



# GREEN AUDIT REPORT

PREPARED BY
EHS ALLIANCE SERVICES





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## CERTIFICATE



## **CERTIFICATE**

PRESENTED TO

## M/S SGT UNIVERSITY

Budhera, Gurugram-Badli Road, Gurugram(Haryana)-122505

Has been assessed by EHS Alliance Services for the comprehensive study of environmental impacts on institutional working framework to fulfill the requirement of

## **GREEN AUDIT**

The green initiatives carried out by the institution have been verified on the report submitted and was found to be satisfactory.

The efforts taken by the management and the faculty towards environment and sustainability are appreciated and noteworthy.



31.05.2022 DATE OF AUDIT

EHS ALLIANCE SERVICES, PLOT A-72, SURYA VIHAR, GURUGRAM, 122001 WWW.EHSALL.IN | BUSINESS@EHSALL.IN | EHSALLIANCE@GMAIL.COM





## ACKNOWLEDGEMENT

EHS Alliance Services would like to thank the management of SGT University, Gurugram for assigning this important work of Green Audit. We appreciate the co-operation to the teams for completion of assessment.

We would like to specially thank *Prof.(Dr.) Joginder Yadav, Registrar, SGT University* for giving us an opportunity to evaluate the environmental performance of the campus.

We would also like to thank *Dr. Satish Kumar Sharma*, *Director IQAC*, *SGT University* for his continuous support and guidance, without which the completion of the project would not have been possible. We are also thankful to other staff members who were actively involved while collecting the data and conducting field measurements.

We are also thankful to

Dr. Archana Chaudhary Environmental Committee Chairperson

Mr. Gaurav Choudhary: Environmental Committee Member

*Prof.(Dr.) Manish Gupta:* Environmental Committee Member

Dr. Bijender Sindhu: Environmental Committee Member

Dr. Simranjeet Singh: Environmental Committee Member

Mr. Ramesh Semwal: Environmental Committee Member

Mr. Gopal Rana: Environmental Committee Member

Mr. Umesh Kothari: Environmental Committee Member

Mr. Arvind: Environmental Committee Member

Mr. Sripal: Environmental Committee Member





## DISCLAIMER

EHS Alliance Services Audit Team has prepared this report for SGT University based on input data submitted by the representatives of SGT University complemented with the best judgment capacity of the expert team.

While all sensible care has been taken in its preparation, details contained in this report have been compiled in good faith based on information gathered.

It is further informed that the conclusions are arrived following best estimates and no representation, warranty or undertaking, express or implied is made and no responsibility is accepted by Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report.

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Signature

**LEAD AUDITOR** 





## **CONCEPT AND CONTEXT**

The National Assessment and Accreditation Council, New Delhi (NAAC) has made it mandatory from the academic year 2019–20 onwards that all Higher Educational Institutions should submit an annual Green, Environment and Energy Audit Report. Green Audit is assigned to the Criteria 7 of NAAC, National Assessment and Accreditation Council which is a self-governing organization of India that declares the institutions as Grade A, Grade B or Grade C according to the scores assigned at the time of accreditation. Moreover, it is part of Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards the reduction of global warming through Carbon Footprint reduction measures.

In view of the NAAC circular regarding Green auditing, the university management decided to conduct an external environment assessment study by a competent external professional auditor. The green audit aims to examine environmental practices within and outside the SGT campus, which impact directly or indirectly on the atmosphere. Green audit can be defined as systematic identification, quantification, recording, reporting and analysis of components of university/college environment. It was initiated with the intention of reviewing the efforts within the institutions whose exercises can cause risk to the health of inhabitants and the environment.

Through the green audit, a direction as how to improve the structure of environment and inclusion of several factors that can protect the environment can be commenced. This audit focuses on the Green Campus, Waste Management, Water Management, Air Pollution, Energy Management & Carbon Footprint etc. being implemented by the institution. The concepts, structure, objectives, methodology, tools of analysis, objectives of the audit are discussed below.







## INTRODUCTION

Now days, the educational institutions are becoming more thoughtful towards the environmental aspects and as a result new and innovative concepts are being introduced to make them sustainable and eco-friendly. To preserve the environment within the institution, a number of viewpoints are applied by the several educational institutes to solve their environmental problems such as promotion of the saving the energy, waste recycle, water consumption reduction, water harvesting and many more...

The activities carried out by the institution can also create adverse environmental impacts. Green audit is defined as an official inspection of the effects a university has on the environment. Green Audit is conducted to evaluate the actual scenario at the institution campus. Green audit can be a useful tool for a college/university to determine how and where they are using the most of the energy or water or resources; the college can then decide how to implement changes and make savings. It can also be used to determine the nature and volume of waste, which can be used for a recycling project or to improve waste minimization plan.

Green auditing and the application of mitigation measures is a win-win situation for all the institutions, the learners and the mother earth. It can also result in health awareness and can promote the environmental awareness, values and beliefs. It provides a better understanding to staff and students about the Green impact on institution. Green auditing also upholds financial savings through reduction of resource usage. It gives an opportunity to the students and teachers for the development of ownership of the personal and social responsibility. The audit process involves primary data collection, site walk through with the team of College/University including the assessment of policies, activities, documents and records.







## **OVERVIEW OF THE UNIVERSITY**

SGT (Shree Guru Gobind Singh Tricentenary) University, Gurugram, which spreads over 70 acres of lush green campus enveloped with serene beauty and environment. The University is situated at Chandu-Bhudera on the outskirts of Gurgaon; it is less than five kilometers from Delhi border at Daurala and has an easy and convenient access from I.G International Airport.



SGT University came into existence by the Haryana Private Universities (Amendment) Act No. 8 of 2013 making educational opportunities available to all segments of the society under the parasol of Dashmesh Educational Charitable Trust, which was founded in 1999 with the holly cause of propagating the message of Shree Guru Gobind Singh Ji, the great philosopher and social reformer which says "spread of learning is the best service to mankind". In fact, the seeds for its magnificent growth were sown way back in 2002 with the establishment of the SGT Dental College.

The most valuable investment any educational institution can make is "Nurturing Future Leaders". With the continuous rise in expectation of essential leadership standards, SGT University torch bearers have taken a responsibility for this investment to nurture the Next-Gen leaders with a vision to bridge the existing skill gap. With a firm step forward to attain an academic excellence, several Centers of Excellence, laboratories, incubation cell and industry-academia associations have been setup at the SGT University in association with global leaders.

With dedicate Corporate Resource Center, Centers of Excellence and academic associations like Apple, Laerdal-Jhpiego, SAP Next-Gen, UNESCO Bioethics, IBM, ORACLE, University of California –Berkley, Nobel Biocare, Trimble, Intel, NSE, Tally India, OISTAT, SMC India, CIMA & German Academy for Digital Education we are committed to develop naturally confident young innovative leaders who will weave career advancement opportunities through continuous learning & development support and experience they gain. With the continuously changing nature of work and the war for talent wages, at SGT University we Foster a Culture of Continous Learning to develop future innovative leaders of international repute, who





are quick to learn & implement, understand changing customer needs, highly comfortable & creative with change, are able to revamp operations modestly with an appreciable ROI.



The modern infrastructure and learner centric andragogy at SGT University extend full support to the learners and we are focused to invest more in "Nurturing Future Leaders" to produce much more resourceful and productive employee for each level in the organization be it a "Green Graduates" or a "Tenured Senior Managers". To map the galloping pace of innovations blended with changing technology and HR systems.

We are determined to inculcate Domain Specific Skills and Soft Skills to our emerging innovative leaders and make them future ready. At SGT University, we are focused to inculcate skills and behaviours for a good cultural fit along with right academic background.

#### **Facilities**

#### Hostel

SGT University has separate hostels for girls and boys with round the clock security arrangements, each hostel has separate dining rooms, recreation rooms and study rooms.







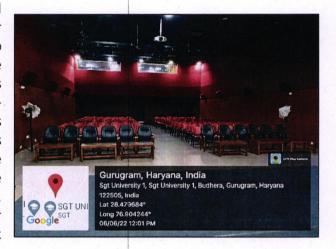
#### **Transport Services**

SGT University has 60 buses that ply on several routes across NCR and its neighbouring areas, serving both students and staff. Bus facilities are also available to hostellers for visits to the city. Students are charged on the basis of actual.



#### Seminar Hall

The Seminar Hall is the ideal venue for seminars and medical professional members to talk and deliver lectures to the students of our SGT University to provide them with a better and closer insight into the working of their different fields. These conferences and lectures not only provide the students with first-hand information about the working of various fields but also give them an opportunity to get their doubts cleared by asking questions from our guests. The guests initially deliver their lecture telling the students about their work, the challenges they face, the difficulties they overcome and so on, and after that the students are given an opportunity to ask questions and clear their doubts if any.



#### Play Grounds

The SGT University provides all kinds of sports activities and encourages students to take part in games and to ensure their all-round development. All facilities and playgrounds are available for Basket Ball, VolleyBall, Foot Ball, Table Tennis, Cricket, Badminton etc.







#### Library

The Library of the college has fully air conditioned excellent Health Sciences library with state of the art facilities. The library has been carefully designed to have more space & natural lighting for the comfort of readers. It can accommodate 450 users at a time. It covers an extensive set of features with a simple user interface. It is well equipped with modern facilities and resources in the form of CD-ROM, online databases, books, journals, back volumes of journals, thesis, WHO publications etc.



#### Canteen

The SGT University has a spacious cafeteria that offers a wide variety of snacks to students and staff at reasonable rates.



#### Labs

The Highlights of Department of Anatomy, SGT Medical College, Hospital and Research Institute is its Museum, Dissection Hall and Research Lab. The Dissections hall is well equipped with embalming facility, deep freezer, cadaver storage tank, body cutting machine for making specimens for the museum. The research lab is well equipped with the facility of tissue processing, special staining, research microscope with digital camera, facilities for basic research in genetics, anthropometrical studies and egg incubator for research in embryology.







#### Gym

SGT University has well equipped gym for fitness both in girls and boys hostel



### **Vision & Mission**

#### Vision

To nurture individual's excellence through value based, cross-cultural, integrated and holistic education adopting the contemporary and advanced means blended with ethical values to contribute in building a peaceful and sustainable global civilization.

#### Mission

- To impart higher education at par with global standards that meets the changing needs of the society
- To provide access to quality education and to improve quality of life, both at individual and community levels with advancing knowledge in all fields through innovations and ethical research.
- To actively engage with and promote growth and welfare of the surrounding community through suitable extension and outreach activities
- To develop socially responsible citizens, fostering ethical values and compassion through participation in community engagement, extension and promotion activities.





- To create competitive and coordinated environment wherein the individual develop skills and a lifelong learning attitude to excel in their endeavours.
- To develop Centers of Excellence culminating in achieving the cutting-edge technology in all fields.

### **Core Values**

- 1. Innovation
- 2. Leadership
- 3. Ethics
- 4. Social responsibility



Presently, SGT University offers around 160+ courses featuring a wide selection of undergraduate, postgraduate and PhD courses. SGT University has 18 faculties namely:





Faculty of Mass Communication & Media Technology	Faculty of Hotel & Tourism Management	Faculty of Fashion & Design	Faculty of Commerce & Management
Faculty of Engineering & Technology	Faculty of Agricultural Sciences	Faculty of Education	Faculty of Law
Faculty of Science	Faculty of Indian Medical System	Faculty of Naturopathy and Yogic Sciences	Faculty of Allied Health Sciences
Faculty of Behavioral Sciences	Faculty of Dental Sciences	Faculty of Nursing	Faculty of Medicine & Health Sciences
	Faculty of Physiotherapy	Faculty of Pharmacy	

SGT University is also emphasising a lot on new and upcoming technologies and has set up dedicated centres of excellence for Artificial Intelligence & Machine Learning, Big Data Analytics, Cloud computing, Internet of Things, Blockchain technology, etc following industry standards.





Geo Location Geo Coordinates from Google maps: 28.478609989761843, 76.90393658016679









## **AUDIT PARTICIPANTS**

#### On behalf of SGT University

Name	Designation/Department
Prof.(Dr.) Joginder Yadav	Registrar, SGT University
Dr. Archana Chaudhary	Environmental Committee Chairperson, SGT University
Mr. Gaurav Choudhary	Environmental Committee Member, SGT University
Prof.(Dr.) Manish Gupta	Environmental Committee Member, SGT University
Dr. Bijender Sindhu	Environmental Committee Member, SGT University
Dr. Simranjeet Singh	Environmental Committee Member, SGT University
Mr. Gopal Rana	Environmental Committee Member, SGT University
Mr. Umesh Kothari	Environmental Committee Member, SGT University
Mr. Arvind	Environmental Committee Member, SGT University
Mr. Sripal	Environmental Committee Member, SGT University
Mr. Ramesh Semwal	Environmental Committee Member, SGT University

#### On behalf of EHS Alliance Services

Name	Position	Qualifications
Dr. Uday Pratap	Lead-Auditor	Ph.D. , PDIS, Lead Auditor ISO 14001:2015, QCI — WASH, Field expert
Mr. Puneet Kaushik	Co-Auditor	M.Sc. M.Tech (Environment Science & Engineering), PGDISM, Lead Auditor ISO 14001:2015, OHSAS 18001:2007
Mr. Shamsher Kharab	Co-Auditor	M.Sc., M.Tech in Environment Sciences, Field Expert, Post Diploma in Industrial Safety Management







## **EXECUTIVE SUMMARY**

Green auditing is an essential step to identify and determine whether the institutions practices are sustainable and ecological. Traditionally, we were upright and efficient users of natural resources. But over the period of time, excessive usage of resources like water, electricity, petrol, etc. have become habitual for everyone especially, in urban and semi-urban areas. It is actually the right time to check if we (our process) are consuming more than required resources? Whether we are using resources sensibly?

Green audit standardizes all such practices and provides an efficient way to use natural resources. In the time of climate change and resource exhaustion it is necessary to re-check the processes and convert it in to green and sustainable. Green audit provides an approach for it. It also increases overall awareness among the individuals working in institution towards the eco-friendly environment.

This is the second attempt to conduct a green audit of the SGT campus for fulfilment of NAAC criteria. This audit was mainly focused on greening indicators like consumption of energy in terms of electricity and fossil fuel, quality of soil, water usage, vegetation, waste management practices and carbon foot print of the campus. Initially a questionnaire was shared to know about the existing resources of the campus and resource consumption pattern of the students and staffs in the SGT University.

## GREEN AUDIT - ANALYSIS

#### 1.1 GENERAL INFORMATION

1. Does any Green Audit conducted earlier?

Yes, This is second time SGT University has gone for External Green Audit in a systematic way of monitoring their environmental eminence.

#### 2. What is the total strength (people count) of the Institute?

Students

Male: 3931 Female: 4143 Total: 8074

Teachers (including guest faculty)

Male: 343 Female: 345 Total: 688

Non-Teaching Staff

Male: 1090 Female: 342 Total: 1442

Total Strength

Male: 5364 Female: 4830 Total: 10194





#### 3. What is the total number of working days of your campus in a year?

There are one hundred eighty working days in a year.

#### 4. Where is the campus located?

The campus is located at Budhera, Gurugram-Badli Road, Gurugram(Haryana)-122505

#### 5. Which of the following are available in your institute?

Garden area Available Playground Available Kitchen Available Toilets Available Garbage Or Waste Store Yard Available Laboratory Available Canteen Available Hostel Facility Available Guest House Available

#### 6. Which of the following are found near your institute?

Municipal dump yard Not in vicinity of institute

Garbage heaps No Garbage heaps

Public convenience Public convenience is available

Sewer line Approximately 4 KM sewer line within campus

Stagnant water No stagnant water

Open drainage No Industry – (Mention the type) No

Bus / Railway station Budhera Bus stand, Garhi Hashru Railway station

Market / Shopping complex Available

#### 1.2 WASTE MINIMIZATION AND RECYCLING

#### Does your institute generate any waste? If so, what are they?

Yes, Solid waste, Canteen waste, paper, plastic, horticulture, electronic waste, BMW waste, etc.

#### 2. What is the approximate amount of waste generated per day? (in KG approx.)





Biodegradable waste – 50 Kg Non-biodegradable waste - 50 Kg Hazardous Waste - 10 Kg (BMW) E-waste - 2 Kg

## 3. How is the waste generated in the institute managed? By Composting, Recycling, Reusing, Others (specify)

- Single use plastic is banned on the campus
- Composting is done for horticulture waste management.
- Biotic Waste Limited. Is managing BMW of SGT University.
- Solid waste (Both dry and wet) is managed by Gurugram Waste Management System Pvt Ltd
- Oil and hazardous waste is managed by Shiv Shakti Oil and Lubricants and Gujarat Enviro Protection and Infrastructure (Haryana) Pvt. Ltd
- Greenobin is managing paper waste by doing bulk recycling.
- SGT University is in collaboration with Earth Zone Recycling. They collect e-waste (computers, mobile, printers, servers, printers) in the campus, and send for recycling.
- They recycle used paper on the campus.
- > Bi-annual one week collection drive is organized by campus.

#### 4. Do you use recycled paper in institute?

Yes, SGT University collaborate with third party recycle vendor for management of the used paper

#### 5. How would you spread the message of recycling to others in the community?

- Seminars and add-on courses for students and faculty
- Nukkar-Natak by Students to increasing awareness
- Part of Environment education
- MoUs with NGOs
- Reuse waste paper for poster makings

#### 6. Can you achieve zero garbage in your institute? If yes, how?

Not yet achieved. SGT University is in process to achieve zero garbage. SGT University converts the biodegradable garden and kitchen waste into compost. The dry waste is reduced by using digital medium to circulate messages rather than printed paper.





#### 1.3 GREENING THE CAMPUS

1. Is there a garden in your institute?

Yes, about 111869.78 Sq meters areas are developed as Gardens.

2. Do students spend time in the garden?

Yes, students spend around 2-4 Hours during winters.

3. Total number of Plants in Campus?

Plant type with approx. count

Full grown Trees

2064

Small Trees

27842

Hedge Plants

195061

Grass Cover SQM

111869.78 Sq meters

4. Is the SGT campus having any Horticulture Department? (If yes, give details)

Yes, Total 57 staff deployed in horticulture

1 - Head

4 - Supervisor

52 – gardeners

#### 5. How many Tree Plantation Drives organized by campus per annum?

- Various Plantation Drives are organized by campus in last Financial Year 2021-2022.
   A total 104471 plants were planted (Details of the same are provided in annexure 1)
- Plantation by the distinguished guest during event.

#### 6. How many trees and plants were planted in last drive? And, what is the survival rate?

Total 104471 trees and hedge plants planted in this Financial Year with more than 70% survival rate.

#### 7. Is there any Plant Distribution Program for Students and Community?

The SGT University has a practice where all guests are given a planter as a gift rather than a bouquet of flowers





#### 8. Is there any Plant Ownership Program?

Yes

#### 1.4 WATER AND WASTEWATER MANAGEMENT

1. List uses of water in your institute

Basic use of water in campus:

Drinking - 232.72 KL/month

Gardening - O KI/month, SGT University uses STP treated water

Kitchen and Toilets - 1533.33 KL/month

Hostel - 3302.10 KL/Month

Others - 652.73 KL/month

Total = 5720.81 KL/Month

## 2. How does your institute store water? Are there any water saving techniques followed in your institute?

SGT University relies on tanker for water supply as a primary source and 3 bore wells as a secondary source. 4 Overhead Water Tanks and 03 Underground Water tanks installed for storage of water.

SGT University ensures regular maintenance of water tanks and checking of water quality standards on the campus. The water tanks and water coolers are checked every 3 months, and RO systems are regularly changed.

#### Saving Techniques

- > SGT University ensures that the faucets in the washrooms and water filtration units are checked regularly and do not have any leakages.
- SGT University has also initiated the installation of auto push taps to reduce water wastage.
- 3. Locate the point of entry of water and point of exit of waste water in your institute.





Entry – SGT University uses tankers for water and have bore wells as a secondary source

**Exit** – From Canteen, Toilets, bathrooms and Hostels through covered drainage which is connected to sewage

#### 4. Write down ways that could reduce the amount of water used in your institute

#### Basic ways:

- Close the taps after usage
- Maintenance and monitoring of valves in supply system to avoid overflow, leakage and spillage
- The SGT University ensures that the faucets in the washrooms and water filtration units are checked regularly and do not have any leakages.
- The SGT University has initiated the installation of auto push taps to reduce water wastage.

#### 1.5 ANIMAL WELFARE

1. List the animals (wild and domestic) found on the campus (dogs, cats, squirrels, birds, insects, etc.)

Approx. 5 Dogs, 3 cats, 100+ Squirrels, 20+ species of Birds including peacock, and Butterflies are found in campus. A variety of bird's species and other flora and fauna available, so institute is doing their bit for bio diversity conservation.

#### 2. Does your institute have a Biodiversity Program or a KARUNA CLUB?

Yes **SGT environment committee** actively participates in activities including feeding the birds, planting fruit based plants for birds, organizes biodiversity awareness campaigns, etc.

#### 1.6 CARBON FOOTPRINT - EMISSION & ABSORPTION

1. Electricity used per year - CO2 emission from Electricity

(electricity used per year in kWh/1000) x 0.84 4656510 kWh/1000 x 0.84

- = 4656510/1000x0.84
- = 3911.47 tons

#### 2. LPG/PNG used per year - CO2 emission from LPG/PNG





(LPG/PNG used per year in kg/1000) x 2.99 49096 kg /1000 x 2.99

- =49096/1000 x 2.99
- =146.80 tons

#### 3. Diesel used per year - CO2 emission from HSD (Diesel)

(diesel used per year in litre/1000) x 2.68 126144/1000 x 2.68

- = 126144 /1000 x 2.68
- = 283.98 tons

#### 4. Transportation per year (car) CO2 emission from transportation (Bus and Car)

SGT University has 11 buses and 15 cars which runs on diesel 11X1X2x180/100x0.01

- +15x2x2x180/100x0.02
- = 0.40 + 2.16
- = 2.56 tons

Total CO2 emission per year cumulative by electricity usage + bus and car transportation (3911.47 + 146.80 + 283.98 + 2.56 = 4344.81 tons)

#### Carbon absorption by flora in the institution

There are 2064 full grown trees and 27842 semi grown trees of different species and approximately 195061 shrubs/hedge plants.

Carbon absorption capacity of one full grown tree 22 kg CO2 Therefore Carbon absorption capacity of 2064 full-grown trees 2064 x 22 kg CO2 = 45.41 tons of CO2. The carbon absorption capacity of 27842 semi-grown trees is 50% of that of full-grown trees. Hence the carbon absorption 27842 x 6.8 kg of CO2 = 189.33 tons of CO2

There are approximately Hedge Plants 195061 of various species being raised in the gardens and grown in the areas where no buildings are built Carbon absorption of bush plants varies widely with their species. Certain bushes absorb very high level of CO2 where as some others absorb very low level of CO2. In the absence of a detailed scientific study, 200g of CO2, absorption is taken per bush (in consultation with Environmental Science specialists). Based on this, total carbon absorption of bushes is  $195061 \times 200 \text{ g} = 39.01 \text{ tons of CO2}$ 

The lawns on the campus have buffalo grass, Mexican grass and indigenous grass species and cover a total area of 542758 sq. ft. Carbon absorption capacity of a 10 sq. ft. area of lawn is 1 g per day Therefore, carbon absorption by lawn area  $542758 \times 365 \times 0.1$  g CO2 = 19.81 tons of CO2

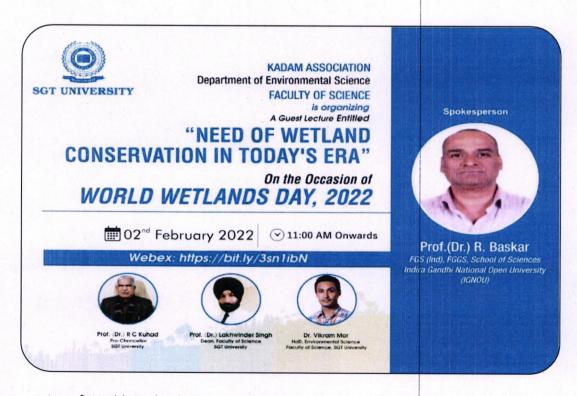
Grand total of carbon absorption capacity of the campus is 293.56 tons.





## **GREEN INITIATIVES BY CAMPUS**

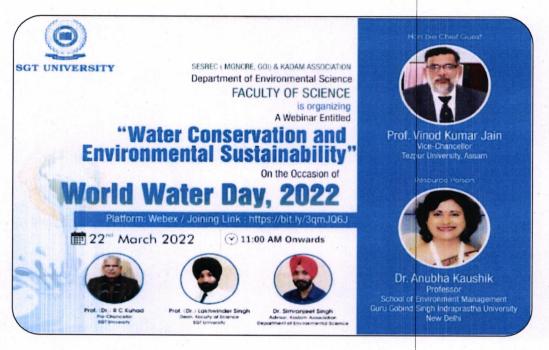
- Renewable Energy Solar power plant of capacity 910 KW is installed on building roof that will supply approx. 20 % of total power in campus. Also, the SGT University is using solar lights for street lights.
- Tree Plantation Drives Various plantation drives were carried out in the current year in the Campus.
- Air Pollution Reduction Personal Vehicles (Students) are not allowed in the campus to reduce the air pollution
- Solid Waste Management Waste management is done by composting. There is ban on single plastic use and plastic crockery in the campus.
- SGT Environment Committee SGT University has an environment committee. Below are the highlights of their work on environment consciousness.



On the occasion of World Wetlands Day, A webinar was organised by Kadam Association, Department of Environmental Science, FOSC on the topic "Need of Wetland Conservation in Today's Era", for all the students of UG and PG, SGT University







A webinar was organised by Kadam Association and SESREC, on the topic "Water Conservation and Environmental Sustainability" on the occasion of World Water Day for all the students of UG and PG, SGT University



On the Occasion of World Environment Day -2021 Prodigy A Science Association under the aegis of SESREC (Social Entrepreneurship, Swachhta & Rural Engagement Cell), Faculty of Science, organizing an





expert talk on *Geo-informatics for Environmental Conservation and Management* on 05 June 2021. More than 165 participants participated in this event.



**Plantation drive of native plants:** Students and Faculty members have actively participated in tree plantation on the occasion of World Environment Day with Kadam Association, Department of Environmental Science (FOSC).

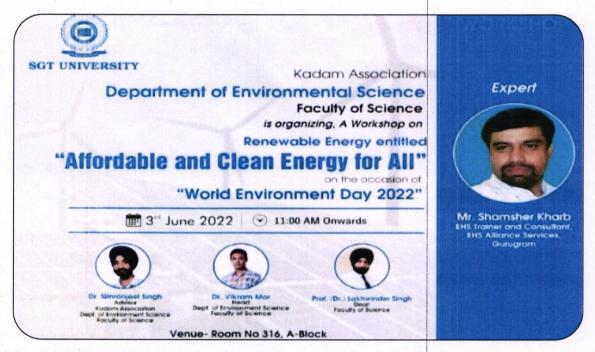


The Best out of Waste: Mrs. Anu, Department of Environmental Science and Mrs. Nidhi Hooda of Community Outreach along with 10 students carried out Best out of Waste Activities at Senshil





Foundation-An orphanage home, Sector 50, Gurugram. Students of Faculty of Science have prepared some items out of waste paper and other waste materials which were demonstrated to the kids of orphanage. The main objective of the activity was to create Environment awareness, solid waste management and how to reuse these waste to make many usable items. Near 100 kids participate in this and show their enthusiasm to save Environment.



Workshop on –Renewable Energy: Mr. Niladri Roy started the workshop on renewable energy resources. Dean, Faculty of Science welcomed today's guest Mr. Shamsher Kharb with a sapling. Mr. Shamsher Kharb shared knowledge on renewable energy resources and their applications and also interacted with the students later.

## RECOMMENDATIONS

- Water Meter should be installed at every building of institute for monitoring of water consumption per capita.
- Plant distribution program in nearby villages and societies should be initiated periodically.
- SGT University should increase drip irrigation to save water in campus
- Flow rate of taps should be checked, it should not be more than 2.5 litres/minute.





- Eco-friendly parameters should be included in the purchase of campus.
- Increase plantation drives in nearby villages, local bodies, NGO and Municipal Corporation.
- Arrange training programmes on environmental management system and nature conservation for schools and local people.
- Establish an E-waste collection centre in campus.

## CONCLUSION

This audit involved extensive consultation with all the teams, interactions with key personnel on wide range of issues related to Environmental aspects. SGT University has Environmental Committee for sustainable use of resources.

Overall 60% of SGT campus is for landscaping. The University is considering the environmental impacts of most of its actions and makes an intensive effort to act in an environmentally responsible manner. Even though the University does perform quite well, the recommendations in this report highlight many ways in which the University can work to improve its actions and become a more sustainable institution.

Few things that are important to initiate includes initiation of drip irrigation and checking of water flow of taps. We also highly recommend for installation of water meters at each building/block and water balancing report.

## REFERENECE:

- The Environment [Protection] Act 1986 (Amended 1991) & Rules-1986 (Amended 2010)
- The Petroleum Act: 1934 The Petroleum Rules: 2002
- The Central Motor Vehicle Act: 1988 (Amended 2011) and The Central Motor Vehicle
- Rules:1989 (Amended in 2005)
- Energy Conservation Act 2010.
- The Water [Prevention & Control Of Pollution] Act 1974 (Amended 1988) & the Water (Prevention & Control of Pollution) Rules 1975
- The Air [Prevention & Control Of Pollution] Act 1981 (Amended 1987) The Air (Prevention & Control of Pollution) Rules 1982
- The Gas Cylinders Rules 2016 (Replaces the Gas Cylinder Rules 1981
- E-waste management rules 2016





- Electrical Act 2003 (Amended 2001) / Rules 1956 (Amended 2006)
- The Hazardous Waste (Management and Handling and Trans-boundary Movement) Rules, 2008 (Amended 2016)
- The Noise Pollution Regulation & Control rules, 2000 (Amended 2010)
- The Batteries (Management and Handling) rules, 2001 (Amended 2010)
- Relevant Indian Standard Code practices

#### Transparency of Green Audit Report

Green audit report is one of the useful means of demonstrating an organization's commitment to openness and transparency. If an Organisation believes it has nothing to hide from its stakeholders, then it should feel confident enough to make its green audit reports freely available to those who request them. As a basic rule, green audit reports should be made available to all stakeholders.

## ANNEXURE I – PLANTATION DRIVE DETAILS

PLANTS COMMAN NAME	PLANTS BOTANICAL NAME	QTY
Gulmohaar	Delonix regia	16
Lagerstromia speosa	Lagerstromia speiosa	3
Silver oak	Grevillea robusta	8
Molshree	Mimusops elengi	13
Totaa	Mimosa pudica	2
Curesia	Sterculia urens	6
Arjun	Terminalia arjuna	6
Guvava	Posidum guvava	8
Cheku	Manilkara zapota	3
Belpatthar	Aegle marmelos	9
Sahtut	Morus alba	11
Nimbu	citrus nimbu	2
Mango	Mangifera indica	23
Anaar	Punica granatum	11
Jamun	Syzygium cumini	23





Neem	Melia azadirichita	34
Tarmenaliya	Terminaliya mantelana	5
Aadu	Prunus persica	1
Lashoda	Cordia dichotoma	1
Champa	Pulmeria alba	74
Shishaam	Dalbergia sissoo	5
Gulear	Ficus racemosa	10
Pilkhan	Ficus infectoria	15
Paapdii	Lablab purepures	14
Ficus nuda	Ficus nuda	4
Amaltaas	Casia fistula	5
Ticoma gaudichoudi	Ticoma gaudichoudi	700
ticoma capensis	ticoma capensis	1096
Ficus starlight	Ficus starlight	200
Golden durenta	Golden durenta	600
rose	rosa indica	519
Mogra	jasmine sambac	52
Madhumalti	Combretum indicum	25
Lgerstromia indica	Lgerstromia indica	500
Golden cyprush	Golden cyprush	17
Morpankhi	Platycladus orientalis	7
Eforbia milli	Eforbia milli	2687
Allamanda	Allamanda	500
Cassia gluca	Cassia gluca	500
Clorophytum	Clorophytum	2000
Black grass	Ophiopogon planiscapus	1000
Ribbon grass	Phalaris arundinacea	1000
winter seasonal		90756
Zapranthus lily	Zapranthus lily	2000
Total plantation 2021 to 2022		104471





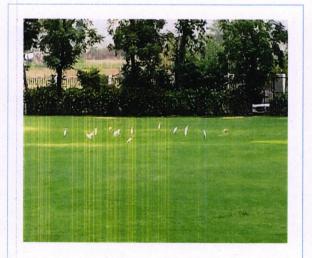
## ANNEXURE II – PHOTOGRAPHS OF ENVIRONMENT CONSCIOUSNESS



Well ventilated building structure



Well maintained SGT campus



Lush green campus



Green Campus







Plantation drive in SGT University



Plantation drive in the campus



Active participation by students and staff in Plantation Drive



Winter Endowment Drive



Plant distribution programme to guests



Guest-Lecture-On-"Valueadded-products-fromdifferent-waste







Winter endownment drive -Asha Bhawan



Winter endownment drive -Asha Bhawan



Winter Endowment Drive -Dream Girl Foundation



Winter Endowment Drive -Dream Girl Foundation



'Reducing Carbon emission' Awareness campaign in Rural areas



'Reducing Carbon emission' Awareness campaign in Rural areas







Best out of Waste Activities at Senshil Foundation - An orphanage home



Active participation by students and staff in Best Out of Waste activity



**Smart Classrooms** 



Classrooms as per NBC guidelines with more than 40% window ratio



Spacious and well equiped computer labs



Hi-tech infra for students

\*\*\*\*\*\* END OF THE REPORT \*\*\*\*

## **Energy Audit**





# ENERGY AUDIT REPORT

PREPARED BY
EHS ALLIANCE SERVICES





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#### **CERTIFICATE**



# **CERTIFICATE**

PRESENTED TO

# M/S SGT UNIVERSITY

Budhera, Gurugram-Badli Road, Gurugram(Haryana)-122505

Has been assessed by EHS Alliance Services for the comprehensive study of Energy Audit on institutional working framework to fulfill the requirement of

## **ENERGY AUDIT**

The energy-saving initiatives carried out by the College have been verified in the report submitted and were found to be satisfactory.

The efforts taken by management and faculty towards all types of energy used in the College and sustainability are highly appreciated and noteworthy.



31.05.2022 DATE OF AUDIT

EHS ALLIANCE SERVICES, PLOT A-72, SURYA VIHAR, GURUGRAM, 122001 WWW.EHSALL.IN | BUSINESS@EHSALL.IN | EHSALLIANCE@GMAIL.COM





#### **ACKNOWLEDGEMENT**

EHS Alliance Services would like to thank the management of SGT University for assigning this important work of Energy Audit. We appreciate the co-operation to the teams for completion of assessment.

We would like to specially thank *Prof.(Dr.) Joginder Yadav, Registrar, SGT University* for giving us an opportunity to evaluate the environmental performance of the campus

We would also like to thank *Dr. Satish Kumar Sharma*, *Director IQAC*, *SGT University*, for his continuous support and guidance, without which the completion of the project would not have been possible. We are also thankful to other staff members who were actively involved while collecting the data and conducting field measurements.

We are also thankful to

Dr. Archana Chaudhary Environment Committee, Chairperson

**Prof.(Dr.) Manish Gupta** Environmental Committee Member

**Dr. Simranjeet Singh** Environmental Committee Member

**Dr. Bijender Sindhu** Environmental Committee Member

Mr. Gaurav Choudhary Environmental Committee Member

Mr. Ramesh Semwal Environmental Committee Member

Mr. Gopal Rana Environmental Committee Member

Mr. Umesh Kothari Environmental Committee Member

Mr. Arvind Environmental Committee Member

*Mr. Sripal* Environmental Committee Member





#### **DISCLAIMER**

EHS Alliance Services Energy Audit Team has prepared this Energy Audit Report for SGT University based on input data submitted by the representatives of University complemented with the best judgment capacity of the expert team.

While all reasonable care has been taken in its preparation, details contained in this report have been compiled in good faith based on information gathered.

It is further informed that the conclusions are arrived following best estimates and no representation, warranty or undertaking, express or implied is made and no responsibility is accepted by Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report.

If you wish to distribute copies of this report external to your organization, then all pages must be included.

EHS Alliance, its staff and agents shall keep confidential all information relating to your organization and shall not disclose any such information to any third party, except that in the public domain or required by law or relevant accreditation bodies. EHS Alliance staff, agents and accreditation bodies have signed individual confidentiality undertakings and will only receive confidential information on a 'need to know' basis.

Jen -

Vijay Singh Lead Auditor EMS & Energy Ben

Dr. Uday Pratap Co-Auditor EMS & Energy





#### **ABBREVIATION**

A Amps

AC Air Conditioner

AC Alternating Current

AMET Academy of Maritime Education and Training

CFL Compact fluorescent lamp

CIP Comprehensive Inspection Programme

DC Direct Current

HSD High Speed Diesel

Hz Hertz

kg Kilogram

kVA kilo-volt-ampere

kW kilo Watts

kWh kilowatt hour

kWp Kilowatt peak

LED Light Emitting Diode

LPG Liquefied Petroleum Gas

MMS Module mounting structure

MPPT Maximum Power Point Tracker

NAAC The National Assessment and Accreditation Council

SEC Specific Energy Consumption

SPV Solar Photovoltaic

STC Standard Test Condition

TV Television

V Volts

W Watts

W/m2 watt per square meter





#### INTRODUCTION OF UNIVERSITY

SGT (Shree Guru Gobind Singh Tricentenary) University, Gurugram, which spreads over 70 acres of lush green campus enveloped with serene beauty and environment. The University is situated at Chandu-Bhudera on the outskirts of Gurgaon; it is less than five kilometers from Delhi border at Daurala and has an easy and convenient access from I.G International Airport.



SGT University came into existence by the Haryana Private Universities (Amendment) Act No. 8 of 2013 making educational opportunities available to all segments of the society under the parasol of Dashmesh Educational Charitable Trust, which was founded in 1999 with the holly cause of propagating the message of Shree Guru Gobind Singh Ji, the great philosopher and social reformer which says "spread of learning is the best service to mankind". In fact, the seeds for its magnificent growth were sown way back in 2002 with the establishment of the SGT Dental College.







With a firm step forward to attain an academic excellence, several Centers of Excellence, laboratories, incubation cell and industry-academia associations have been setup at the SGT University in association with global leaders.

The SGT UNIVERSITY-IQAC works in its mandated direction of internalizing and institutionalizing the quality enhancement initiatives. These initiatives encompass various stakeholders, namely students (with the aim of their integrated development), teaching staff and non-teaching staff (enhancing their capabilities and empowering them) and students' parents and Alumnae (strengthening mutually beneficial relationships).

With dedicate Corporate Resource Center, Centers of Excellence and academic associations like Apple, Laerdal-Jhpiego, SAP Next-Gen, UNESCO Bioethics, IBM, ORACLE, University of California –Berkley, Nobel Biocare, Trimble, Intel, NSE, Tally India, OISTAT, SMC India, CIMA & German Academy for Digital Education we are committed to develop naturally confident young innovative leaders who will weave career advancement opportunities through continuous learning & development support and experience they gain. With the continuously changing nature of work and the war for talent wages, at SGT University we Foster a Culture of Continous Learning to develop future innovative leaders of international repute, who are quick to learn & implement, understand changing customer needs, highly comfortable & creative with change, are able to revamp operations modestly with an appreciable ROI.







The modern infrastructure and learner centric andragogy at SGT University extend full support to the learners and we are focused to invest more in "Nurturing Future Leaders" to produce much more resourceful and productive employee for each level in the organization be it a "Green Graduates" or a "Tenured Senior Managers". To map the galloping pace of innovations blended with changing technology and HR systems.

We are determined to inculcate Domain Specific Skills and Soft Skills to our emerging innovative leaders and make them future ready. At SGT University, we are focused to inculcate skills and behaviours for a good cultural fit along with right academic background.

SGT University provides the mentioned below facilities to the students and staff members.



#### Hostel

SGT University has separate hostels for girls and boys with round the clock security arrangements, each hostel has separate dining rooms, recreation rooms and study rooms.



#### **Transport Service**

SGT University has its own fleet of over 60 buses that ply on several routes across NCR and its neighbouring areas, serving both students and staff. Bus facilities are also available to hostellers for visits to the city.







Canteen

SGT University has a spacious cafeteria that offers a wide variety of snacks to students and staff at reasonable rates.



**Sports Ground** 

SGT University provides all kinds of sports activities and encourages students to take part in games and to ensure their all-round development. All facilities and playgrounds are available for Basket Ball, VolleyBall, Foot Ball, Table Tennis, Cricket, Badminton etc.



**Smart Classroom** 

SGT University has 3-5 smart Classrooms which are ICT enabled with interactive smart boards to facilitate the teaching-learning process.



**Seminar Room** 

The Seminar Hall is the ideal venue for seminars and medical professional members to talk and deliver lectures to the students of our SGT to provide them with a better and closer insight into the working of their different fields.

## Vision | Mission | Core Values

VISION

To nurture individual's excellence through value based, cross-cultural, integrated and holistic education adopting the contemporary and advanced means blended with ethical values to contribute in building a peaceful and sustainable global civilization.





# **MISSION**

# To impart higher education at par with global standards that meets the changing needs of the society

# To provide access to quality education and to improve quality of life, both at individual and community levels with advancing knowledge in all fields through innovations and ethical research.

# To actively engage with and promote growth and welfare of the surrounding community through suitable extension and outreach activities

# To develop socially responsible citizens, fostering ethical values and compassion through participation in community engagement, extension and promotion activities.

# To create competitive and coordinated environment wherein the individual develop skills and a lifelong learning attitude to excel in their endeavours.

# To develop Centers of Excellence culminating in achieving the cuttingedge technology in all fields.

# CORE VAUES

Innovation

Leadership

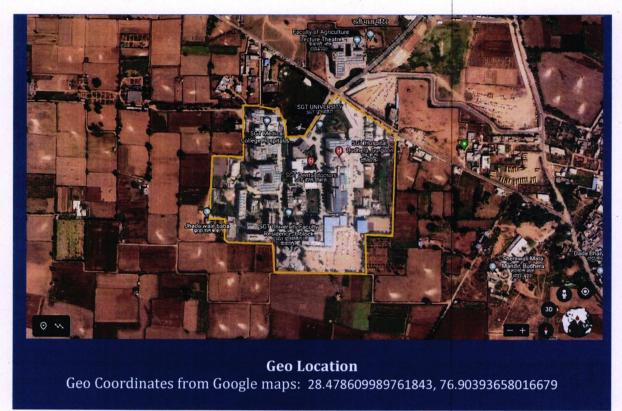
Ethics

Social responsibility











**ENERGY AUDIT REPORT - May 2022** 





### **Audit Participants**

On behalf of University

Name	Designation/Department					
Prof.(Dr.) Joginder Yadav	Registrar, SGT University					
Dr. Archana Chaudhary	Environmental Committee Chairperson SGT University					
Dr. Simranjeet Singh	Environmental Committee Member, SGT University					
Prof.(Dr.) Manish Gupta	Environmental Committee Member, SGT University					
Dr. Bijender Sindhu	Environmental Committee Member, SGT University					
Mr. Ramesh Semwal	Environmental Committee Member, SGT University					
Mr. Gopal Rana	Environmental Committee Member, SGT University					
Mr. Umesh Kothari	Environmental Committee Member, SGT University					
Mr. Arvind	Environmental Committee Member, SGT University					
Mr. Sripal	Environmental Committee Member, SGT University					
Mr. Gaurav Choudhary	Environmental Committee Member, SGT University					

#### On behalf of EHS Alliance Services

Name	Position	Qualifications
Dr. Uday Pratap	Lead-Auditor	Ph.D. , PDIS, QCI – WASH, Lead Auditor ISO 14001:2015
Mr. Puneet Kaushik	Co-Auditor	M.Sc. M.Tech (Environment Science & Engineering), PGDISM, Lead Auditor ISO 14001:2015, OHSAS 18001:2007
Mr. Shamsher Kharab	Co-Auditor	M.Sc., M.Tech in Environment Sciences, Field Expert, Post Diploma in Industrial Safety Management







#### **EXECUTUVE SUMMARY**

The purpose of this Energy Audit was to seek opportunities to improve the energy efficiency of the SGT University. Reducing the energy consumption despite improving the human comfort, health and safety were of primary concern.

Beyond just identifying the energy consumption pattern, this audit sought to detect and categorize the most energy efficient appliances. Additionally, some daily practices relating common appliances have been shared which may help consumption. Data collection for energy audit of the University was carried out by the EHS Alliance Team. The Energy Audit Report accounts for the energy consumption patterns of the University on actual survey and detailed analysis during the audit.

The work comprehends the area wise consumption traced using suitable equipment. The analysis was carried out by our team with the support of the staff members from SGT University. The report provides a list of possible actions to preserve and efficiently access the available source, resources and their saving potential was also identified. We look forward towards optimization that the authorities, students and staff members would follow the recommendations in the best possible way. The report is based on certain generalizations including the approximations wherever necessary. The views conveyed may not reveal the general opinion. They merely represent the opinion of the team guided by the interviews of clients. We are happy to submit this Energy audit report to the SGT University.

#### **ENERGY AUDIT ANALYSIS**

#### 1. ENERGY CONSUMPTION

To understand the Energy Consumption trends and for analyzing the average monthly consumption we have collected electricity energy bills from April 2021 to March 2022

The details of "Meter Connection" at "SGT UNIVERSITY" are as follows-

Name

Chairman Dasmesh

CA No.

1578781000

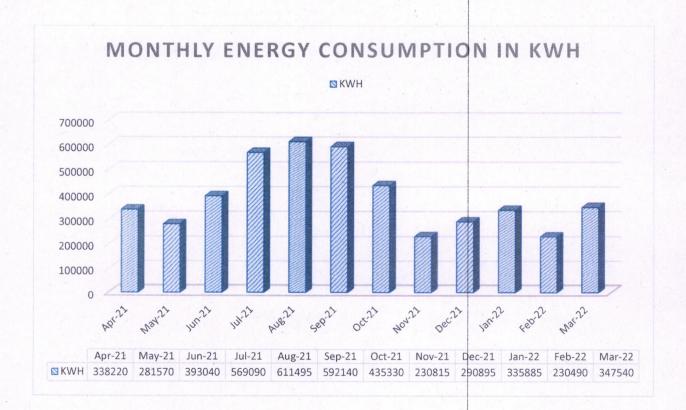




#### 1.1 Summary of Monthly Electricity Consumption and Total Bill Amount

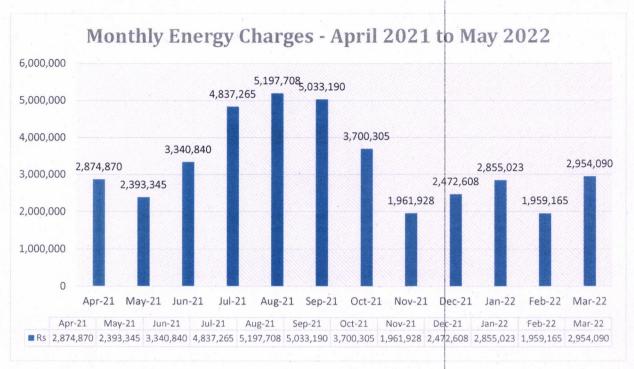
To understand the Energy consumption trend and for developing the baseline parameter we have collected monthly energy bill for the 12 months i.e. from April 2021 to March 2022

Month	Units (KWH)	Amount (INR)
Apr-21	338220	2,874,870
May-21	281570	2,393,345
Jun-21	393040	3,340,840
Jul-21	569090	4,837,265
Aug-21	611495	5,197,708
Sep-21	592140	5,033,190
Oct-21	435330	3,700,305
Nov-21	230815	1,961,928
Dec-21	290895	2,472,608
Jan-22	335885	2,855,023
Feb-22	230490	1,959,165
Mar-22	347540	2,954,090
Total	4656510	39,580,335





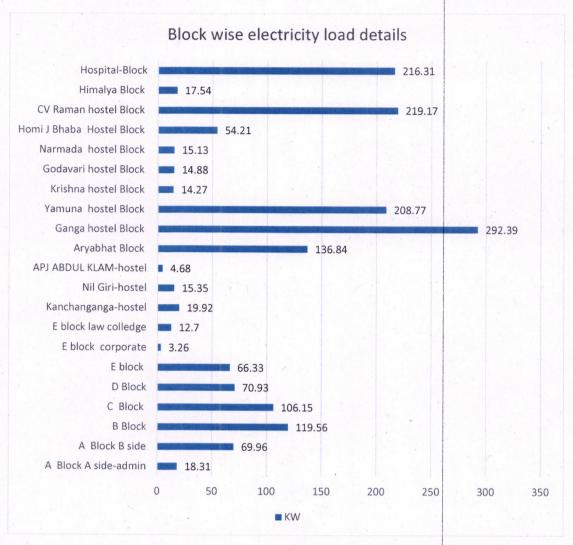




Sl. No.	Building/ Block Name	KW	Load in (%)
1	A Block A side-admin	18.31	1.08
2	A Block B side	69.96	4.12
3	B Block	119.56	7.05
4	C Block	106.15	6.26
5	D Block	70.93	4.18
6	E block	66.33	3.91
7	E block corporate	3.26	0.19
8	E block law college	12.70	0.75
9	Kanchanjunga-hostel	19.92	1.17
10	Nil Giri-hostel	15.35	0.90
11	APJ ABDUL KLAM-hostel	4.68	0.28
12	Aryabhatt Block	136.84	8.07
13	Ganga hostel Block	292.39	17.23
14	Yamuna hostel Block	208.77	12.31
15	Krishna hostel Block	14.27	0.84
16	Godavari hostel Block	14.88	0.88
17	Narmada hostel Block	15.13	0.89
18	Homi J Bhaba Hostel Block	54.21	3.19
19	CV Raman hostel Block	219.17	12.92
20	Himalya Block	17.54	1.03
21	Hospital-Block	216.31	12.75
	Total Load in KW	1696.65	100.00

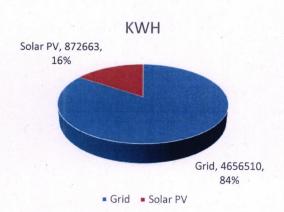






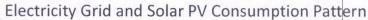
#### Electricity generation from Solar PV

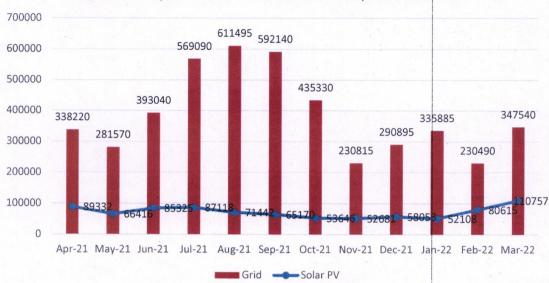
Period	APR	MAY	JUN	JUL	AUG	SEP	ОСТ	NOV	DEC	JAN	FEB	MAR	Total
kWh	89332	66416	85325	87118	71442	65170	53646	52681	58053	52108	80615	110757	872663











#### 2. DIESEL CONSUMPTION

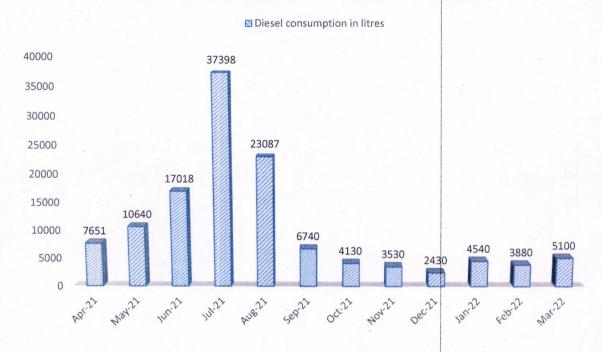
Below is the diesel consumption details in litres from May 2021 to April 2022.

Period	Diesel consumption (in l	itres)
Apr-21	7651	
May-21	10640	
Jun-21	17018	
Jul-21	37398	
Aug-21	23087	
Sep-21	6740	
Oct-21	4130	
Nov-21	3530	
Dec-21	2430	
Jan-22	4540	
Feb-22	3880	
Mar-22	5100	
Total	126144	





# DIESEL CONSUMPTION (LITRES) APRIL. 2021 TO MARCH. 2022



#### 3. ANALYSIS OF DG SETS

In the University, there are 6 Diesel Generator (DG) sets for its electrical power needs in case of Grid power failure. Total installed DG sets capacity is 3000 kVA.

S.No.	Description	Sr. No.	Rated Capacity	Mfg.	Make	Volts	Hz	P.F	RPM	Amp.	Phase
1	250 KVA D.G Set	25764515	250 KVA	Cummins	Sudhir	415	50	0.8	1500	348	3
2	125 KVA D.G Set	62687154	125 KVA	Cummins	Sudhir	415	50	0.8	1500	174	3
3	125 KVA D.G Set	62687156	125 KVA	Cummins	Sudhir	415	50	0.8	1500	174	3
4	1250 KVA D.G Set	25398844	1250 KVA	Cummins	Sudhir	415	50	0.8	1500	1739	3
5	750 KVA D.G Set	25381383	750KVA	Cummins	Sudhir	415	50	0.8	1500	1045	3
6	500 KVA D.G Set	25349907	500KVA	Cummins	Sudhir	415	50	0.8	1500	696	3





DG Set Operation details								
Operating hours during testing	Hours	0.50						
% Loading	%	66.28						
<b>Energy Generation</b>	kWh	36.92						
Load	KVA	96.45						
Fuel consumption during testing	Litre	10						
Specific energy generation	kWh/litre	3.49						







**Observation and Suggestions:**- As per the trial taken during the energy audit the percentage loading of DG set is 66.28% which is ok and specific energy consumption of DG Sets 3.49 KWH/Litre which is satisfactory because as per manufacturer recommendation, best practices for SEC in DG sets range from 3.0 to 3.5 kWh/litre and above.



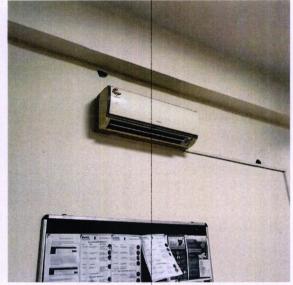


#### 4. AC SYSTEM

Energy Efficiency Ratio (EER): Performance of smaller chillers and rooftop units is frequently measured in EER rather than kW/ton. EER is calculated by dividing a chiller's cooling

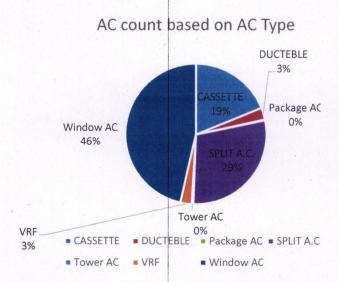
Capacity (in Btu/h) by its power input (in watts) at full-load conditions. The higher the EER, the More efficient the unit. The cooling effect produced is quantified as tons of refrigeration (TR). The above TR is also called as air-conditioning tonnage.





There are Split ACs installed in SGT University in various areas of various capacity which detail is given below:

Type of ACs	Count of ACs	Total TR (in Tons)
CASSETTE	221	662
DUCTEBLE	32	147.5
Package AC	2	36
SPLIT A.C.	339	577
Tower AC	4	10
VRF	31	466
Window AC	545	631.25
Total	1174	2529.75







							Name and Park Street,	
Location Name	CASSETTE	DUCTEBLE	Package AC	SPLIT A.C.	Tower AC	VRF	Window AC	Total Count
D BLOCK 3RD FLOOR	12			2			2	16
A - BLOCK 2nd.Floor	31			2				33
A - BLOCK First Floor	21			1			1	23
A - BLOCK Ground Floor	11	1	2	1			1	16
A - BLOCK L/G Floor	1			6				7
A - BLOCK 4th Floor	10			2		15		25
A.P.J. KALAM HOSTEL 3 FLOOR				1			4	5
ARYABHAT HOSTEL 1ST FLOOR							9	9
ARYABHAT HOSTEL 2ND FLOOR				1			12	13
ARYABHAT HOSTEL 3RD FLOOR						7	7	7
ARYABHAT HOSTEL 4TH FLOOR						5.148	18	18
ARYABHAT HOSTEL 5TH FLOOR							17	17
ARYABHAT HOSTEL G. FLOOR							1	1
AYURVEDA HOSPITAL							4	4
C - BLOCK GROUND FLOOR	2			2		2	14	20
C BLOCK 1ST FLOOR				15		3	9	27
C.V. RAMAN 1ST FLOOR				1			10	11
C.V. RAMAN 2ND FLOOR				2			14	16
C.V. RAMAN 3RD FLOOR							29	29
C.V. RAMAN 4TH FLOOR				23			2	25
C.V. RAMAN 5TH FLOOR				22			8	30
CENTRAL STORE				2				2
COFFE HOUSE				4				4
D - BLOCK 1ST FLOOR	18	1		3			2	23
D - BLOCK BESMENT FLOOR	12			1			1	14
D - BLOCK G. FLOOR	18			4			2	24
D - BLOCK 4TH FLOOR	12						telf.	12
D BLOCK 2ND FLOOR	21			2			1	24
E - BLOCK 2ND FLOOR	1			19				19
E - BLOCK 3RD FLOOR				22				22
E - BLOCK 4TH FLOOR	30			1				31
E - BLOCK GROUND FLOOR	4	20		34	2			60
E BLOCK 1ST FLOOR				51				51
GANGA HOSTEL 1ST FLOOR				1			26	27





GANGA HOSTEL 2ND FLOOR							24	24
GANGA HOSTEL 3RD FLOOR				-			26	26
GANGA HOSTEL 4TH FLOOR							25	25
GANGA HOSTEL 5TH FLOOR							26	26
GODAWARY 1ST FLOOR							6	6
GODAWARY 2ND FLOOR							8	8
GODAWARY 3RD FLOOR							7	7
GODAWARY 4TH FLOOR							6	6
GODAWARY 5TH FLOOR							2	2
HIMALAYA HOSTEL 1ST FLOOR							29	29
HIMALAYA HOSTEL 2ND FLOOR							29	29
HIMALAYA HOSTEL 3RD FLOOR							28	28
HIMALAYA HOSTEL GROUND		7 -					19	19
HOMEOPATHIC HOSPITAL				1			3	4
HOMI J BABA BLOCK 1ST FLOOR							5	5
HOMI J BABA BLOCK2ND FLOOR							6	6
HOMI J BABA BLOCK3RD FLOOR						1.4	5	5
HOMI J BABA BLOCK4TH FLOOR							4	4
HOMI J BABA BLOCK5TH FLOOR							4	4
HOSPITAL 1ST FLOOR				20			12	32
HOSPITAL 2ND FLOOR				15			9	24
HOSPITAL 3RD FLOOR				16				16
B - DENTAL BLOCK	1			36	2	4	50	93
C - BLOCK - 2ND FLOOR				10		. 3	10	23
C - BLOCK - 3RD FLOOR	17					2	8	27
C - BLOCK - 4TH FLOOR		11		18		2		31
GRAND TOTAL	221	32	2	339	4	31	545	1174

**Remarks**: - We have checked Energy Efficiency Ratio of AC's and EER of AC's is fairly OK. But in future you should purchase 5-Star rated invertor based split AC's because power consumption of Inverter based BEE 5-Star rated AC's is less than non-star rated AC's.





#### 5. FAN ANALYSIS

In the SGT University, 6413 Ceiling Fans and 41 wall fans are installed. The observation and suggestion are given below.

Location Name	Fan Type	Basement	Ground floor	1st floor	2nd floor	3 rd floor	4th floor	Others	Total
A Block A side-admin	fan		82						82
A Block A side-admin	wall fan			1					1
APJ ABDUL KLAM-hostel	fan		8	8	8	8	8		40
APJ ABDUL KLAM-hostel	fan	84	78	82	. 96	95	109		544
APJ ABDUL KLAM-hostel	wall fan		2	1					3
aryabhat Block	fan	20	4	20	20	20	20		104
B Block	fan	7.2	152	172	223	145			692
B Block	wall fan		4	2	0	1			7
C Block	fan		172	188	201	170	191		922
C Block	wall fan		4						4
CV Raman hostel Block	fan	60	26	60	60	60	60		326
D Block	fan	91	92	90	98	94	98		563
D Block	wall fan	3	8	2	1	1	1		16
E block	fan	83	126	110	122	146			587
E block	wall fan	1			2	1			4
E block law colledge	fan	46	51						97
E block law colledge	wall fan	1							1
Ganga hostel Block	fan	60	38	60	60	60	60		338
Godavari hostel Block	fan	16	5	16	16	16	16		85
Himalya Block	fan		30	27	27	28	27		139
homi j bhaba hostel Block	fan	4 10 24	16	16	16	16	16	40	120
homi j bhaba hostel Block	wall fan						-	4	4
Hospital-	fan	188	157	207	203	177	95	78	1105
Kanchanganga-hostel	fan	1	40	40	40	40	40		201
krishna hostel Block	fan	16	8	16	16	16	16		88
Narmada hostel Block	fan	16	10	16	16	16	16		90
Nil Giri-hostel	fan	15	24	24	24	24	24		135
Nil Giri-hostel	wall fan	1				1	,		1
Yamuna hostel Block	fan		31	64	30	30			155

#### Observation and Suggestions:-

In the University, majority of ceiling fans are of 70 W but BEE 5 Star Rated of 30W Ceiling Fans are present in the market. Therefore we suggest to replace BEE 5 Star rated fans





of 30W.

ECRM-1-Energy saving by replacing 70 W fans with energy efficient 30W ceiling fans

		1
=	6413	Nos.
=	41	Nos.
=	193620	Watt
=	257955	Watt
=	8	Hours
=	180	Days
=	8	INR
=	2971642	INR
=	19362000	INR
=	6.52	YEARS
	= = = = = = = = = = = = = = = = = = = =	= 41 = 193620 = 257955 = 8 = 180 = 8 = 2971642 = 19362000

Note:- Energy saving will increase or decrease if operating hours of machine /equipment will be increase or decrease and payback period will also increase or decrease if cost of investment(Cost of machine/equipment/accessories of machine) will increase or decrease because cost of investment is taken on tentative basis.

#### 6. ANALYSIS OF LIGHTING SYSTEM

#### 6.1 Brief description of existing system

For assessing energy efficiency of lighting system, Inventory of the Lighting System has been noted / collected, with the aid of a lux meter, measurement and documentation of the lux levels at various locations at working level has been done.

#### 6.2 Inventory of Lighting

Location Name	Type of Appliances	Basement	Ground floor	1st floor	2nd floor	3 rd floor	4th floor	Others	Total	Load In Watts	Load in KW
C Block	14 WATT T5		34	61	24	66	170		355	12780	12.78
C Block	18 WATT 4 PIN		40	17	90	9			156	5616	5.62





Hospital-	22 WATT T5	5	6	5	7	8	7	7	45	990	0.99
C Block	22 WATT T5		18	9	10	5			42	1512	1.51
E block	7 watt led blub	9	1						10	70	0.07
aryabhat Block	7 watt led blub	4		3	4	4	5		20	140	0.14
APJ AbdulKalam hostel	7 watt led blub		10	5	3	4	2		24	168	0.17
homi j bhaba hostel	7 watt led blub	8		10	8	9	8		43	430	0.43
Yamuna hostel	7 watt led blub		30	32	32	32			126	882	0.88
Himalya Block	7 watt led blub		24	27	28	27	26		132	924	0.92
Ganga hostel Block	7 watt led blub	52	1	52	52	52	52		261	1827	1.83
CV Raman hostel Block	7 watt led blub	80	4	60	63	65	70		342	2394	2.39
E block corporate	cfl 18 watt	20							20	720	0.72
E block	led 20 watt	6							6	120	0.12
E block	led 36 watt	58							58	2088	2.09
D Block	led 12 watt					2			2	24	0.02
APJ Abdulkalamhostel	led 12 watt		1	1		2	1		5	60	0.06
E block law college	led 12 watt	5	16						21	252	0.25
A Block A side-admin	led 12 watt		6	6	6	6	6		30	360	0.36
Ganga hostel Block	led 12 watt	2	6	12	5	4	3		32	384	0.38
E block	led 12 watt	8	5	10	9	1			33	396	0.40
E block corporate	led 12 watt			28	17				45	540	0.54
B Block	led 12 watt		55						55	660	0.66
APJ Abdulkalamhostel	led 12 watt		53	50	51	44	53		251	3012	3.01
homi j bhaba hostel	led 15 watt	2	3	2	2	2	2	10	23	230	0.23
Nil Giri-hostel	led 15 watt		6	2	7	4	1		20	300	0.30
E block	led 15 watt	16				14			30	450	0.45
aryabhat Block	led 15 watt	4	8	5	5	5	5		32	480	0.48
Narmada hostel Block	led 15 watt	6	15	2	3	4	5		35	525	0.53
Ganga hostel Block	led 15 watt	6	15	2	3	4	5		35	525	0.53
krishna hostel Block	led 15 watt	8		8	8	8	8		40	600	0.60
Godavari hostel Block	led 15 watt	8	3	8	8	8	8		43	645	0.65
Yamuna hostel Block	led 15 watt		12	14	12	12			50	750	0.75
Kanchanganga-hostel	led 15 watt	5	15	11	13	10	9		63	945	0.95
CV Raman hostel Block	led 15 watt	32	6	3	4	16	3		64	960	0.96
Himalya Block	led 15 watt		15	18	16	16	16		81	1215	1.22
B Block	led 15 watt		32	34	22	18			106	1590	1.59
APJ Abdulkalamhostel	led 15 watt		16	16	16	16	64		128	1920	1.92
C Block	led 15 watt		38	57	41	12	22		170	2550	2.55
Hospital-	led 15 watt	60	67	65	36	35	33	33	329	4935	4.94
D Block	led 15 watt	52	58	53	64	56	61		344	5160	5.16
E block	led 2*2 36/45w	1	4						4.	144	0.14
D Block	led 2*2 36/45w	0	6	0	0	0	0		6	216	0.22
homi j bhaba hostel	led 2*2 36/45w							56	56	560	0.56
E block corporate	led 2*2 36/45w			20	10				30	1080	1.08





Hospital-	led 2*2 36/45w	20	0	0	0	0	0	31	51	1836	1.84
APJ Abdulkalam hostel	led 2*2 36/45w	10	8	4	20	16			58	2088	2.09
B Block	led 2*2 36/45w		68	1	0	0	0		69	2484	2.48
C Block	led 2*2 36/45w		39	22	52	23			136	4896	4.90
A Block A side-admin	led 2*2 36/45w		28	33	22	34	23		140	5040	5.04
E block corporate	led 4 ft 18/20w	10							10	180	0.18
D Block	led 4 ft 18/20w	5		1		2			8	288	0.29
APJ Abdulkalam hostel	led 4 ft 18/20w	2	2	4	8	3	5		24	432	0.43
E block law college	led 4 ft 18/20w	35							35	630	0.63
Godavari hostel Block	led 4 ft 18/20w	9	1	9	9	9	9		46	828	0.83
Narmada hostel Block	led 4 ft 18/20w	9	5	9	9	9	9		50	900	0.90
homi j bhaba hostel	led 4 ft 18/20w	20	3	19	20	19	21	32	134	1340	1.34
Kanchanganga-hostel	led 4 ft 18/20w	1	35	21	16	10	9		92	1656	1.66
krishna hostel Block	led 4 ft 18/20w	18	5	18	18	20	18		97	1746	1.75
Nil Giri-hostel	led 4 ft 18/20w	7	20	21	18	19	15		100	1800	1.80
B Block	led 4 ft 18/20w		45	38	67	55			205	3690	3.69
aryabhat Block	led 4 ft 18/20w	43	4	40	43	43	43		216	3888	3.89
Himalya Block	led 4 ft 18/20w		45	45	44	43	42		219	3942	3.94
Yamuna hostel Block	led 4 ft 18/20w		60	67	64	64			255	4590	4.59
Ganga hostel Block	led 4 ft 18/20w	54	7	52	53	54	56		276	4968	4.97
CV Raman hostel Block	led 4 ft 18/20w	40	27	69	55	60	50		301	5418	5.42
Hospital-	led 4 ft 18/20w	260	250	240	271	260	212	140	1633	29394	29.39
E block corporate	led-18 watt			3					3	54	0.05
E block	led-18 watt	10							10	180	0.18
E block law college	led-18 watt		13						13	234	0.23
APJ Abdulkalam hostel	led-18 watt				20	12			32	576	0.58
C Block	led-18 watt		16			80	14		110	1980	1.98
A Block A side-admin	led-18 watt		57	76	43	65	61		302	5436	5.44
B Block	led-18 watt								0		0.00
CV Raman hostel Block	led-22 watt	3							3	66	0.07
Godavari hostel Block	led-22 watt		3						3	66	0.07
Ganga hostel Block	led-22 watt		37						37	814	0.81
E block law college	led-22 watt	1	106						107	2354	2.35
C Block	led-22 watt		32	92	16		15		155	3410	3.41
E block	led-22 watt	55	24	16	45	190			330	7260	7.26
D Block	led-22 watt	43	14	5	64	121	148		395	8690	8.69
APJ Abdulkalam hostel	led-22 watt	204	112	118	137	153	155		879	19338	19.34
B Block	led-22 watt								0		0.00
C Block	led-24 watt			13	3	6			22	528	0.53
B Block	led-24 watt								0		0.00
D Block	led-24 watt								0		0.00
E block	led-6 watt		1						1	6	0.01
Yamuna hostel Block	led-6 watt			2					2	12	0.01





Ganga hostel Block	led-6 watt		5						5	30	0.03
E block corporate	led-6 watt		9		7				16	96	0.10
APJ ABDUL KLAM- hostel	led-6 watt		6	3	5	4	6		24	144	0.14
CV Raman hostel Block	led-6 watt	20		6	3		14		43	258	0.26
krishna hostel Block	led-6 watt	21	10	16	16	21	21		105	630	0.63
C Block	led-6 watt		32	30	28	30	31		151	906	0.91
Godavari hostel Block	led-6 watt	29	6	29	29	29	29		151	906	0.91
Narmada hostel Block	led-6 watt	29	13	29	29	29	29		158	948	0.95
Nil Giri-hostel	led-6 watt	1	30	34	29	32	35		161	966	0.97
Kanchanganga-hostel	led-6 watt		45	49	47	50	51		242	1452	1.45
B Block	led-6 watt								0		0.00
homi j bhaba hostel	tube light 36 W	0	3	0	0	0	0	15	18	180	0.18
CV Raman hostel Block	tube light 36 w		5	4	8	7			24	864	0.86
APJ Abdulkalam hostel	tube light 36W	3	6	7	6	5	3		30	1080	1.08
Ganga hostel Block	tube light 36w	8	0	2	9	8	6		33	1188	1.19
Nil Giri-hostel	tube light 36w	9	4	3	6	5	9		36	1296	1.30
Hospital-	tube light 36w	10	0	12	11	7	0		40	1440	1.44
Himalya Block	tube light 36 w		10	10	9	8	11		48	1728	1.73
Kanchanganga-hostel	tube light 36 w		5	11	13	10	9		48	1728	1.73
D Block	tube light 36 w		2	45	0	2			49	1764	1.76
E block law colledge	tube light 36 w	54							54	1944	1.94
C Block	tube light 36 w		1	3		2	50		56	2016	2.02
E block	tube light 36 w	21	110	125	114	5			375	13500	13.50
B Block	tube light 36 w		90	164	169	193			616	22176	22.18

#### 6.3 Lux Measurement

Description	Lux	Remark
Class Rooms	120 to 235	Acceptable
Offices	130 to 240	Acceptable
Corridors	35 to 90	Acceptable
Washrooms	45 to 76	Acceptable
Outdoor	36 to 95	Acceptable
Computer Lab	150 to 289	Acceptable
Parking area	45 to 94	Acceptable
Canteen	69 to 185	Acceptable





#### Observation

SGT University has implemented LED based lighting solution in the campus. LEDs save energy, the life span is much greater and emit virtually no heat. The University has installed solar lights for street lights in the campus. SGT University is doing their bit for the energy conservation.

Table below shows the performance characteristics comparison of all luminaries.

				of Commonly Used Lu	
Type of Lamp	Lumens/ Range	Avg.	Colour Rendering Index	Typical Application	Typical Life
Incandescent	8-18	14	Excellent (100)	Homes, restaurants, general lighting emergency lighting	1000
Fluorescent lamps	46-60	50	Good w.r.t coating (67- 77)	Offices, shops, hospitals, homes	5000
Compact fluorescent Lamps (CFL)	40-70	60	Very Good (85)	Hotels, shops, homes, offices	8000-10000
High pressure mercury (HPMV)	44-57	50	Fair (45)	General lighting in factories, garages, car parking. flood lighting	5000
Halogen lamps	18-24	22	Excellent (100)	Display, flood lightening, stadium exhibition grounds, construction areas	2000 - 4000
High pressure sodium (HPSV) SON	67-121	90	Fair (22)	General lighting in ware houses, factories, street lighting	6000 - 12000
Low pressure sodium (LPSV) SOX	101-175	150	Poor (10)	Roadways, tunnels, canals, street lighting	6000 - 12000
Metal halide lamps	75-125	100	Good (70)	Industrial bays, spot lighting, flood lighting, retail stores	8000
LED Lamps	30-50	40	Good (70)	Reading lights, desk lamps, night lights, spotlights, security lights, signage lights, etc.	40000 - 100000





#### 7. OTHER POWER CONSUMPTION

Location Name	Type of Appliances	Basement	Ground floor	1st floor	2nd floor	3rd floor	4th floor	Others	Total	Load In Watts	Load in KW
homi j bhaba hostel Block	geyser	2		2	2	2	2	8	18	180	0.18
homi j bhaba hostel Block	door bell	4		4	4	4	4		20	200	0.2
homi j bhaba hostel Block	exhaust fan	8		7	9	10	8	15	57	570	0.57
Narmada hostel Block	geyser	2				1			3	6000	6
Narmada hostel Block	exhaust fan	1	3		1	1	1		7	455	0.46
A Block A side-admin	exhaust fan		6	4	6	4	6		26	1690	1.69
APJ ABDUL KLAM-hostel	exhaust fan	19	10	10	14	9	12		74	4810	4.81
aryabhat Block	door bell	4		4	4	2	4		18	180	0.18
aryabhat Block	geyser	12		12	12	12	12		60	120000	120
aryabhat Block	exhaust fan	16	1	14	13	15	16		75	4875	4.88
B Block	geyser		4	3	5	2			14	28000	28
B Block	cooller		3	5	8	8			24	9600	9.6
B Block	exhaust fan		13	11	10	6			40	2600	2.6
C Block	Cooler		4					100	4	1600	1.6
C Block	exhaust fan		16	10	10	10	10		56	3640	3.64
CV Raman hostel Block	exhaust fan		6						6	390	0.39
CV Raman hostel Block	geyser	23	0	26	1	22	21		93	186000	186
D Block	geyser					2			2	4000	4
D Block	Cooler		3	2		1			6	2400	2.4
D Block	exhaust fan	20	22	22	20	23	20		127	8255	8.26
E block	exhaust fan	7	2	2	2				13	845	0.85
E block corporate	exhaust fan		5	2	2				9	585	0.59
E block law colledge	exhaust fan	3	4						7	455	0.46
Ganga hostel Block	exhaust fan		7						7	490	0.49
Ganga hostel Block	geyser	26	1	26	26	28	28		135	270000	270
Godavari hostel Block	geyser	1				1	1		3	6000	6
Godavari hostel Block	exhaust fan	1	1	1	1	. 1	1		6	390	0.39
Hospital-	cooler	2		5	6	8	7	0	28	11200	11.2
Hospital-	geyser	2	5	5	8	8	7	5	40	80000	80
Hospital-	exhaust fan	38	27	15	21	18	15	7	141	9165	9.17





Kanchanganga-hostel	exhaust fan	1						1	65	0.07
krishna hostel Block	exhaust fan		2					2	130	0.13
krishna hostel Block	geyser	1			1		1	3	6000	6
Nil Giri-hostel	exhaust fan	7	6	2	3	1	4	23	1495	1.5
Yamuna hostel Block	exhaust fan		26					26	1690	1.69
Yamuna hostel Block	geyser		28	3	32	32		95	190000	190
Total										964

#### Observation

There should be regular maintenance schedule of equipment like geyser, water coolers, pumps, etc. in order to increase the efficiency of the appliances.

\*\*\*\*\* END OF THE REPORT \*\*\*\*\*

# **Environment**Audit





# ENVIRONMENT AUDIT REPORT

PREPARED BY
EHS ALLIANCE SERVICES





Prepared by: EHS ALLIANCE SERVICES

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#### **AUDIT CERTIFICATE**



# CERTIFICATE

PRESENTED TO

# M/S SGT UNIVERSITY

Budhera, Gurugram-Badli Road, Gurugram(Haryana)-122505

Has been assessed by EHS Alliance Services for the comprehensive study of environmental impacts on institutional working framework to fulfill the requirement of

# **ENVIRONMENT AUDIT**

The environment legal compliances and initiatives carried out by the College have been verified on the report submitted and was found to be satisfactory.

The efforts taken by management and faculty towards environment and sustainability are highly appreciated and noteworthy.



31.06.2022 DATE OF AUDIT

EHS ALLIANCE SERVICES, PLOT A-72, SURYA VIHAR, GURUGRAM, 122001 WWW.EHSALL.IN | BUSINESS@EHSALL.IN | EHSALLIANCE@GMAIL.COM





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#### **ACKNOWLEDGEMENT**

EHS Alliance Services would like to thank the management of SGT University, Gurugram for assigning this important work of Environment Audit. We appreciate the co-operation of the teams in the completion of the assessment.

We would like to especially thank *Prof.(Dr.) Joginder Yadav, Registrar, SGT University* for giving us an opportunity to evaluate the environmental performance of the campus.

We would also like to *thank Dr. Satish Kumar Sharma, Director IQAC, SGT University,* for his Continuous Support and guidance, without which the completion of the project would not have been possible. We are also thankful to other staff members who were actively involved while collecting the data and conducting field measurements.

We are also thankful to

Dr. Archana Chaudhary Environment Committee, Chairperson

Prof.(Dr.) Manish Gupta: Environmental Committee Member

Dr. Simranjeet Singh: Environmental Committee Member

Dr. Bijender Sindhu: Environmental Committee Member

Mr. Gaurav Choudhary: Environmental Committee Member

Mr. Ramesh Semwal: Environmental Committee Member

Mr. Gopal Rana: Environmental Committee Member

Mr. Umesh Kothari: Environmental Committee Member

Mr. Arvind: Environmental Committee Member

Mr. Sripal: Environmental Committee Member





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#### **DISCLAIMER**

EHS Alliance Services Audit Team has prepared this report SGT University based on input data submitted by the representatives of University complemented with the best judgment capacity of the expert team.

While all sensible care has been taken in its preparation, details contained in this report have been compiled in good faith based on the information gathered.

It is further informed that the conclusions have arrived following best estimates and no representation, warranty or undertaking, express or implied is made and no responsibility is accepted by Audit Team in this report or for any direct or consequential loss arising from any use of the information, statements or forecasts in the report.

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Signature

**LEAD AUDITOR** 





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## **CONCEPT AND CONTEXT**

In India, the process for environmental audit was first mentioned under the Environment Protection Act, 1986 by the Ministry of Environment of forests on 13th March, 1992. As per this act, every person owning an industry or performing an operation or process needs legal consent and must submit an environmental report or statement.

The National Assessment and Accreditation Council, New Delhi (NAAC) has made it mandatory from the academic year 2019–20 onwards that all Higher Educational Institutions should submit an annual Green, Environment and Energy Audit Report. Moreover, it is part of the Corporate Social Responsibility of the Higher Educational Institutions to ensure that they contribute towards a sustainable environment.

In view of the NAAC circular regarding environment auditing, the University management decided to conduct an external environment assessment study by a competent external professional auditor.

The term 'Environmental audit' means differently to different people. Terms like 'assessment', 'survey' and 'review' are also used to describe similar activities. Furthermore, some organizations believe that an 'environmental audit' addresses only environmental matters, whereas others use the term to mean an audit of health, safety and environment-related matters. Although there is no universal definition of Environment Audit, many leading companies/institutions follow the basic philosophy and approach summarized by the broad definition adopted by the International Chambers of Commerce (ICC) in its publication of Environmental Auditing (1989).

The ICC defines Environmental Auditing as:

"A management tool comprising a systematic, documented, periodic and objective evaluation of how well environmental organization, management and equipment are performing intending to safeguard the environment and natural resources in its operations/projects."

This audit focuses on the environment legal compliances and implementation of rules defined by MoEFCC or the state pollution control board. The concepts, structure, objectives, methodology, tools of analysis and objectives of the audit are discussed below.







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### INTRODUCTION

Nature is a very precious gift for all life forms. Disturbance in nature causes environmental Problems. These are increasing day by day as a result of the development of urbanization and industrialization on earth. Because of the unplanned utilization of resources, our planet is facing tremendous pressure results a sharp rise in temperature. Therefore, there is an urgent need to plan the consumption of the resources in a sustainable manner to conserve natural resources for future generations.

Sustainable development is becoming popular in the world for saving the earth. Utilizing resources judicially can save the earth's precious resources. Measurement of environmental components is the most effective step to conserving and protecting natural resources.

Environmental auditing had begun in the early 1970s with the provision of civil lawsuits for non-compliance with environmental regulations. Environment auditing involves on-site visits, collection of samples, performing analyses, and reporting results to competent authorities.

Industry, the corporate world is initiating auditing for saving natural resources. Academic institutions also can contribute to the preservation and conservation of resources within their premises.

In thin "Environment Audit" report would help everyone to think about preserving resources, show a willingness to learn their importance, adopt steps to minimize resource use and set an example for others to follow the path of eco-friendly practices to achieve the goal of sustainable development. Effective implementation of environmental auditing helps in minimization of environmental risks at a low cost.







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## **OVERVIEW OF THE UNIVERSITY**

SGT (Shree Guru Gobind Singh Tricentenary) University, Gurugram, which spreads over 70 acres of lush green campus enveloped with serene beauty and environment. The University is situated at Chandu-Bhudera on the outskirts of Gurgaon; it is less than five kilometres from the Delhi border at Daurala and has easy and convenient access from I.G International Airport.



SGT University came into existence by the Haryana Private Universities (Amendment) Act No. 8 of 2013 making educational opportunities available to all segments of the society under the parasol of Dashmesh Educational Charitable Trust, which was founded in 1999 with the holly cause of propagating the message of Shree Guru Gobind Singh Ji, the great philosopher and social reformer which says "spread of learning is the best service to mankind". In fact, the seeds for its magnificent growth were sown way back in 2002 with the establishment of the SGT Dental College.

The most valuable investment any educational institution can make is "Nurturing Future Leaders". With the continuous rise in expectation of essential leadership standards, SGT University torch bearers have taken a responsibility for this investment to nurture the Next-Gen leaders with a vision to bridge the existing skill gap.





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With a firm step forward to attain an academic excellence, several Centers of Excellence, laboratories, incubation cell and industry-academia associations have been setup at the SGT University in association with global leaders.

The SGT University-IQAC works in its mandated direction of internalizing and institutionalizing the quality enhancement initiatives. These initiatives encompass various stakeholders, namely students (with the aim of their integrated development), teaching staff and non-teaching staff (enhancing their capabilities and empowering them) and students' parents and Alumnae (strengthening mutually beneficial relationships).





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With dedicated Corporate Resource Center, Centers of Excellence and academic associations like Apple, Laerdal-Jhpiego, SAP Next-Gen, UNESCO Bioethics, IBM, ORACLE, University of California –Berkley, Nobel Biocare, Trimble, Intel, NSE, Tally India, OISTAT, SMC India, CIMA & German Academy for Digital Education we are committed to developing naturally confident young innovative leaders who will weave career advancement opportunities through continuous learning & development support and experience they gain. With the continuously changing nature of work and the war for talent wages, at SGT University we Foster a Culture of Continous Learning to develop future innovative leaders of international repute, who are quick to learn & implement, understand changing customer needs, highly comfortable & creative with change, are able to revamp operations modestly with an appreciable ROI.

The modern infrastructure and learner centric andragogy at SGT University extend full support to the learners and we are focused to invest more in "Nurturing Future Leaders" to produce much more resourceful and productive employee for each level in the organization be it a "Green Graduates" or a "Tenured Senior Managers". To map the galloping pace of innovations blended with changing technology and HR systems.

We are determined to inculcate Domain Specific Skills and Soft Skills to our emerging innovative leaders and make them future ready. At SGT University, we are focused to inculcate skills and behaviours for a good cultural fit along with right academic background.





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#### VISION

To nurture individual's excellence through value based, cross-cultural, integrated and holistic education adopting the contemporary and advanced means blended with ethical values to contribute in building a peaceful and sustainable global civilization.

#### MISSION

- # To impart higher education at par with global standards that meets the changing needs of the society
- # To provide access to quality education and to improve quality of life, both at individual and community levels with advancing knowledge in all fields through innovations and ethical research.
- # To actively engage with and promote growth and welfare of the surrounding community through suitable extension and outreach activities
- # To develop socially responsible citizens, fostering ethical values and compassion through participation in community engagement, extension and promotion activities.
- # To create competitive and coordinated environment wherein the individual develop skills and a lifelong learning attitude to excel in their endeavours.
- # To develop Centers of Excellence culminating in achieving the cutting-edge technology in all fields.

# CORE VALUES Innovation Leadership Ethics Social responsibility

SGT University provides the mentioned below facilities to the students and staff members.





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#### Hostel

SGT University has separate hostels for girls and boys with round the clock security arrangements, each hostel has separate dining rooms, recreation rooms and study rooms.



#### **Transport Service**

SGT University has its own fleet of 60S buses that ply on several routes across NCR and its neighbouring areas, serving both students and staff. Bus facilities are also available to hostellers for visits to the city. Students are charged on the basis of actual.



#### Canteen

SGT University has a spacious cafeteria that offers a wide variety of snacks to students and staff at reasonable rates.



#### **Sports Ground**

The SGT University provides all kinds of sports activities and encourages students to take part in games and to ensure their all-round development. All facilities and playgrounds are available for Basket Ball, VolleyBall, Foot Ball, Table Tennis, Cricket, Badminton etc.



#### **Smart Classroom**

SGT University has 3-5 smart Classrooms which are ICT enabled with interactive smart boards to facilitate the teaching-learning process.



#### **Seminar Room**

The Seminar Hall is the ideal venue for seminars and medical professional members to talk and deliver lectures to the students of our SGT University to provide them with a better and closer insight into the working of their different fields. These conferences and lectures not only provide the students with first-hand information about the working of various fields but also give them an opportunity to get their doubts cleared by asking questions from our guests. The guests initially deliver their lecture telling the students about their work, the challenges they face, the difficulties they overcome and so on, and after that the students are given an opportunity to ask questions and clear their doubts





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Geo Coordinates from Google maps: 28.478609989761843, 76.90393658016679





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## **AUDIT PARTICIPANTS**

On behalf of SGT University

Name	Designation/Department				
Prof.(Dr.) Joginder Yadav	Registrar, SGT University				
Dr. Archana Chaudhary	Environmental Committee Chairperson, SGT University				
Dr. Simranjeet Singh	Environmental Committee Member, SGT University				
Prof.(Dr.) Manish Gupta	Environmental Committee Member, SGT University				
Dr. Bijender Sindhu	Environmental Committee Member, SGT University				
Mr. Ramesh Semwal	Environmental Committee Member, SGT University				
Mr. Gopal Rana	Environmental Committee Member, SGT University				
Mr. Umesh Kothari	Environmental Committee Member, SGT University				
Mr. Arvind	Environmental Committee Member, SGT University				
Mr. Sripal	Environmental Committee Member, SGT University				
Mr. Gaurav Choudhary	Environmental Committee Member, SGT University				

On behalf of EHS Alliance Services

Name	Position	Qualifications
Dr. Uday Pratap	Lead-Auditor	Ph.D. , PDIS, QCI – WASH, Lead Auditor ISO 14001:2015
Mr. Puneet Kaushik	Co-Auditor	M.Sc. M.Tech (Environment Science & Engineering), PGDISM, Lead Auditor ISO 14001:2015, OHSAS 18001:2007
Mr. Shamsher Kharab	Co-Auditor	M.Sc., M.Tech in Environment Sciences, Field Expert, Post Diploma in Industrial Safety Management







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## **EXECUTIVE SUMMARY**

The environment audit is a snapshot in time, in which one assesses campus performance in complying with applicable environmental laws and regulations. Though a helpful benchmark, the audit almost immediately becomes out-dated unless there is some mechanism in place to continue the effort of monitoring environmental compliance. Our approach to promote a Green Campus to inculcate the sustainable value systems among the students, so that they carry the learning and practices them in their future endeavours. This will ensure that Sustainability and Environmental practices get embedded in all the institutions and organizations in the country.

A Green Campus is a place where environmentally friendly practices and education combine to promote sustainability in the campus which ultimately offers an institution the opportunity to take the lead in redefining its environmental culture and developing new paradigms by creating sustainable solutions to environmental, social and economic needs of the mankind.

This is fourth environment audit of University for doing their bit towards environmental protection and environmental awareness at local and global front. Audit criterion is environmental cognizance, waste minimization and management, biodiversity conservation, water conservation, energy conservation and environmental legislative compliance by the campus. A questionnaire is used during audit. This audit report contains observations and recommendations for improvement of environmental consciousness.







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## **WASTE MANAGEMENT**

#### TYPES OF WASTE ON UNIVERSITY CAMPUS

To create effective waste management plans, the university first needs to know the types of waste they produce. Below, we have compiled a list of various kinds of waste commonly generated on institutional campus:

- 1. Food Waste University campus generates food waste. The average mess and canteen generate approximately 10 kg of food waste a day. The reasons for food waste on an educational campus may be over-purchasing food to ensure a sufficient supply and then throwing it away, especially in all hostel messes where plentiful stores are essential. And in the cafeteria or hostel mess, students may pile food onto their ample trays, find it unappealing once they sit down and dutifully scrape it into the garbage. Immediate attention is given to food waste minimization techniques.
- 2. Recyclable Paper, Cardboard, Plastic, Glass and Cans Campus tends to produce vast quantities of these recyclables. Even in the digital age, many students, professors and staff members still prefer handwritten notes and end up with piles of unwanted paper once their courses and projects are complete. The snacks so essential to late-night studying or socializing tend to come in recyclable plastic, glass or aluminium containers. And shipments of necessary items throughout the year are likely to arrive in recyclable plastic and cardboard packaging. The same is sold/auctioned to the scrap vendors from time to time.
- 3. **Student Clothes and Housewares** As we have mentioned above, many students find it more convenient to throw away their clothes and dorm furnishings at the end of the year than donate or recycle them. The environmental committee of SGT University has initiated a donation camp for donating clothes to help needy people. It was a full week drive which successfully collected more than 10 cartons.
- 4. **E-Waste Student and facility electronics often form a large portion of a campus's waste** As campus continually upgrade their computing facilities and office computers to keep up with the latest technology, the old computers have to go somewhere. So do old printers, phones, copy machines and other electronics that receive upgrades over the years. Discarded student electronics often become part of a University's waste stream as well. Students may throw away old phones, TVs, tablets, laptops and printers, along with cords and other accessories. Recycling is a much more eco-friendly option the metals in old electronics often have a high reuse value. The University has tie-up with external authorised agency details mentioned in legislation compliances.
- 5. Chemical Waster Chemical waste on a university campus may come from numerous sources. Campus laboratories generate waste chemicals, as do cleaning services. The detergents used in campus laundry rooms eventually become waste as well. Much of these chemical substances are hazardous waste under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989



## EHS alliance

#### **SGT University: Environment Audit Report**

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and must undergo specific disposal processes according to state environmental rules and regulations.

- 6. **Maintenance Waste** In the maintenance department, spent paints, solvents, adhesives and lubricants all form potentially hazardous waste. Because they incandescent light bulbs usually become landfill waste. Spent fluorescent light bulbs, which contain small amounts of mercury, typically require special handling because of the environmental and health risks they pose.
- 7. **Biological Waste** Biological waste from laboratories and campus medical centres will require special handling and disposal as per BMW Rules, 2016. Tissue from biology and cadaver labs forms biological waste, as do tissue samples, contaminated bandages facilities
- 8. **Furniture** Furniture waste on a University campus has a couple different sources. The campus itself may also get rid of old furniture as it modernizes its classrooms, cafeterias, computer labs and study spaces. Annually sold to junk dealer.
- 9. **Books/Magazines/Newspapers** Books accounted for solid waste generation and University often generate tons of textbook waste. As courses upgrade to new editions, they may end up throwing their newly obsolete textbooks into the garbage if donation programs cannot use them. Students of SGT University donates their text books and notes to junior students, or else are auctioned to reseller.
- 10. **C & D Waste** Due to expansion of University campus building and renovation works result significant amount of construction and demolition waste that should be either used for back filling or disposed off through authorised dumping site by CPCB/SPCB.
- 11. Solid Waste The University is managing solid waste by providing it to the MCD.
- 12. **Horticulture Waste** University campus has lavish greenery and grounds that results significant horticulture waste which is managed by in-house composting system.

Below is the details of the wet and dry waste details for 1 year duration

Wet & Dry Waste Details (Jan 21 - December 21)														
Particulars	Unit	Jan- 21	Feb- 21	Mar -21	Apr- 21	Ma v-	Jun- 21	Jul- 21	Aug- 21	Sep-	Oct- 21	Nov- 21	Dec- 21	Total
						21								
Food	Kg	441	453	470	198	203	487	482	474	479	483	499	503	5172
Raddi	Kg	35	40	45	22	20	46	42	48	45	39	42	44	468
Carton	Kg	37	42	48	21	24	54	49	52	47	51	56	59	540
Paper glass	Kg	31	39	43	17	21	49	46	47	40	43	41	45	462

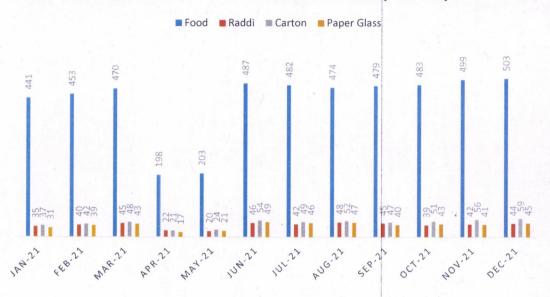




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Total	Kg	601	635	676	292	300	716	690	697	679	705	738	757	7486
Plastic Bottles	Kg	28	32	37	19	17	42	38	40	37	51	57	61	459
Poly bags	Kg	29	29	33	15	15	38	33	36	31	38	43	45	385

#### WASTE DETAILS OF CAMPUS (IN KG)



## **ENERGY CONSERVATION**

- List ten ways that you use energy in your institute. (Electricity, LPG, firewood, others). Using this list, try to think of ways that you could use less energy every day.
  - SGT University uses electricity for Lights, fans, computers, smart boards, AC, etc.
  - Electricity is mainly used in the classrooms, offices, staff room, library, seminar room, hostel, canteen, etc.
  - SGT University uses solar energy For street lights
  - SGT University use solar water heater in kitchens and hostels
  - LPG is used for cooking purpose in canteen and hostel mess.





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2. Are there any energy-saving methods employed in your institute? If yes, please specify. If no, suggest some

Yes, SGT University has adopted energy-saving techniques

- Renewable source of energy through 910 KW solar panel is operational
- Solar heaters are installed for the hostel and mess
- LED lights have been installed in the campus
- Switch off fans and lights when not in use
- Switch off bulbs/LEDs in the well-lighted rooms during sunny afternoons.
- Various energy conservation awareness programs for students and staff
- Keep the computers and ACs in power-saving mode.
- 3. How many CFL/LED bulbs have your institute installed?

SGT University has replaced all conventional bulbs and tube lights with 20W LED Lights.

4. Do you run "switch off" drills at the institute?

Yes

5. Are your computers and other equipment put in power-saving mode?

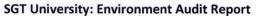
Yes, SGT University put the equipment on power-saving mode

6. Does your machinery (TV, AC, Computer, weighing balance, printers, etc.) run on standby modes most of the time? If yes, how many hours?

Yes, approx. 6 hours

Energy Share	kWh	Percentage
Electric Grid kWh	4656510.00	76.10%
Solar PV-kWh	872663.00	14.26%
HSD-Eq.kWh	247242.24	4.04%
LPG Eq. kWh	342690.08	5.60%
Total -kWh	6119105.32	100%

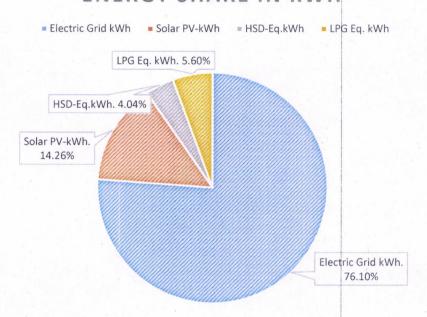






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#### **ENERGY SHARE IN KWH**



#### **SOLAR PV DETAILS**

Below are the block-wise load details of SGT University in KWH

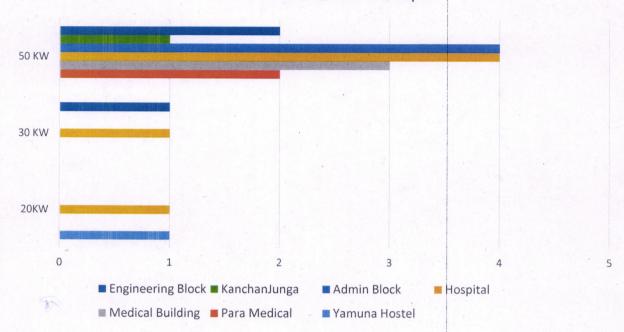
Sl. No.	Description	20 KW	30 KW	50KW	Total KW
1	Yamuna Hostel		1		30
2	Para Medical			2	100
3	Medical Building			3	150
4	Hospital	1	1	4	250
5	Admin Block			4	200
6	KanchanJunga			1	50
7	Engineering Block		1	2	130
	Total KW				910





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#### Solar PV Installation-910 Kwph



## WATER AND WASTE-WATER MANAGEMENT

#### 1. List uses of water in your institute

Basic use of water in campus:

Drinking - 232.72 KL/month

Gardening – O KI/month, SGT University uses STP treated water

Kitchen and Toilets – 1533.33 KL/month

Hostel - 3202.10 KL/Month

Others - 652.73 KL/month.

Total = 5720.81 KL/Month





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## 2 How does your institute store water? Are there any water saving techniques followed in your institute?

SGT University relies on tanker for water supply as a primary source and 3 bore wells as a secondary source. 4 Overhead Water Tanks and 03 Underground Water tanks installed for storage of water.

SGT University ensures regular maintenance of water tanks and checking of water quality standards on the campus. The water tanks and water coolers are checked every 3 months, and RO systems are regularly changed.

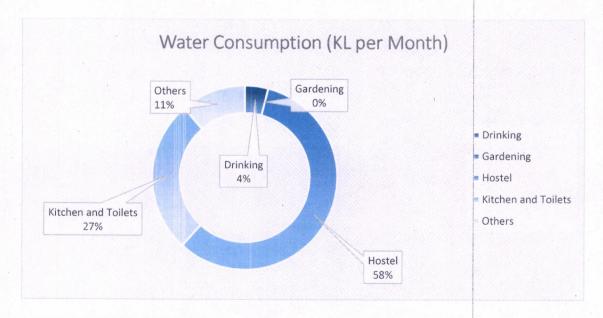
#### Saving Techniques

- SGT University ensures that the faucets in the washrooms and water filtration units are checked regularly and do not have any leakages.
- SGT University has also initiated the installation of auto push taps to reduce water wastage.

## 3. Locate the point of entry of water and point of exit of wastewater in your institute. (Entry and Exit)

Entry – SGT University uses tankers for water and has bore well as a secondary source

**Exit**- From Canteen, Toilets, bathrooms and Hostels through covered drainage which is connected to a sewage







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#### 4. Write down ways that could reduce the amount of water used in your institute

#### Basic ways:

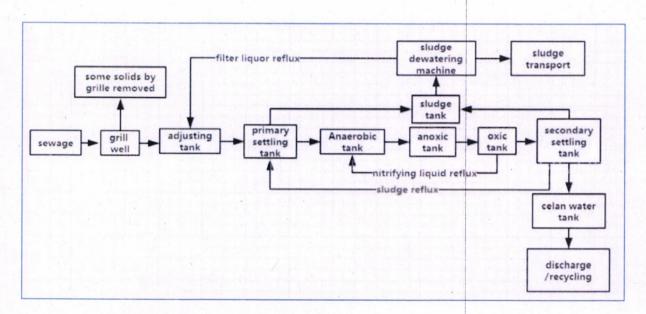
- Close the taps after usage
- Maintenance and monitoring of valves in the supply system to avoid overflow, leakage and spillage
- SGT University ensures that the faucets in the washrooms and water filtration units are checked regularly and do not have any leakages.
- > SGT University has initiated the installation of auto push taps to reduce water wastage.

#### 5. Does your institute harvest rainwater?

Yes, there are twenty five units for rainwater storage

#### 6. Is there any water recycling System?

Yes, there are fully functional STP and ETP, on the campus



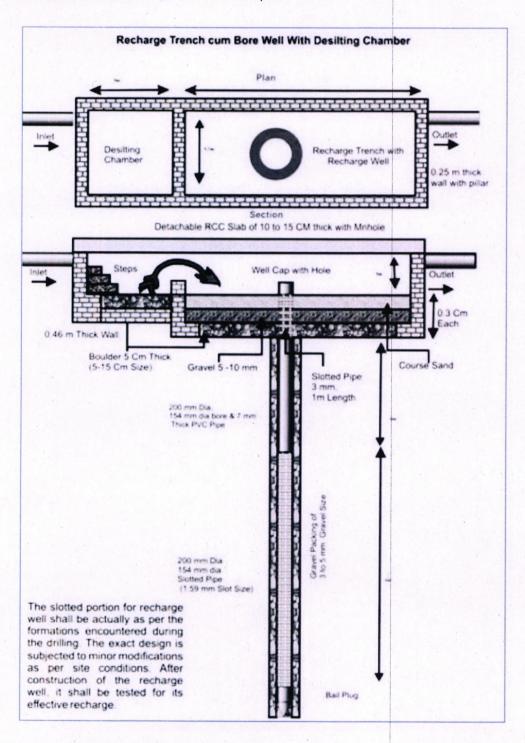
Zero liquid discharge (ZLD) is a strategic wastewater management system that ensures that there will be no discharge of industrial wastewater into the environment. It is achieved by treating wastewater through recycling and then recovery and reuse for flushing, gardening, Dg cooling and housekeeping purpose. 275 KLD STP and 10KLD & 40KLD ETP installed and functional in Campus as per Environment Clearance from State Pollution Control Board dated 19.03.2021. The flow diagram of STP is given below:





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Rainwater harvesting (RWH) is the collection and storage of rain, rather than allowing it to run off. Rainwater is collected from a roof-like surface and redirected to a tank, cistern, deep pit (well, shaft, or borehole), aquifer, or a reservoir with percolation so that it seeps down and restores the groundwater. A total of 25 RWH units has been installed on the campus.







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## **BIO DIVERSITY**

Promoting biodiversity at the university campus provides students with educational, hands-on opportunities to make positive environmental impacts. Hanging birdhouses, planting wildflower gardens, and expanding recycling programs run by SGT management and students inside the premises as well as in adopted local villages. Birds and Squirrels are commonly found on campus. A variety of bird species and other flora and fauna are available but these are not harmful to humans so institute doing their bit for its conservation. Dogs and cats are not found on campus, only pets are allowed, and other stray animals are not inside the camps due to the hard fencing of the premises. Yes, the Environment committee actively organized awareness through nukkar natak, poster competition, in the locality of Sultanpur National Park, Gurugram. Basai Wetland's Biodiversity Conservation Awareness articles by faculty for spreading awareness in the locality.

## **AIR QUALITY MANAGEMENT**

1. Are the Rooms in Campus Well Ventilated?

Yes, as per National Building Code, guidelines

2. Window Floor ratio of the Rooms?

Very Good, ample daylight utilization because of big windows.

3. What is the ownership of the vehicles used by your campus?

SGT University has 60 buses and 7 cars, 5 vans, and 9 other vehicles (4 e-rikshaw, 2 tractors, 3 bikes). Out of which 7 cars and 11 buses runs on diesel.

#### 4. Provide details of Institute-owned vehicles?

Details of University-owned vehicles	Buses	Cars	Vans	Other	Total
No. of vehicles - CNG	49	2	0	0	51
No. of Vehicles - Petrol	0	0	5	3	8
No. of vehicles - Diesel	11	5	0	2	18
Total number of Vehicles	60	7	5	5	77

<sup>\*</sup>Campus has 4 e-rikshaws, but the same is not mentioned in the above table because e-Rikshaw doesn't require any fuel and are pollution free





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#### 5. Is the PUC of the campus vehicles done?

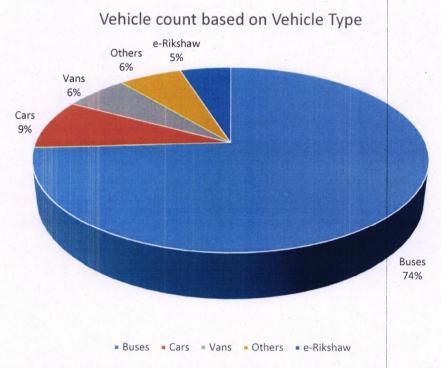
Yes

#### 6. Specify the type of fuel used by your campus's vehicles

Diesel – 18 Petrol/CNG – 59 Electric – 4

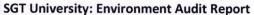
#### 8. Air Quality Monitoring Program (If, Any)

Yes, half-yearly monitoring is done by the NABL-approved Laboratory



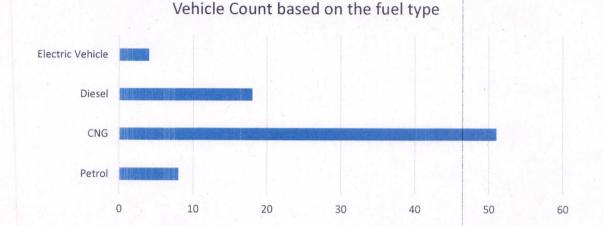
Air Pollution Mitigation The campus encourages the students to use public transport. There is no vehicle movement is allowed within the campus, except for goods and service movement periodically. The parking of staff vehicles is allowed at a designated space within the campus. Hence, air pollution due to vehicular movement is negligible. Paved roads and vegetation help in reducing dust pollution to a large extent Burning of waste within the campus is strictly banned.







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## ENVIRONMENT LEGISLATIVE COMPLIANCE

1. Are you aware of any environmental Laws About different aspects of environmental management?

Yes, To promote environment management on the campus, the university follows certain laws related to RRR such as e-waste Management and Handling Rules 2011, Plastic Waste Management Rules, 2016, Solid Waste Management Rules 2016, and more

2. Does your institute have any rules to protect the environment? List possible Rules you could include.

Yes, the environment committee of SGT University is conscious of environment protection and takes proper measures in terms of awareness campaigns, activities, webinars, seminars, etc.

3. Does Environmental Ambient Air Quality Monitoring conducted by the Institute?

Yes, half yearly monitoring is done by the NABL approved Laboratory

4. Does Environmental Water and Wastewater Quality monitoring conducted by the Institute?

Yes, half yearly monitoring is done by the NABL approved Laboratory





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5. Does stack monitoring of DG sets conducted by the Institute?

Yes, half yearly monitoring is done by the NABL approved Laboratory

6. Is any warning notice, letter issued by state government bodies?

No

7. Does any Hazardous waste generated by the Institute?

Yes, it is being disposed though the authorized external agency. (Biotic Waste limited)

## **GENERAL INFORMATION**

1. Does your institute have any rules to protect the environment? List possible rules you could include.

Yes, SGT University committee carries out a number of workshops, campaigns, and awareness programmes for environment protection in campus.

2. Are students and faculties aware of environmental cleanliness ways? If Yes Explain

SGT Univerity follow the 5 parameters of Swachhta

3. Does Important Days Like World Environment Day, Earth Day, and Ozone Day etc. eminent in Campus?

Yes, World Environment Day, Ozone Day, Earth Day, Earth Hour and more are celebrated on campus. Furthermore, SGT University organises different activities such as a workshop on —Renewable Energy, a webinar on Geo-informatics for Environmental Conservation and Management and 'Water Conservation and Environmental Sustainability, activity on - The Best out of Waste, Various plantation drives of native plants, etc.

4. Does Institute participate in the National and Local Environmental Protection Movement?





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Yes, SGT University is actively participating in environment protection movements like Swatch Bharat Abhiyan by students at the campus

5. Does Institute have any Recognition or certification for environment friendliness?

Yes. SGT University has received recognitions and certifications like a Certificate of Achievement from 'Green Tree' for high-performance building with Low EPI, letters from the village sarpanch for their awareness initiatives, cleanliness and plantation drives.

7. Does Institution conduct a green or environmental audit of its campus?

This is the fourth external audit carried out by the University.

8. Has the institution been audited /accredited by any other agency such as NABL, NABET, TQPM, NAAC etc.?

Yes, University is accredited NABH and NABL

# RECOMMENDATIONS AND SUGGESTIONS

- Green building guidelines with ECBC compliance should be adopted for future expansion projects of the University.
- Increase recycling education on campus by conducting webinars and campaigns
- Expand work with community and nongovernmental organizations to assist in finding solutions to environmental problems.
- Environmental parameters should be included in purchase policy to achieve cradle to grave approach for sustainability.





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## CONCLUSION

This audit involved extensive consultation with all the campus team, interactions with key personnel on wide range of issues related to environmental aspects. The University is devoted to promote the environment management and conservation in the campus and community. The audit has identified some suggestions for making the campus premise more environment friendly. The recommendations and suggestions are mentioned for university campus team to initiate actions.

The audit team opines that the overall site is well-maintained from environmental perspective. Still there are few things that are important to initiate which includes periodic inspection of buildings to increase the energy efficiency.

Even though the University does perform fairly well, the recommendations in this report highlight many ways in which the University can work to improve its actions and become a more sustainable institution.

## REFERENCES

- The Environment [Protection] Act 1986 (Amended 1991) & Rules-1986 (Amended 2010)
- The Petroleum Act: 1934 The Petroleum Rules: 2002
- The Central Motor Vehicle Act: 1988 (Amended 2011) and The Central Motor Vehicle Rules:1989 (Amended in 2005)
- Energy Conservation Act 2010.
- The Water [Prevention & Control Of Pollution] Act 1974 (Amended 1988) & the Water (Prevention & Control of Pollution) Rules – 1975
- The Air [Prevention & Control Of Pollution] Act 1981 (Amended 1987) The Air (Prevention & Control of Pollution) Rules 1982
- The Gas Cylinders Rules 2016 (Replaces the Gas Cylinder Rules 1981
- E-waste management rules 2016
- Electrical Act 2003 (Amended 2001) / Rules 1956 (Amended 2006)
- The Hazardous Waste (Management and Handling and Trans-boundary Movement) Rules,
   2008 (Amended 2016)
- The Noise Pollution Regulation & Control rules, 2000 (Amended 2010)
- The Batteries (Management and Handling) rules, 2001 (Amended 2010)
- Relevant Indian Standard Code practices





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# ANNEXURE I – RECOGNITIONS AND CERTIFICATES







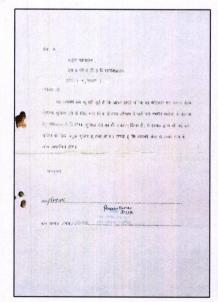


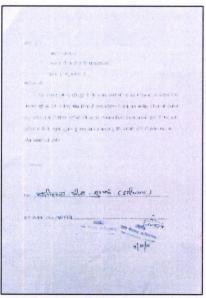


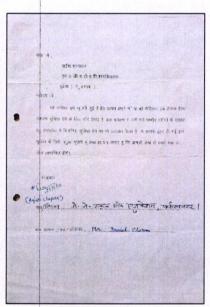


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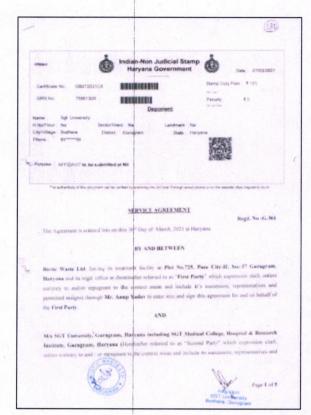
Appreciation letters from the Sarpanch of nearby villages for awareness campaign and plantation drives





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MOU signed by third party organisations for the waste management





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#### MOU with third party organisations for the waste management





FSSAI vendor Agreement





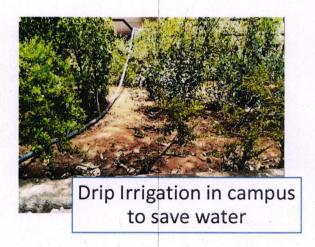
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## **ANNEXURE II - PHOTOGRAPHS**

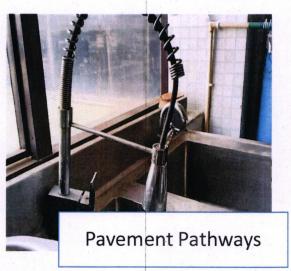












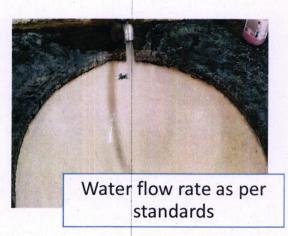


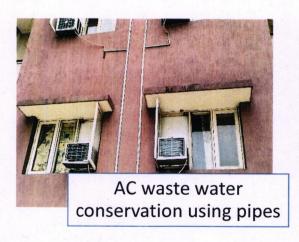
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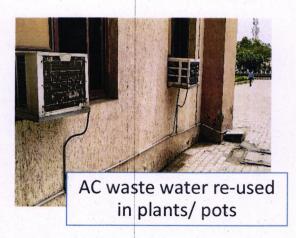












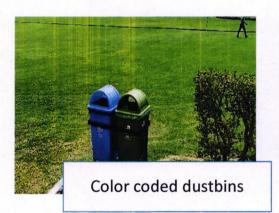




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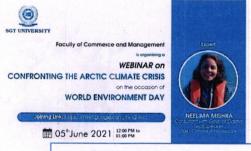
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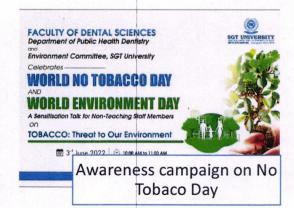








Webinar on confronting Arctic climate crisis

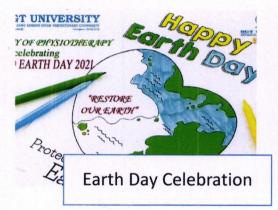


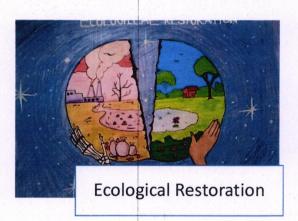


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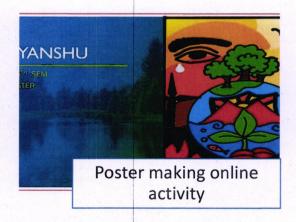












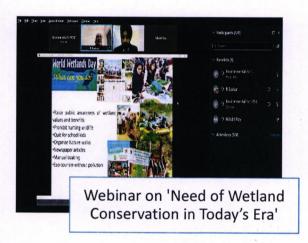




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\*\*\*\*\*\* END OF THE REPORT \*\*\*\*