAI-622303, TAMILNADU**



## **AUDIT CONDUCTED BY**

**YOJO NETWORK & TRAINING CENTER**

**(Registered Audit Agencies)**

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**Dr. S.THILAGAVATHI M.E., Ph.D.,  
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### ACKNOWLEDGEMENT

Yojo Network & Training Center is thankful to the Board of Management, Head of Institution, Faculty and Technical team members of **SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN** for providing an opportunity to conduct a detailed Environment and Green Audit process in the college premises. It is our great pleasure which must be recorded here that the Management of **SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN** extended all possible support and assistance resulting in thorough completion of the audit process. The audit team appreciates the co-operation and guidance extended during the course of site visit and measurements. We are also thankful to all those who gave us the necessary inputs and information to carry out this very vital exercise of Environment and Green Audit.

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

### Audit Team Members

Er. V. Marimuthu., B.E.,	UKAS Certified Energy Auditor (KQ-233)
Er. C. Saravanakumar., B.E.,	Lead Auditor-ISO-9001:2015, 14001:2015(EMS), UKAS, KQ Reg., COC. Carbon Footprint Auditor Mobile: +91-9047205733
Er. R. Rajkumar, B.E.,	Audit Associate

Dr. S. THILAGAVATHI M.E., Ph.D.,

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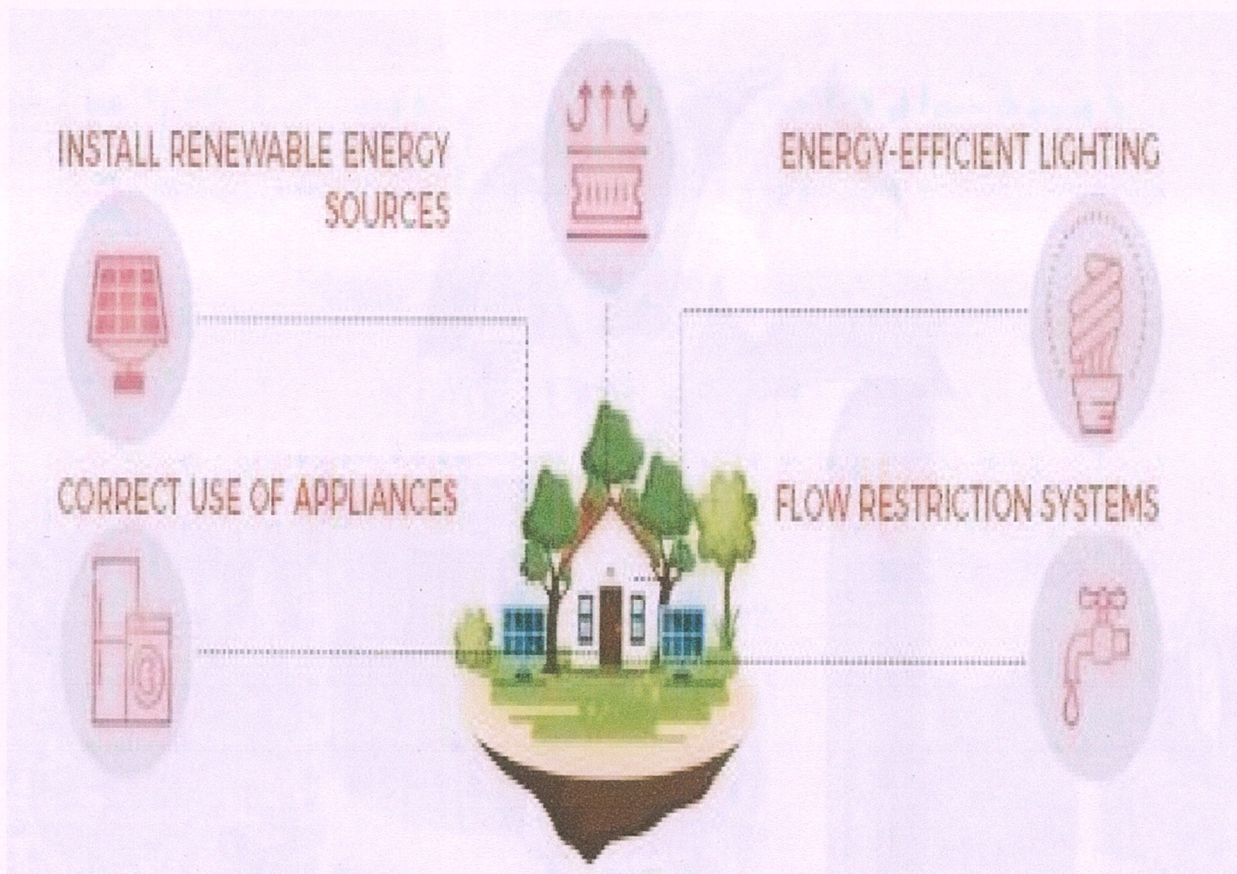
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# ENVIRONMENT AND GREEN AUDIT REPORT

## INTRODUCTION TO ENVIRONMENT-GREEN AUDIT

### 5 IDEAS FOR A SUSTAINABLE INSTITUTION



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### 1.1 : Preface about the Institution:

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN was seeded by Sri Bharathi Educational Trust in the year 2009 with five B.E/B.Tech courses to inculcate quality education for rural women. This institute is located on the outskirts of Pudukkottai, about 6 kilometers from Pudukkottai and almost in a rural atmosphere.

The undergraduate courses offered are - Civil Engineering, Computer Science and Engineering, Electrical and Electronics Engineering, Electronics and Communication Engineering and Information Technology. This College has a good digital library with high-speed internet facilities to the benefit of students and faculty. The well equipped library with number of International and National Journals and Magazines. This College has well-qualified faculties, modern infrastructure with well-equipped laboratories. The main building has G+3 floors with a total carpet area of 80,000 Sq.feet and another building with G+1 floors with a carpet area of 27000 square feet. This College got permanent affiliation for two Departments - Computer Science and Engineering and Electronics and Communication Engineering.

### 1.2 : Quality Policy:

SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN maintains various policies to enhance the growth of the students, staff along with the growth of the Institution.

The policies are as follows:

- GREEN POLICY
- CODE OF CONDUCT
- RESOURCE MOBILISATION POLICY
- ENVIRONMENT POLICY
- ENERGY POLICY
- WASTE MANAGEMENT POLICY
- E-GOVERNANCE POLICY
- GRIEVANCE & REDRESSAL POLICY

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### 1.3 : Scope of the Audit Process:

- **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<sub>2</sub> due to green energy system and identification of possible implementation and enhancement of current greenery practices.

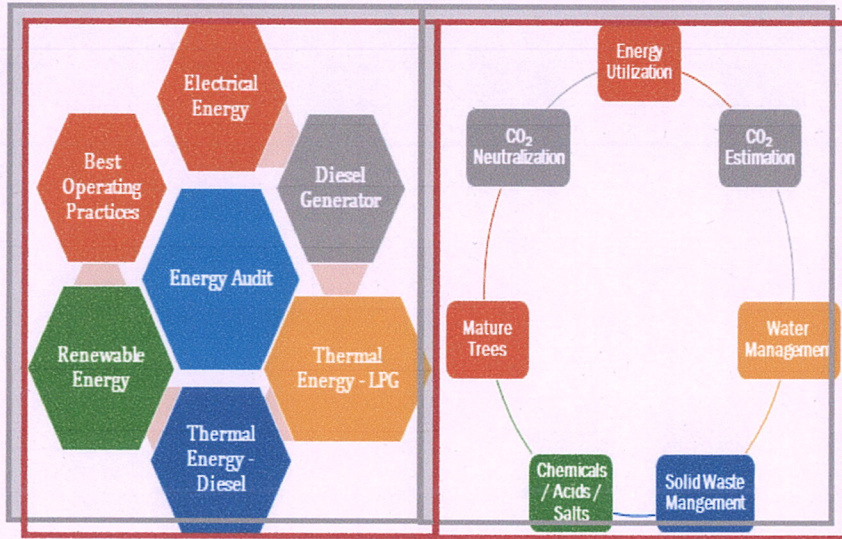
### 1.4 : Outcomes of the Audit Process:

- Recommendations based on field measurement with achievable **Energy Conservation (ENCON)** proposals under **No cost / Low cost and Cost investment categories**.
- **Minimization of present energy cost** by adjusting and optimizing energy usage and reduction of energy wastage without affecting the regular activities.
- **Identification of possible cost and energy saving from energy conservation, waste reduction, reuse and recycling.**
- Formation of methodology for long term road map for maintaining green environment within the campus and encourage the stakeholders for continuous improvements.

### 1.5 : Standards Used:

- Bureau of Energy Efficiency Guidelines to conduct the detailed energy audit process.
- **ISO 14064-Part-1** – Specification with guidance at the organization level for quantification and reporting of GHG emissions and removals (Second Edition).
- **ISO 14064-Part-2** – Specification with guidance at the project level for quantification, monitoring and reporting of GHG emissions reductions or removal enhancement (Second Edition-2019).
- **ISO 14064-Part-3** – Specification with guidance for the verification and validation of GHG statements (Second Edition-2019).
- The Green house Gas Protocol- a Corporate Accounting and Reporting Standard (Revised Edition) released by World Resources Institute & World Business Council for Sustainable Development – 2014.
- Ministry of Environment, Forest and Climate Change Notification on “**Battery Waste Management Rules, 2020**” & “**E- Waste (Management) Rules, 2016**”, & “**Solid Waste Management Rules, 2015**”s.

**1.6: Coverage in Environment & Green Audit Process:**



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**1.7 List of Faculty Members Involved in Audit Process & Data Collection:**

S. No.	Faculty Details	Contribution
1.	Dr. K. Ambujam AP/ Dept. of ECE	Overall Coordinator for the Audit Process.
2.	Ms. R. Padmarani AP/ Dept. of Civil	Collection of RO water & Water Distribution system.
3.	Ms. S.Raga Brintha AP/ Dept. of EEE	Collection of Electrical Energy Parameters from College & Hostel.
4.	Mr. S. Rajapandian AP/ Dept. of S&H	Fuel consumption of Transport Vehicles & Transport In charge.
5.	Mrs. S. Renuga Devi AP/ Dept. of S&H	Collection of Chemicals/Salts/ Acids.
6.	Ms. K. Mahizhini Raci AP/ Dept. of Civil	Collection of LPG & Fire Wood Data.
7.	Mrs. T. Parthiban AP/ Dept. of EEE	Collection E.B utility & D.G Details.
8.	Mrs. T. Annalakshmi AP/ Dept. of S&H	Collection of Trees & Plants with Botanical Name.
9	Mr. S. Ramesh Raja Dept. of S&H	Collection of Trees & Plants with Botanical Name.
10	Dr. Saravanan Principal & Chairperson IQAC New Prince Shri Bhavani College of Engineering and Technology, Medavakkam, Chennai	External Member



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# ENVIRONMENT AUDIT REPORT

## ENVIRONMENT AUDIT REPORT

### PART-A

### ESTIMATION OF CO<sub>2</sub> EMISSION & NEUTRALIZATION (ELECTRICITY, DIESEL, LPG & MATURE TREES)

#### AUDIT CONDUCTED BY

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### 1.1 : Assessment of Annual Energy Usage:

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

Table-1: Energy Carriers, Application area and their sources used for College Operation.

S. No.	Type of Energy Carrier	Application Area	Source of Procurement
1.	Electricity LT Service for College	Powering to all electrical & electronic/HVAC/Motors/Pumps	From TANGEDCO
			Captive power plant
2.	Diesel	Transport vehicles and Diesel Generator(Captive Generation)	From authorized distributor
3.	Liquified Petroleum Gas(LPG)	Used for cooking application	
4.	Mature Trees	Nearly 391 Nos of different varieties with more than 15 years old.	

### 1.2: Environmental System: CO2 Balance Sheet:

The following tables 2 to 6 provide the balance sheet indicating various energy carriers associated with the regular activities and their CO<sub>2</sub> mapping from 2018-19 to 2022-23 Academic Year.

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*Engg*

GIN No. U40109TN2009GC073746  
 996912 5(i) Support services are taxable under GST  
 TANGEDCO GSTIN : 33AADCT4784E1ZC  
 HSN Code : 27160000

**தமிழ்நாடு மின் உற்பத்தி மற்றும் பகிர்மானக் கழகம் விநியோக**  
 CHIRMAN புதுக்கோட்டை மின் பகிர்மான வட்டம்

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நாள் :

வ.எண்/0	CC Charges	கட்டண விதித்தம்	தொகை ரூ.
		39670/-	
	Total	39670/-	
		மொத்தம்	

Thirty Nine Thousand Six Hundred And Seventy Only

தொகை (எழுத்தால்) :  
 இதர விவரங்கள் :  
 Cheque/DD No.: 171873 Date: 24/05/2023 Amount: 39670/-  
 Bank: 002 கணக்கிட்பாளர் / கணக்கீட்டு அபிவானர் / வருவாய் மேற்பார்வையாளர்

**Table-2: Environmental System: CO<sub>2</sub> Balance Sheet (2018-19)**

S. No	Annual Energy Consumption & CO <sub>2</sub> Emission			Annual CO <sub>2</sub> Neutralization		
	Description	Usage	CO <sub>2</sub> Emission (Tons)	Description	Usage	CO <sub>2</sub> Neutralized (Tons)
1.	Diesel	4332Liters	12.8	MatureTrees	391No's	19.9
2.	Electrical Energy	48322 kwh	77.3			
3.	LPG	1611 kg	16.6	-	-	-
<b>Total Emission</b>			<b>106.7</b>	<b>Total-Neutralized</b>		<b>19.9</b>

Balance CO<sub>2</sub> to be Neutralized = 106.7 Tons / Annum & Per Capita CO<sub>2</sub> Consumption = 19.9 Tons / Annum<sup>1</sup>



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**1.3 : Environmental System: CO<sub>2</sub> Balance Sheet (2019-20):**

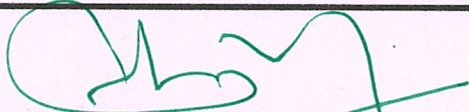
**Table-3: Environmental System: CO<sub>2</sub> Balance Sheet (2019-20)**

S. No	Annual Energy Consumption & CO <sub>2</sub> Emission			Annual CO <sub>2</sub> Neutralization		
	Description	Usage	CO <sub>2</sub> Emission (Tons)	Description	Usage	CO <sub>2</sub> Neutralized (Tons)
1.	Diesel	4,445 Liters	13.2	Mature Trees	391No's	19.9
2.	Electrical Energy	47636 kWh	76.2			
4.	LPG	1,611 kg	16.6	-	-	-
<b>Total Emission</b>			<b>106</b>	<b>Total- Neutralized</b>		<b>19.9</b>
Balance CO <sub>2</sub> to be Neutralized = 106 Tons/Annum & Per Capita CO <sub>2</sub> Consumption = 19.9 Tons/Annum						

**1.4 : Environmental System : CO<sub>2</sub> Balance Sheet (2020-21):**

**Table-4: Environmental System: CO<sub>2</sub> Balance Sheet (2020-21)**

S. No	Annual Energy Consumption & CO <sub>2</sub> Emission			Annual CO <sub>2</sub> Neutralization		
	Description	Usage	CO <sub>2</sub> Emission (Tons)	Description	Usage	CO <sub>2</sub> Neutralized (Tons)
1.	Diesel	1269 Liters	3.8	Mature Trees	391 No's	19.9
2.	Electrical Energy	27857.2 kWh	44.6			
3.	LPG	349 kg	7.2	---	---	---
<b>Total Emission</b>			<b>55.6</b>	<b>Total- Neutralized</b>		<b>19.9</b>
Balance CO <sub>2</sub> to be Neutralized = 55.6 Tons / Annum & Per Capita CO <sub>2</sub> Consumption = 19.9 Tons / Annum						





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**1.5 : Environmental System: CO<sub>2</sub> Balance Sheet (2021-22):**

**Table-5: Environmental System: CO<sub>2</sub> Balance Sheet (2021-22)**

S. No.	Annual Energy Consumption & CO <sub>2</sub> Emission			Annual CO <sub>2</sub> Neutralization		
	Description	Usage	CO <sub>2</sub> Emission (Tons)	Description	Usage	CO <sub>2</sub> Neutralized (Tons)
1.	Diesel	4141 Liters	12.3	Mature Trees	391 No's	20.2
2.	Electrical Energy	45153.5 kWh	72.2			
3.	LPG	1815 kg	18.7	Biogas	---	---
<b>Total Emission</b>			<b>103.2</b>	<b>Total- Neutralized</b>		<b>20.2</b>
Balance CO <sub>2</sub> to be Neutralized = <b>103.2</b> Tons / Annum & Per Capita CO <sub>2</sub> Consumption = <b>20.2</b> Tons / Annum						

**1.6 : Environmental System: CO<sub>2</sub> Balance Sheet (2022-23):**

**Table-6: Environmental System: CO<sub>2</sub> Balance Sheet (2022-23)**

S. No.	Annual Energy Consumption & CO <sub>2</sub> Emission			Annual CO <sub>2</sub> Neutralization		
	Description	Usage	CO <sub>2</sub> Emission (Tons)	Description	Usage	CO <sub>2</sub> Neutralized (Tons)
1.	Diesel	4155 Litres	12.3	Mature Trees	391 No's	20.2
2.	Electrical Energy	35845 kWh	76.2			
3.	LPG	1510 kg	15.6	---	----	-----
<b>Total Emission</b>			<b>104.1</b>	<b>Total-Neutralized</b>		<b>20.2</b>
Balance CO <sub>2</sub> to be Neutralized = <b>104.1</b> Tons / Annum & Per Capita CO <sub>2</sub> Consumption = <b>20.2</b> Tons / Annum						





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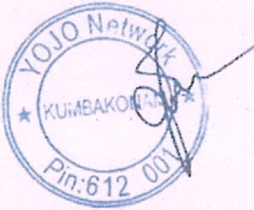
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**1.8: Observations:**

- From the above tables; it is evident that the college is now trying to neutralize their CO<sub>2</sub> emission through various initiatives like i) Installation of roof top solar PV system & solar thermal hot water generation (cooking & bathing application) iii) Planting more number of trees and iv) Implementing various energy conservation measures (FTL to LED conversion, conventional fan to BLDC fans, Energy efficient motor replacement, judicious use of all types of energy etc.,)

**1.9: References:**

1. <https://ecoscore.be/en/info/ecoscore/co2>
2. <http://www.tenmilliontrees.org/trees/#:~:text=A%20mature%20tree%20absorbs%20carbon,the%20average%20car's%20annual%20mileage>.



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# ENVIRONMENT AUDIT REPORT

## ENVIRONMENT AUDIT REPORT

### PART-B

## TRANSPORT & REFRIGERANT GASES IN AC SYSTEM

#### AUDIT CONDUCTED BY

YOJO NETWORK & TRAINING CENTER

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**GST no: 33AYXPP0304R1ZT**

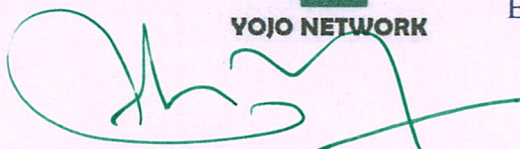
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### 1.1: List of Transport Vehicles:

Pollution level of all vehicles is regularly monitored and is maintained within the prescribed limit since the college is committed to provide green environment for better atmosphere.

All the transport vehicles are having pollution certificates and maintaining the emission level within the Pollution Control Board limits

The no. of vehicles available in the college campus is represented in Table-1.

**Table-1: List of Transporting Vehicles available in the College**

S. No.	Type of Vehicle	Quantity	Purpose
1.	Bus	12	Students & Faculty Transportation
2.	Jeep	02	Office and Administrative Works
3.	Car	03	Transportation for the Principal & Visitors

### 1.2 : List of Air Conditioning System along with its Refrigerant:

Most of the AC system has R-32 as refrigerant which has **Global Warning Potential (GWP) of 675 and hence Ozone Depletion Potential (ODP) is Zero.**

**Table-2: List of Multi-variant AC System available in the College**

S. No.	Tonnage Capacity (TR)	Quantity
1.	1.5	13 Nos
<b>Total</b>		<b>13 Nos</b>

**Note:** The most environment-friendly refrigerants that are available in Indian market currently are -R- 290 and -R-600A. They are Hydrocarbons and their chemical names are -Propane for R-290 and -Iso- Butane for R-600A

They are completely halogen free, have no ozone depletion potential and are lowest in terms of global warming potential. They also have high-energy efficiency but are highly flammable as they are hydrocarbons.

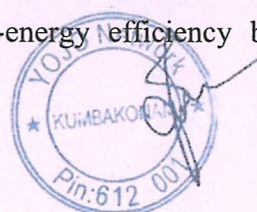
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# ENVIRONMENT AUDIT REPORT

## ENVIRONMENT AUDIT REPORT

### PART-C

## USAGE OF CHEMICALS SALTS AND ACIDS (STORAGE, HANDLING AND BEST OPERATING PRACTICES)

#### AUDIT CONDUCTED BY

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COLLEGE FOR WOMEN

Kaikkurchi - 622 303, Pudukkottai Dt



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### 1.1 : Handling of Chemicals / Salts / Acids used in the Laboratories:

- The S & H and Civil departments use chemicals for experimental applications and are having strict safety rules as follows;
- Well trained faculty and lab assistants who have knowledge about the hazardous nature of each and every chemical are only allowed to handle the chemicals safely.
- Strictly follow the manufacturer's instruction on the container in order to prevent accidents.
- Volatile or highly odorous chemicals, fuming acids are stored in a ventilated area. Chemicals are stored in eye level and never on the top shelf of storage unit.
- All stored chemicals; especially flammable liquids are kept away from heat and direct sunlight. Reactive chemicals are not stored closely.
- Hazardous and corrosive chemicals are kept on sand platform to avoid corrosion.

First aid box and fire extinguishers are readily available in the laboratory

### 1.2 : Storage of Chemicals / Salts / Acids:

- Less concentrated chemicals, salts and acids are stored in proper racks; cupboard and high concentrated acids are stored in separate area filled with sand.
- Most of the chemicals, salts and acids used in the science departments are inorganic in nature and no harmful effects are created during the experiment process.
- Only trained teaching and non-teaching staffs are handling the chemicals and also they are well trained to handle any abnormal situations.
- Laboratories with chemicals are well ventilated with proper emergency exits. Adequate and correct sequence of fire extinguishers is placed near all the laboratories.

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### 1.3 Use of Chemical for Vessels & Floor Cleaning:

In order to maintain hygiene in the College campus; the administration regularly clean the floor and restrooms. In addition to this, the hostel management has to monitor the cleaning of vessels, kitchen floor, dining hall, store room and gas station. Table-1 shows the cleaning agents used to clean the above mentioned area;

**Table-1: Cleaning Agents used for Floor and Vessel Cleaning**

S.No.	Cleaning Agent	Application
1	Soap & Washing Powder	Vessel Cleaning
2	Soap Oil & Bleaching Powder	Floor Cleaning

### 1.4 : Recommendations: Eco Friendly – Green Cleaning Agents:

- On an average; the cleaning agents used today have about 51 harmful chemicals like Paraben, Phosphates or Chlorides. A lot of them are multi-purpose cleaners
- It is recommended to use natural ingredients like orange peel extract & vinegar. It leaves a mild and pleasant fragrance after use. The formula is free from all harmful chemicals & toxins. It is pH-neutral, gentle on the skin as well as on the surface where it is used
- Fig.1 shows the sample eco-friendly Green Pro certified cleaning agents used in the Institution for cleaning purpose.

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**Fig.1: Green Pro Certified Eco Friendly Cleaning Agents (ZERODER) used in the Institution**



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# GREEN AUDIT REPORT

## GREEN AUDIT REPORT

### PART-A

## WATER UTILIZATION, CONSERVATION & WATER MANAGEMENT

#### AUDIT CONDUCTED BY

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**1.1: Source of Water, Storage and Distribution:**

Table-1 shows the source of water, location of storage along with their application.

**Table-1: Source of Water, Location of Storage and Application**

Type of Water	Source	Application
Bore Water (Interconnected)	• Bore-1; South West Side –260ft	• Input to the RO plant
	• Bore-2; Administrative Block Front Side–260ft	• Cooking Utensil Cleaning, • Bathing & Cloth Washing
Rain Water (9Nos) + One Pond	• Collected from i) buildings run off and ii) road run-offs • Each building has RWH	• Used to increase the ground water level
		• Small pond is also available to Collect the rain water
Treated Water using RO Plant (1 Nos) from Bore well Water. Treated Water using RO Water Purifiers (4Nos) from water tank.		• RO Water: Drinking and Cooking
		• Grey Water: Gardening & Toilet Cleaning (Good Initiative)
• Raw water tank capacity and Location	• Hostel – 10,000 L	• 10,000 Litres
	• Main Block –5,000 L • Civil Block – 1000 L	• 6,000 Litres
<ul style="list-style-type: none"> <li>• All tanks are cleaned monthly once (Good practice).</li> <li>• Water filling is now in manual operation.</li> </ul>		

### 1.2: Treated Water for Drinking Application:

- The college management is keen on providing uninterrupted, safe and healthy drinking water to all; throughout the year.
- The over head tanks storing the drinking water which are cleaned at regular intervals and the water management team has been maintaining a cleaning schedule.
- The specifications of RO Plant and distribution of potable water to the entire campus is given in Table-2.

**Table- 2: Specifications of RO Plant and Potable Water Distribution System**

S. No.	Parameters	Description
1.	Total no. of RO Plant	• 01 No's (Total 500L PH)
2.	Source of raw water	• Bore Water
3.	% of RO & grey water out put	• 60 % RO water: 40% grey water
4.	Usage of grey water	• Used for Toilet Cleaning (Good Initiative)
5.	Cleaning schedule of filter	• Once in three months (Replaced every year)
6.	Cleaning schedule of membrane	• Yearly twice
7.	Functioning of RO Plant	• Manual operation
8.	Quality of RO water	• Internally tested (50 TDS)
9.	RO water storage	• Stored in the HPDE tanks and distributed
10.	RO water tank capacity & location	• Main Block – 2000 Litre & Hostel –5000 Liter

### 1.3 : Water Savings in Foreign Toilets:

The list of availability of Indian & Foreign style toilets are presented in the below Table-3.

**Table-3: List of Indian & Foreign Style Toilets**

S. No.	Location	No. of Toilets	
		Indian	Western
1.	Main Block	80	7
2.	Civil Block	08	0
<b>Total</b>		<b>88</b>	<b>7</b>

- In general the flush tank capacity may be 8 to 10 Liters (depends on make and model). Water savings also leads to power saving it saves the operating duration of the water pumps directly.

**1.4 : Rain Water Harvesting (RWH) – from Building Roof Area & Run-off Area:**

- The audit team appreciates the effects taken by the management of **SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN** for harvesting the rain water almost in all buildings with proper maintenance.
- The roof area is so arranged to collect the rainwater and then passed through proper piping system, and then bring back to the RWH pits which are located close to each pits
- The building run off are collected through each pits mostly located in each buildings. Common area and road run-off are properly collected and routed to nearby water body.



A handwritten signature in green ink, appearing to be 'S. Thilagayathi'.

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# GREEN AUDIT REPORT

## GREEN AUDIT REPORT

### PART-B

## WASTE HANDLING & MANAGEMENT

#### AUDIT CONDUCTED BY

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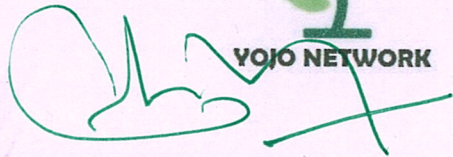
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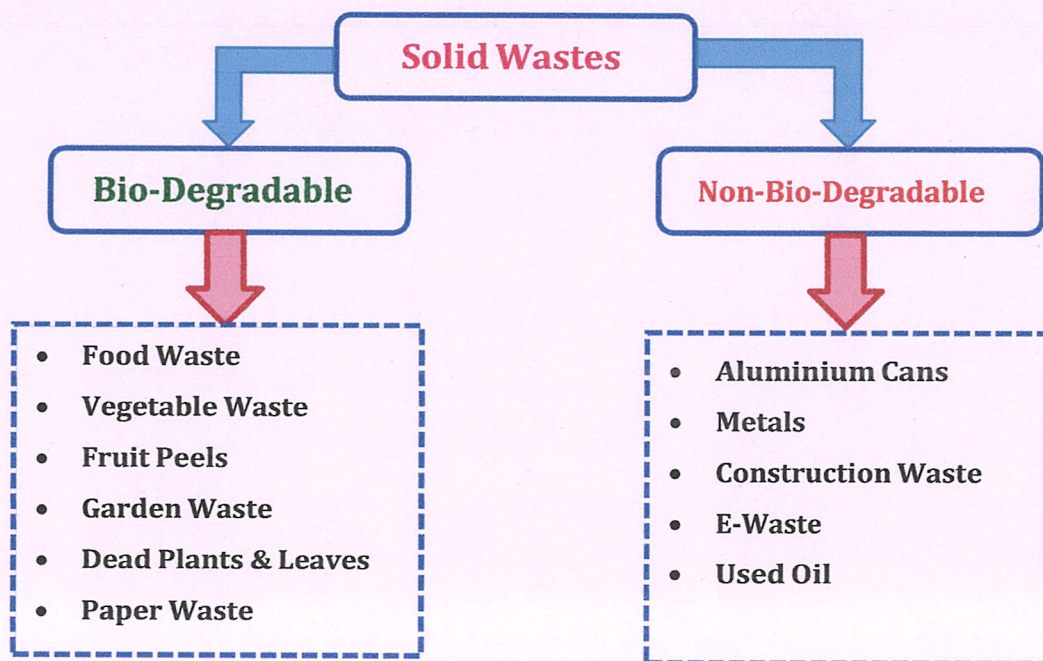
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**1.1 : Solid Waste Management System:**

Different types of wastes generated inside the college premises are represented in the block diagram given below.



**1.2: Process of Solid Waste Management:**

The college management practiced efficient methods to treat the waste generated and Table-1 shows the process of treating the solid waste generated inside the college campus.

**Table-1: Process of Waste Management**

S. No.	Waste Type	Waste Treatment
<b>Bio-Degradable Waste Management</b>		
1.	Food and Vegetable Waste	Collected and dumped in a yard (used as manure)
2.	Garden Wastes and Plant Leaves	Daily collected and dumped in a yard

3.	Paper Waste	Collected and stored in a separate place to dispose further.
		Sold to third party for recycling
4.	Napkin Pads	Collected, dumped in a separate Napkin incinerator unit is available in the campus.
<b>Non-Bio- Degradable Waste</b>		
<b>Management</b>		
5.	Plastics	Banned in the college campus (Welcome step).The chemical / salt storage plastic containers are disposed to third party.
6.	Metals	Construction metals or metals from any other sources are stored in a separate place.
		Used for sale to third party for recycling
7.	Transport Oil + Tyres	Stored in a separate place and used for sale to third Party.
8.	Transport Vehicle and Computer Batteries	Procuring new batteries with buyback offer (old battery replacement)
9.	Used edible oil	Almost zero waste. Mostly used for internal cooking And frying.
10.	E- Waste Management	Used for sale to third party for recycling



# GREEN AUDIT REPORT

## GREEN AUDIT REPORT

### PART-C

## ASSESSMENT ON MATURED TREES AND BIO DIVERSITY

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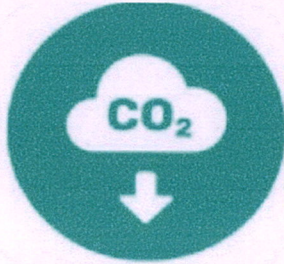
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### 1.1: Campus Greenery:

The college is completely covered with mature trees grown for more than 10 years. The total number of mature trees available in the college campus is **391 with 22 varieties of trees.** Apart from the mature trees; preserving the ecology; the entire college campus is planted with various flowering shrubs and bushes.

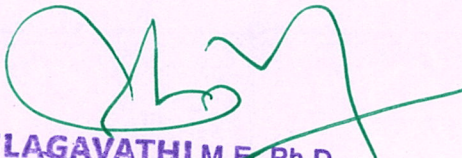


Total No. of Mature Trees available in the college campus is **391** which contributes for reduction of **20.4 Tons** of CO<sub>2</sub> emission/ Annum

### 1.2: Recommendations for Indoor Plants as Natural Air Purifier:

- Indoor plants are available more numbers in the institution campus, which will be helpful to look good while bringing life to our living space and they also help to purify the air.



  
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**TABLE 1**  
**GREEN AUDIT**

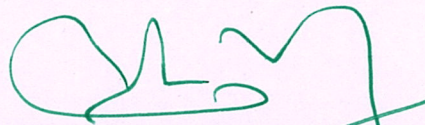
LIST OF TREES AND SAPLINGS

SL.NO.	TREES / SAPLINGS TAMIL NAME	TREES / SAPLINGS ENGLISH NAME	BOTANICAL NAME	NOS.	
				TREES	SAPLINGS
1	Thennai maram	Cocunut	Cocos nucifera	210	47
2	Veppa maram	Neem	Azadirachta indica	111	13
3	Maamaram	Mango	Mangifera indica	NIL	10
4	Sapota	Sapota	Manilkara zapota	NIL	4
5	Naaval maram	Java plum or indian blackberry	Syzygium cumini.	1	11
6	Badam	Almond	Terminalia catappa	NIL	2
7	Koyya	Guava	Psidium guajava	1	26
8	Udhiya maram	Odina wodier	Lanea coromandelica	16	7
9	Maadhulai tree	Pomegranate	Punica granatum	1	NIL
10	Pungai tree	Pongamia	Millettia pinnata.	14	1
11	Puliya maram	Tamrind tree	Tamarindus indica	1	NIL
12	Semmaram	Red sandal wood	Pterocarpus santalinus	1	NIL
13	Marudha maram	Arjuna tree	Terminalia arjuna	2	4
14	Poovarasu maram	Portia tree	Thespesia populnea	1	5
15	Nagalinga maram	Cannonball tree	Couroupita guianensis	NIL	3
16	Ilupai tree	Mahua tree / butter nut tree	Madhuca longifolia	NIL	12
17	Mahogany tree	Mahogany tree	Swietenia macrophylla	NIL	8
18	Nelli maram	Gooseberry	Phyllanthus emblica	NIL	9
19	Vaagai maram	Surrogate tree	Albizia lebbeck	2	NIL
20	Christmas palm tree	Foxtail palm	Wodyetia bifurcata	30	20
21	Moongil	Bamboo	Bambusa vulgaris		14
22	-	Crotons	Codiaeum variegatum		24
TOTAL				391	210



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## AUDIT SUMMARY & CONCLUSION



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### **SUMMARY OF THE AUDIT PROCESS:**

In order to make SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN campus 100 % Environmental sustainability and lush Greenery, the audit team appreciate the measures followed by the institution to maintain environmental friendly, green campus.

The following measures are followed by the institution:

#### **i. Water Conservation & Management:**

- Retrofit aerator based water taps are used for good water savings
- Water treatment log (for RO plant) is maintained for treated and outletwater quality
- Installed sensor based water controller in each Over Head Tanks to reduce the water wasteland power required to operate the pump

#### **ii. Waste Management:**

- The institution stores solid wastes properly in a separate place for safe disposal.
- Scientific method of handling chemicals/Acids/Salt and safe disposal through 3<sup>rd</sup> party
- Used napkins are safely disposed using napkin disposal machine
- Having all records for the solid waste items given to the 3<sup>rd</sup> party

#### **iii. Way Forward towards Energy & Environmental Sustainability:**

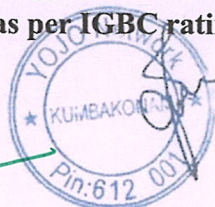
- Available an exclusive **Energy and Environment Policy** based on the energy and environment practices are followed in the campus and reflects the
  - i) Present energy consumption & generation
  - ii) Projection of energy need
  - iii) Commitment by the college to conserve energy
  - iv) Roadmap to achieve the commitment
  - v) Facilities needed to achieve the same
  - vi) Roles and responsibilities of all stakeholder
  - vii) Corrective measures, if the results deviates from the committed value
- Implemented ENCONs and best operating practices proposed in the audit report
- Adopted effective Waste Management Policy and reduced the food print of waste generation (Net zero waste campus)
- Working towards Net Zero Energy and Net Zero Water Campus and achieve **Gold rated Global Leadership campus (as per IGBC rating)** and/or **4-star rated campus**

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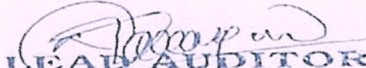
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## COMPLETION OF THE REPORT

This report is prepared as a part of the Environment and Green Audit process conducted at **SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN, Pudukkottai** by **YoJo Network and Training Center, Tamilnadu.**



  
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## CERTIFICATE FOR ENVIRONMENT & GREEN AUDIT PROCESS

This is to certify that, we have conducted ENVIRONMENT & GREEN AUDIT at **SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN**, Kaikurichi Village, Pudukkottai Dt, Tamil Nadu, India from 12 June 2023 to 23 June 2023 and it is **appreciated that, the institution strictly follows and maintain environment friendly clean and green campus initiatives to provide conducive atmosphere for active teaching learning.**

This process investigates the following activities;

- ✓ Coverage of Mature trees and more bushes & shrubs (nearly 391 Matured trees)
- ✓ Plan to increase the green coverage and natural water bodies
- ✓ Pollution certificates for all transport vehicles, Ambulance and verified.
- ✓ Inspection on Rain Water Harvesting (RWH) both from buildings and road run-off verified.
- ✓ Initiatives taken to promote green coverage inside the college campus
- ✓ Recommendation for Rooftop Solar Thermal system for cooking application and water heating system for hostel students (bathing application).
- ✓ Study on effective Solid Waste Management (SWM) system
- ✓ E-waste: Collection, Segregation, Storage and Safe Disposal are verified.
- ✓ Availability of Waste to Wealth, Waste to Energy possibilities
- ✓ Improvement of Indoor and Ambient Air Quality (IAQ) and Indoor Environment quality (IEQ)
- ✓ Maintaining excellent Bio-diversity and Ecology
- ✓ Detailed Recommendation on green initiatives are represented in the Audit report

Thank You

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