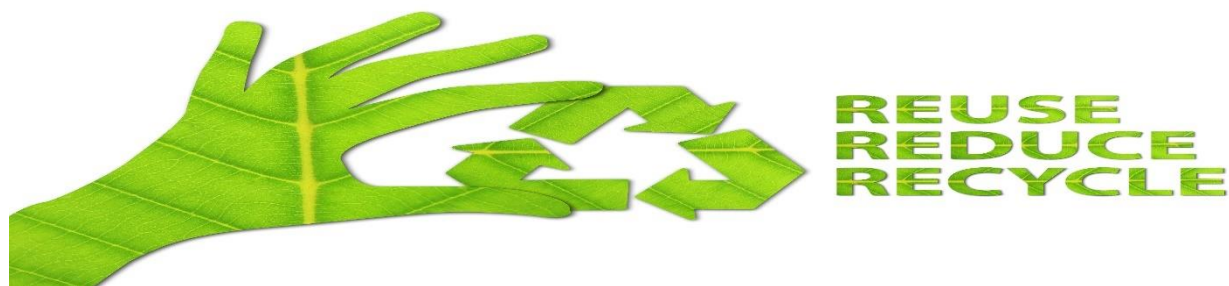


ASHOKA UNIVERSITY
SUSTANABILITY REPORT - 2023

REPORT STRUCTURE

The Environmental Sustainability team at Ashoka University has 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 2023.

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INTRODUCTION:


Ashoka University is a pioneer in its focus on providing a liberal education at par with the best in the world. The aim at Ashoka is to help students become well-rounded individuals who can think critically about issues from multiple perspectives, communicate effectively and become leaders with a commitment to public service. Our endeavour is to achieve academic excellence along with a focus towards environmental sustainability. We, not only focus on preparing the students for promising social and professional future but also want to imbibe in our students, faculty and staff the moral responsibility towards sustainable environment. We at Ashoka believe in the contributing to environment sustainability along with the institutional growth.

Our Planet is changing. We need to help it change for the better. There are a lot of things that effect our planet in a negative way but the good news is that everyone can help to reduce them and do their part for the environment.

The United Nations' 17 Sustainable Development Goals (SDG's) are our world's call to action on the most pressing challenges and opportunities facing humanity and the natural world. With their unique role in creating and sharing knowledge, universities have a direct role in addressing the challenges set out in transforming our world: the 2030 Agenda for Sustainable Development. While the government has initiated various actions towards sustainability, we at Ashoka have started our journey by measuring our carbon footprint and also undertaking sustainability goals. While the government is playing an active role in safeguarding the environment, Ashoka as a University undertakes this as a moral responsibility to equally contribute towards sustainable environmental practices and giving back to Mother Nature. We believe in Reduce, Recycle and Reuse.

Ashoka University is pioneer in imparting liberal education, and we strive to be a pioneer in the environmental sustainability hence our infrastructure, systems and processes are such that we can adapt to better practices easily.

Presented here is the Sustainability report for the year 2023.



Vice President
Operations
Ashoka University

B. K. Mishra

While the government has initiated various efforts towards sustainability, we at Ashoka have begun contributing to the cause by measuring our carbon footprint and also undertaking sustainability goals. While the government is playing an active role in safeguarding the environment, Ashoka as an institution undertakes this as a moral responsibility.

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 tress

S.No.	Common Name	Botanical Name	Nos	S.No.	Common Name	Botanical Name	Nos
1	Orchid Tree (Kachnar)	<i>Bauhinia blakeana</i>	297	27	Pilkhan	<i>Ficus virens</i>	62
2	Golden Shower (Amaltas)	<i>Cassia fistula</i>	7	28	Kusum	<i>Schleichera oleosa</i>	1
3	African Wattle	<i>Peltophorum africanum</i>	40	29	Ashoka	<i>Saraca indica</i>	4
4	Champa (White Frangipani)	<i>Plumeria alba</i>	159	30	Milletia	<i>Millettia sp.</i>	2
5	Farpod Wattle	<i>Acacia auriculiformis</i>	9	31	Goondi	<i>Cordia allalora</i>	6
6	Bakain	<i>Melia azedarach</i>	31	32	Anjan	<i>Hardwickia binata</i>	5
7	Jarul	<i>Lagerstroemia speciosa</i>	2	33	Jhinjiri	<i>Bauhinia racemosa</i>	4
8	Coral Tree	<i>Erithrina indica</i>	10	34	Mango	<i>Mangifera indica</i>	4
9	Neem	<i>Azadirachta indica</i>	4	35	Guava	<i>Psidium guajava</i>	3
10	Desi Babool	<i>Acacia nilotica</i>	6	36	Ficus	<i>Ficus benjamina</i>	341
11	Bel pathar	<i>Aegle marmelos</i>	3	37	Ficus	<i>Ficus krishnae</i>	1
12	Siris	<i>Albizia lebbek</i>	4	38	Pomegranate	<i>Punica granatum</i>	29
13	Bistendu	<i>Diospyros cordifolia</i>	12	39	khara jaal	<i>Salvadora persica</i>	20
14	Dhan	<i>Anogeissus pendula</i>	135	40	meettha jaal	<i>Salvadora oleoides</i>	4
15	Peelu	<i>Salvadora persica</i>	15	41	peelvaan	<i>Cocculus pendulus</i>	6
16	Putranjiva	<i>Drypetes roxburghii</i>	23	42	daab grass	<i>Desmostachya bipinnata</i>	150
17	Kaim	<i>Mitragyna parviflora</i>	2	43	roheda	<i>Tecomella undulata</i>	6
18	Kanjar	<i>Bauhinia purpurea</i>	2	44	shami	<i>Prosopis cineraria</i>	7
19	Chikrassy	<i>Chukrasia tabularis</i>	66	45	sargooro	<i>Moringa concanensis</i>	5
20	Sonjna	<i>Moringa oleifera</i>	12	46	Silver Oak	<i>Grevillia robusta</i>	31
21	Kamrakh	<i>Averrhoa carambola</i>	4	47	Firangipani	<i>Plumeria rubra</i>	18
22	Gulmohar	<i>Delonix regia</i>	41	48	Harshringar	<i>Nyctanthus arbortristis</i>	16
23	Tabebuia	<i>Tabebuia argentea</i>	9	49	Bamboo	-	20
24	Tabebuia	<i>Tabebuia rosea</i>	5	50	indrokh	<i>Anogeissus nummularia</i>	4
25	Jacaranda	<i>Jacaranda mimosifolia</i>	2	51	anjan	<i>Hardwickia binata</i>	5
26	Jamun	<i>Syzgium cumini</i>	4	52	Thevetia	<i>Thevetia peruviana</i>	5
Total							1664





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.



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 (SO_x, NO_x,) 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.

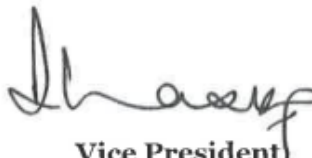
C. The Policy will be implemented at the operating level. The overall responsibility for implementation and maintaining standards of the Environment Policy rests with the Safety Officer. S/He will:

- 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.

06th July, 2021



Vice President
Operations
Ashoka University



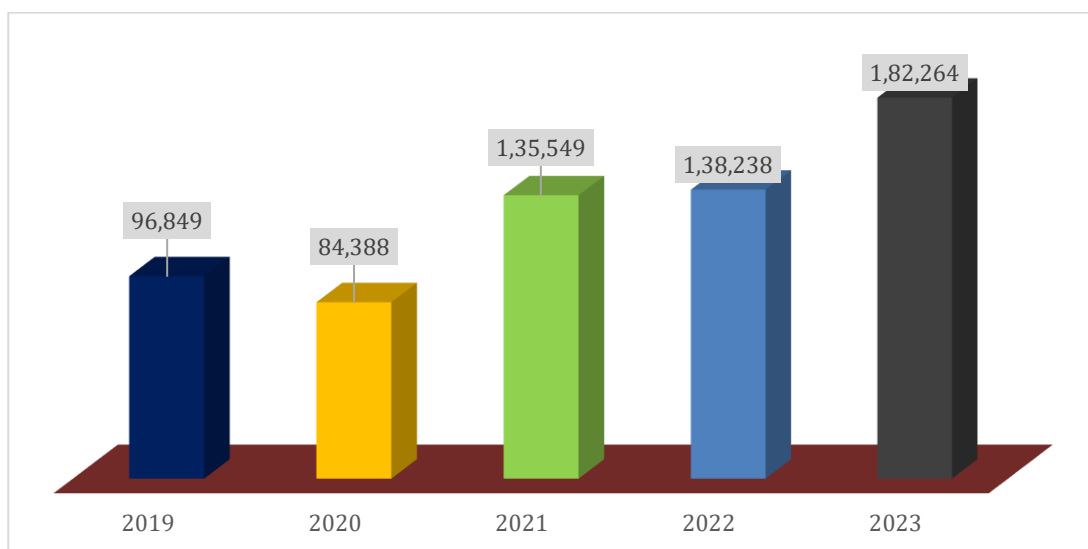
WATER MANAGEMENT

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.

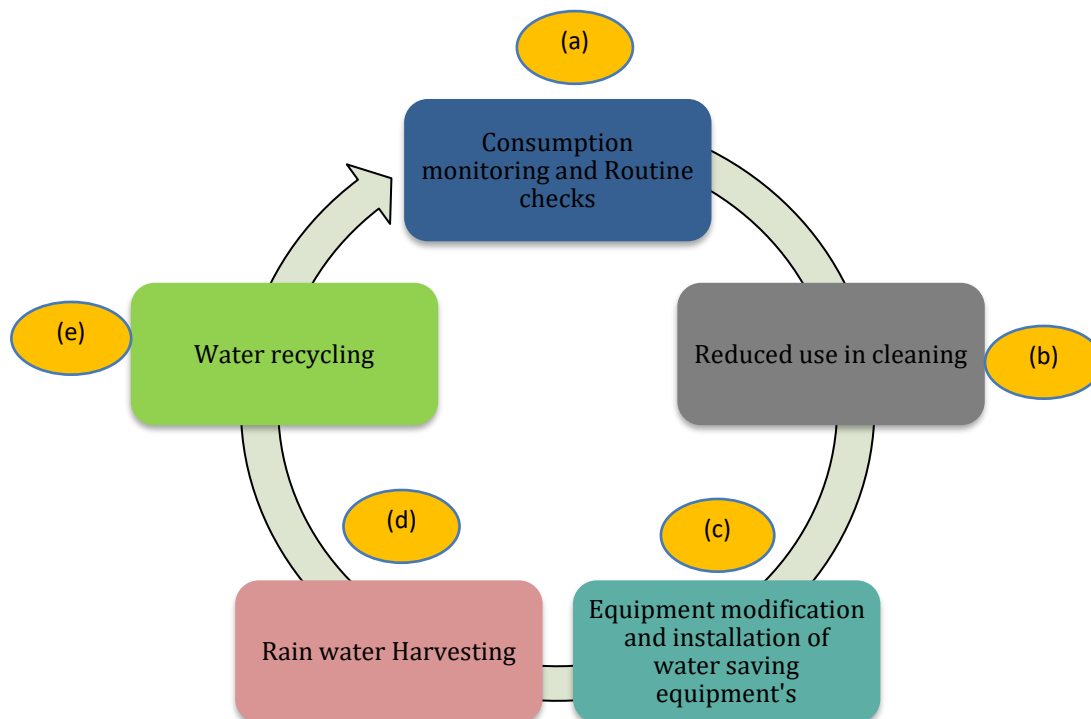
Water Intake on Campus Over the Years in KL (HUDA Supply)



What does 1,82,264 Kilo liters (Year 2023) of water usage look like. Translated into rainfall, one acre inch of rainfall means that 113310 litres of water through rainfall over 24 hours on one acre of land. Thus, in our case, we have 1,220 one-acre inches. As an example, Sonipat receives 579 mm of rainfall p.a., or 23.16 inches of rainfall. In other words, 69.45 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, 1,33,003 kg of wheat and 93,415 kg of paddy would have been grown. Or a total of 2,26,418 kg (2,660 fifty kg bags or 15 trucks of food grains, @9 tons each) of grains could potentially be raised from 1,82,264 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.

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 plant (STP) according to the parameters set by the Central Pollution Control Board and is used within the campus for irrigation."

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

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

Furthermore, we take measures to prevent water pollution by refraining from dumping any waste, including sewage, effluents, and hazardous substances, and instead dispose of them responsibly through authorized recyclers/vendors approved by the government.



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 (100 KLD)



HARYANA TEST HOUSE

& Consultancy Services

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TEST REPORT

Issued To: Ashoka University Plot No. 2, Rajiv Gandhi Education City, Rai, Sonapat (HR)	Report No. : HTH/EP/231025009 ULR No. : TC781123100007645F Party's Ref No. : Nil Booking Date : 25/10/2023 Period of Testing : 25/10/2023 To 30/10/2023 Reporting Date : 30/10/2023
--	--

Sample Description	: Sewage Water Sample (STP-Inlet) 100 KLD
Type of Industry	: Education Institute
Sample type	: Sewage Water Sample (STP-Inlet) 100 KLD
Date of sampling	: 25/10/2023
Date of receipt of sample	: 25/10/2023
Sample Location	: STP-Inlet
Sample quantity	: 2 Litre
Purpose of analysis	: Monitoring
Sample collected/ supplied by	: By our Lab. Representative

TEST RESULTS

S.N.	Test Parameters	Unit	Result	Test Method
Discipline : Chemical, Group : Waste Water				
1	Odour	-	Mild	IS 3025 (Part 5): 2018
2	pH	-	7.12	IS 3025 (Part 11): 2022
3	Total Suspended Solids	mg/L	110.0	IS 3025 (Part 17): 1984
4	Chemical Oxygen Demand(COD)	mg/L	289.0	IS 3025 (Part 58): 2006
5	Biochemical Oxygen Demand (BOD) 3 Days at 27°C	mg/L	125.0	IS 3025 (Part 44): 1993
6	Oil & Grease	mg/L	11.4	IS 3025 (Part 39): 2021

End of Report

Test Report for the Sewage Water Sample -After Treatment (100KLD)



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TEST REPORT

Issued To: Ashoka University Plot No. 2, Rajiv Gandhi Education City, Rai, Sonapat (HR)	Report No. : HTH/EP/231025010 ULR No. : TC781123100007646F Party's Ref No. : Nil Booking Date : 25/10/2023 Period of Testing : 25/10/2023 To 30/10/2023 Reporting Date : 30/10/2023
--	--

Sample Description	: Sewage Water Sample (STP-Outlet) 100 KLD
Type of Industry	: Education Institute
Sample type	: Sewage Water Sample (STP-Outlet) 100 KLD
Date of sampling	: 25/10/2023
Date of receipt of sample	: 25/10/2023
Sample Location	: STP-Outlet
Sample quantity	: 2 Litre
Purpose of analysis	: Monitoring
Sample collected/ supplied by	: By our Lab. Representative

TEST RESULTS

S.N.	Test Parameters	Unit	Result	Limit as per EP Act. 1986, Schedule-VI (Inland Surface Water)	Test Method
Discipline : Chemical, Group : Waste Water					
1	Odour	-	Odourless	--	IS 3025 (Part 5): 2018
2	pH	-	7.76	5.5 - 9.0	IS 3025 (Part 11): 2022
3	Total Suspended Solids	mg/L	38.0	100 Max	IS 3025 (Part 17): 1984
4	Chemical Oxygen Demand(COD)	mg/L	74.0	250 Max	IS 3025 (Part 58): 2006
5	Biochemical Oxygen Demand (BOD) 3 Days at 27°C	mg/L	15.0	30 Max	IS 3025 (Part 44): 1993
6	Oil & Grease	mg/L	1.0	10 Max	IS 3025 (Part 39): 2021

End of Report

Test Report for the Sewage Water Sample- Before Treatment (300KLD)



HARYANA TEST HOUSE & Consultancy Services

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TEST REPORT

Issued To: Ashoka University Plot No. 2, Rajiv Gandhi Education City, Rai, Sonapat (HR)	Report No. : HTH/EP/231025011 ULR No. : TC781123100007647F Party's Ref No. : Nil Booking Date : 25/10/2023 Period of Testing : 25/10/2023 To 30/10/2023 Reporting Date : 30/10/2023
--	--

Sample Description	: Sewage Water Sample (STP-Inlet) 300 KLD
Type of Industry	: Education Institute
Sample type	: Sewage Water Sample (STP-Inlet) 300 KLD
Date of sampling	: 25/10/2023
Date of receipt of sample	: 25/10/2023
Sample Location	: STP-Inlet
Sample quantity	: 2 Liter
Purpose of analysis	: Monitoring
Sample collected/ supplied by	: By our Lab. Representative

TEST RESULTS

S.N.	Test Parameters	Unit	Result	Test Method
Discipline : Chemical, Group : Waste Water				
1	Odour	-	Mild	IS 3025 (Part 5): 2018
2	pH	-	7.15	IS 3025 (Part 11): 2022
3	Total Suspended Solids	mg/L	124.0	IS 3025 (Part 17): 1984
4	Chemical Oxygen Demand(COD)	mg/L	306.0	IS 3025 (Part 58): 2006
5	Biochemical Oxygen Demand (BOD) 3 Days at 27°C	mg/L	142.0	IS 3025 (Part 44): 1993
6	Oil & Grease	mg/L	11.8	IS 3025 (Part 39): 2021

End of Report

Test Report for the Sewage Water Sample- After Treatment (300KLD)



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TEST REPORT

Issued To: Ashoka University Plot No. 2, Rajiv Gandhi Education City, Rai, Sonapat (HR)	Report No. : HTH/EP/231025012 ULR No. : TC781123100007648F Party's Ref No. : Nil Booking Date : 25/10/2023 Period of Testing : 25/10/2023 To 30/10/2023 Reporting Date : 30/10/2023
--	--

Sample Description	: Sewage Water Sample (STP-Outlet) 300 KLD
Type of Industry	: Education Institute
Sample type	: Sewage Water Sample (STP-Outlet) 300 KLD
Date of sampling	: 25/10/2023
Date of receipt of sample	: 25/10/2023
Sample Location	: STP-Outlet
Sample quantity	: 2 Liter
Purpose of analysis	: Monitoring
Sample collected/ supplied by	: By our Lab. Representative

TEST RESULTS

S.N.	Test Parameters	Unit	Result	Limit as per EP Act. 1986, Schedule-VI (Inland Surface Water)	Test Method
Discipline : Chemical, Group : Waste Water					
1	Odour	-	Odourless	-	IS 3025 (Part 5): 2018
2	pH	-	7.81	5.5 - 9.0	IS 3025 (Part 11): 2022
3	Total Suspended Solids	mg/L	34.0	100 Max	IS 3025 (Part 17): 1984
4	Chemical Oxygen Demand(COD)	mg/L	87.0	250 Max	IS 3025 (Part 58): 2006
5	Biochemical Oxygen Demand (BOD) 3 Days at 27°C	mg/L	16.0	30 Max	IS 3025 (Part 44): 1993
6	Oil & Grease	mg/L	1.2	10 Max	IS 3025 (Part 39): 2021

End of Report

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.



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TEST REPORT

Issued To: Ashoka University Plot No. 2, Rajiv Gandhi Education City, Rai, Sonapat (HR)	Report No. : HTH/EP/231025007 ULR No. : TC78112310007643F Party's Ref No. : Nil Booking Date : 25/10/2023 Period of Testing : 25/10/2023 To 30/10/2023 Reporting Date : 30/10/2023
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Sample Description	Effluent Water Sample (ETP-Inlet)
Type of Industry	Education Institute
Sample type	Effluent Water Sample (ETP-Inlet)
Date of sampling	25/10/2023
Date of receipt of sample	25/10/2023
Sample Location	ETP-Inlet
Sample quantity	2 Liter
Purpose of analysis	Monitoring
Sample collected/ supplied by	By our Lab. Representative

TEST RESULTS

S.N.	Test Parameters	Unit	Result	Test Method
Discipline : Chemical, Group : Waste Water				
1	Odour	-	Foul	IS 3025 (Part 5): 2018
2	pH	-	7.96	IS 3025 (Part 11): 2022
3	Total Suspended Solids	mg/L	187.0	IS 3025 (Part 17): 1984
4	Chemical Oxygen Demand(COD)	mg/L	760.0	IS 3025 (Part 58): 2006
5	Biochemical Oxygen Demand (BOD) 3 Days at 27°C	mg/L	311.0	IS 3025 (Part 44): 1993
6	Oil & Grease	mg/L	18.2	IS 3025 (Part 39): 2021

End of Report

Test Report for the ETP Water Sample- After Treatment.



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TEST REPORT

Issued To: Ashoka University Plot No. 2, Rajiv Gandhi Education City, Rai, Sonapat (HR)	Report No. : HTH/EP/231025008 ULR No. : TC78112310007644F Party's Ref No. : Nil Booking Date : 25/10/2023 Period of Testing : 25/10/2023 To 30/10/2023 Reporting Date : 30/10/2023
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Sample Description	Effluent Water Sample (ETP-Outlet)
Type of Industry	Education Institute
Sample type	Effluent Water Sample (ETP-Outlet)
Date of sampling	25/10/2023
Date of receipt of sample	25/10/2023
Sample Location	ETP-Outlet
Sample quantity	2 Liter
Purpose of analysis	Monitoring
Sample collected/ supplied by	By our Lab. Representative

TEST RESULTS

S.N.	Test Parameters	Unit	Result	Limit as per EP Act. 1986, Schedule-VI (Inland Surface Water)	Test Method
Discipline : Chemical, Group : Waste Water					
1	Odour	-	Odourless	--	IS 3025 (Part 5): 2018
2	pH	-	7.77	5.5 - 9.0	IS 3025 (Part 11): 2022
3	Total Suspended Solids	mg/L	42.0	100 Max	IS 3025 (Part 17): 1984
4	Chemical Oxygen Demand(COD)	mg/L	116.0	250 Max	IS 3025 (Part 58): 2006
5	Biochemical Oxygen Demand (BOD) 3 Days at 27°C	mg/L	19.0	30 Max	IS 3025 (Part 44): 1993
6	Oil & Grease	mg/L	3.0	10 Max	IS 3025 (Part 39): 2021

End of Report

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:

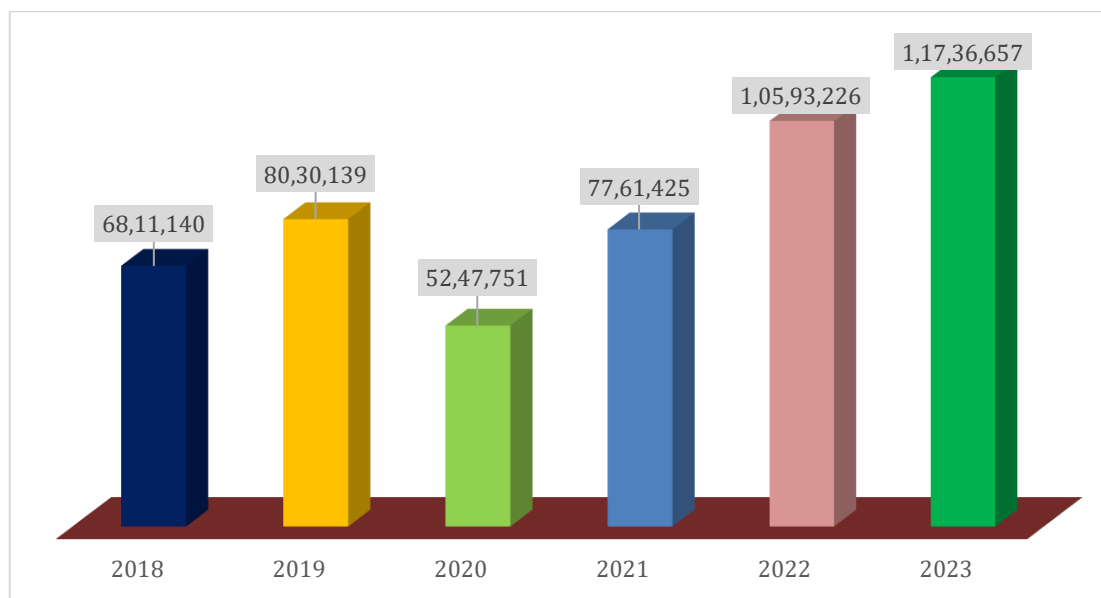


Ashoka University understands that the educational and research development requires significant dependence on natural resources including water and energy. To grow in a more sustainable and responsible manner, AU is committed toward decreasing dependence on the conventional source of energy and increasing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

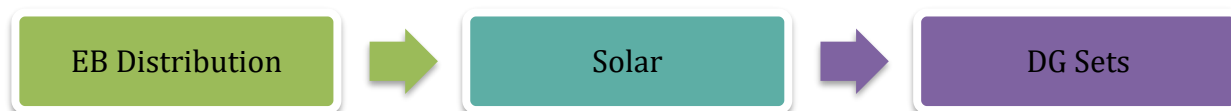
adopted greener transportation alternatives to our Campus such as the use of metro by a large number of daily commuters and a CNG shuttle service. To lay a stronger emphasis on reducing emissions, we encourage our employees to carpool and use the metro. We have also implemented last-mile connectivity 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.

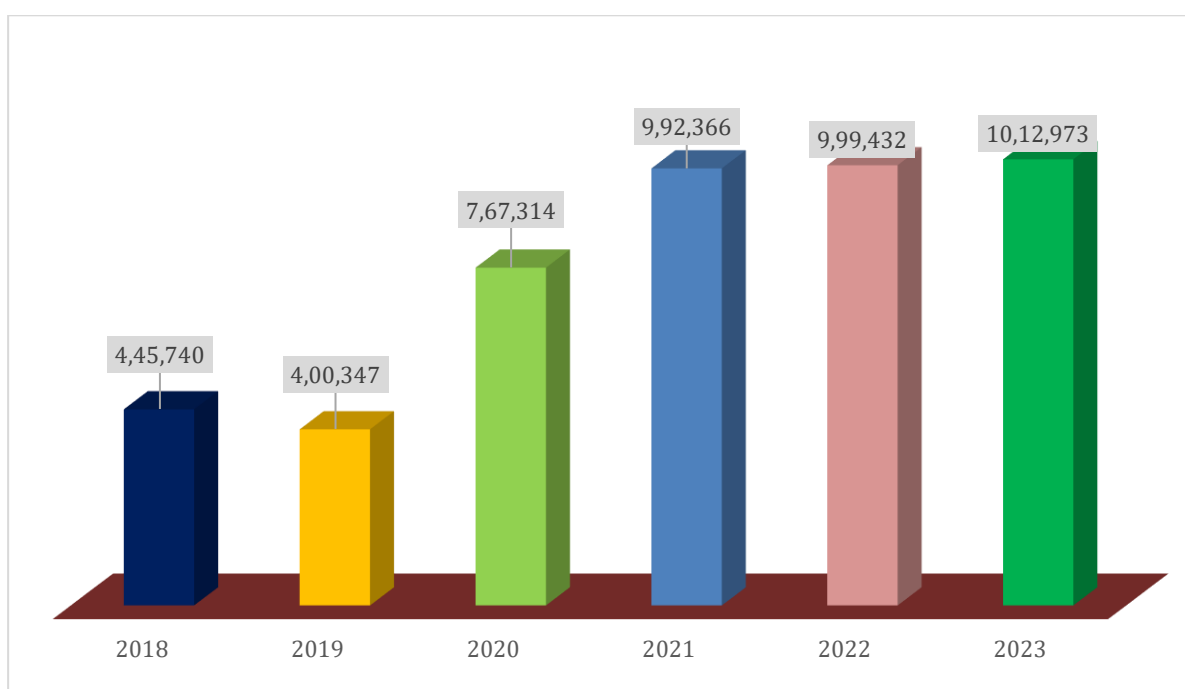
Power factor tracking for the year 2023:

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:

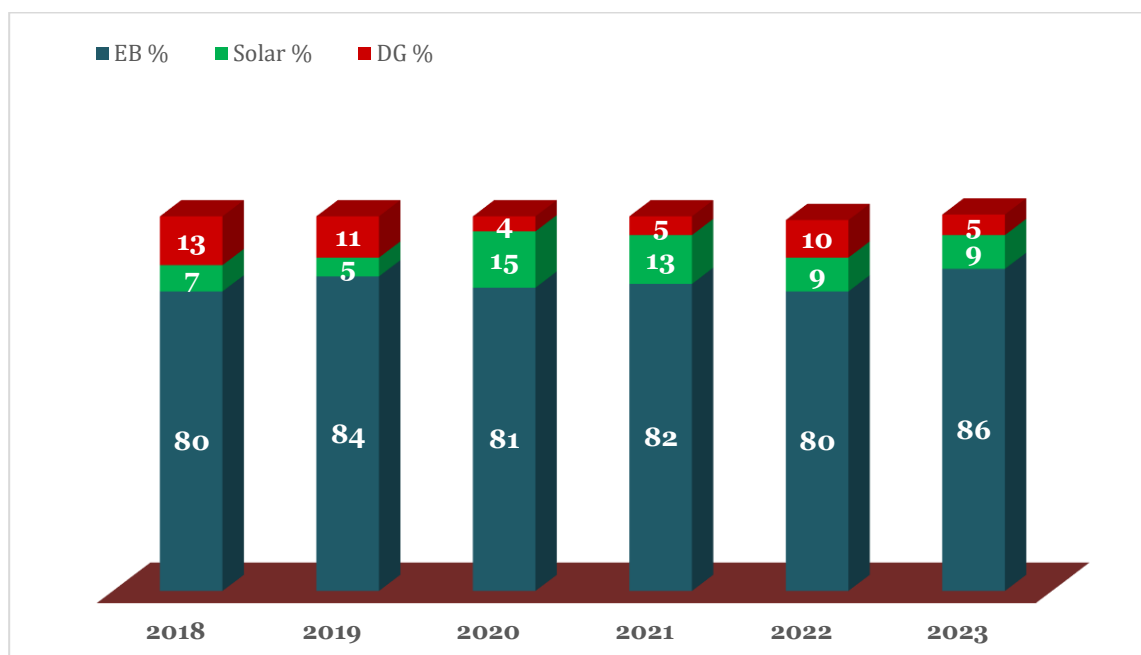
As we keep on expanding Y-o-Y, our energy requirements are also growing. At Ashoka, we are trying to reduce our dependency on conventional sources and move towards renewable sources like solar power. At present, we have installed 893 KW solar power as rooftop and carport through which we are able to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

Solar Energy Generation Over the Years (KWH)

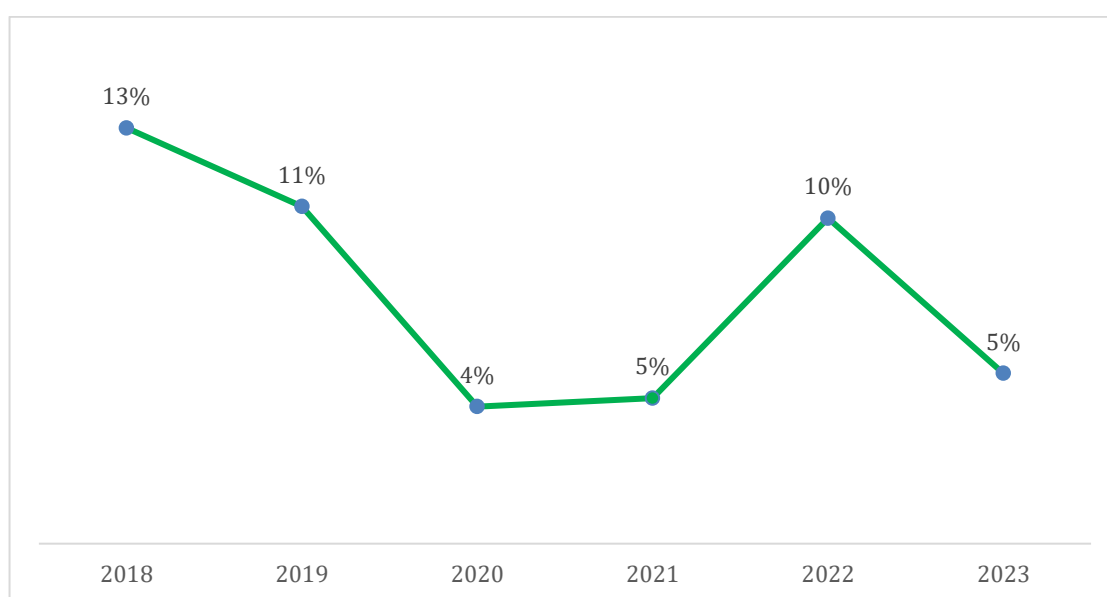


DG Sets:

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

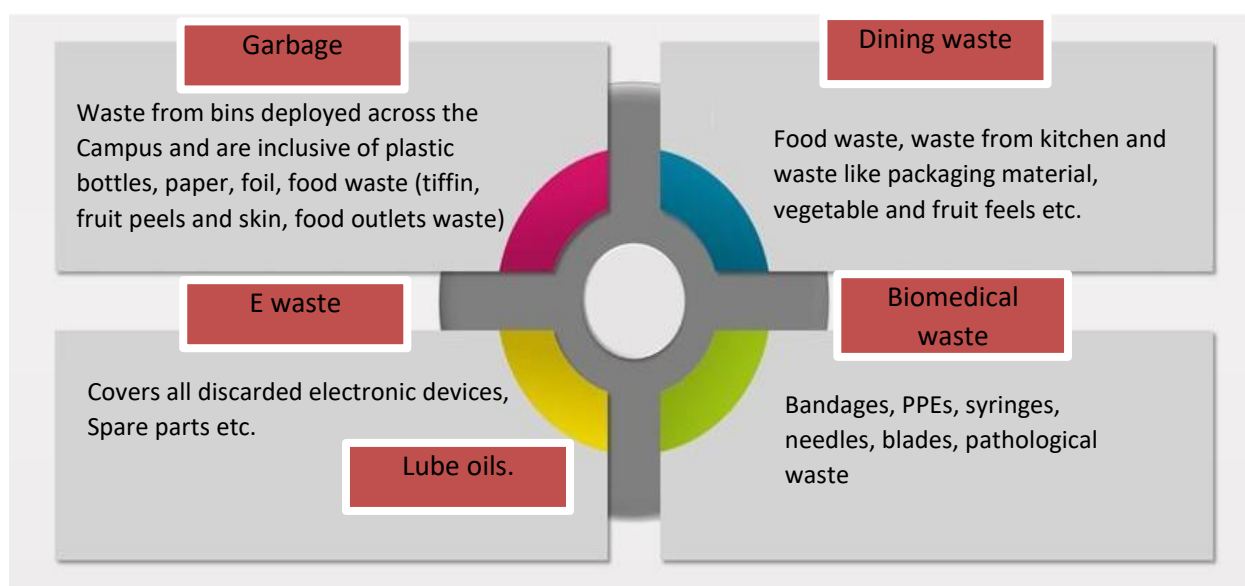
Over the years the share of energy from DG sets has reduced considerably. With the addition of more solar capacity y-o-y, we have been able to generate more green energy and reduce the dependency on fossil fuels. Decreased use of DG sets means less consumption of fossil fuels and thus lesser carbon emissions. 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.



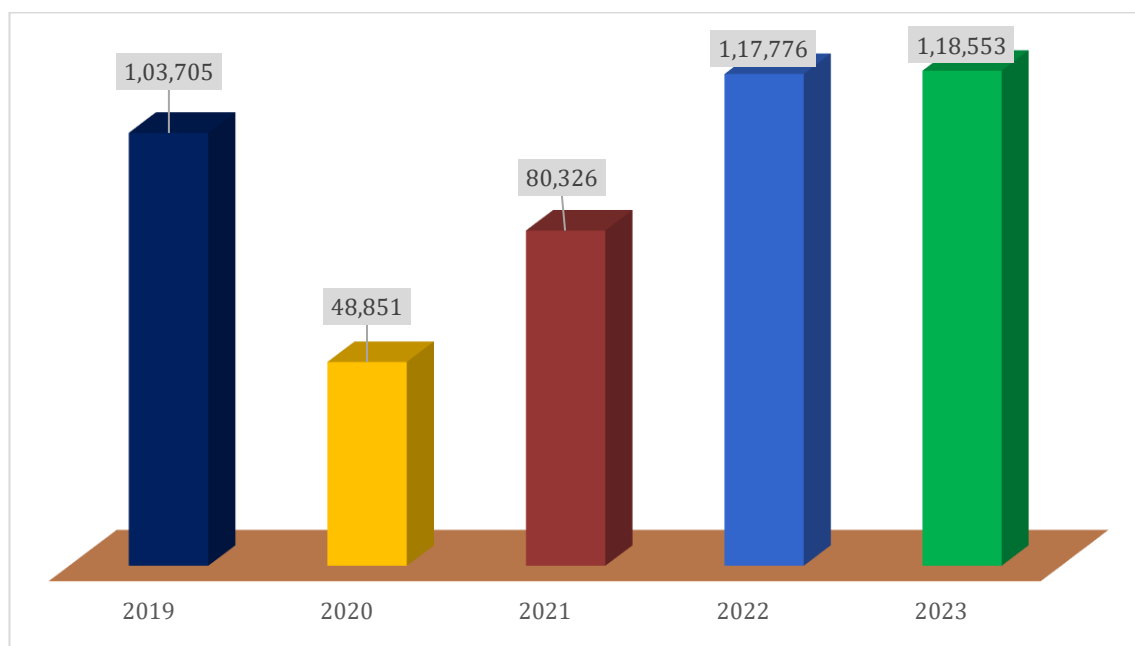
Bin Categories and Design

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.

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

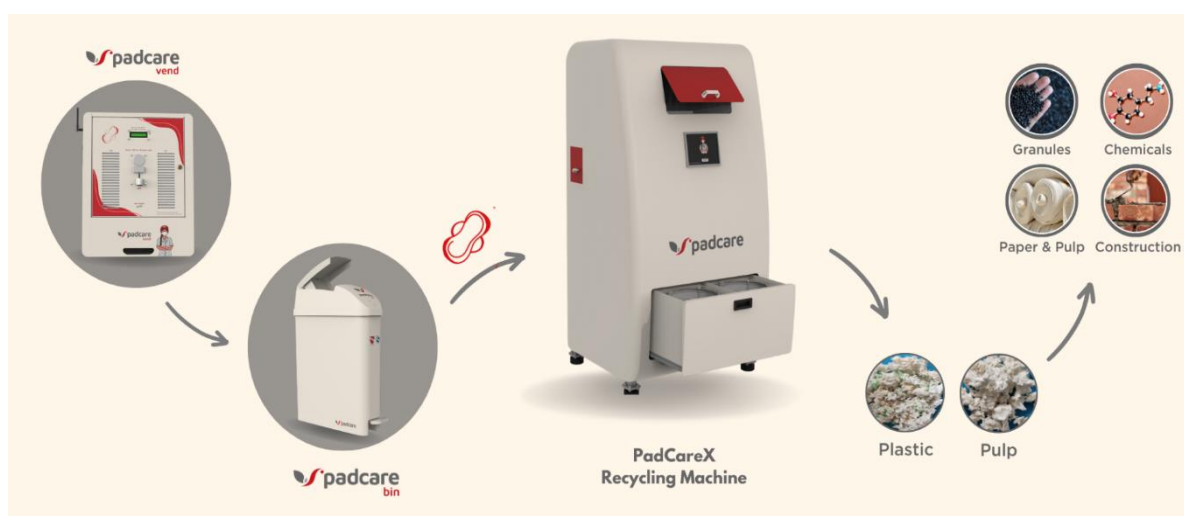


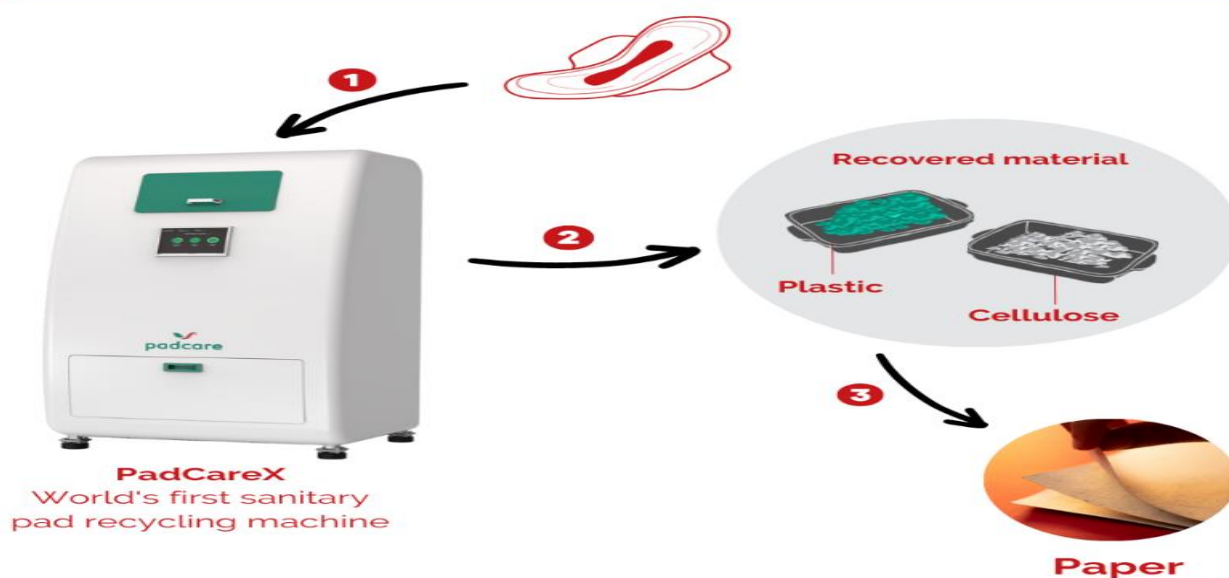
*The waste details include waste bins deployed across the Campus and are inclusive of plastic bottles, paper, foil, food waste (tiffin, fruit peels and skin, food outlets waste)

**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





We are proud to announce the successful disposal of 54,680 pads from the Pad care bins deployed in girls' hostels and female toilets in academic blocks across our campus. These pads, weighing 1367 kg, were meticulously processed at the Padare Recycling Station by the Pad Care team.

By diverting this waste from conventional disposal methods, we have saved an impressive 27,340 litres of landfill space, channelling the materials towards the production of recycled paper. Not only does this contribute to the reduction of waste accumulation, but also underscores our commitment to sustainable practices.

Furthermore, throughout the entirety of this process, we have conserved 2,925 kg of carbon equivalents. This significant reduction in carbon emissions exemplifies our efforts towards mitigating environmental impact and fostering a greener future.

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:

E-WASTE



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

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

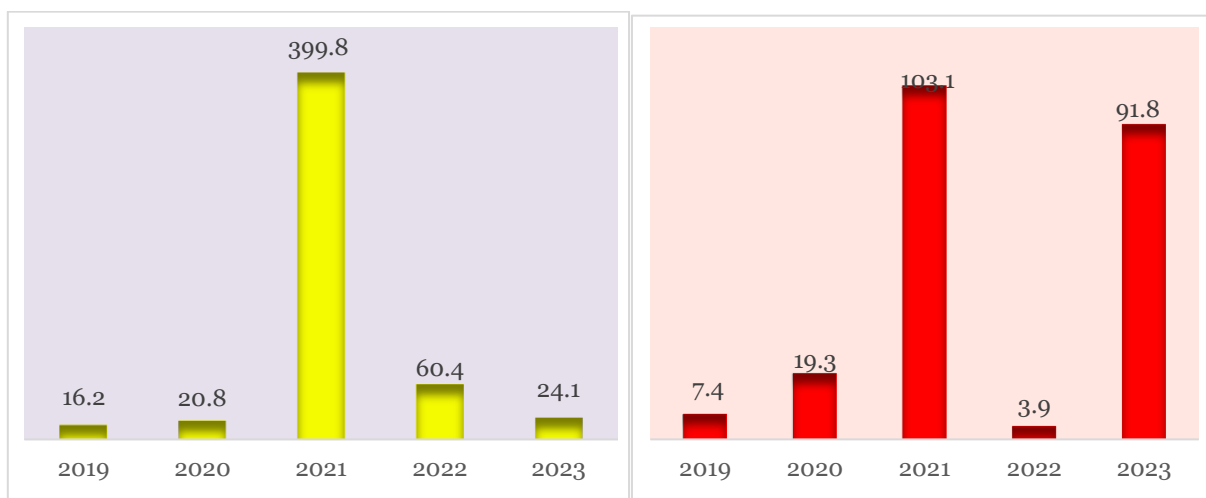
Yellow: Pathological waste, used cotton, dressing material, bedding, body fluid, PPEs, etc.

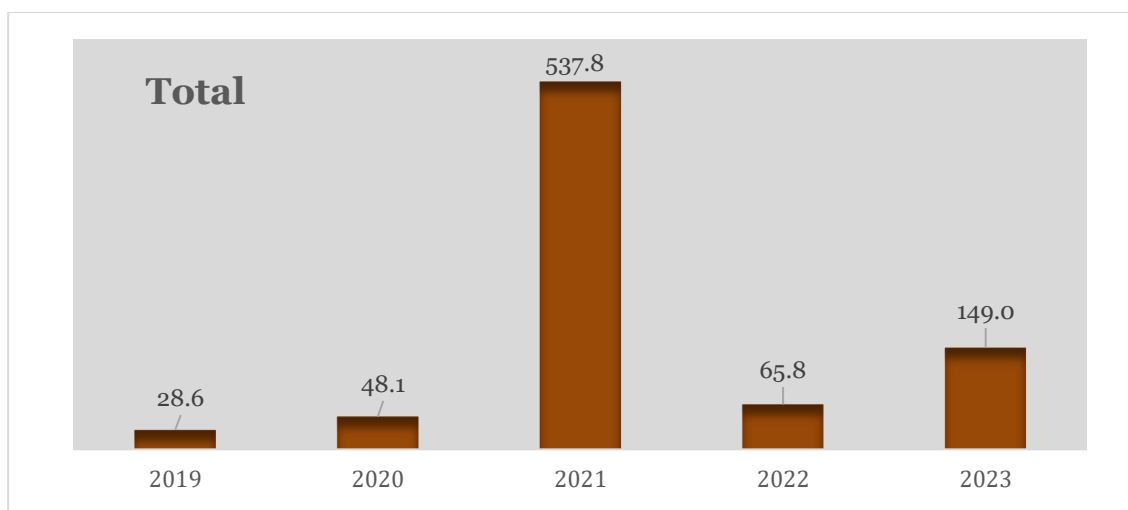
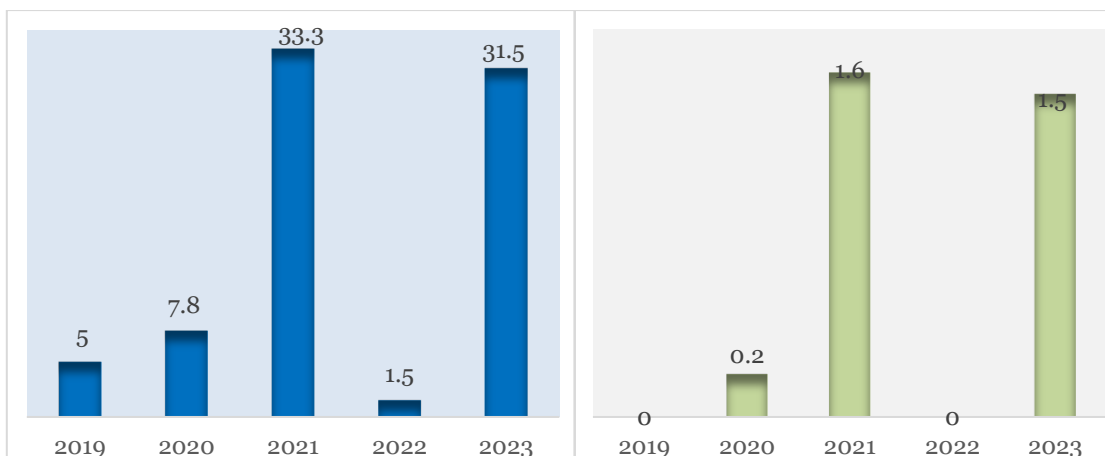
Red: Syringe without needle, I.V. Sets, catheters, gloves, urine bags, plastic waste, etc.

Blue: Glass and metal

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

Biomedical Waste Generated (Kg)





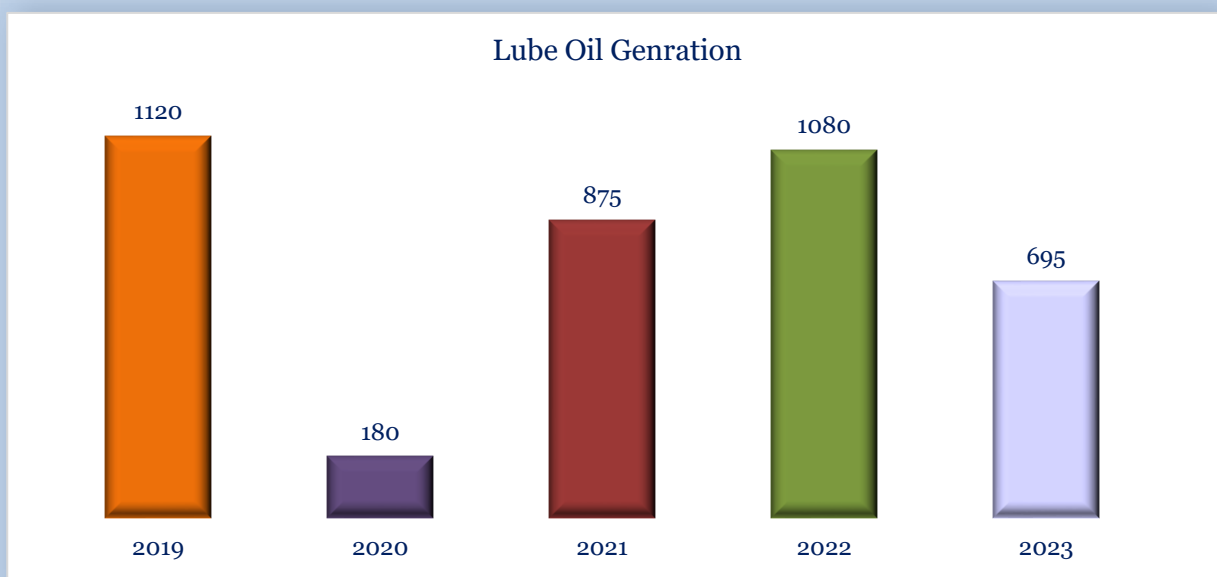
Summary-Biomedical waste (Kg)					
Year	Yellow	Red	Blue	White	Total
2019	16.2	7.4	5.0	0.0	28.6
2020	20.8	19.3	7.8	0.2	48.1
2021	399.8	103.1	33.3	1.6	537.8
2022	60.4	3.9	1.5	0.0	65.8
2023	24.1	91.8	31.5	1.5	149.0
Grand Total	521.3	225.5	79.1	3.3	829.3

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.

Waste lube oil generated over the years (Ltr.)				
2019	2020	2021	2022	2023
1120	180	875	1080	695



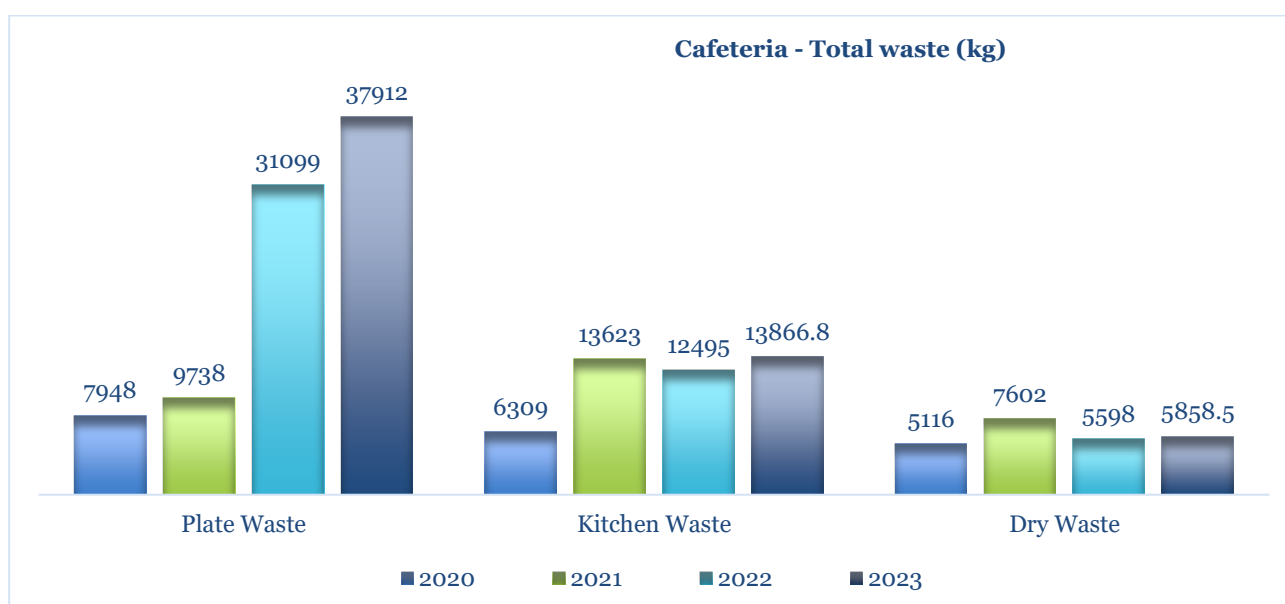
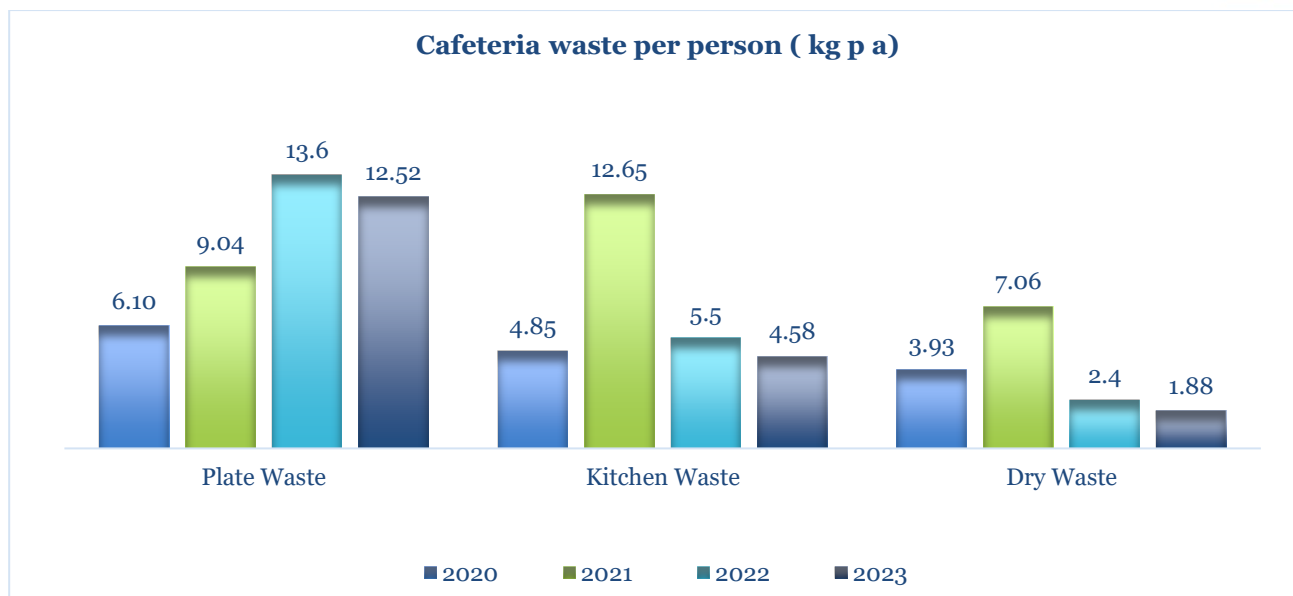
Cafeteria Waste:

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.

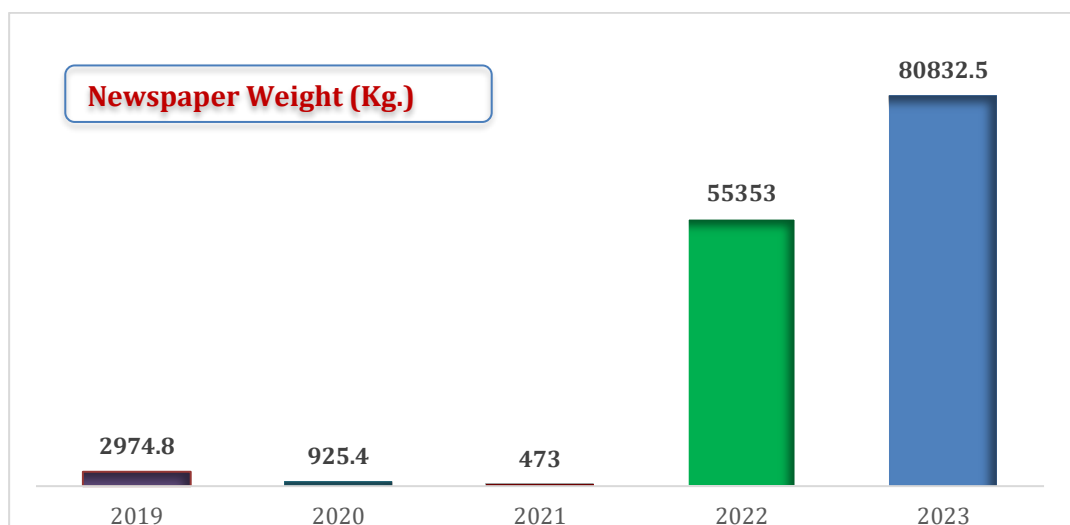
Dry Waste: Food packing material such as cardboard boxes, plastic sleeves, plastic containers, tins etc.



	Qty (Kg)				Per person (kg)			
	Plate Waste	Kitchen Waste	Dry Waste	Total	Plate Waste	Kitchen Waste	Dry Waste	Total
2020	7948	6309	5116	19373	6.10	4.85	3.93	14.88
2021	9738	13623	7602	30963	9.04	12.65	7.06	28.74
2022	31099	12495	5598	49191	13.6	5.5	2.4	21.5

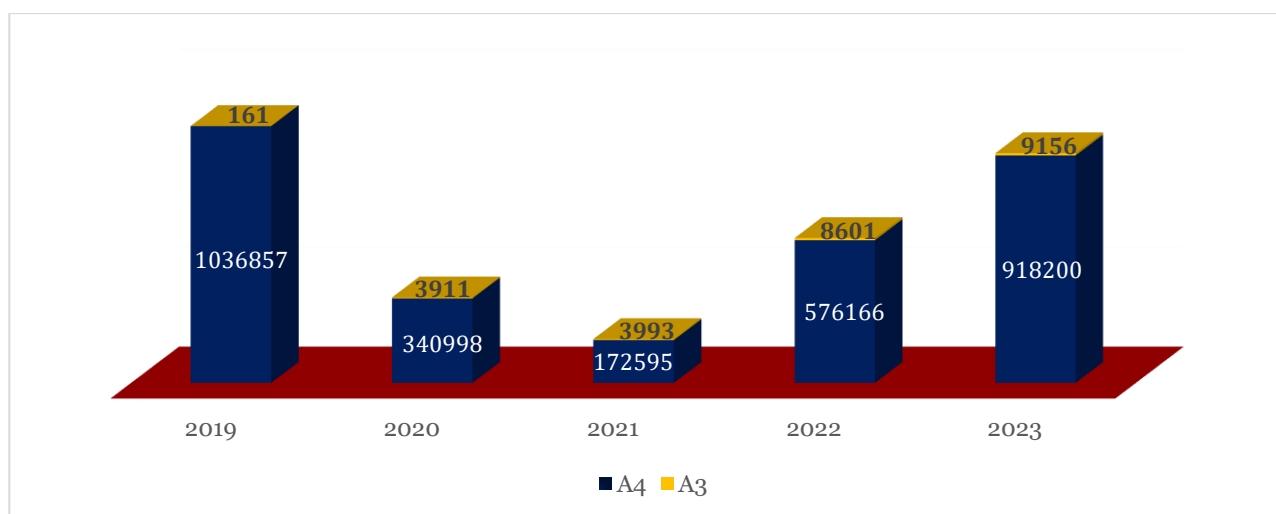
Paper Usage:

Newspaper (Kg)



In the year 2023, Ashoka University used 80,832.5 kg of newsprint p.a. or 6,736.04 kg p.m. (easily reducible through e-paper/magazines and this can be a first in AU).

Printing sheets



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

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

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.





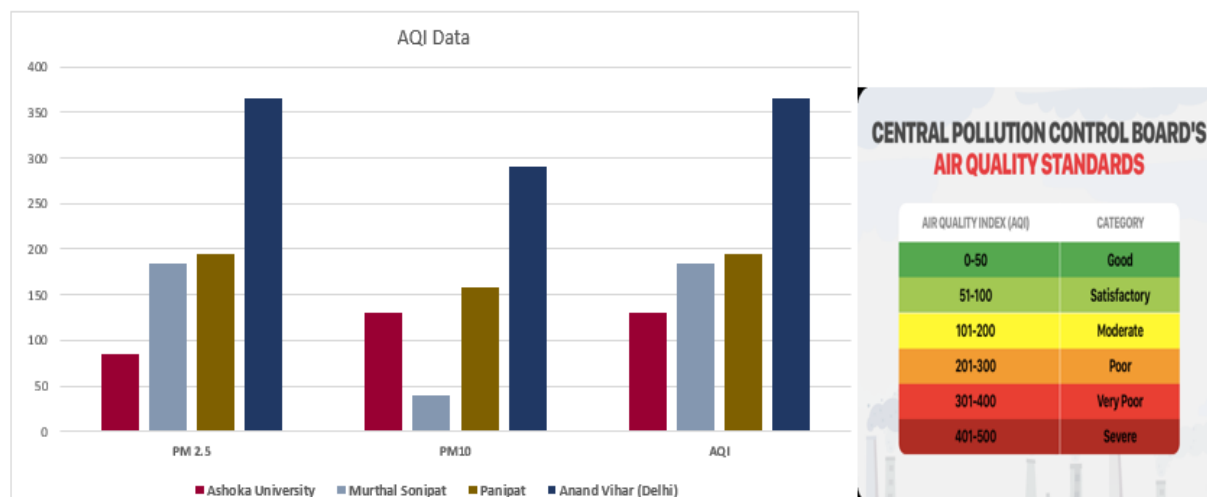
- The entire site has been barricaded with a minimum 3-meter site barricading, and geotextile fencing has been used as and when required to suppress dust particles.
- The vehicles taking construction waste materials outside the site have been covered with fabric to minimise dust caused due to vehicular 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.

Air Quality Management Ashoka University



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



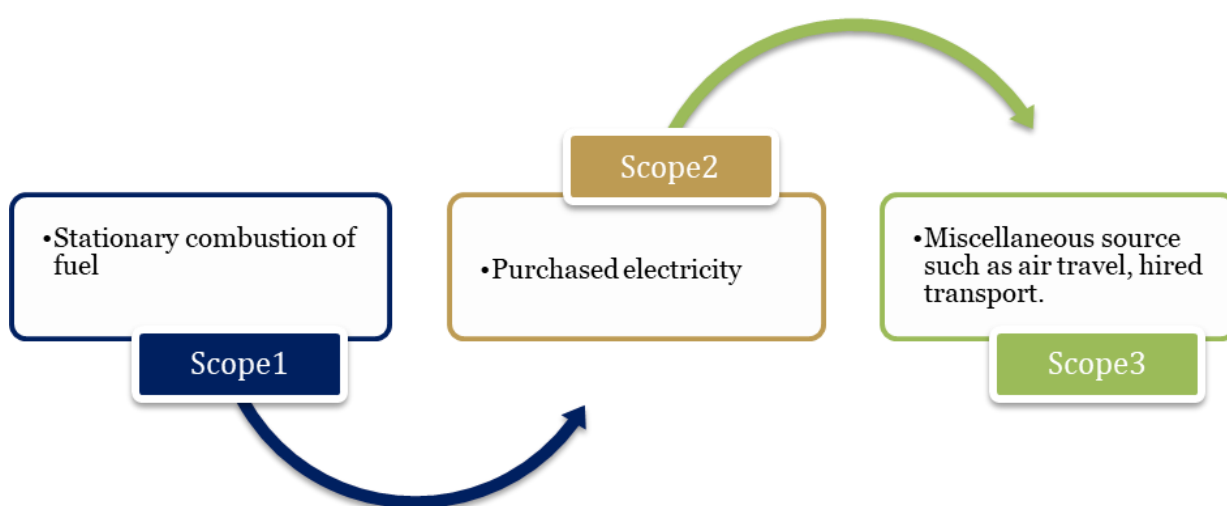
Ashoka University started capturing its energy consumption and CDe generation from Jan'19 onwards, wherein it was more from understanding consumption. The data presented below has certain assumptions, which are as follows:

- *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):



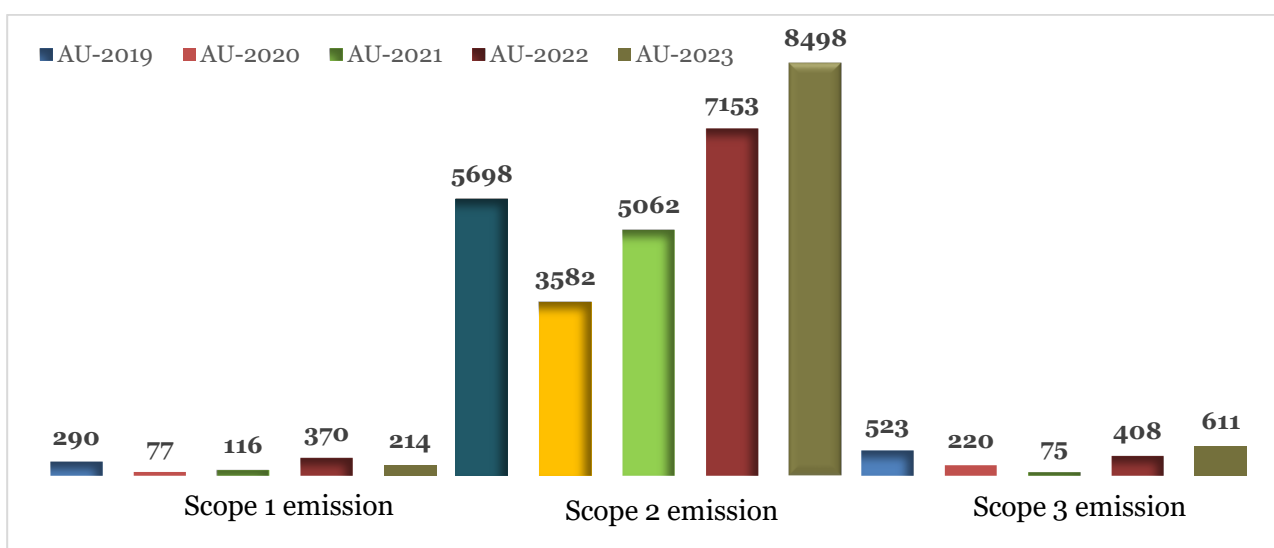
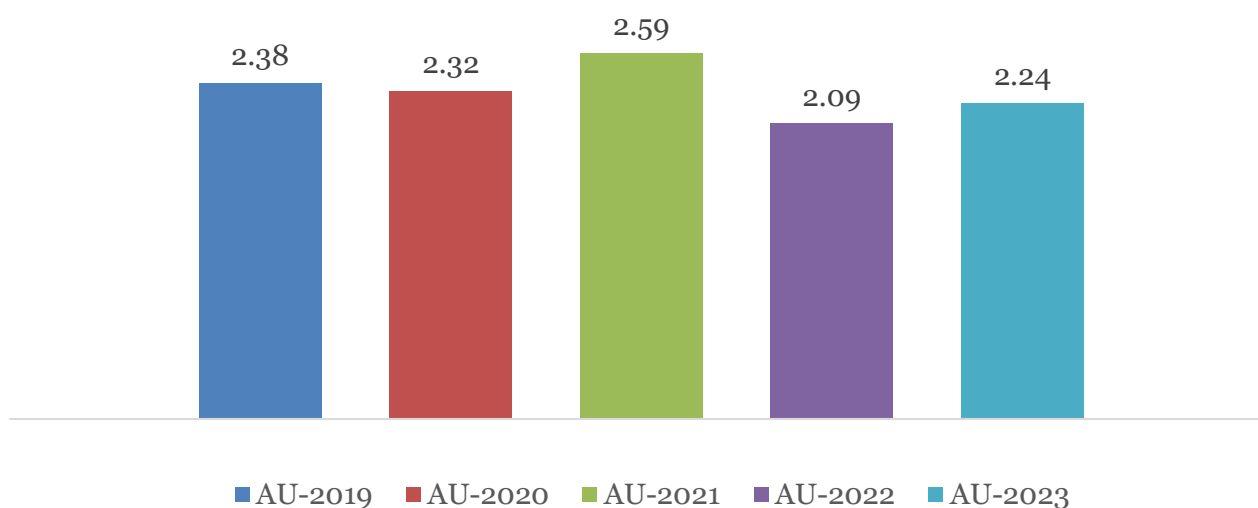
CARBON FOOTPRINT

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	2.38
AU-2020	1652*	77.1	3534	219.8	3830.9	2.32
AU-2021	2038*	116.7	5113.5	55.1	5285.3	2.59
AU-2022	3792*	369.7	7152.7	407.8	7930.3	2.09
AU-2023	4167*	214.3	8498.2	610.7	9323.2	2.24

*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.

tCO₂ /person



2019

	Scope 1	Scope 2	Scope 3		
	DG power generation	Grid Electricity consumption	Employee travel by road- Distance travelled	Employee travel by railways- passenger kilometre's	Employee travel by airways- passenger kilometre's
Month	kWh	kWh	km	km	Km
Jan-19	40320	668370	72995	-	146330
Feb-19	23861	517770	87880	-	157437
Mar-19	26247	309990	90939	-	439478
Apr-19	70424	544470	89640	-	300637
May-19	105818	518010	76506	-	374552
Jun-19	69082	547800	57161	-	387619
Jul-19	125765	784350	80059	-	116530
Aug-19	130295	799710	94358	-	192013
Sep-19	88698	785790	92540	-	373852
Oct-19	92132	475950	85877	-	266268
Nov-19	31909	440250	95085	-	329284
Dec-19	66241	366540	77832	-	298021
Total	870792	6759000	1000872	-	3382021

Carbon Emissions				
	Scope 1 Emissions	Scope 2 Emissions	Scope 3 emissions	Total
Month	tCO2	tCO2	tCO2	
Jan-19	13.44	563.44	30.47	607.35
Feb-19	7.96	436.48	35.26	479.69
Mar-19	8.75	261.32	57.59	327.66
Apr-19	23.48	458.99	46.65	529.12
May-19	35.29	436.68	48.82	520.78
Jun-19	23.04	461.80	44.70	529.53
Jul-19	41.94	661.21	30.07	733.21
Aug-19	43.45	674.16	39.61	757.21
Sep-19	29.58	662.42	53.00	745.00
Oct-19	30.72	401.23	43.03	474.98
Nov-19	10.64	371.13	50.28	432.05
Dec-19	22.09	308.99	43.33	374.41
	290.37	5697.84	522.79	6510.99

Construction staff	175
Total no. of Faculty and staff	347
Total No. of Students	1807
Support Staff	409
Total strength	2738
tCO2/Person	2.38

2020

	Scope 1	Scope 2	Scope 3		
	DG power generation	Grid Electricity consumption	Employee travel by road- Distance travelled	Employee travel by railways- passenger kilometre's	Employee travel by airways- passenger kilometre's
Month	kWh	kWh	km	km	km
Jan-20	58370	768540	85389	-	536882
Feb-20	9960	655320	107182	-	340837
Mar-20	19911	194490	55204	-	849534
Apr-20	9351	219630	0	-	37082
May-20	14929	403110	475	-	0
Jun-20	15094	225000	2121	-	25707
Jul-20	31341	247500	7303	-	34696
Aug-20	30698	378240	8379	-	4344
Sep-20	11721	286704	3952	-	0
Oct-20	12955	241920	4400	-	19399
Nov-20	4178	262110	6666	-	18238
Dec-20	12795	309660	8932	-	8137
Total	231303	4192224	290003	-	1874856

Carbon Emissions				
	Scope 1 Emissions	Scope 2 Emissions	Scope 3 emissions	Total
Month	tCO2	tCO2	tCO2	
Jan-20	19.46	647.88	63.55	730.90
Feb-20	3.32	552.43	54.36	610.11
Mar-20	6.64	163.96	79.43	250.03
Apr-20	3.12	185.15	2.83	191.10
May-20	4.98	339.82	0.13	344.93
Jun-20	5.03	189.68	2.52	197.23
Jul-20	10.45	208.64	4.58	223.67
Aug-20	10.24	318.86	2.55	331.64
Sep-20	3.91	241.69	1.05	246.64
Oct-20	4.32	203.94	2.64	210.90
Nov-20	1.39	220.96	3.15	225.51
Dec-20	4.27	261.04	2.98	268.29
	77.13	3534.04	219.77	3830.95

Construction staff	350
Total no. of Faculty and staff	112
Total No. of Students	849
Support Staff	341
Total strength	1652
tCO2/Person	2.32

2021

	Scope 1	Scope 2	Scope 3		
	DG power generation	Grid Electricity consumption	Employee travel by road- Distance travelled	Employee travel by railways- passenger kilometre's	Employee travel by airways- passenger kilometre's
Month	kWh	kWh	km	km	km
Jan-21	26065	555870	10586	-	18475
Feb-21	6869	297600	8933	-	15672
Mar-21	9975	341400	11081	-	39192
Apr-21	15255	540840	4629	-	10067
May-21	29814	397260	3882	-	12118
Jun-21	33120	569544	8554	-	34557
Jul-21	53541	525546	11628	-	7723
Aug-21	30659	651960	13706	-	30928
Sep-21	66752	770070	12938	-	29989
Oct-21	36473	496230	8726	-	42457
Nov-21	14553	439050	11536	-	21060
Dec-21	26818	480450	10836	-	54328
Total	349894	6065820	117035	-	316568

Carbon Emissions				
	Scope 1 Emissions	Scope 2 Emissions	Scope 3 emissions	Total
Month	tCO2	tCO2	tCO2	
Jan-21	8.69	468.60	4.21	481.50
Feb-21	2.29	250.88	3.56	256.73
Mar-21	3.33	287.80	5.92	297.05
Apr-21	5.09	455.93	1.99	463.01
May-21	9.94	334.89	1.95	346.78
Jun-21	11.04	480.13	4.90	496.07
Jul-21	17.85	443.04	3.66	464.55
Aug-21	10.22	549.60	5.98	565.81
Sep-21	22.26	649.17	5.71	677.14
Oct-21	12.16	418.32	5.55	436.03
Nov-21	4.85	370.12	4.66	379.63
Dec-21	8.94	405.02	7.01	420.97
	116.67	5113.49	55.11	5285.27

Construction staff	485
Total no. of Faculty and staff	70
Total No. of Students	966
Support Staff	517
Total strength	2038
tCO2/Person	2.59

2022

	Scope 1	Scope 2	Scope 3		
	DG power generation	Grid Electricity consumption	Employee travel by road- Distance travelled	Employee travel by railways- passenger kilometre's	Employee travel by airways- passenger kilometre's
Month	kWh	kWh	km	km	km
Jan-22	17169	740640	0	-	30742.95
Feb-22	18680	502770	29620	-	28331
Mar-22	18167	1	69268	-	170631
Apr-22	158352	1586010	71420	-	174352
May-22	140558	670050	68908	-	94133
Jun-22	132056	684221	57360	-	122017
Jul-22	101736	763471	59328	-	210852
Aug-22	84284	749205	58052	-	351186
Sep-22	303733	883233	72901.9	-	630534
Oct-22	76771	740310	72125	-	278314
Nov-22	38499	602490	73801	-	329810
Dec-22	18943	562445	77000	-	463450
Total	1108948	8484846	709783.9	-	2884353

Carbon Emissions				
	Scope 1 Emissions	Scope 2 Emissions	Scope 3 emissions	Total
Month	tCO2	tCO2	tCO2	
Jan-21	5.73	624.36	2.35	632.43
Feb-21	6.23	423.84	10	440.06
Mar-21	6.06	0	31.34	37.4
Apr-21	52.8	1337.01	32.19	1422
May-21	46.87	564.85	25.41	637.13
Jun-21	44.03	576.8	24.48	645.31
Jul-21	33.92	643.61	31.78	709.31
Aug-21	28.1	631.58	42.15	701.84
Sep-21	101.28	744.57	67.4	913.24
Oct-21	25.6	624.08	40.31	689.99
Nov-21	12.84	507.9	44.69	565.42
Dec-21	6.32	474.14	55.73	536.19
	369.78	7152.73	407.83	7930.33

Construction staff	0
Total no. of Faculty and staff	468
Total No. of Students	2715
Support Staff	609
Total strength	3792
tCO2/Person	2.09

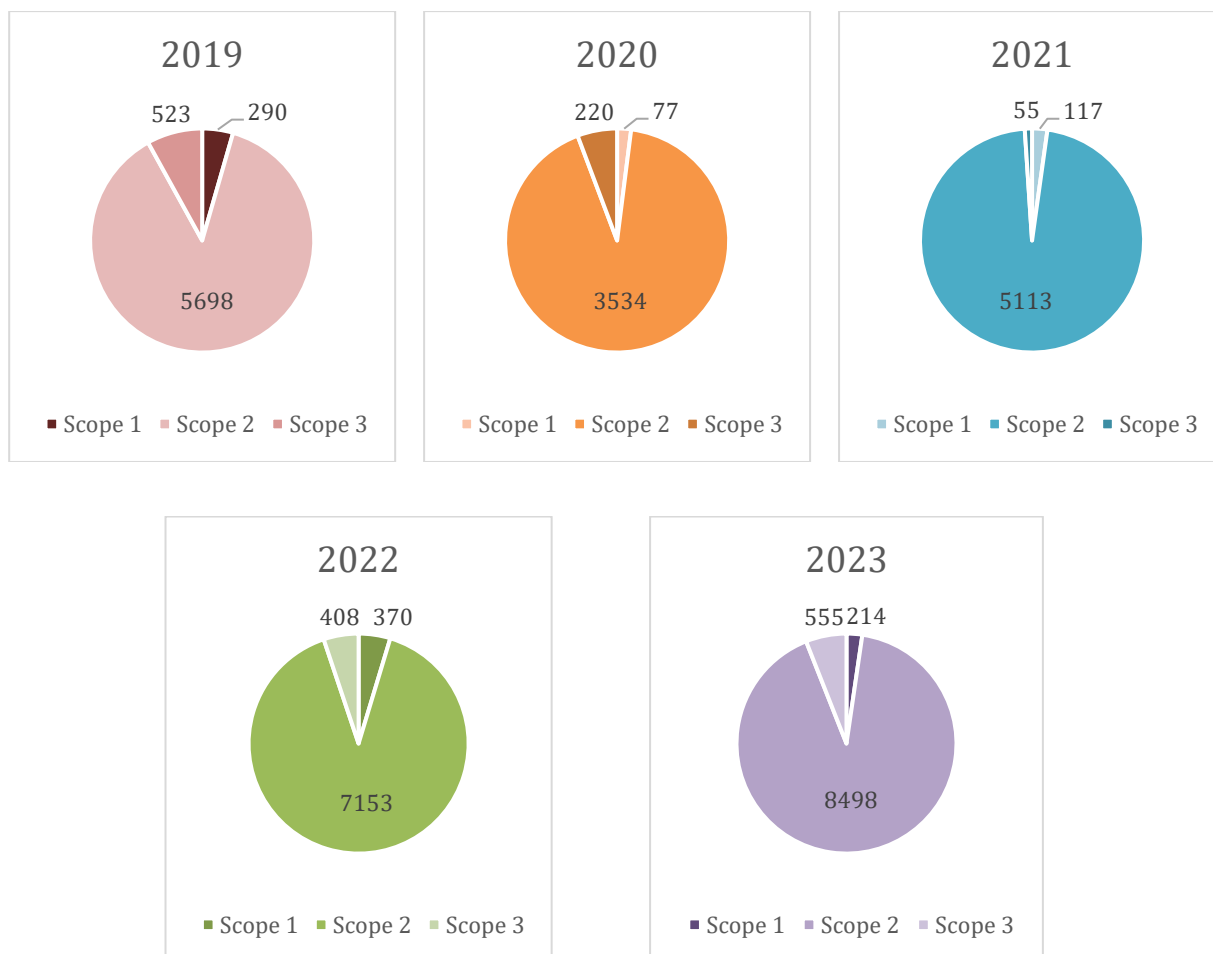
2023

	Scope 1	Scope 2	Scope 3		
	DG power generation	Grid Electricity consumption	Employee travel by road- Distance travelled	Employee travel by railways- passenger kilometres	Employee travel by airways- passenger kilometres
Month	kWh	kWh	km	km	km
Jan-23	78486	769680	70000	-	376038.38
Feb-23	35446	490890	77000	-	505591.86
Mar-23	80375	657930	77000	-	432057.9
Apr-23	128483	798270	77000	-	343500.75
May-23	120629	762210	70000	-	482108.37
Jun-23	25480	833790	70000	-	415673.21
Jul-23	61525	911220	70000	-	298231.62
Aug-23	42445	1100130	70000	-	519939.13
Sep-23	42312	1346880	84000	-	531713.06
Oct-23	19121	901080	84000	-	399140.46
Nov-23	3638	694290	84000	-	316172.98
Dec-23	4874	814500	77000	-	229208.64
Total	642814	10080870	910000	-	4849376.36

Carbon Emissions				
	Scope 1 Emissions	Scope 2 Emissions	Scope 3 emissions	Total
Month	tCO2	tCO2	tCO2	
Jan-23	26.2	648.8	47.2	722.2
Feb-23	11.8	413.8	58.9	484.6
Mar-23	26.8	554.6	53.3	634.8
Apr-23	42.8	672.9	46.6	762.4
May-23	40.2	642.5	55.3	738.1
Jun-23	8.5	702.9	50.2	761.6
Jul-23	20.5	768.2	41.3	829.9
Aug-23	14.2	927.4	58.2	999.8
Sep-23	14.1	1135.4	62.8	1212.3
Oct-23	6.4	759.6	52.7	818.7
Nov-23	1.2	585.3	46.3	632.8
Dec-23	1.6	686.6	37.9	726.1
	214.3	8498.2	610.7	9323.3

Total no. of Faculty and staff	468
Total No. of Students	2960
Support Staff	739
Total strength	4167
tCO2/Person	2.24

CDe Chart (Year-Wise)



End of CDe report

In conclusion, Ashoka University, in its dedication to enhancing sustainability across all operations, has initiated the measurement of all necessary parameters. Adhering to current GHG protocols, Ashoka will progressively set more ambitious environmental goals in pursuit of sustainability.

End of report.