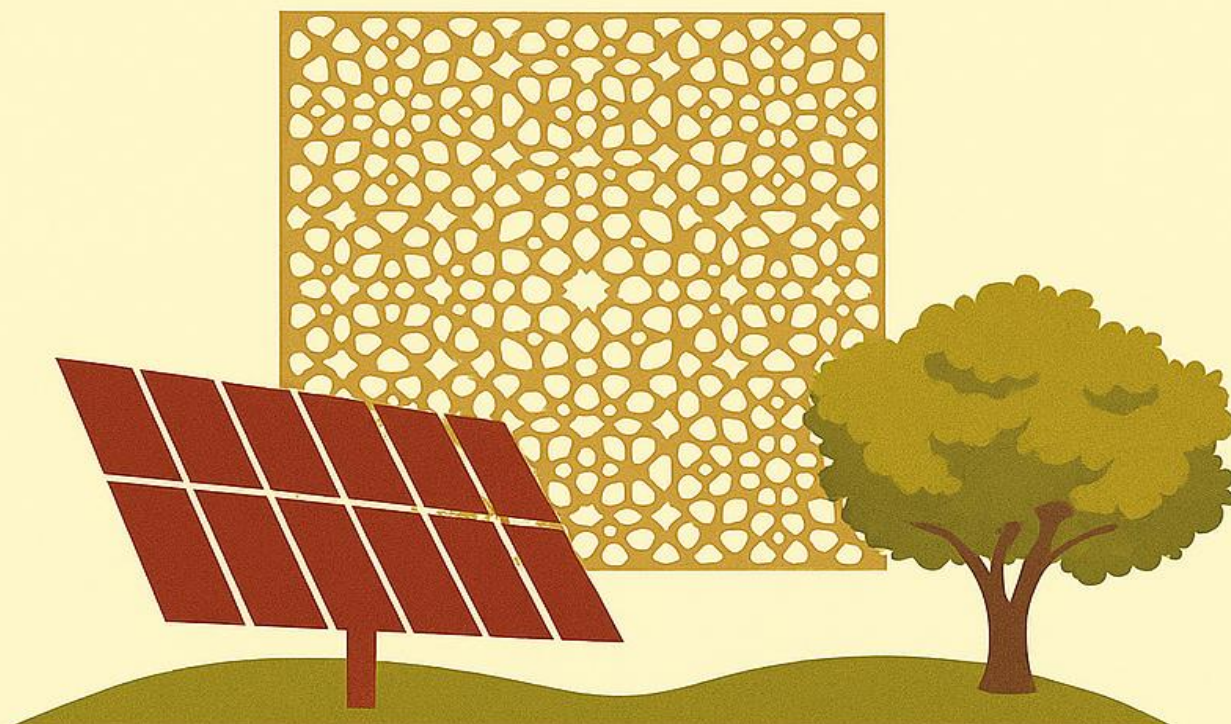




ASHOKA UNIVERSITY SUSTAINABILITY REPORT 2024



REPORT STRUCTURE

The Environmental Sustainability team at Ashoka University's Special Projects team have come up with a range of policies and projects to address an array of sustainability issues. This report provides an overview of the progress made in the core areas covered by our team up to December 2024.

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**REDUCE
REUSE
RECYCLE**



INTRODUCTION:

Ashoka University: Pioneering Liberal Education with a Purpose-Driven Commitment to Sustainability

Ashoka University stands at the forefront of liberal education in India, offering an academic experience that matches global standards. Our mission is to nurture well-rounded individuals who not only think critically and communicate effectively but who also emerge as ethical leaders dedicated to public service and societal well-being.

Academic excellence at Ashoka goes hand-in-hand with environmental stewardship. We are committed to equipping our students for successful social and professional futures while fostering a deep sense of environmental responsibility across our entire community—including students, faculty, and staff.

As a progressive institution, we recognize that our planet is undergoing rapid transformation. Our shared responsibility is to guide that change in a positive direction. Though many challenges threaten our environment, the power to make a difference lies with each of us. At Ashoka, we empower our community to take actionable steps towards a more sustainable future.

We align our vision with the United Nations' 17 Sustainable Development Goals (SDGs)—a global blueprint to address the most urgent issues facing humanity and the natural world. As an university, we are uniquely positioned to contribute through research, innovation, and education that drives meaningful impact and intensively. In support of the 2030 Agenda for Sustainable Development, Ashoka has initiated tangible steps, including measuring our carbon footprint and setting clear sustainability objectives.

While national efforts toward environmental protection continue to grow, Ashoka University has been continuously embracing sustainability not just as a policy but as a core moral imperative. Our guiding philosophy—Reduce, Reuse, Recycle—is integrated into our infrastructure, systems, and daily practices, making sustainability a lived value on our campus.

As a pioneer in liberal education, we are equally committed to leading in environmental consciousness. Through adaptive systems, eco-friendly infrastructure, and a culture of continuous improvement, Ashoka University strives to set new benchmarks in institutional sustainability and this reflects in the QS ranking 2024, a worldwide recognized institution.

This report outlines the key milestones, initiatives, and progress we have made in 2024 toward building a greener, more resilient future. We at Ashoka are continuously celebrating our commitment to sustainability of our planet.



Vice President
Special Projects
Ashoka University

B. K. Mishra

While the government continues to lead with a range of sustainability initiatives, Ashoka University has proactively aligned itself with this national agenda by embarking on its own journey toward environmental stewardship. We have taken measurable steps—such as assessing our carbon footprint and setting tangible sustainability goals—to ensure our operations reflect our deep commitment to ecological responsibility. Beyond compliance, we view this as a moral imperative, embedding sustainability into the very ethos of our institution.

Message from the Vice President Special Projects

The journey toward sustainability is a collective responsibility—one that universities are uniquely positioned to lead. With their diverse communities, academic influence, and societal reach, institutions of higher learning have a pivotal role in shaping a more sustainable and equitable future.

At Ashoka University, sustainability is not just an ambition; it is a core value embedded in our institutional fabric. It informs our governance, research, curriculum, and Campus operations. Since 2022, we have been documenting our progress through annual Sustainability Reports, reaffirming our long-term commitment to environmental stewardship and social responsibility.

Our Sustainable Development Reports for 2024 highlight key initiatives—from reducing our carbon footprint to integrating sustainability across academic and operational frameworks. These efforts reflect a strategic and holistic approach to building resilient systems that can adapt to global challenges while nurturing environmentally conscious leaders of tomorrow.

We are deeply grateful to our faculty, students, staff, and partners for their continued engagement and contributions. I would like to express special appreciation to Mr. Narender Malik, our EHS Manager, whose leadership has been instrumental in driving the sustainability agenda forward.

Together, we remain committed to leveraging education as a force for lasting environmental and societal progress.



Mr. B. K. MISHRA
VICE PRESIDENT
SPECIAL PROJECTS

Message from the EHS Manager

As the Environmental Health and Safety (EHS) Manager, I take great pride in contributing to our institution's ongoing journey toward sustainability. We have been consistently documenting our progress through annual Sustainability Reports, reflecting our unwavering commitment to building a greener, safer, and more responsible campus environment.

Our approach is comprehensive—embedding sustainability into our infrastructure, operations, and community practices. From energy efficiency and waste management to water conservation and carbon footprint reduction, every initiative is designed to create long-term environmental impact while ensuring regulatory compliance and safety standards.

These achievements are the result of strong collaboration among faculty, staff, students, and external partners. As we move forward, we remain focused on strengthening our sustainability practices and aligning with global standards to contribute meaningfully to environmental and social well-being.

Together, we continue to build a campus that not only educates but also leads by example.



Mr. NARENDER MALIK
EHS MANAGER



CAMPUS OVERVIEW



Ashoka University's master plan for sustainability is designed with all-natural elements and environmental aspects in mind. Most of the academic buildings have an eco-friendly design with open corridors.

The idea behind the inception of the University was to bring the best-in-class education to India. The same ideology echoes in the design of the campus. The University has been designed using the best global trends in architecture, with special emphasis on sustainability.



The campus is structured around two concentric rings. The inner ring with academic buildings encircles a central academic quadrangle and has low-rise buildings to facilitate easy movement between classes. Surrounding this inner ring is an outer ring consisting of student and faculty housing, arranged in courtyard clusters to create cosy residential spaces. This layout brings academic and residential life into close proximity, facilitating a seamless transition between classes and housing.

There is a sports yard towards the west, serving as a hub for student recreation with play courts and casual dining options. This design helped in creating a vibrant campus where learning is integrated into everyone's daily experience, both formally and informally.

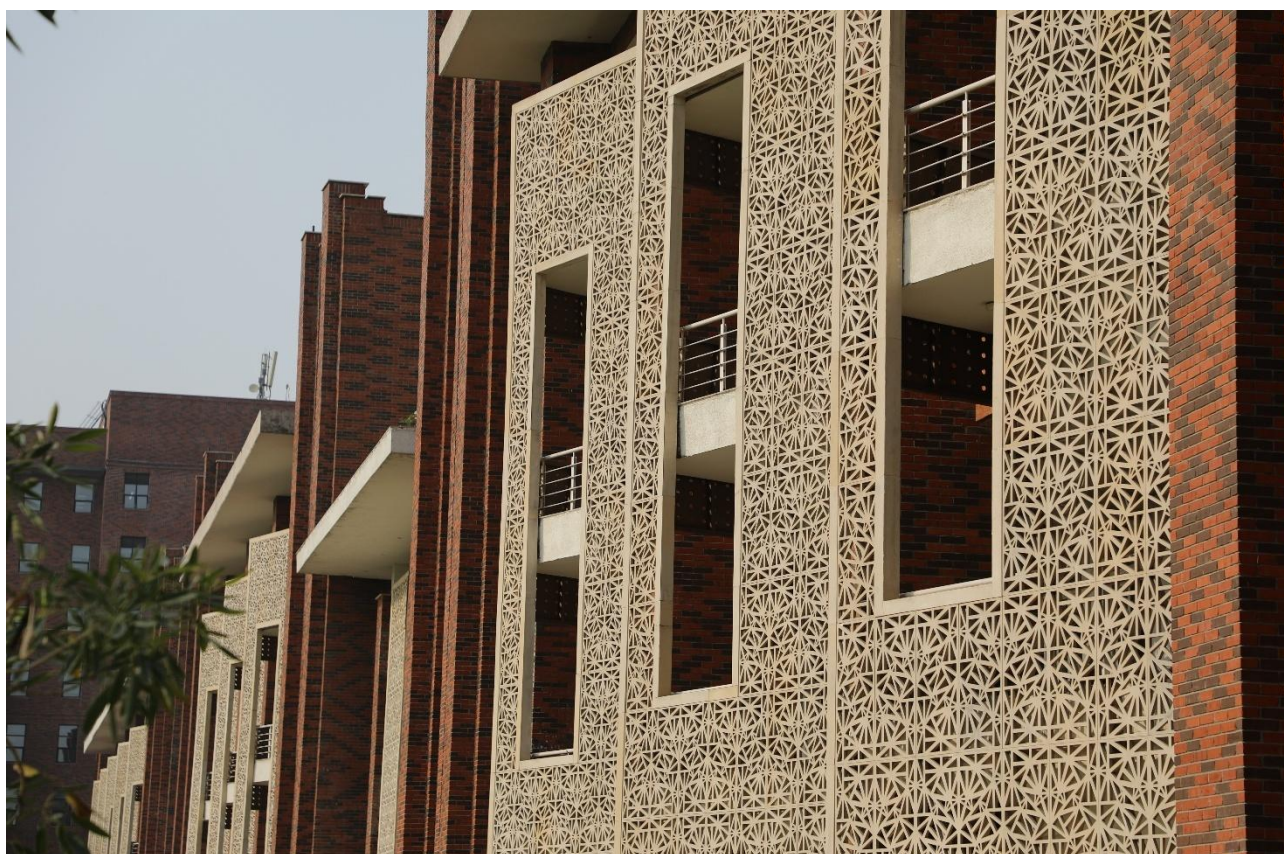


Sustainability is an integral part of the campus design with buildings having outdoor corridors, natural ventilation in common areas, the use of 'jaali', sun shades, and other passive features in addition to technologically advanced building systems. The building design has a double-wall structure with brick cladding and AAC blocks that reduce heat transfer to the interior. The beautiful 'jaali' design brings ample daylight to interior spaces. The stone jaali is vital in cutting glare and providing diffused light. The 'jaali' design has become synonymous with Ashoka, making it a vital part of the University.

The campus premises provide ample spaces for large events, and group activities as well as quieter nooks for some tranquillity. The campus layout has made it a biodiversity hotspot which can be seen with changing foliage over seasons.

Buildings designed with open corridors enable the use of natural ventilation and light.





Species wise no. of Trees

S.No.	Common Name	Botanical Name	Nos
1	Orchid Tree (Kachnar)	<u>Bauhinia blakeana</u>	294
2	Golden Shower (Amaltas)	<u>Cassia fistula</u>	7
3	African Wattle	<u>Peltophorum africanum</u>	71
4	Champa (White Frangipani)	<u>Plumeria alba</u>	180
5	Earpod Wattle	<u>Acacia auriculiformis</u>	9
6	Bakain	<u>Melia azedarach</u>	58
7	Jarul	<u>Lagerstroemia speciosa</u>	2
8	Coral Tree	<u>Erithrina indica</u>	102
9	Neem	<u>Azadirachta indica</u>	12
10	Desi Babool	<u>Acacia nilotica</u>	6
11	Bel pathar	<u>Aegel marmelos</u>	3
12	Siris	<u>Albizia lebbeck</u>	4
13	Bistendu	<u>Diospyros cordifolia</u>	12
14	Dhau	<u>Anogeissus pendula</u>	135
15	Peelu	<u>Salvadora persica</u>	15
16	Putranjiva	<u>Drypetes roxburghii</u>	23
17	Kaim	<u>Mitragyna parviflora</u>	2
18	Kanar	<u>Bauhinia purpurea</u>	2
19	Chikrassy	<u>Chukrasia tabularis</u>	120
20	Sonjna	<u>Moringa oleifera</u>	12
21	Kamrakh	<u>Averrhoa carambola</u>	4
22	Gulmohar	<u>Delonix regia</u>	41
23	Tabebuia	<u>Tabebuia argentia</u>	7
24	Tabebuia	<u>Tabebuia rosea</u>	5
25	Jacaranda	<u>Jacaranda mimosifolia</u>	2
26	Jamun	<u>Syzygium cumini</u>	4
27	Pilkhan	<u>Ficus virens</u>	62
28	Kusum	<u>Schleichera oleosa</u>	1
29	Ashoka	<u>Saraca indica</u>	6
30	Millettia	<u>Millettia sp.</u>	2
31	Goondi	<u>Cordia gharaf</u>	6
32	Anjan	<u>Hardwickia binata</u>	5
33	Jhinjiri	<u>Bauhinia racemosa</u>	4
34	Mango	<u>Mangifera indica</u>	4
35	Guava	<u>Psidium guajava</u>	3
36	Ficus	<u>Ficus benjamina</u>	341
37	Ficus	<u>Ficus krishnae</u>	1
38	Pomegranate	<u>Punica granatum</u>	29
39	khara jaal	<u>Salvadora persica</u>	20

40	meettha jaal	<i>Salvadora oleoides</i>	4
41	peelvaan	<i>Cocculus pendulus</i>	6
42	daab grass	<i>Desmostachya bipinnata</i>	150
43	roheda	<i>Tecomella undulata</i>	6
44	shami	<i>Prosopis cinerarea</i>	7
45	sargooro	<i>Moringa concanensis</i>	5
46	Silver Oak	<i>Grevellia robusta</i>	48
47	Firangipani	<i>Plumeria rubra</i>	18
48	Harshringar	<i>Nyctanthus arbortristis</i>	15
49	Bamboo	<i>Bambusa vulgaris</i>	20
50	indrokh	<i>Anogeissus nummularia</i>	4
51	anjan	<i>Hardwickia binata</i>	5
52	Thevetia	<i>Thevetia peruviana</i>	5
53	Shrish	<i>Delbergia sisso</i>	1
54	Amla	<i>phyllanthus emblica</i>	8
Total			1918



Glimpses of greenery on Campus





We have an in-house nursery which is managed by a skilled team of gardeners. Currently, we grow approximately 6,000 varieties of trees and plants every year.

We have an automated irrigation system in the nursery section wise which we control through a program that also runs on mobile and thus can be remotely managed.



The photographs above feature our dedicated horticulture team—custodians of Ashoka University's lush and vibrant landscape. Through their expertise and unwavering commitment, they ensure that our Campus remains green, thriving, and in harmony with nature, contributing significantly to our sustainability goals.



ENVIRONMENT POLICY

Ashoka University (AU) is committed to maintaining, and wherever possible, improving the quality of its environment, both for the people who live and work in the University and for the wider community.

Scope

The Environmental Policy is applicable throughout the evolution of academic curriculum, extracurricular activities, and services, encompassing every phase of their lifecycle — a cradle-to-grave assessment. It extends to both the inception and ongoing operations of processes and services, encompassing both new initiatives and existing ones.

Implementation

A. In implementing the Environment Policy, AU will:

- Use standards of environmental safety, which are scientifically sustainable and commonly acceptable.
- Review and continuously improve processes, performance of services and operations as measured by their environmental impact.
- Work in cooperation with members of the fraternity, government agencies, relevant environmental bodies, suppliers, transporters, caterers and service providers to promote the achievement of high standards in environmental care.
- Promote responsibly and showcase real advantages it has achieved without making false or misleading claims on environmental protection.

B. AU undertakes:

- To appoint and empower a member of AU to oversee all environmental matters and to manage relevant communication both internally and externally.
- To analyse the University's environmental footprint and initiate changes necessary to improve the University's environmental performance.
- To comply with all local and national environmental laws and regulations.
- To comply with all government guidelines and codes of practice.
- To operate the best practices in accordance with guidelines produced by AU or an appropriate body.
- To cooperate and interact with national and local authorities concerned with the protection of the environment.
- To operate the University in a manner which demonstrates awareness of the nature and extent of the impact on the environment.
- To maintain effective procedures, to prevent environmental incidents.
- To maintain procedures enabling quick response in the event of a hazardous accident, thereby minimising environmental damage or nuisance.
- To maximise the energy efficiency of processes, thereby minimising the emission of carbon dioxide and CDe (SOx, NOx,) and safely discharging them, monitoring COD, and BOD, to maintain the ecosystem.
- To fully assess the environmental impact of new processes completely at the design stage.
- To obtain raw materials of precise chemical composition from material suppliers to design

good disposal techniques after its end-use. This procedure prevents the disposal of even trace quantities of material which may be harmful to the environment.

- To recycle waste or recover economically useful materials from waste as far as is reasonably practicable.
- To provide appropriate training for user groups, emphasizing individual responsibilities for sound environmental management.
- To carry out internal audits to demonstrate compliance with policy and local and national regulations.
- To maintain procedures for the investigations of all environmental incidents, requests and complaints and to take reasonably practicable action (wherever possible) to prevent or minimize its recurrence.
- To practice good housekeeping which is fundamental for a sound environmental management system.

C. The Policy will be implemented at the operating level. The overall responsibility for implementation and maintaining standards of the Environment Policy rests with the Safety Officer. S/He will:

- Take steps to protect the environment through continuous improvement in the environmental impact of AU operations.
- Meet or exceed the requirement of legislation.
- Increase environmental awareness by appropriate training of user groups.
- Ensure that in the implementation of the policy, AU is able to call upon expertise available from suitable specialists within or outside the University campus.

All individuals have specific responsibility for the implementation of the policy in areas of their control. They are required to ensure that all activities are conducted in a responsible manner, which is compatible with the objectives of the AU Environment Policy.

All individuals have a duty to observe rules and practices, which apply to the job or work area in which they are employed, and to report any faults or malpractice to their immediate supervisor. They should be aware of any action which may have an effect on environmental issues and at all times must cooperate with AU to ensure that legal requirements, the Environmental Policy and internal procedures are satisfied.

03rd July, 2024



Vice President
Special Projects
Ashoka University

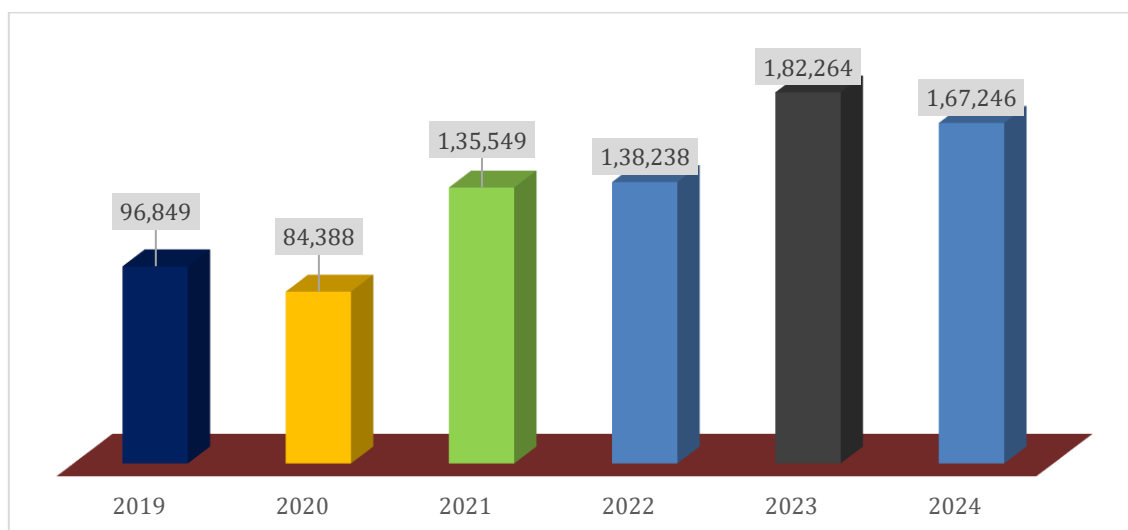

WATER MANAGEMENT

Water requirements on the campus are met through the HUDA water supply system. We actively monitor the actual consumption of water through various methods. Water meters have been installed in all buildings to monitor the amount of water being used for activities like irrigation, laundry etc.

It has been made mandatory to value every drop of water and avoid wastage at Ashoka University. Being a sustainable University, we are putting our best foot forward for water conservation by adopting the policy to reduce, reuse, and recycle. We have put a robust system in place to ensure the judicious use of water.

- Ashoka established a sustainable irrigation system in the first phase of construction and will be expanding it to the subsequent phases.
- We use Sewage Treatment Plant (STP) water for irrigation.
- The University deploys adequate preventive, predictive, and routine maintenance systems with skilled manpower in place to ensure the efficient working of the water system and ensure there are no water leakages.

Water Intake on Campus Over the Years in KL (HUDA Supply)

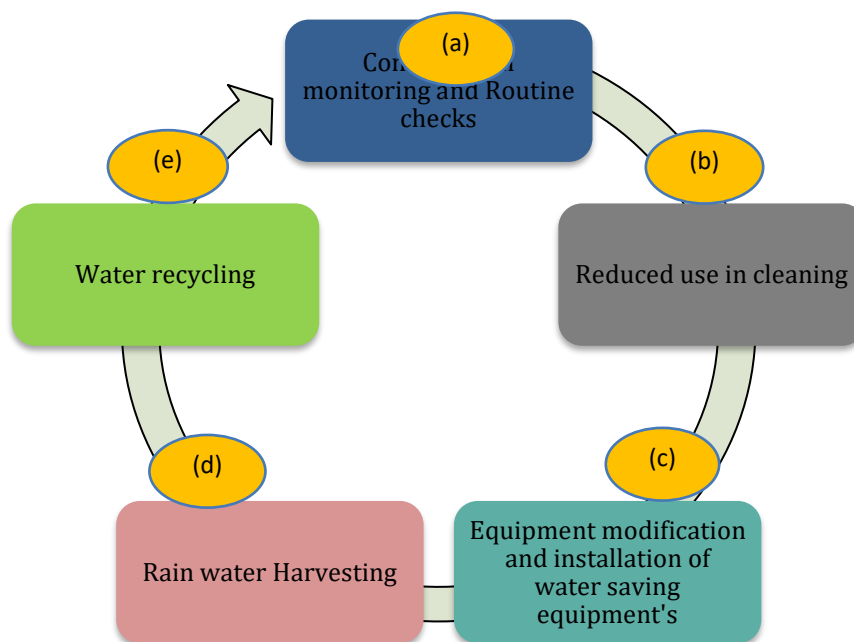


What does 1,67,246 Kilo liters (Year 2024) of water usage look like. Translated into rainfall, one acre inch of rainfall means that 113,310 litres of water through rainfall over 24 hours on one acre of land. Thus, in our case, we have 1476 one-acre inches. As an example, Sonipat receives 373.9 mm of rainfall p.a., or 14.95 inches of rainfall. In other words, 98.69 acres of land would be irrigated with this water in the state of Haryana annually.

Understanding the above through cropping in Sonipat, one acre would grow 1915 kg of wheat and 1345 kg of paddy per annum. This would mean, from the water being used by us, 1,88,991 kg of wheat and 1,32,738 kg of paddy would have been grown. Or a total of 3,21,729 kg (6,435 fifty kg bags or 36 trucks of food grains, @9 tons each) of grains could potentially be raised from 1,67,246 Kilo litres of water used at AU. The alternatives around this could also be explored such as dry cleaning, air curtains, wastewater treatment and recharging or reusing. We are now evaluating installation of separate meters for drinking - cooking, separate for horticulture, flushing, cleaning and washing purpose.

Water Conservation Measures:

Ashoka understands its responsibility for ensuring the judicious use of water, hence we have undertaken various measures to reduce water wastage.



- a) A well-calibrated water flow meter has been installed at sources and building level to measure and evaluate the water consumption for the day/month. Building-wise daily water consumption is being monitored along with monitoring of the water utilised for various other activities.
- b) We have reduced water usage for cleaning purposes. Our housekeeping team is equipped with specialised cleaning machines which not only require less effort in comparison to manual cleaning, but also require less water.



We also use the treated water from the sewage treatment plant to clean the solar panels as and when required.



- c) i) Taps are fitted with water aerators for regulating the flow of water to reduce the required flow of water from taps to level, which is sufficient enough as per requirement, which in turn reduces water usage. Efficient and less water-consuming faucets/showers have been installed across all the washrooms inside the Campus.



BEFORE



AFTER

- ii) Sensor-based urinals have been set up for the regulated flow of water.

iii) The irrigation system design allows us to save water without any wastage. Our sprinkler water system allows uniform distribution of water with high efficiency. Loss of water is minimal.

- d) Rainwater Harvesting:

There are 15 rainwater harvesting pits built up within the campus to replenish the groundwater. Regular maintenance work is carried out to ensure these pits work efficiently.

Each zone has one harvesting pit with a de-silting chamber. Through these pits, harvested water is fed into the ground, which helps in retaining the groundwater level.

- e) i) Ashoka has two STP plants (100KLD and 300KLD) to treat sewage and make it fit for safe usage. Wastewater treatment frees scarce freshwater resources for other uses or conservation. Treated water is currently being utilized for irrigating the landscape and cleaning solar panels. Furthermore, we have planned to use STP-treated water for flushing purposes and construction activities. All wastewater generated from buildings/messes and other sources is collected and treated in our sewage treatment plants (STP) according to the parameters set by the Central Pollution Control Board and is used within the Campus for irrigation, and treated water is periodically tested by NABL accredited labs for confirmation to approved norms/values and our readings have been confirming to the standards"

We are also in the process of utilizing the treated water of STP in our toilets for flushing through dual coupling.

Our STP plants use the latest technology for treatment - the MBBR system.

Furthermore, being a Sustainable University, other than treating waste water through STP, and ETP, we additionally handover all other hazardous wastes generated on Campus such as e-waste, lubes, oil filters etc, to the authorized HSPCB partners.



Treated water is tested for the prescribed limits as per EP Act. 1986 for the following parameters:

1	2	3	4	5
PH	Total suspended solids	Chemical Oxygen demand	Biochemical Oxygen demand, 3 days at 27-degree C	Oil & Grease

Test Report for the Sewage Water Sample- Before Treatment



Vardan Envirolab LLP

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (HR)
ISO 9001 | ISO 14001 | ISO 45001



Test Report

Page No. 1/1

Sample Number : VEL/PE/03

Name & Address of the Party : M/s Ashoka University

Plot No-2, Rajiv Gandhi Education City, Rai Sonipat,
(Haryana)

Report No. : VEL/PE/2412020006

Format No : 7.8 F-03

Party Reference No : By Mail

Reporting Date : 07/12/2024

Period of Analysis : 02/12/2024-07/12/2024

Receipt Date : 02/12/2024

Sampling Date : 02/12/2024

Sampling Quantity : 2.0 Ltrs.

Sampling Type : Grab

Name of Sample : WASTE WATER (STP Inlet)

Sample Group : Pollution & Environment

Location : STP Plant (300 KLD)

Sample Collected By : VEL Representative (Mr. Ashish)

Environmental Condition : 25±2°C

Sampling and Analysis Protocol : IS, APHA & STP

S.No.	Test Parameters	Test Method	Result	Unit
Discipline : Chemical				
1	pH at 25°C	IS 3025 (P-11):2022 (Using Electrode)	7.41	--
2	Total Suspended Solids at 105°C	IS 3025 (P-17) :2022 (Gravimetric Method)	750.21	mg/L
3	Oil & Grease	IS:3025 :P-39:2021(Gravimetric Method)	7.21	mg/L
4	Biochemical Oxygen Demand (3 Days at 27°C)	IS 3025 (Part -44):2023	524.00	mg/L
5	COD at 150°C	APHA 24th Edition 2023 , 5220 B Open Reflux Method	1151.00	mg/L

End of Report

Reviewed By

Ashish
07/12/2024

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Test Report for the Sewage Water Sample -After Treatment



Vardan Envirolab LLP

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (HR)
ISO 9001 | ISO 14001 | ISO 45001



Test Report

Page No. 1/1

Sample Number : VEL/PE/04

Name & Address of the Party : M/s Ashoka University

Plot No.-2, Rajiv Gandhi Education City, Rai Sonipat,
(Haryana)

Report No. : VEL/PE/2412020007

Format No : 7.8 F-03

Party Reference No : By Mail

Reporting Date : 07/12/2024

Period of Analysis : 02/12/2024-07/12/2024

Receipt Date : 02/12/2024

Sampling Date : 02/12/2024

Sampling Quantity : 2.0 Ltrs.

Sampling Type : Grab

Packing Status : OK

Name of Sample : WASTE WATER (STP Outlet)

Sample Group : Pollution & Environment

Location : STP Plant (300 KLD)

Sample Collected By : VEL Representative (Mr.Ashiesh)

Environmental Condition : 25±2°C

Parameter Required : As Per Work Order

Sampling and Analysis : IS, APHA & STP

Protocol

S.No.	Test Parameters	Test Method	Result	Unit	Limits As Per HSPCB
Discipline : Chemical					
1	pH at 25°C	IS 3025 (P-11):2022 (Using Electrode)	7.62	--	5.5 - 9.0
2	Total Suspended Solids at 105°C, Max	IS 3025 (P-17) :2022 (Gravimetric Method)	BLQ(LOQ-1.0)	mg/L	20.0
3	Oil & Grease	IS:3025 :P-39:2021(Gravimetric Method)	BLQ(LOQ-4.0)	mg/L	--
4	Biochemical Oxygen Demand (3 Days at 27°C), Max	IS 3025 (Part -44):2023	BLQ(LOQ-2.0)	mg/L	10.0
5	COD at 150°C, Max	APHA 24th Edition 2023 , 5220 B Open Reflux Method	6.00	mg/L	50.0

BLQ-Below Limit of Quantification, LOQ- Limit of Quantification

End of Report

Reviewed By

Ashok
07/12/2024

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Authorized Signatory
[Signature]

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ii) Two ETP plants each with a capacity of 5KLD have been installed to treat the discharged water from laundry. ETP-treated water is then fed into the STP where it is further utilised as mentioned earlier, for landscaping, solar panel washing etc.

Test Report for the ETP Water Sample- Before Treatment.



Vardan Envirolab LLP

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (HR)
ISO 9001 | ISO 14001 | ISO 45001



Test Report

Page No. 1/1

Sample Number : VEL/PE/01
Name & Address of the Party : M/s Ashoka University
Plot No-2, Rajiv Gandhi Education City, Rai Sonipat,
(Haryana)

Report No. : VEL/PE/2412020004
Format No : 7.8 F-03
Party Reference No : By Mail
Reporting Date : 07/12/2024
Period of Analysis : 02/12/2024-07/12/2024
Receipt Date : 02/12/2024
Sampling Date : 02/12/2024
Sampling Quantity : 2.0 Ltrs.
Sampling Type : Grab

Name of Sample : WASTE WATER (ETP Inlet)
Sample Group : Pollution & Environment
Location : ETP Plant
Sample Collected By : VEL Representative (Mr.Ashish)
Environmental Condition : 25±2°C
Sampling and Analysis Protocol : IS,APHA & STP

S.No.	Test Parameters	Test Method	Result	Unit
Discipline : Chemical				
1	pH (at 25°C)	IS:3025 (P-11):2022(Electrode Method)	7.52	--
2	Total Suspended Solids at 105°C	IS: 3025 (F-17):2022(Gravimetric Method)	265.10	mg/L
3	Oil & Grease	IS:3025 (P-39):2021(Gravimetric Method)	4.10	mg/L
4	BOD (3 Days at 27°C)	IS:3025:Part-44: 2023	382.00	mg/L
5	COD, max	APHA, 24th Edition 2023, 5220 B Open Reflux Method	860.00	mg/L

End of Report

Reviewed By

(Signature)
07/12/2024

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Authorized Signatory
(Signature)
07/12/2024

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Test Report for the ETP Water Sample- After Treatment.



Vardan Envirolab LLP

Laboratory: Plot No. 82A, Sector - 5, IMT Manesar, Gurugram - 122051 (HR)
ISO 9001 | ISO 14001 | ISO 45001



Test Report

Page No. 1/1

Sample Number : VEL/PE/02
Name & Address of the Party : M/s Ashoka University
Plot No-2, Rajiv Gandhi Education City, Rai Sonpal,
(Haryana)

Report No. : VEL/PE/2412020005
Format No : 7.8 F-03
Party Reference No : By Mail
Reporting Date : 07/12/2024
Period of Analysis : 02/12/2024-07/12/2024
Receipt Date : 02/12/2024
Sampling Date : 02/12/2024
Sampling Quantity : 2.0 Ltrs.
Sampling Type : Grab

Name of Sample : WASTE WATER (ETP Outlet)
Sample Group : Pollution & Environment
Location : ETP Plant
Sample Collected By : VEL Representative (Mr. Ashlesh)
Environmental Condition : 25±2°C
Parameter Required : As Per Work Order
Analysis Protocol : IS, APHA & STP

S.No.	Test Parameters	Test Method	Result	Unit	GENERAL STANDARDS AS PER EPA-1986(Schedule-VI)		
					Inland Surface Water	Public Sewers	Land for Irrigation
Discipline : Chemical							
1	pH (at 25°C)	IS:3025 (P-11):2022(Electrode Method)	7.41	—	5.5 - 9.0	5.5 - 9.0	5.5 - 9.0
2	Total Suspended Solids,max	IS: 3025 (P-17):2022(Gravimetric Method)	7.00	mg/L	100.0	600.0	200.0
3	Oil & Grease,max	IS:3025 (P-39):2021(Gravimetric Method)	BLO(L.O.Q-4 0)	mg/l	10.0	20.0	10.0
4	BOD (3 Days at 27°C)	IS:3025:Part-44: 2023	8.00	mg/L	30.0	350.0	100.0
5	COD, max	APHA, 24th Edition 2023, 5220 B Open Reflux Method	110.00	mg/L	250.0	--	--

BLO-Below Limit of Quantification, LOQ-Limit of Quantification.

End of Report

Reviewed By

(Signature)
07/12/2024

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(Signature)
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Dr. Shiv Prakash Singh

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It may be worth noting that post STP and ETP treatment of effluents, the output is well within all prescribed norms and thus fit for use for the activities it is being used for.

Energy Management:

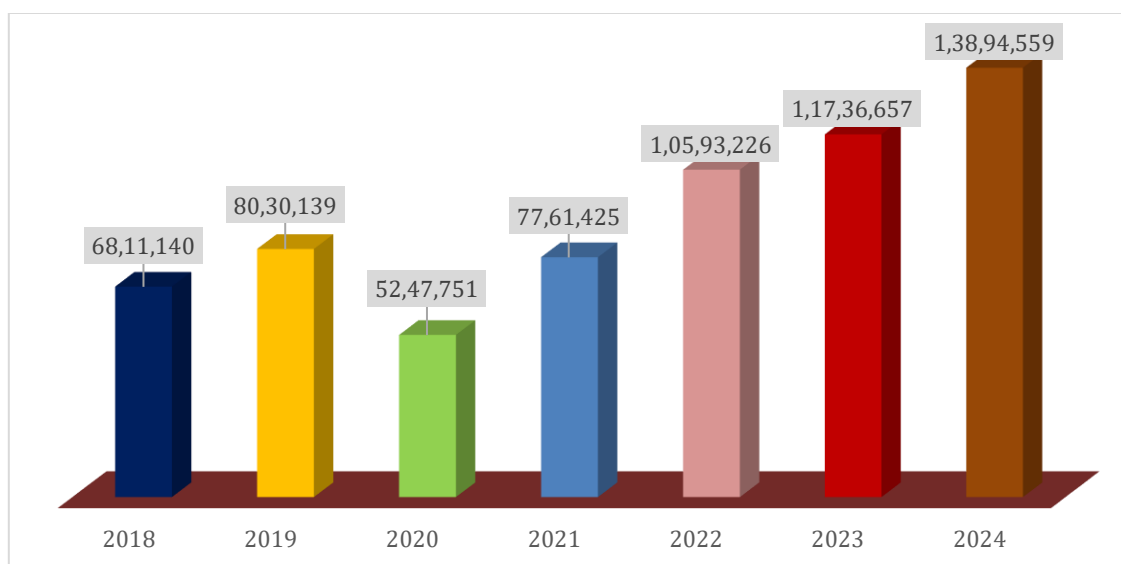


Ashoka University understands that the educational and research development requires significant dependence on natural resources including water and energy. To grow in a more sustainable and responsible manner, AU is committed toward decreasing dependence on the conventional source of energy and increasing the share of renewable energy in the energy mix, every year.

While we lay emphasis on adopting greener sources of energy, optimizing energy use is also a priority. Further, in our endeavour to move towards a greener growth path, we have adopted greener transportation alternatives to our Campus such as the use of metro by a large number of daily commuters and a CNG shuttle service. To lay a stronger emphasis on reducing emissions, we encourage our employees to carpool and use the metro. We have also implemented last-mile connectivity with the Shuttle service.

Energy saved equals energy produced. Therefore, significant energy savings can be achieved through conservation measures. These savings represent an additional energy source and contribute to reducing environmental pollution. Energy conservation also promotes human health, as pollution from energy sources can have harmful effects on the body. For instance, air pollution from fossil fuels can lead to conditions such as asthma, cancer, heart attack, heart diseases, and neurological disorders. Additionally, polluted water resulting from energy sources can cause various diseases. At Ashoka, we aim to reduce our reliance on conventional sources and transition to renewables like solar power. We've maximized solar energy utilization by harnessing all available surfaces, including rooftops and parking areas. While we've actively pursued offsite solar farms, pending government regulations necessitate awaiting review and final approval.

Total energy consumption (KWH)



Energy Sources at Ashoka



EB Distribution:

At Ashoka University the electric power is supplied from Uttar Haryana Bijli Vitran Nigam (UHBVN). The supplied voltage is of 11KV. These high voltages are stepped down to a low voltage using step-down transformers. The sanctioned load is 3MW. Ashoka University also maintains the power factor at 0.99 on each EB bill to reduce the power and energy losses in power lines and transformers. This is closely monitored.

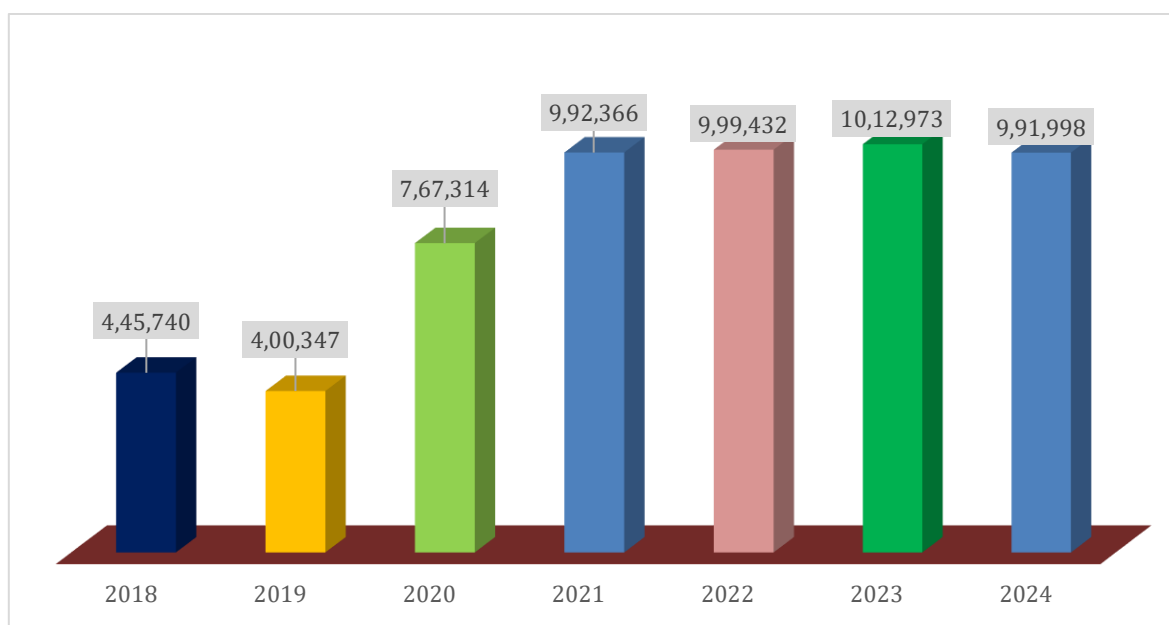
Power factor tracking for the year 2023:

At Ashoka, we have a separate building for the electric power distribution system called Service Block. The power distribution starts from the transformer, and we have 3 1500kva transformers which step down the high voltage to 440 volts. In the LT section, we have 4 sections which supply power to the entire campus. This LT panel has dedicated ACBs for all three transformers which provide all the necessary safety and protection to handle the fluctuating voltage.

Solar Energy:

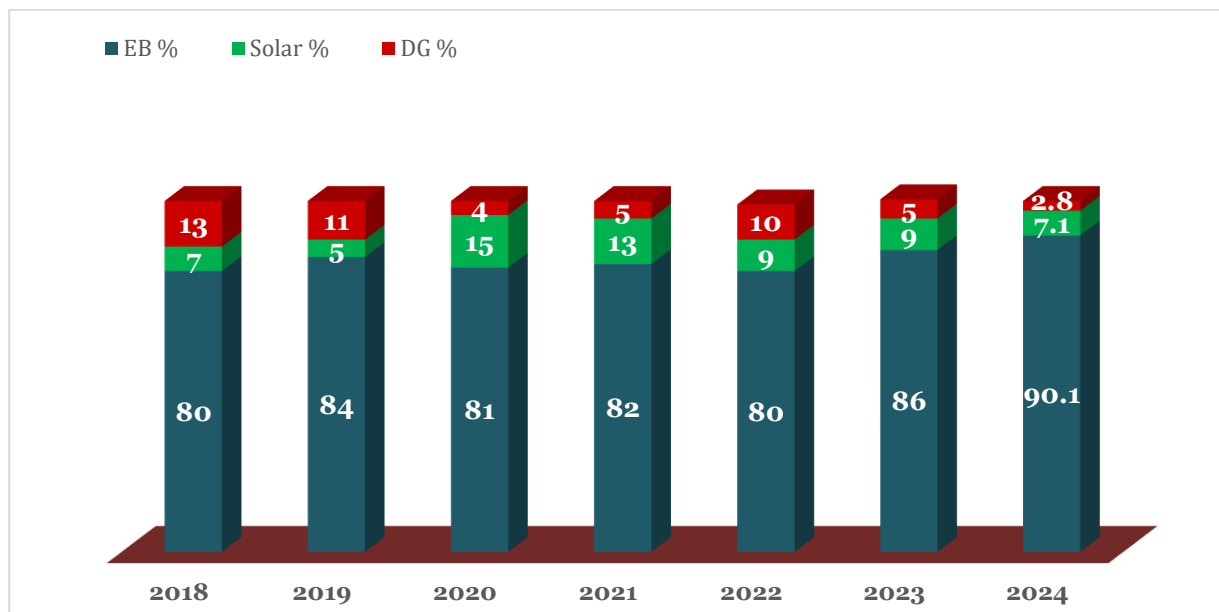
As we keep on expanding Y-o-Y, our energy requirements are also growing. At Ashoka, we are trying to reduce our dependency on conventional sources and move towards renewable sources like solar power. At present, we have installed 893 KW solar power as rooftop and carport through which we are able to generate approx. 13% of the power requirement of the entire campus.

Solar Energy Generation Over the Years (KWH)

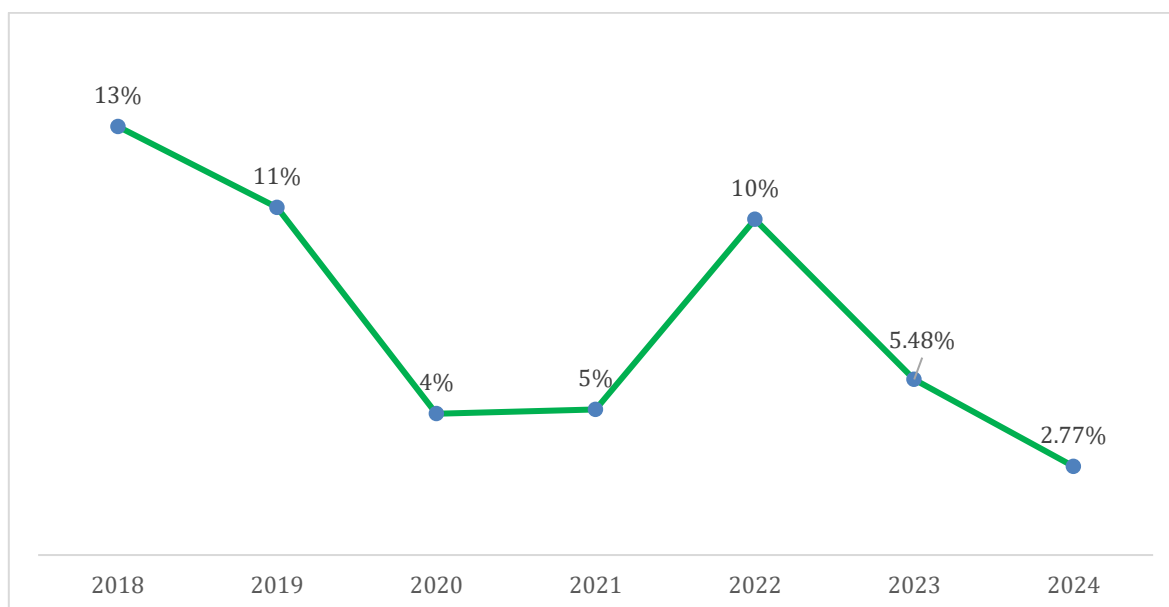


DG Sets:

DG Sets provides 100% power in the event of a blackout or power outage from the State Electricity Board. We have total of 5 DG sets (750Kva x 4 No's and 500Kva x 1 No's.). We ensure adherence to all pollution control board norms while operating the DG sets. All DG sets are tested for Carbon emissions at fixed periodic intervals as prescribed by the pollution control board.



Share of Electricity Through DG Sets



Note: Electricity units for EB are based on the monthly electricity board invoice

Over the years the share of energy from DG sets has reduced considerably. With the addition of more solar capacity y-o-y, we have been able to generate more green energy and reduce the dependency

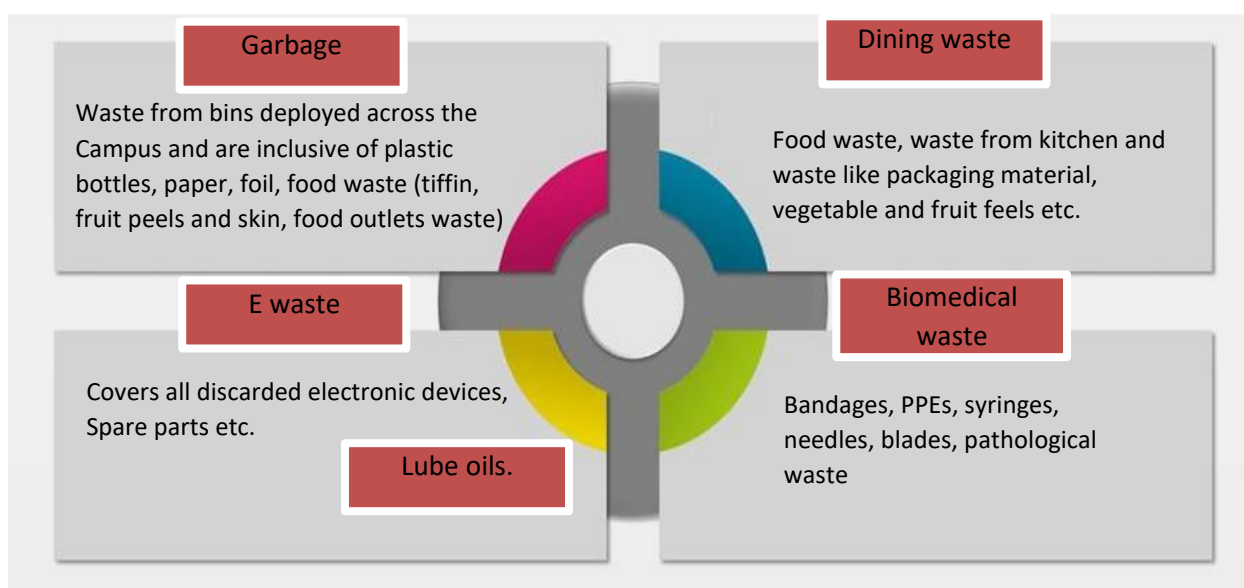
on fossil fuels. Decreased use of DG sets means less consumption of fossil fuels and thus lesser carbon emissions. Further, at Ashoka, we are taking the following measures to conserve energy:

- Use of energy is consistently being monitored building-wise to analyse energy efficiency.
- Our entire campus, including buildings, is designed in a very energy-efficient manner and employed with energy-efficient and high-performance equipment and plants with regular maintenance to optimise the performance of equipment.
- Our air conditioning system is centrally controlled, maintaining optimum temperature settings of 26 ± 1 degrees Celsius throughout the campus's air-conditioned spaces to optimize energy usage.

Waste Management:

Waste management at Ashoka includes the activities and actions taken to manage the waste from its inception till its disposal. This includes various steps like collection, transportation, sorting, and treatment.

Types of Waste Generated



Waste Management (mixed waste)

Color-coded bins have been placed at various locations in the entire campus. These bins are coded as black (Inorganic/dry waste) and Green (organic/wet/recyclable waste). This allows waste segregation at the first level. Entire waste is collected separately, and further segregation is done.



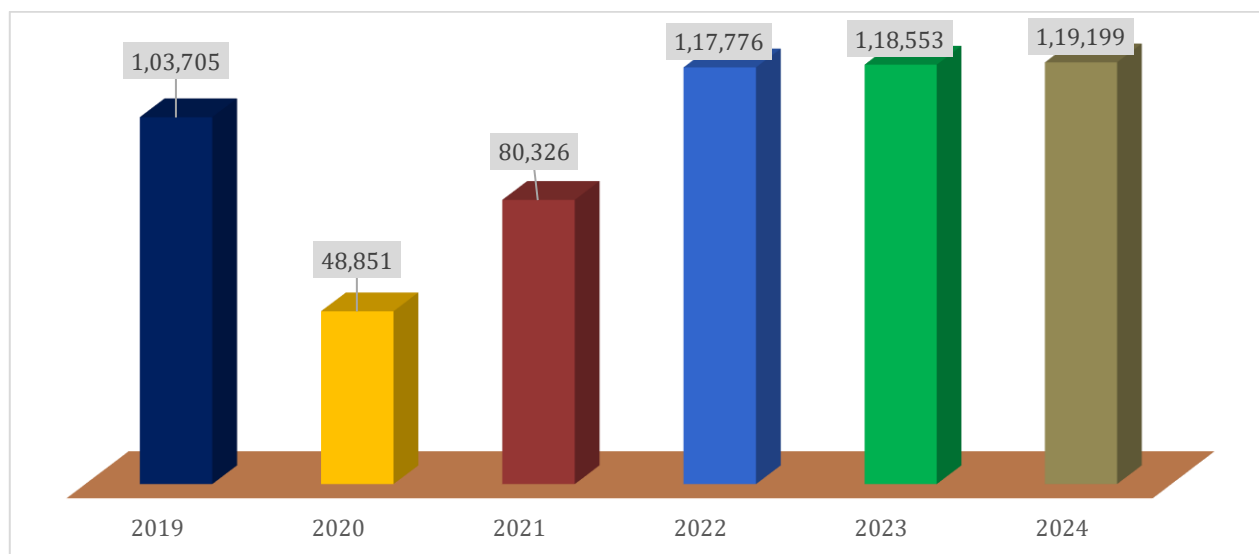
Bin Categories and Design

At Ashoka we currently have a 2-bin system (Organic and inorganic) in all open spaces. Waste disposal is done based on the category of waste.

- **Organic (biodegradable):** the first iteration included food waste, garden waste, unlined paper plates, used toothpicks and paper napkins. All this waste is directed to the composter, in order to make the compost richer and of better quality.
- **Inorganic (recyclable plastic, metal, tetra pack, and glass):** This category includes recyclable plastics such as beverage and cosmetics containers, cutlery and stationery.
- **Plastic waste:** This category includes plastic waste such as chips packets, plastic bottles plastic containers, plastic spoons etc.

Smaller bins are placed in all workstations and offices. These are labelled 'paper' and are mostly meant for paper waste collection as it is the most common type of waste generated in workspaces. These bins are emptied and the content is stored till a bulk amount is achieved and then disposed to our empanelled paper recycler.

Waste Generated Over the Years

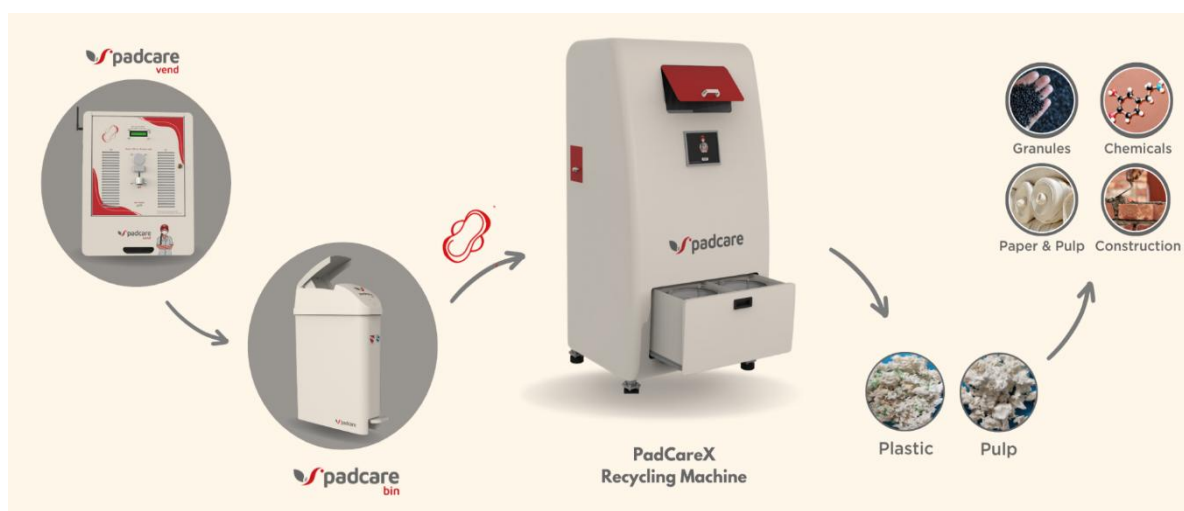


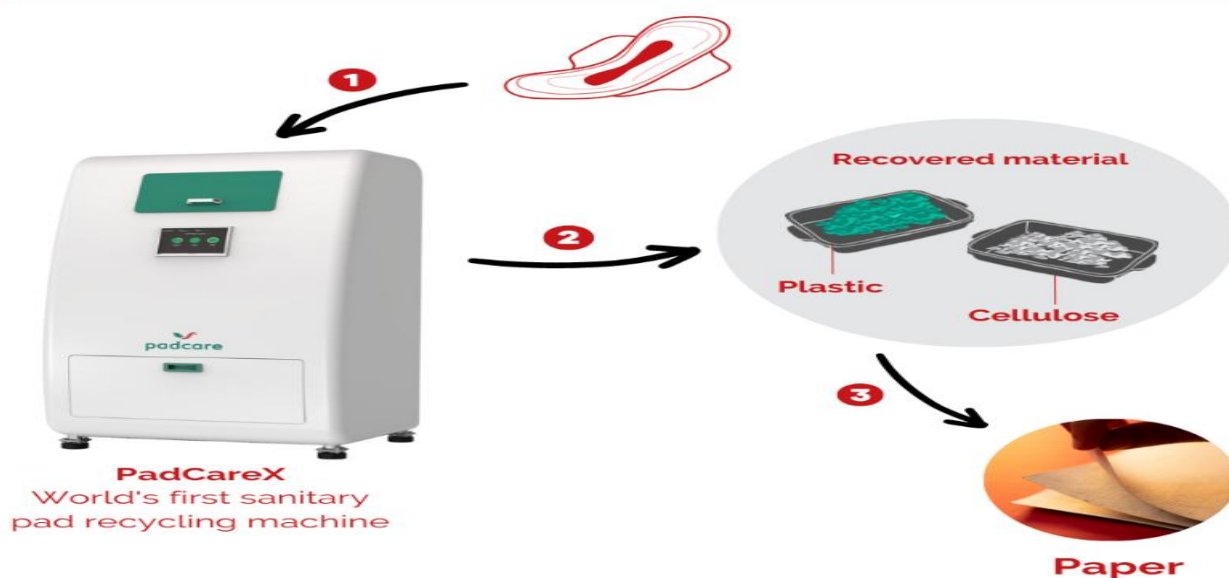
*The waste details include waste bins deployed across the Campus and are inclusive of plastic bottles, paper, foil, food waste (tiffin, fruit peels and skin, food outlets waste)

**This does not include newsprint, A3, A4 printing paper & cafeteria waste of any sort which is captured separately

Female Health Unit (FHU): Female washrooms have been facilitated in every block with FHU for the disposal of sanitary pads and these units are serviced twice a month.

The Pad Care Ecosystem





Through initiatives like these, we continue to uphold our dedication to sustainability, promoting responsible consumption and waste management practices within our community and beyond.

PadCare makes paper out of recycled sanitary napkins via their patented recycling technology. The paper is further used to make some earnest products which aspire to create a cheerful corner at the desk!

The below products are made from pads after recycling: -



A6 Flower Diary



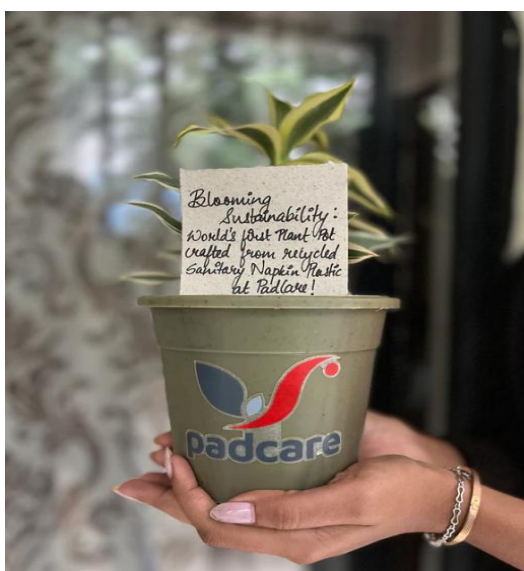
Mini Desk Calendar



Pad care Gift box



Vintage Typewriter To-Do List



Recycled Plant Pot



Planet Conscious Diary

E-waste Management:



to recycle the older devices in a proper manner. There are serious environmental risks if we send our

E-waste consists of all electronic and electrical devices which have been discarded and will not be in use. While most modern electronic equipment are safe, few equipment contain some form of toxic elements, including Lithium, lead, and mercury which can be a potential serious threat to the environment.

We know that new devices will keep being manufactured, but at the same time, it's important

electronic devices and gadgets to a landfill. On the other hand, recycling provides considerable benefits to our environment. At Ashoka, we have an experienced firm which has years of experience in performing environment-friendly recycling of electronic products and is authorised by HSPCB.

Biomedical Waste Management:

Biomedical waste gets generated at the infirmary and at the IQC. At Ashoka, biomedical waste is collected and disposed of in a specialised manner. Separate colour-coded bins have been placed for collecting the specific type of waste for which the colour is earmarked.

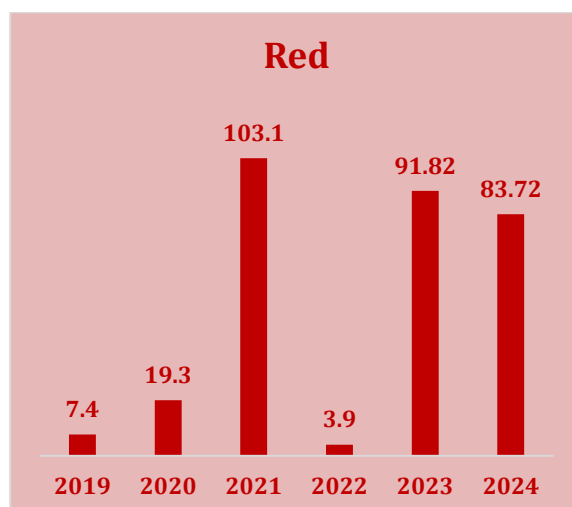
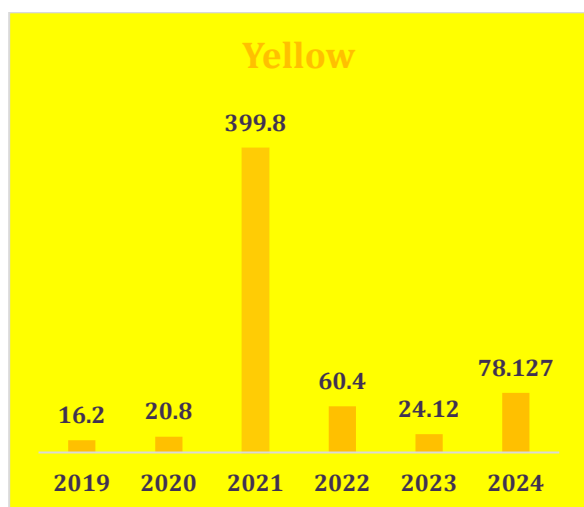
Yellow: Pathological waste, used cotton, dressing material, bedding, body fluid, PPEs, etc.

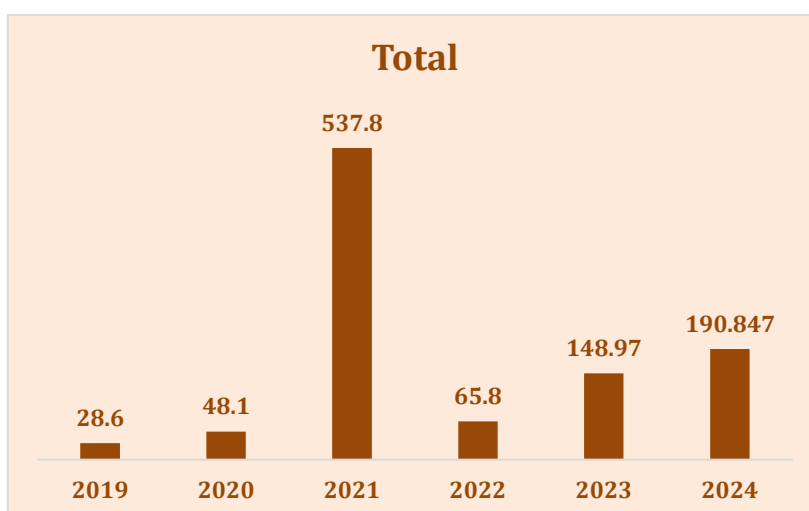
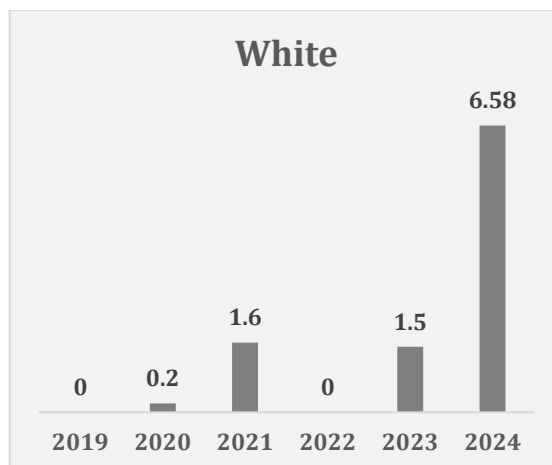
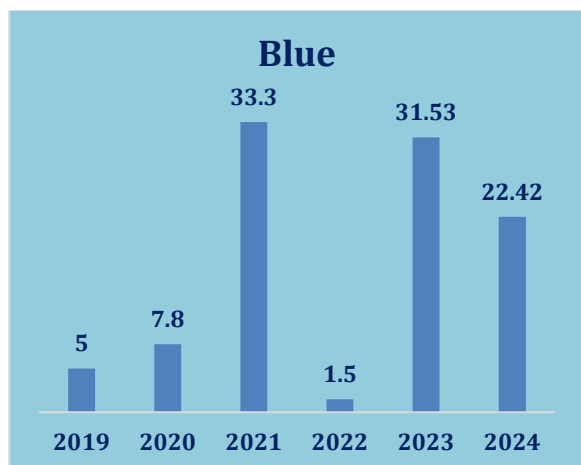
Red: Syringe without needle, I.V. Sets, catheters, gloves, urine bags, plastic waste, etc.

Blue: Glass and metal

White: Sharp waste, Needles, scalpels, blades etc.

Biomedical Waste Generated (Kg)





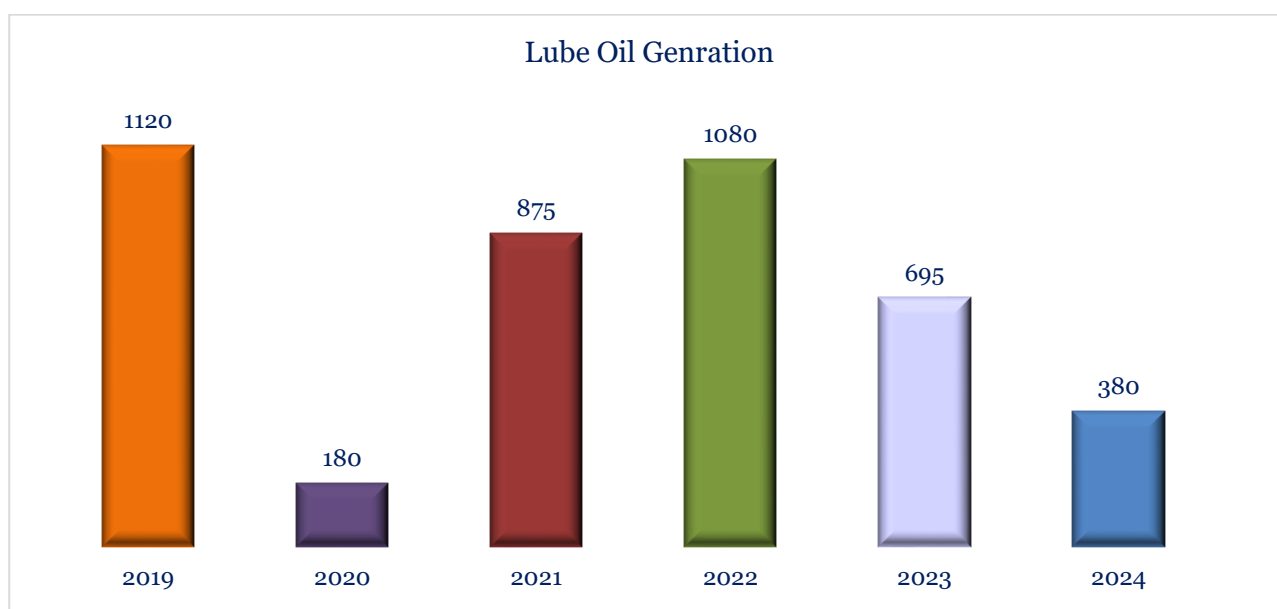
Summary of Bio medical waste (kg)					
Year	Yellow	Red	Blue	White	Total
2019	16.2	7.4	5	0	28.6
2020	20.8	19.3	7.8	0.2	48.1
2021	399.8	103.1	33.3	1.6	537.8
2022	60.4	3.9	1.5	0	65.8
2023	24.12	91.82	31.53	1.5	148.97
2024	78.127	83.72	22.42	6.58	190.847
Total	599	309	102	10	1020

At Ashoka, we have a government authorised firm (Divya Waste Management) which manages biomedical waste disposal.

Lube Oil:

Lube oil is considered as hazardous waste hence it is handled in a specialised way by an experienced government-approved agency empanelled by Ashoka.

Waste lube oil generated over the years					
2019	2020	2021	2022	2023	2024
1120	180	875	1080	695	380



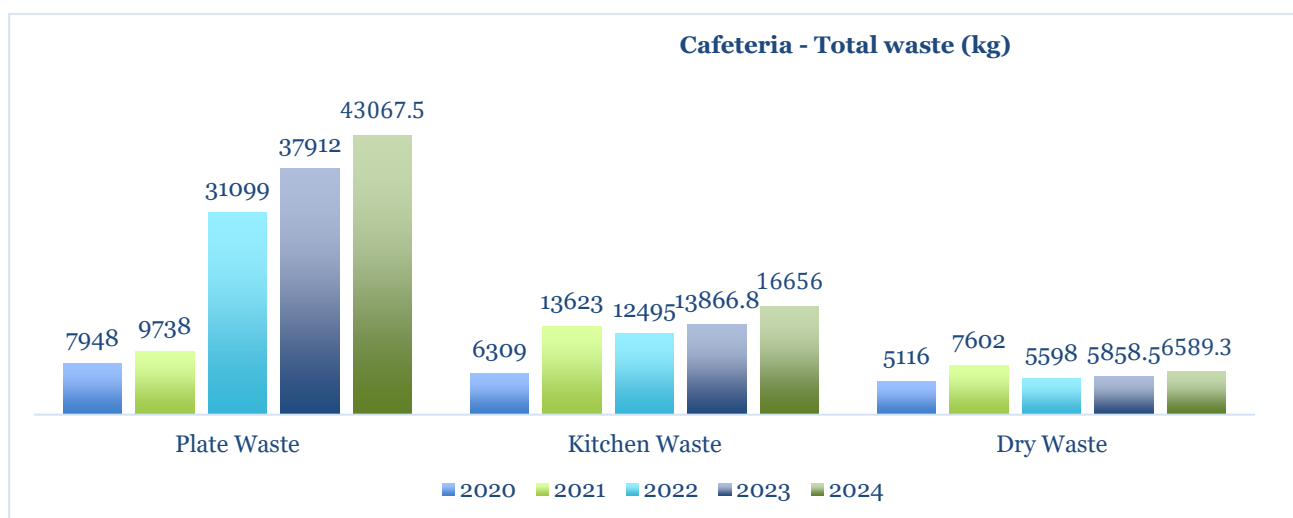
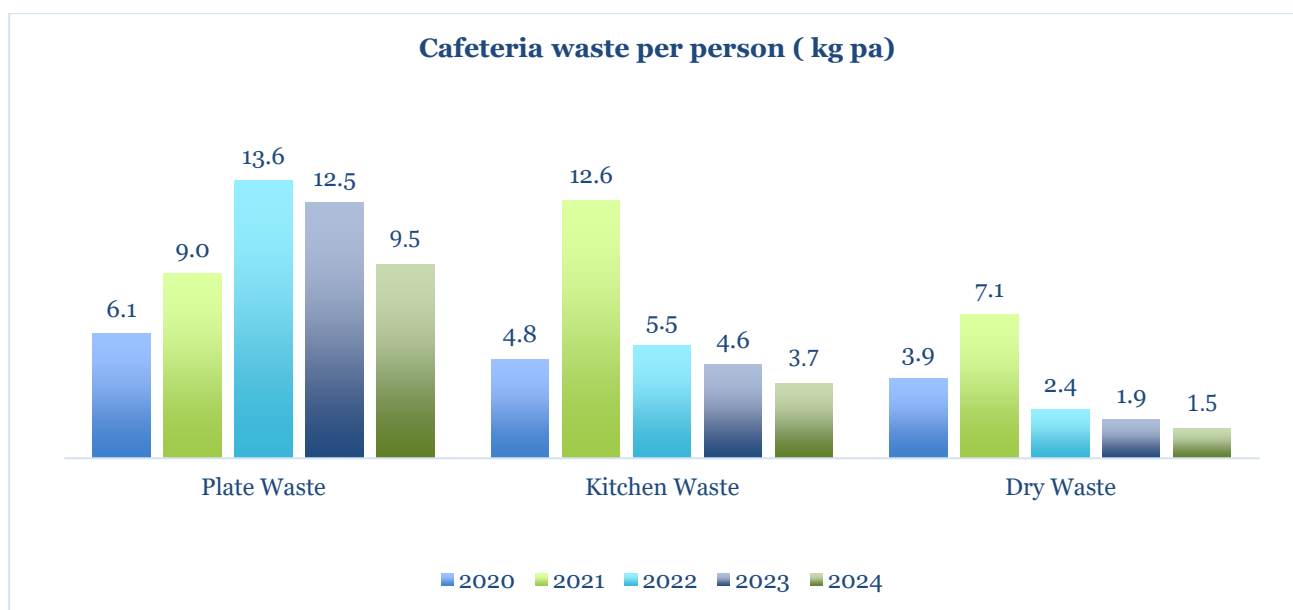
Cafeteria Waste:

Waste generated from the cafeteria is categorised as: plate waste, kitchen waste, and dry waste.

Plate Waste: Food scraped off into waste collection bin from plates.

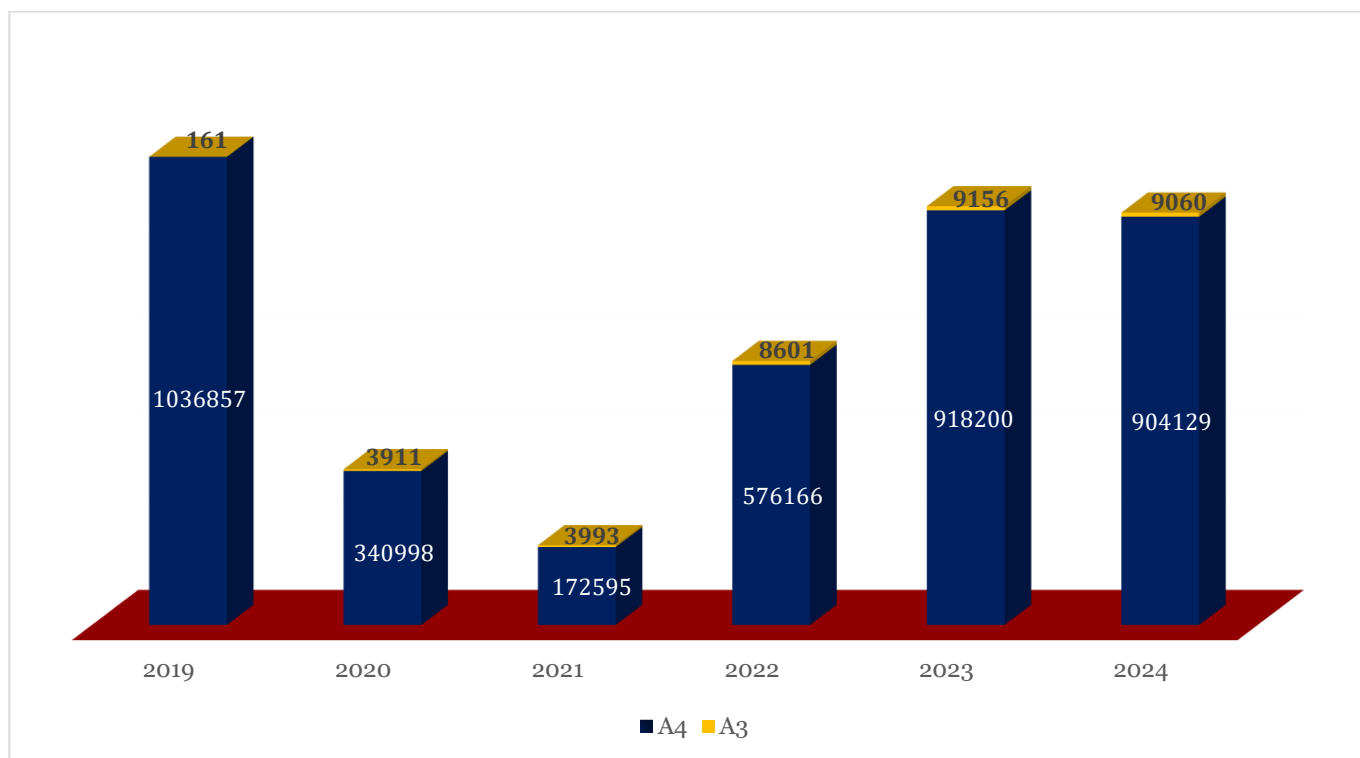
Kitchen Waste: Unserved cooked food and Food wastes such as vegetable peels, wheat sieving, pulses cleaning, etc.

Dry Waste: Food packing material such as cardboard boxes, plastic sleeves, plastic containers, tins etc.



	Qty (Kg)				Per person (kg)			
	Plate Waste	Kitchen Waste	Dry Waste	Total	Plate Waste	Kitchen Waste	Dry Waste	Total
2020	7948	6309	5116	19373	6.1	4.8	3.9	14.88
2021	9738	13623	7602	30963	9.0	12.6	7.1	28.74
2022	31099	12495	5598	49192	13.6	5.5	2.4	21.5
2023	37912	13866.8	5858.5	57637.3	12.5	4.6	1.9	18.98
2024	43067.5	16656	6589.3	66312.8	9.5	3.7	1.5	14.65

Paper Usage:



Trees cut for paper (based on number of printing sheets used)

Sheet Type	GSM	No. of sheets / tree	Count of Sheets used						No. of trees cut					
			2019	2020	2021	2022	2023	2024	2019	2020	2021	2022	2023	2024
A4	70	1,21,444	10,36,857	3,40,998	1,72,595	5,76,166	9,18,200	9,04,129	9	3	1	5	8	7
A3	75	60,722	161	3,911	3,993	8,601	9,156	9,060	0	0	0	0	0	0
Total			10,37,018	3,44,909	1,76,588	5,84,767	9,27,356	9,13,189	9	3	1	5	8	7

Paper calculation source: WWW.Paperonweb.com/A1011.htm

Responsible Construction Practice



As a University, we need to ensure that our construction practices are responsibly handled across the site. This includes complying with safety standards as well as minimising our impact on the immediate environment. Construction sites tend to add more air pollutants, and thus we need to ensure that all our construction sites take measures to reduce pollution. These measures have helped us maintain the air quality within the permissible limits:

- Water spraying has been adopted in areas where construction work was being undertaken to reduce the impact of air pollution.
- Anti-smoke guns have been adopted across the construction site to reduce dust particles or reduce the impact of air pollution.
- Water is regularly sprinkled on transportation corridors within the site so as to avoid air pollution due to vehicles.





- The entire site has been barricaded with a minimum 3-meter site barricading, and geotextile fencing has been used as and when required to suppress dust particles.
- The vehicles taking construction waste materials outside the site have been covered with fabric to minimise dust caused due to vehicular movement.
- All DG sets chimneys have been placed at a height and orientation, such that the smoke will not cause harm to any flora and fauna and construction workforce working on the site.
- The speed limit for construction vehicles is restricted to a maximum of 10 KMPH within the construction boundary.
- All the loose construction materials are covered to prevent air pollution.



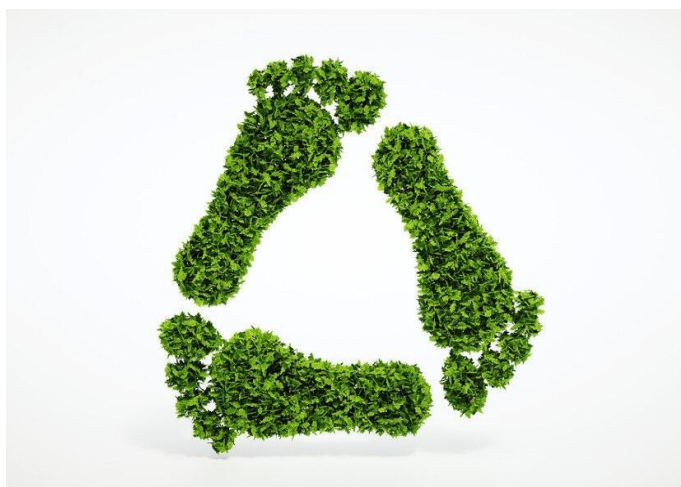
AQI Monitoring

We have been measuring PM 2.5, PM 10 and AQI (air quality index) daily for our University. We have been comparing the same with our nearby locations, namely Murthal, Panipat and Delhi (Anand Vihar). The values of the nearby places are taken from the CPCB (Central Pollution Control Board) site while our data is from the recorder installed within our campus. The data is updated daily and monitored closely, especially as the air quality deteriorates seasonally due to various reasons.



Further, we ensure that the right systems, machinery and processes are in place which helps us meet the PCB norms and allows us to play our role in mitigating air pollution.

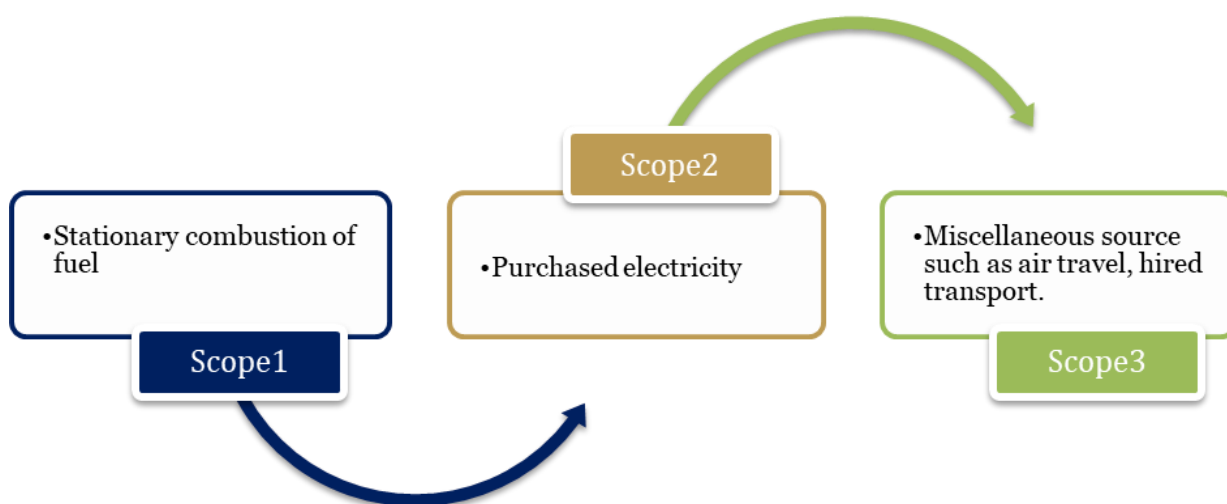
CARBON FOOTPRINT



Ashoka University started capturing its energy consumption and CDe generation from Jan'19 onwards, wherein it was more from understanding consumption. The data presented below has certain assumptions, which are as follows:

- *In the DG efficiency assumption, the % has been changed from 44 to 80 as the DG sets being used at Ashoka University have between 80 to 85 % efficiency.*
- *Air travel has not been segregated into international and domestic components as the current calculations have very limited International travel or class of travel as business / first class will have much higher CDe value than economy class.*
- *GHG protocol has been used for calculations vis-à-vis PAS2050 or IS14064*

Carbon footprint, as per standards has been captured in three scopes, (which are as per GHG protocol):

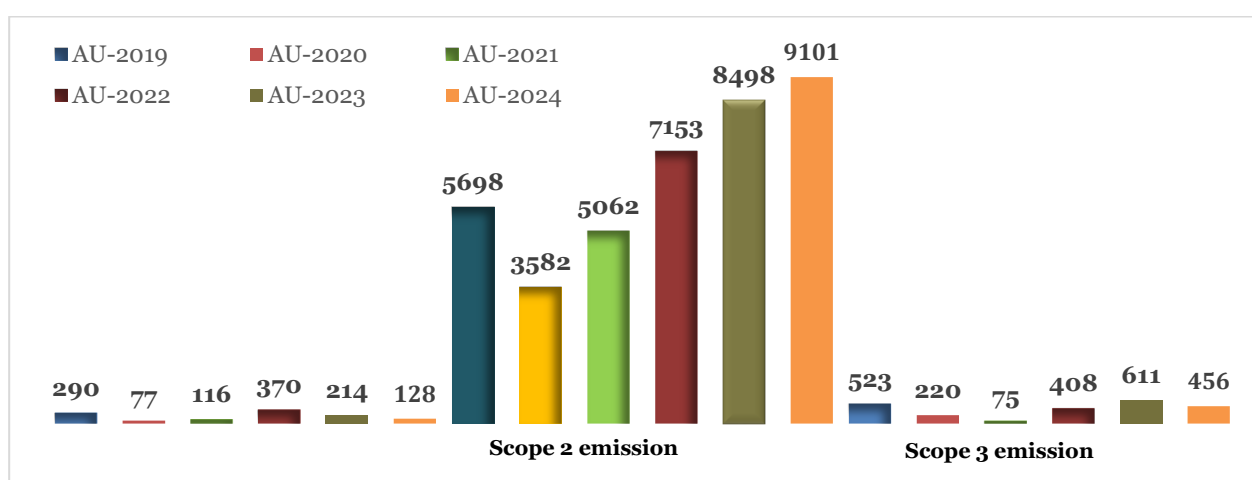
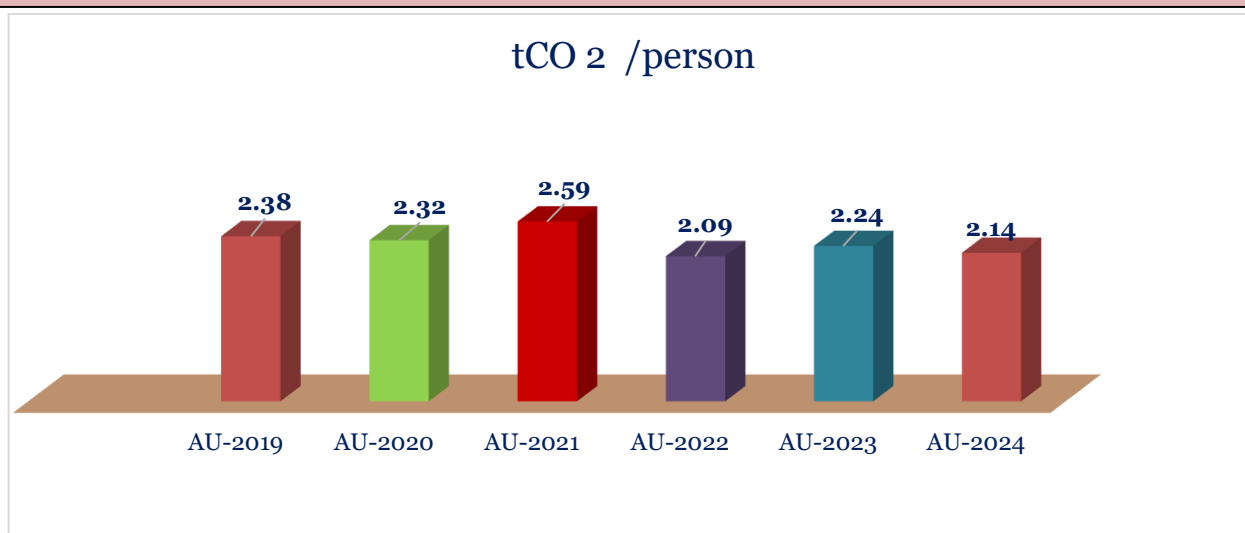


CARBON FOOTPRINT

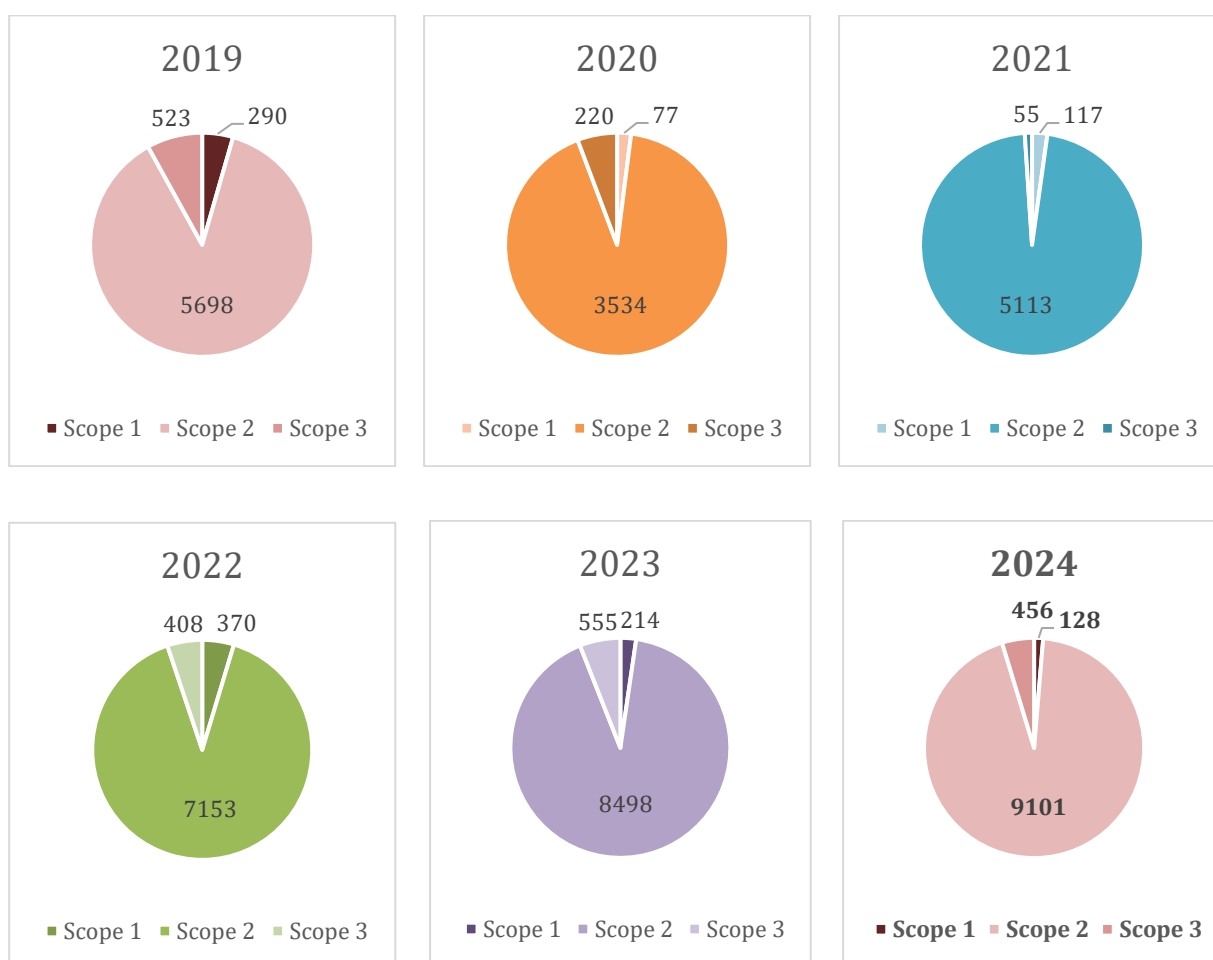
Year	Number of people	Scope 1 emission	Scope 2 emission	Scope 3 emission	Total tCO ₂	tCO ₂ /person
AU-2019	2738	290.4	5697.8	522.8	6511.0	2.38
AU-2020	1672	77.1	3582.0	219.8	3878.9	2.32
AU-2021	2038	116.4	5061.5	74.8	5252.7	2.59
AU-2022	3792	370.0	7152.7	407.8	7930.5	2.09
AU-2023	4167	214.0	8498.1	611.0	9323.1	2.24
AU-2024	4528	128.0	9100.8	456.3	9685.1	2.14

*Average strength on Campus

Note: The 2021 population is lower than 2019 but all hostels' buildings were used to accommodate the student's strength, unlike 2020 where the population was distributed over two hostels. The State power supply has been good due to pandemic thus the DG consumption was significantly lower. This led to higher consumption of fixed electricity for HVAC resulting in higher CDe per person, although the scope 2 emission is lower than 2019.



CDe Chart (Year-Wise)



Ashoka University remains steadfast in its commitment to embedding sustainability across every facet of its operations. As part of this ongoing journey, we have initiated the systematic measurement of key environmental parameters in alignment with globally recognized Greenhouse Gas (GHG) Protocols. These foundational efforts mark the beginning of a more ambitious roadmap—one where Ashoka will continue to raise the bar, setting progressively higher sustainability targets in pursuit of a greener, more resilient future.

End of report.