

**SHAHEED RAJGURU COLLEGE OF APPLIED SCIENCES FOR
WOMEN, UNIVERSITY OF DELHI, DELHI-110096**



**ENVIRONMENT AUDIT REPORT
2023**

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1. Introduction:

Shaheed Rajguru College of Applied Sciences for Women (SRCASW) has released an extensive environmental audit focusing on its carbon footprint. This report reflects the college's commitment to mitigating Greenhouse Gas (GHG) emissions, particularly CO₂, in response to global warming and climate change concerns. By conducting comprehensive GHG inventories, SRCASW establishes a baseline for tracking progress and setting targets for reducing emissions. The audit report highlights opportunities for cost-effective strategies, such as decentralized power through solar panel installations and increased carbon sequestration via tree planting initiatives.

In addition to energy, water, waste management, and fossil fuel consumption in transportation, the audit offers a comparative overview of areas contributing to the college's carbon footprint. It aims to provide a clear understanding of environmental impacts and proposes strategies for improvement. SRCASW's commitment to environmental stewardship is underscored by its proactive approach in assessing and curtailing unsustainable practices, thus promoting broader awareness within the institute and beyond.

2. Goals of Environment audit:

Following are the goals and ambitions of the reports:

1. To create a baseline survey for comparing and measuring the progress.
2. To examine the current practises and their contribution in terms of CO₂ equivalence.
3. To compare, innovate and install green and alternative sources of energy.
4. To reduce dependencies on energy obtained from fossil fuels.
5. To identify and mitigate the problems of waste disposal, and water management practices.
6. To enhance the growth of the green cover of the campus.
7. To enhance environmental consciousness for sustainable use of resources.
8. To identify and assess environmental risk, if any, in the college.

3. Methodology:

The data was collected using survey forms from 1) Students, 2) Teaching Staff and 3) Non-teaching staff from all the departments, administrative buildings canteen and hostels. The data has been collected from the final batch comprising approximately 300-400 students. The total per capita CO₂ emission has been calculated the for a total strength of the college which comprises 1765 students (1652, day scholars and 115, hostlers), ~73 teaching staff, and ~64 non-teaching staff members. The number of working days was taken from January 2023 to December 2023. The month of January was for final years and the data has been collected likewise. The Audit report is carried out for i) CO₂ emission from transportation (Carbon

auditing), ii) CO₂ emission from energy consumption (Energy auditing), iii) GHG emission from wastewater and solid waste (Water and Waste auditing), and iv) other potential CO₂ sinks in the college.

From this year we have started with the initiative of collecting plastic waste from all arenas of college and giving it weekly to an NGO for recycling it and creating useful things.

A detailed report is as follows.

1. CO₂ emission from the Transportation

A carbon footprint is the total greenhouse gas emissions caused directly and indirectly by an individual, organization, event or product. It is calculated by summing the emissions resulting from every stage of a product or service's lifetime. The calculations, formulae and results discussions are supported with the help of tables and graphs. The data was collected from (i) the academic block, (ii) the administrative building, and (iii) the canteen and hostel area. In the academic block, the data were collected separately for each department.

1.1 Component of the Calculations:

The net kg CO₂ equivalence has been calculated using the data and equivalence constants for various fuel types. The data was collected using Google form surveys that were circulated among students, teaching and non-teaching staff in all the departments.

Activity (total fuel consumption in L) * Emission Factor (kg of CO₂ per litre of fuel) = CO₂ Equivalence (CO₂e) of emissions.

Fuel consumption per person = Distance (km) * Avg. fuel consumption (L per km)**

1. Average fuel consumption per km travel = 0.05 kg CNG
2. Average Diesel consumption per km travel = 0.07 kg Diesel
3. Average Petrol consumption per km travel (2 wheeler) = 0.03 kg Petrol
4. Average Petrol consumption per km travel (4 wheeler) = 0.1 kg Petrol
5. Travel by metro per km travel = 0.065 kg CO₂ per commuter
6. Average travel by e-rickshaw per day = 4 km per person

kgCO₂e Consumption of SRCASW through transportation= 3494.996 kg CO₂e/month

Table 1.1. Total distance (km), total fuel consumption (L) and total kgCO₂ equivalence emission of the college (academic and administrative blocks).

Total distance (Km) mode of transportation wise									
Department	4 wheeler				2 wheeler		E-rickshaw	Metro	Bus
Type of fuel	Petrol	CNG	Diesel	Electricity	Petrol	Electricity	Electricity	Electricity	CNG
Academic	2102	1442	122	50	1099	250	2794	30391	3876
Administrative	200	68	0	0	499	0	70	270	80
Total	2302	1510	122	50	1598	250	2864	30661	3956

Total distance fuel wise					
Department	Petrol	CNG	Diesel	Electrical	Total
Academic	3201	5318	122	33485	42126
Administrative	699	148	0	270	1117
Total distance	3900	5466	122	33755	43243

Total distance (km), total fuel consumption (L) and total kgCO ₂ equivalence emission of the college (academic and administrative blocks).		
Parameter	Academic	Administrator
Total distance	42126	1117
Total Fuel (only Petrol, Diesel and CNG)	594.15	40.72
Total kgCO ₂ equivalence emission	3394.44	100.996

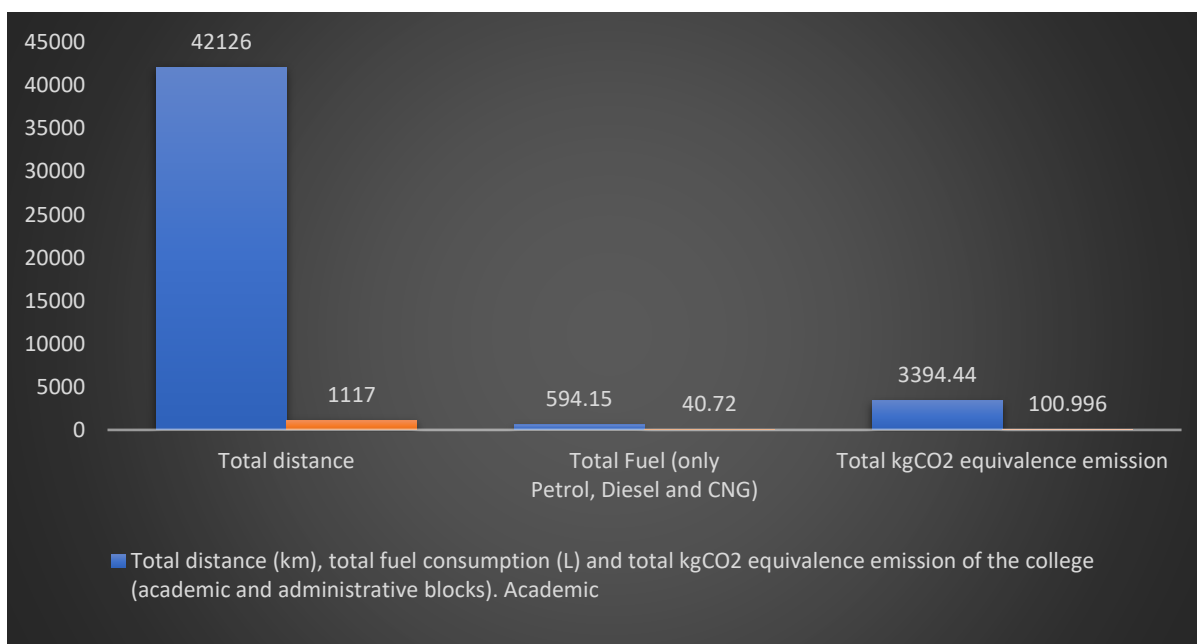


Fig 1.1 Total distance (km), total fuel consumption (L) and total kgCO₂

Table 1.2

total distance travelled by 4-wheelers, 2-wheelers and public transportation,						
Department	Distance(km) 4 wheeler	CO2(kg) (4 wheeler)	Distance(km) 2 wheeler	CO2(kg) (2wheelers)	Distance(km) public transport	CO2 (kg) for public transport
Academic	3716	697.37	1349	24.57	37066	2672.5
Administrative	268	31.02	499	46.906	350	23.07
Total	3984	728.39	1848	71.476	37416	2695.57

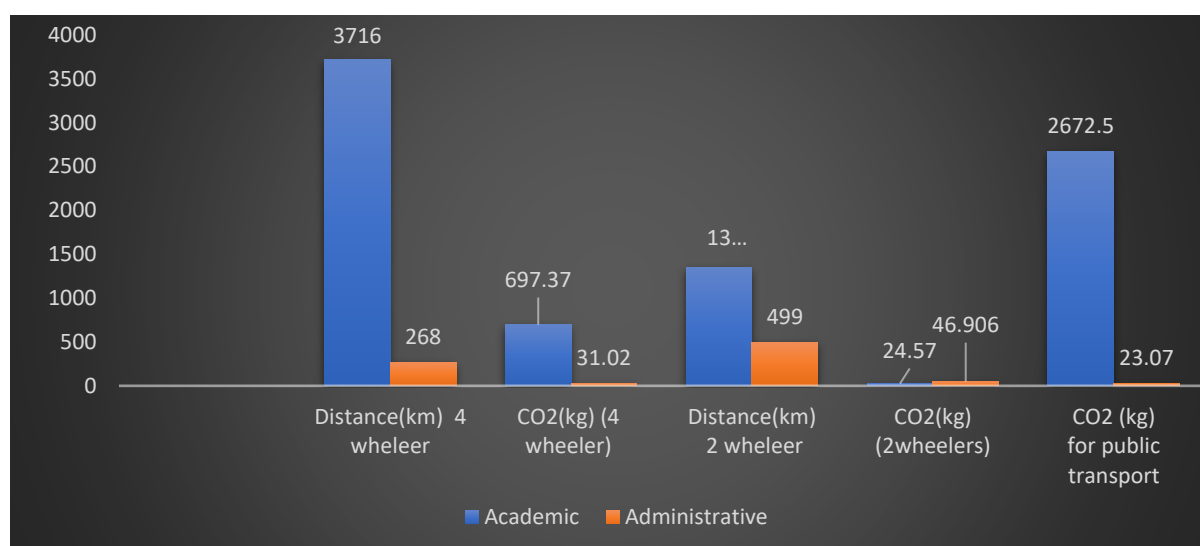


Fig 1.2 total distance travelled by 4-wheelers, 2-wheelers and public transportation and emission of CO2(kg)

Table 1.3

Total distance fuel wise					
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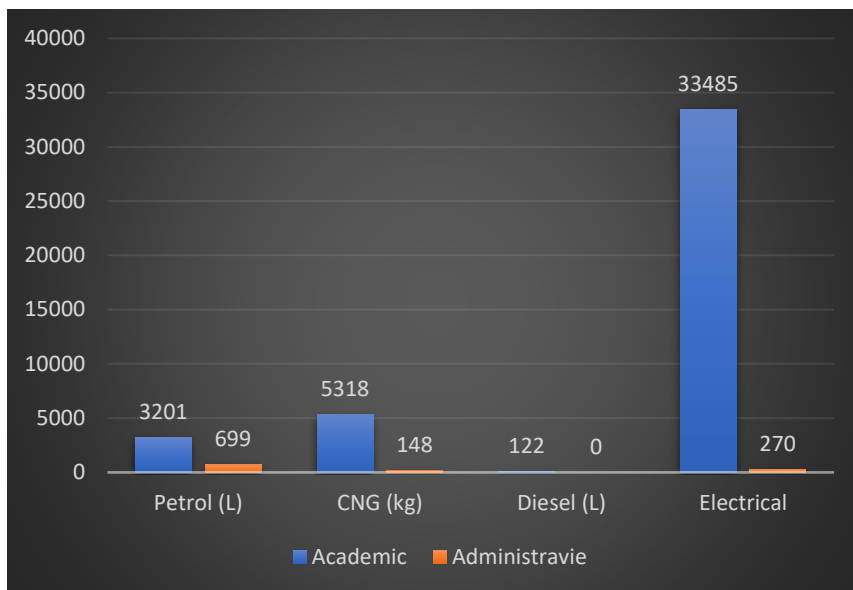


Fig 1.3 Total distance travelled by 4-wheelers, 2-wheelers and public transportation fuel wise

1.2 Results and Discussion:

The total annual CO₂ emission from transportation for the college is ~ 3495 kg of CO₂e or ~3.5 tonnes of CO₂e. The results maintain the maximum CO₂ contribution from public transportation when compared to previous reports. Majority of students, non-teaching staff members, and a few teachers on average commute daily by public transportation. Thus, public transportation is the main cause of the college's carbon footprint, followed by 2-wheelers and 4-wheeler private vehicles.

2. CO₂ emission from the Electricity

The kg CO₂ emission from electricity is remotely generated and therefore indirect. The fossil fuels consumed to generate electricity are a major contributor to GHGs. The electricity in SRCASW is supplied by the state electricity board which comes from thermal power-based grid electricity units. The emission factor for coal has been taken to calculate the amount of CO₂ emission by electricity consumption. The data had been collected for i) academic, ii) administrative buildings, and (iii) hostels. The electricity consumption was collected in three different categories which are as follows:

Category-I: AC (Variable refrigerant flow (VRF); non-VRF), Fans, and Tubelights.

Category-II: Desktop Computers

Category-III: Electrical and Electronic gadgets, Instruments (heavy and light machines), Charging devices (Laptops, mobile phones), photocopier machines, printers, bulbs, microwaves, and refrigerators.

2.1 Component of the Calculations:

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*Note: CO₂ emission in the form of biogas or CH₄ oxidation is not counted in GHG inventories.

Emission Factor for electricity produced by coal = 0.975 kgCO₂e/kWh

Activity (total electricity consumption in kWh) * Emission Factor (kg of CO₂ per kWh) = CO₂ Equivalence (CO₂e) of emissions.

kWh/month = (Rating in Watts/ 1000 * usage in no. of hours per day * number of working days in a year)/12 months

Table II.1. Department-wise consumption of electricity by categories I, II, and III.

Departments	Sub-divisions	Category-I (kWh/day)	Category-III (kWh/day)
Academic	Biochemistry	4602.1	14.22
	Biomedical		31.3
	Chemistry		9.38
	Computer Science		176.36
	Electronics		83.22
	Food Technology		60.38
	Instrumentation		111.72
	Mathematics		91.4
	Microbiology		3.1
	Management		131.44
	Physics		44.38
	Psychology		4.88
	Statistics	35.34	
Administrative building	Principal's room, account section, the library, and non-teaching staff offices.		134.32
Hostel	Quarters (a warden and a caretaker). Student's rooms.		7.14
TOTAL		4602.1	2398.1

S.No.	Name of the Department	Category-II Computer Numbers	Category-II(kWh/day)
1	Biochemistry	3	1.8
2	Biomedical Science	32	32
3	Chemistry	3	2.4
4	Computer Science	127	177.8
5	Electronics	55	66
6	Food Technology	6	2.4
7	Instrumentation	58	92.8
8	Maths	50	60
9	Microbiology	5	6
10	Management & BFIA	4	2.4
11	Physics	4	4.8
12	Psychology	8	8

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*Note: CO₂ emission in the form of biogas or CH₄ oxidation is not counted in GHG inventories.

13	Statistics	35	42
14	Admin Block	88	140.8
15	Hostel	2	1.6
	Total	480	640.8

Break up of the electricity consumption by category I electrical equipments.

S.No.	Equipment	KWh / Day
1	VRV AC Units	3580.8
2	Non-VRV AC Units	396
3	Fans	382.72
4	Tubelights	242.496

2.2. Calculations:

Total Electricity consumption per day = Category I + Category II + Category III

Total Electricity consumption of SRCASW per day 7641 kWh

Total CO₂e emission of SRCASW per day = 7449.975

Total annual CO₂e emission of SRCASW per day ~ 7.5 tonnes Co₂e emission

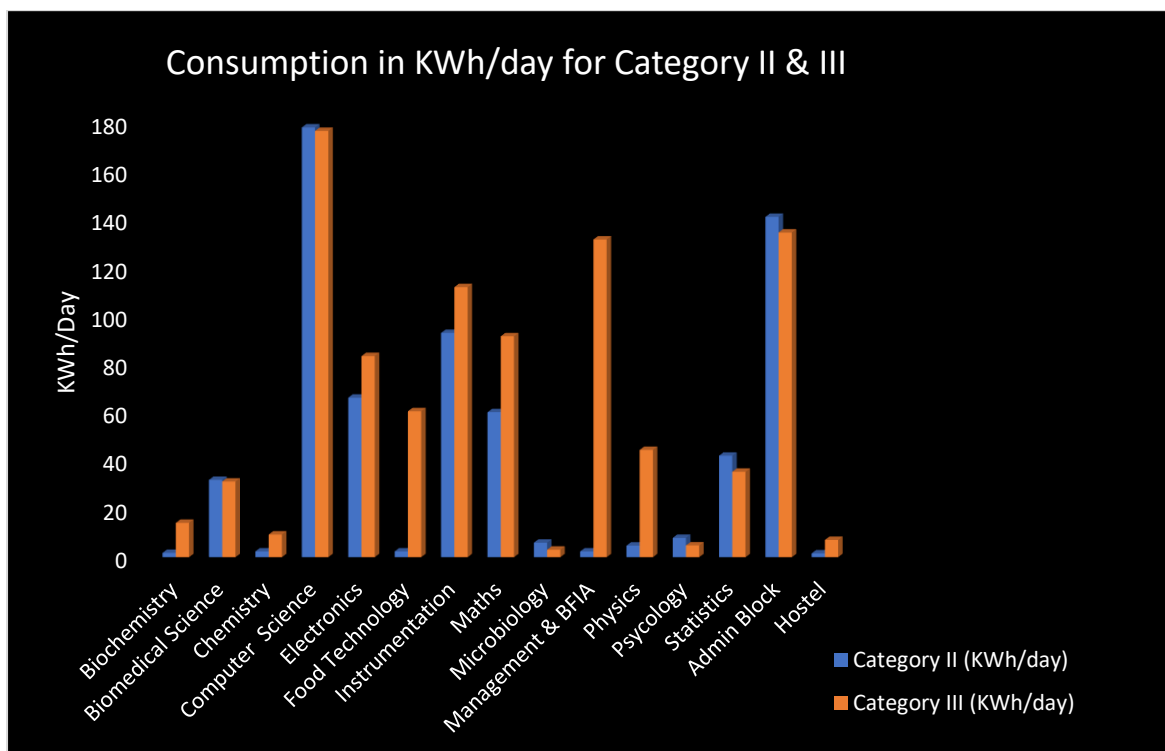


Fig. 2.1 Distribution of electricity consumption for Category-II and Category -III (kWh per day) in different departments.

2.3 Results and Discussions:

The total kg CO₂ emitted due to electricity consumption has been reported in kWh per day. The computer science department, followed by the instrumentation department shows the highest consumption of electricity in Category II that is dependent of number of computer being used.

3. GHG emissions from Waste Water and Solid Waste

This section covers 3.1. Water Auditing, and 3.2. Waste Auditing. The water auditing covers the total water consumption of the college and the N₂O and CH₄ emissions from the wastewater treatment unit. The N₂O and CH₄ are released from the nitrification and breaking of the organic compounds, respectively during the disposal of the wastewater. The N₂O and CH₄ emissions have been calculated by taking into account per person-day contribution in generating wastewater. The contribution of the day scholars, teaching and non-teaching staff who stay only during working hours in the college has been considered 50 % of the hostlers who are living on the campus.

The GHG emission for the waste has been estimated by calculating the CH₄ emission per kg of solid waste. The CH₄ is released from solid waste disposal at the dumping site.* In the current waste audit report, solid waste (kgs) included plastic wastes, sanitary, glass-metal scraps, other dry waste, and miscellaneous waste. The paper waste and e-waste are recycled 100 % by the college and are collected by licensed and authorized manufacturers. Also, wet waste is managed through composting in the college. Hence, they were not included while calculating the solid waste.

3.1. Water Audit:

The water audit has been done for the whole college by collecting data from the different sections. The sections include all the departments in the academic block, the administration building, and the hostels. The average number of days has been taken from January to April 2023 for the final semester students and for the whole college from February to December 2023.

Since dirty water treatment is done by MCD , we have not done the calculations for the kgN₂O and kgCH₄ equivalence emission.

3.1.1. Component of the Calculations:

Emission Factor for N₂O per person-day for generating wastewater = 0.09 kgN₂O/person-month

Emission Factor for CH₄ per person-day for generating wastewater = 9.0 kgCH₄/person-month

The total number of persons in college * Emission Factor * the number of days = Total kgN₂O and kgCH₄ per year.

Consumption of water by the four blocks: A comparison

S. No.	Name of the Block	Consumption of water (in L per month)
1.	Administration	34,500
2.	Academic	86,317
3.	Hostel, teaching and non-teaching	11,620

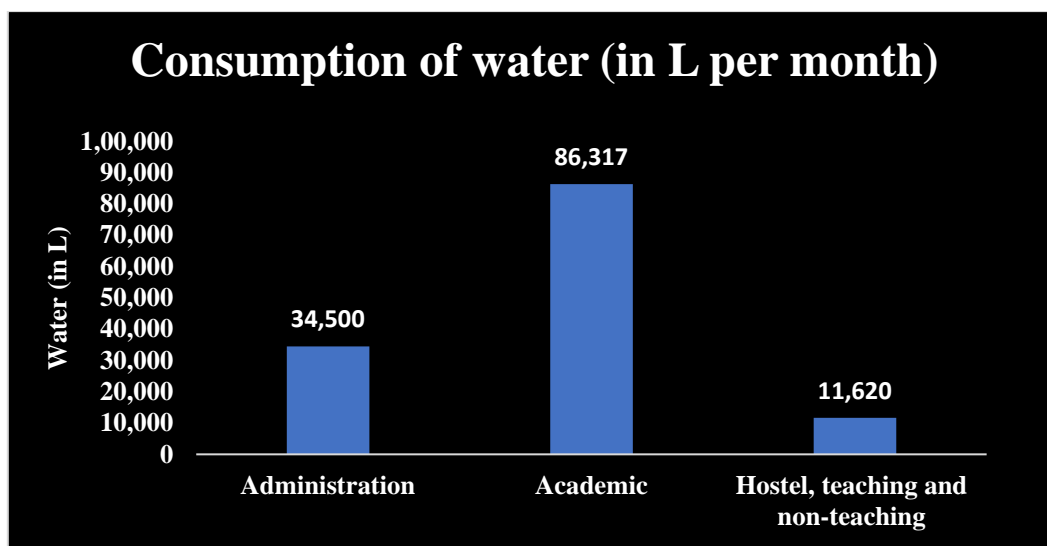


Fig. 3.1.1 Consumption of water by various blocks of college (In L per month)

Consumption of water by academic block:

Details of water consumption by various departments of academic block and other areas are tabulated as under:

S. No.	Name of the department	Consumption of water (in L per month)
1	Canteen	1800
2	Hostel, Staff quarters, Warden's Room	11620
3	Biochemistry	7600
4	Biomedical Science	7200
5	Chemistry	4900
6	Computer Sciences	5000
7	Electronics	5100
8	Food technology	8200
9	Instrumentation	8400
10	Mathematics	7000
11	Microbiology	7900
12	Management studies	4922
13	BFIA	4795

14	Physics	5300
15	Psychology	4000
16	Statistics	4200

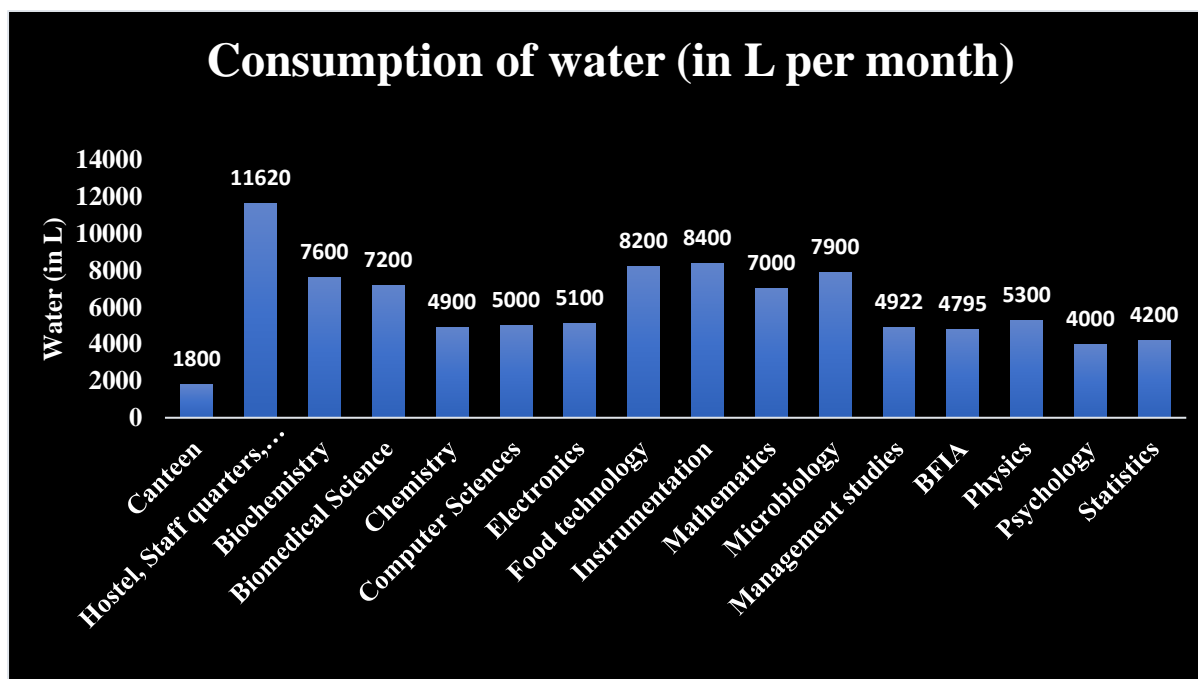


Fig. 3.1.2 Consumption of Water by various departments of academic block and other areas

S. No.	Purpose	Consumption of water (in L per month)
1.	Sanitation	73,565
2.	Drinking water	58,400
3.	Laboratory	9,900
4.	Miscellaneous	-

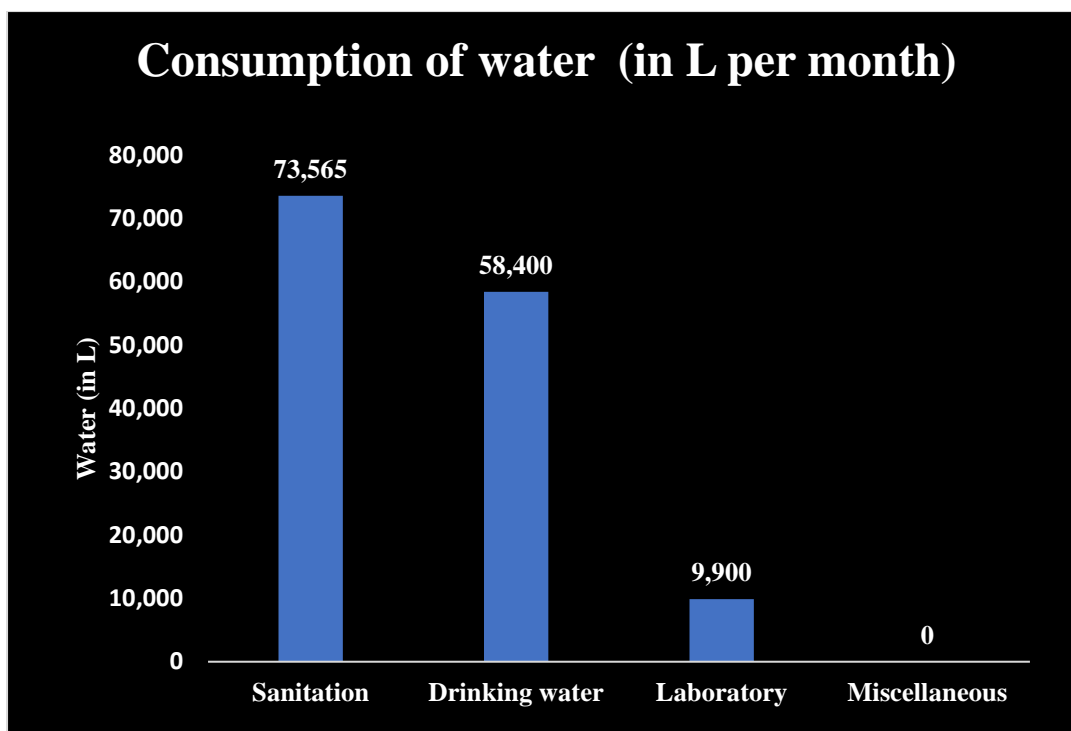


Fig. 3.1.3 Consumption of water for various purposes (in L per month)

3.1.2. Results and Discussion:

The total water consumption of SRCASW is 1,41,865 L per month. The results show maximum consumption of water happening in sanitation (51.8%), followed by drinking (41.16%) and laboratory (6.9%). The maximum consumption of water for sanitation, laboratory and drinking is reported from the academic block; the highest consumption of water in the academic section comes from the management department, followed by the chemistry department. It is due to more number of students and water consumption for laboratory purposes.

3.2. Waste Audit:

The waste audit has been done for the whole college by collecting data from the different sections. The sections include all the departments in the academic block, the administration building, and the hostels. The average number of days has been taken as 60 days (two months) for the students, 120 days (4 months) for the administration, and 360 days (12 months) for the wardens and caretakers staying in the hostel premise.

3.2.1. Component of the Calculations:

Emission Factor for CH₄ for solid waste disposal (SWD) = 0.9 kgCH₄

Activity (kgs of solid waste per year) * Emission Factor = Total kgCH₄ per year.

Distribution of the waste generated through different processes by the departments of SRCASW.

Location /Department	Waste Generated (Kg/day) Total	Paper waste	Sanitary waste	Plastic waste	Others	Lab waste					
						Glass	E - waste	Dry /solid	Wet (L)	Need le	Biological Waste/Food Waste
Administrative Block	0.5	–	–	–	–	–	–	–	0.5	–	–
Hostel	22.6	–	–	–	–	2	–	0.1	20	–	0.5
Staff quarters /Warden's quarters	2.7	–	–	–	–	0.3	–	0.9	1	–	0.5
Canteen	1.4	–	–	–	–	0.2	–	0.2	–	–	1
Departments											
Biochemistry	2.5	0.2	–	–	–	0.2	–	0.5	1	0.1	0.5
Biomedical Science	0.7	–	–	–	–	–	–	0.5	–	–	0.2
Chemistry	0.95	0.25	–	–	–	0.25	–	0.2 5	0.2	–	–
Computer Science	–	–	–	–	–	–	–	–	–	–	–
Electronics	0.75	0.25	–	–	–	–	0.5	–	–	–	–
Food Technology	1	–	–	–	–	0.1	–	0.2	0.6	–	0.1
Instrumentation	2.75	1	–	–	–	0.5	0.25	–	1	–	–
Mathematics	0.02	0.02	–	–	–	–	–	–	–	–	–
Microbiology	1.3	–	–	–	–	–	–	0.3	0.4	–	0.6
Management studies	1.05	–	–	–	–	–	–	0.5	0.25	–	0.3
Financial Studies	1.05	–	–	–	–	–	–	0.5	0.25	–	0.3
Physics	0.15	0.1	–	–	–	–	0.05	–	–	–	–
Psychology	0.7	0.2	–	–	–	–	–	0.5	–	–	–
Statistics	1.1	–	–	–	–	–	–	0.5	0.25	–	0.35

Waste Management Audit:

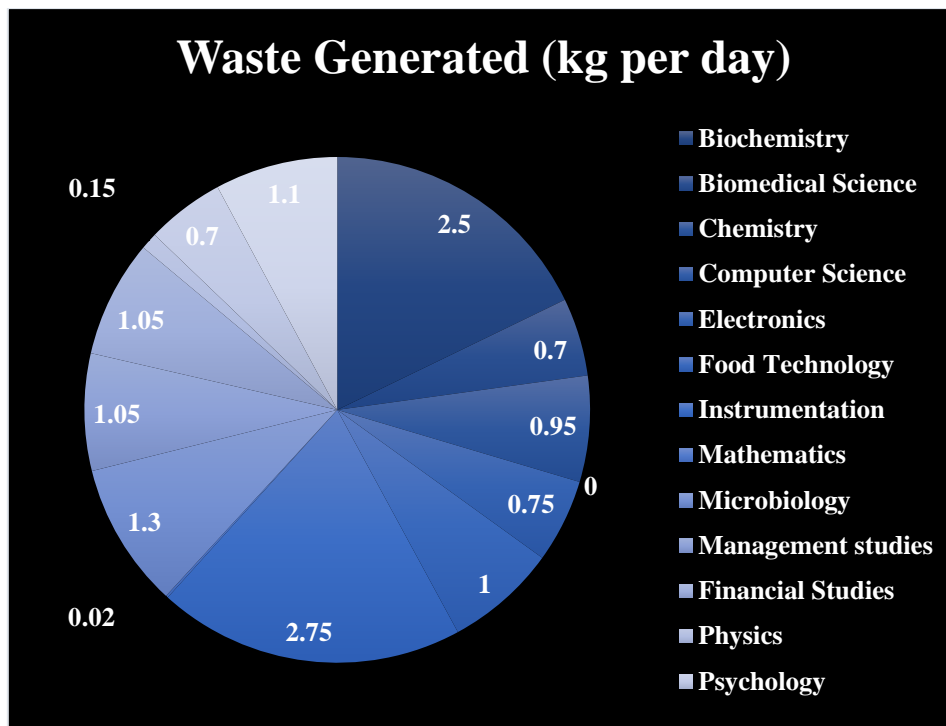


Fig. 3.2.1 distribution of the waste generated by different departments of the academic block

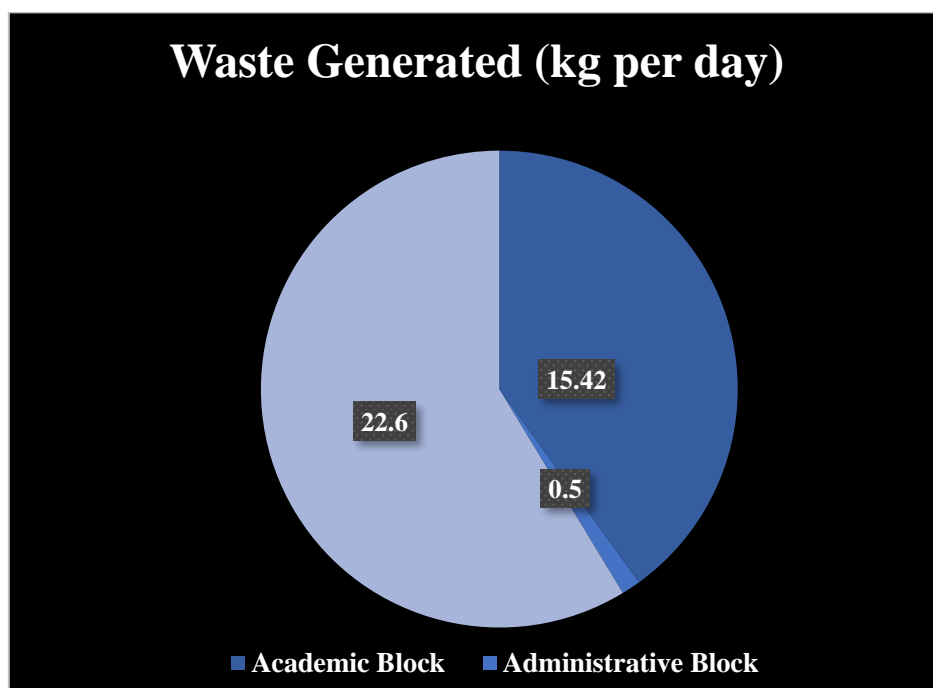


Fig. 3.2.2 distribution of the waste generated by different blocks of college

3.2.2. Results and Discussion:

The waste is condoned to the municipal body which is dumped at the landfill site as solid waste. Out of the total waste, e-waste generated by the college is 5.2 kg/day average. More than 99 % of the paper waste is sent to a recycling unit. Moreover, >99 % of wet waste generated in the college is recycled through composting. ~1.0 kg/day (5 kgs/month) of paper waste is condoned to an NGO; 9.9 kgs (~50 kgs/month) of wet and food waste generated by the hostel mess and different blocks are used in the composting units of the college. 1.4 kgs of wet waste form the part of sewage waste. Out of the total waste of the college, 8,950 kgs/day waste is given away to the MCD vans.

4. Best Practices at Shaheed Rajguru College of Applied Sciences for Women to reduce carbon footprint

4.1. Tree Cover

The approximate number of trees in the college is 400, and its almost the same from the previous years. On average one tree sequesters about 14 kgs of CO₂ per year. This number is approximately the same as last year.

4.2. Composting

The total wet waste generated by the college for 2022-2023 was ~97 kgs/day. The CO₂ sequestration factor (SF) for wet waste utilized in preparing compost is -0.103 kgCO₂/kg wet waste

4.3. An alternative source of Energy- Solar Panels

Each solar panel which is a residential unit produces 9 kWh. In a year it produces 10,000 kWh. The CO₂ sequestration factor (SF) for 1 kWh electricity production is -0.383 kgCO₂e.

4.4 Managing Plastic waste at college

Following are the steps with which we are trying to Manage and reduce plastic waste at our college

1. Awareness and Education

- a. Trying to educate the college community about the environmental impact of plastic waste through our awareness campaigns with the help of our ECO CLUB - PRAVRIDHI. Also looking for engaging students, faculty, and staff to promote behavioral changes such as reducing plastic consumption and proper waste disposal.

2. Reduce Plastic Usage

- a. Encouraging the use of reusable alternatives like stainless steel water bottles, cloth bags, and reusable containers.

3. Plastic Waste Collection and Segregation

- a. Trying to educate the campus community on how to properly segregate plastic waste to improve the effectiveness of recycling efforts.

4. Partnerships and Collaborations

- a. College has collaborated with a NGO that collects plastic waste from college to recycle it to make useful items like bins, benches etc.

Following is the significant data sent by the collaborated organization for our college.

The data given by NGO for our college for recycling plastic waste is as follows:

S.No.	Year	Month	Weight (Kg)
1	2023	November	13.00
2	2023	December	29.00
3	2024	January	0.00
4	2024	February	137.00

5. Future strategies and suggestions for making SRCASW carbon-neutral

SRCASW is committed to becoming carbon neutral by gradually reducing the CO₂ footprint of the college. It is aimed at reducing its dependencies on fossil fuels and replacing them with alternative sources of green energy. The action is taken in the following ways: 1) by educating and building awareness through students on sustainable environment, 2) by promoting and motivating travelling by public transport, 3) by planting more trees by conducting plantation drives and tree adaptation drives, 6) promoting the use of non-plastic bags, utensils etc. and 7) maintaining an eco-club that conducts activities on the environment through different platforms and in different ways.

In addition, SRCASW has been cultivating sustainable practices and maintaining green infrastructures by installing solar panels, enhancing green cover, maintaining water harvesting units, composting pits, organic manure, and mushroom cultivation. It is further working towards increasing the number of solar panels in the college, which will replace grid electricity. The college has a massive green cover that contains around 400 trees and several herbs of different species and varieties. This includes ornamental trees, fruit trees, timber trees and several local varieties. The herbal varieties include several medicinal plants and herbs. The list is given below, table 5.1. The college has been acknowledged and awarded with several awards, that speak about its practices to build a sustainable environment.

Table 5.1. List of categories of different species of plants on the campus.

S.No	Scientific name (genus_species)	Common name
FRUIT TREES		
1	Amla (आंवला)	<i>Phyllanthus emblica</i>
2	Bael (बैल)	<i>Aegle marmelos</i>
3	Banana (के ला)	<i>Musa acuminata</i>
4	Ber (बेर)	<i>Ziziphus mauritiana</i>

5	Black Plum (जामुन)	<i>Syzygium cumini</i>
6	Carambola (कमरख)	<i>Averrhoa carambola</i>
7	Fig (अंजीर)	<i>Ficus carica</i>
8	Guava (अमरूद)	<i>Psidium guajava</i>
9	Mango (आम)	<i>Mangifera indica</i>
10	Orange (संतरा)	<i>Citrus aurantium</i>
11	Papaya (पपीता)	<i>Carica papaya</i>
12	Pomegranate (अनार)	<i>Punica granatum</i>
13	Pomelo (चकोतरा)	<i>Citrus maxima</i>
14	Sapota (चीकू)	<i>Manilkara zapota</i>
15	Shahtoot (शहतूत)	<i>Morus alba</i>
16	Sweet Lemon (मौसंबी)	<i>Citrus limetta</i>
17	ORNAMENTAL TREES/PLANTS	
18	Amaltas (अमलतास)	<i>Cassia fistula</i>
19	Araucaria (क्रिसमस ट्री)	<i>Araucaria columnaris</i>
20	Ashoka (अशोक)	<i>Polyalthia longibolia</i>
21	Banyan (वटवक्षु)	<i>Ficus Benghalensis</i>
22	Bamboo (बांस)	<i>Bambusa Vulgaris</i>
23	Bauhinia (आर्कि ड)	<i>Bauhinia tomentosa</i>
24	Bottle Brush (बोतल ब्रश)	<i>Callistemon</i>
25	Bottle Palm (बोतल पाम)	<i>Hyophorbe lagenicaulis</i>
26	Butter Fly Palm (एररका पाम)	<i>Dypsis lutescens</i>
27	Champa (चम्पा)	<i>Magnoliaceae champaca</i>
28	Chapman (ओक)	<i>Quercus chapmanii</i>
29	Drumstick (सहजन)	<i>Moringa oleifera</i>
30	European Fan Palm (खजरू)	<i>Chamaerops humilis</i>
31	Gulmohar (गुलमोहर)	<i>Delonix regia</i>
32	Kadam (कदम्ब)	<i>Neolamarckia cadamba</i>
33	Neem (नीम)	<i>Azadirachta indica</i>
34	Peepal (पीपल)	<i>Ficus religiosa</i>
35	Philippine Fig (अंजीर)	<i>Ficus pseudopalma</i>
36	Sago Palm (साइकस पाम)	<i>Cycas revoluta</i>
37	Shisham (शीशम)	<i>Dalbergia sissoo</i>
	HERBS AND SHRUBS	
38	Alstonia (सप्तपर्ि)	<i>Alstonia scholaris</i>
39	Bougainvillea (बोगनवेसलया)	<i>Bougainvillea glabra</i>
40	Chandani (चांदनी)	<i>Tabernaemontana divaricata</i>

41	Croton (क्रोटेन)	<i>Codiaeum variegatum</i>
42	Curry Patta (कडिपत्ता)	<i>Murraya koenigii</i>
43	Cycas Palm (साइकस पाम)	<i>Cycas revoluta</i>
44	Dracena (ड्राससना)	<i>Dracaena reflexa</i>
45	Fish Tail (फिशटेल ताड़)	<i>Caryota urens</i>
46	Furcraea (फुकेररया)	<i>Furcraea foetida</i>
47	Fycas Star Light (फाइकस स्टार लाइट)	<i>Ficus benjamina</i>
48	Golden Bottle Brush (गोल्डन बॉटल ब्रश)	<i>Melaleuca bracteata</i>
49	Hamelia (हमेसलया)	<i>Hamelia patens</i>
50	Harsingar हरससंगार (पाररजात)	<i>Nyctanthes arbortristis</i>
51	Hibiscus (गुड़हल)	<i>Hibiscus rosa-sinensis</i>
52	Jamican Sago (जमीकन सैगो)	<i>Zamia furfuracea</i>
53	Jasmine (चमेली)	<i>Jasminum aureum</i>
54	Kachnar (कचनार)	<i>Bauhinia variegata</i>
55	Kochia (कोचिया)	<i>Kochia scoparia</i>
56	Lemon Grass (लेमनग्रास or गंधत्रिण)	<i>Cymbopogon citratus</i>
57	Money Plant (मनी प्लांट)	<i>Epipremnum aureum</i>
58	Phycus Panda (फाइकस पांडा)	<i>Ficus retusa</i>
59	Sago Palm (सैगो पाम)	<i>Gleditsia triacanthos</i>
60	Syngonium (ससंगोननयम)	<i>Syngonium podophyllum</i>
61	Tecoma (ट्रम्पेट बुश)	<i>Tecoma stans</i>

SRCASW strongly adheres to its goal to become a *carbon-neutral* campus. Figure 5.1. shows different potential areas where SRCASW is working to reduce and minimize its carbon footprint, and ultimately become a carbon-neutral campus.

The strategy is by implementing the step-wise-step process of commitment, counting and analysis, action, reduction, offset, evaluation, and repeating the whole process.

Commitment, towards becoming carbon-neutral, and achieving carbon-neutral goals.

Counting and Analysis, of the total resource consumption by compiling an inventory using a GHGs calculator, and emission factors.

Action, in starting to work towards GHG neutrality.

Reduction, by focusing on limiting energy usage in the form of, transportation, and electricity, and minimizing waste generation.

Offsetting, by neutralizing the volume of GHGs through funding projects supporting solar panel installation, biogas plants, and rainwater harvesting.

Evaluation and repeating, of the results, and targets, and compiling the list of suggestions, and improvements.

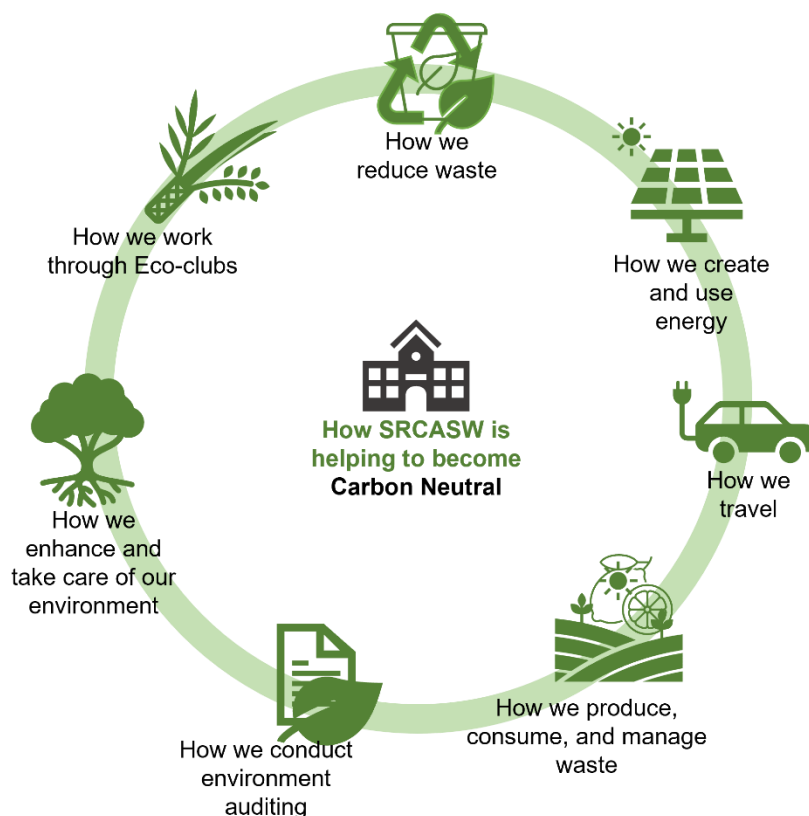


Fig 5.1 Different areas where SRCASW is working to become carbon-neutral.

Thus, it can be concluded that all the indicators of the environmental audit report were properly studied and information about the indicators was collected, analyzed and followed with the conclusions, recommendations and solutions.

6. Awards for Environment Sustainability

On January 31 2022, a visit conducted by the officials from the Mahatma Gandhi National Council of Rural Education (MGNCRE), Ministry of Education, Government of India assessed the institute on five parameters under the Swachhta Action Plan project. These were: 1) Sanitation and hygiene, 2) Water management, 3) Energy management, 4) Solid waste management, and 5) green cover. The college was recognized for carrying out the '*largest plantation drive*' in higher educational institutes across the northern zone. In addition, the college was recognized for its holistic approach toward spreading awareness, influencing and sensitizing various stakeholders on cleanliness, resource management, energy-efficient practices, and promoting environmentally sustainable practices. It was awarded the *Green District Champion* in the east district of Delhi and *Best Sustainable Campus* awards in Delhi.

7. Resources

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EPA 430-R-02-003 (Washington, D.C., April 2002); <http://www.epa.gov/oppeoee1/globalwarming/publications/emissions/us2002/index.html>.

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