Green ,Energy and Environment Audit Report

Accurate Institute of Management & Technology

Plot no. 49, Knowledge Park III, Greater Noida (UP) -201310









CONDUCTED BY:

SHREYAS QUALITY MANAGEMENT SYSTEM,

11, Tulsivihar, Abhyankarnagar, Nagpur-440010 (MS)

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ACKNOWLEDGEMENT:

Green Audit Assessment Team thanks **Accurate Institute of Management & Technology** for assigning this important work of Green Audit. We appreciate the cooperation extended to our team during the entire process.

Our special thanks are due to Principal, IQAC & Team members for giving us necessary inputs to carry out this very vital exercise of Green Audit.

We are also thankful to Department Heads and other staff members who were actively involved while collecting the data and field information.

Dr. R. R. Lakhe

Director

Shreyas Quality Management System, Nagpur.



DISCLAIMER:

Green Audit Team has prepared this report for **Accurate Institute of Management & Technology** based on input data submitted by the representatives of College complemented with the best judgment capacity of the expert team. The audit was conducted on the sample basis by visiting the college and interacting with the various stakeholders. Audit was conducted by interviewing the concerned persons, observing on-site implementation and verifying the documents and records. 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 recommendations are arrived following best judgments 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.

Auditor:

Dr. R. R. Lakhe
Director SQMS, Nagpur



EXECUTIVE SUMMARY:

The rapid urbanization and economic development at local, regional and global level has led to several environmental and ecological crises. On this background it becomes essential to adopt the system of the Green and environmentally sustainable practices on the Campus of the institute which will lead for sustainable development.

Accurate Institute of Management & Technology is deeply concerned and unconditionally believes that there is an urgent need to address these fundamental problems and reverse the trends of pollution. Being a premier institution of higher learning, the college has actively promoted the various projects for the environment protection and sustainability.

The purpose of the audit was to ensure that the practices followed in the campus are in accordance with the Green Policy adopted by the institution and also following the practices of ISO 14001-2015



EMS/ ISO 50001:2018 EnMS. It works on the several facets of 'Green Campus' including Water Conservation, Tree Plantation, Botanical garden, Waste Management, Plastic waste management MOU, Paperless Work, Alternative Energy and Mapping of Biodiversity. With this in mind, the specific objectives of the audit are to evaluate the adequacy of the management control framework of environment sustainability as well as the degree to which the Departments are in compliance with the Green and Environment Policy. It can make a tremendous impact on student health, reducing college operational costs and improvement in the environment. The criteria, methods and recommendations used in the audit were based on the identified risks.

BRIEF RECOMMENDATIONS

- 1. Ensure Green policy, objectives, Environment conservation initiatives plan availability.
- 2. Pretreat the lab/workshop waste prior to collection and disposal. Disposal of waste to CPCB approved agency /Municipal Corporation. Maintain the record of waste disposal as per local authority norms.
- 3. Environment (Air, Water, Noise etc.) testing and monitoring with defined frequency to be ensured. (At least once in a year)
- 4. Facilitate & Ensure PUC for all the fuel vehicles arriving at college.
- 5. Plantation of traditional trees, medicinal as CSR activity can be undertaken.
- 6. Green initiatives/practices, 3R (Reuse, Recycle, Reduce) to be adopted/researched upon.
- 7. Water/Energy Conservation Poster to be displayed to built up awareness.
- 8. Store electrical and electronic waste at designated location and hand it over periodically to scrap dealers/authorized agency to ensure its proper recycling
- 9. Installation and maintenance of ETP/STP as per regulatory norms.
- 10. Rainwater harvesting system needs to be improved and horizontally deployed.
- 11. Awareness building related to Environmental acts and rules, Good practices amongst the staff and students.
- 12. Nurture the seed bank concept through awareness.
- 13. Vermi-composting of green/food waste created in campus to be effectively implemented.
- 14. Study & research on use of environment, biodiversity, ecology in campus
- 15. Installation of a suitable Bio-gas plant to save energy used for heating water in laboratories/canteens.



INTRODUCTION:

Green Audit is a process of systematic identification, quantification, recording, reporting and analysis of components of environmental diversity of various establishments. It aims to analyze environmental practices within and outside of the concerned sites, which will have an impact on the eco-friendly ambience. Green audit can be a useful tool for a college to determine how and where they are using the most energy or water or resources; the college can then consider how to implement changes and make savings. It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. It can create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of Green impact on campus. If self-enquiry is a natural and necessary outgrowth of a quality education, it could also be stated that institutional self-enquiry is a natural and necessary outgrowth of a quality educational institution. Thus it is imperative that the college evaluate its own contributions toward a sustainable future. As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent.

A Nation's growth starts from its educational institutions, where the ecology is thought as a prime factor of development associated with environment. Educational institutions now a daysare becoming more sensitive to environmental factors and more concepts are being introduced to make them eco-friendly. To preserve the environment within the campus, various viewpoints are applied by the several educational institutes to solve their environmental problems such as promotion of the energy savings, recycle of waste, water reduction, water harvesting etc.. The activities pursued by colleges can also create a variety of adverse environmental impacts. Environmental auditing is a process whereby an organization's environmental performance is tested against as environmental policies and objectives. Energy audit helps to improve energy performance there by Petators energy energy accurate institute of Management & Technology consumption, carbon foot print etc. Green, Environment & Energy audit is defined again.

examination of the effects a college has on the environment. As a part of such practice, internal audit is conducted to evaluate the actual scenario at the campus. This can be a useful tool for a college to determine how and where they are using the most energy or water or resources; the college can then consider how to implement changes and make savings.



It can also be used to determine the type and volume of waste, which can be used for a recycling project or to improve waste minimization plan. Green auditing and the implementation of mitigation measures is a win-win situation for all the college, the learners and the planet. It can also create health consciousness and promote environmental awareness, values and ethics. It provides staff and students better understanding of Green impact on campus. Green auditing promote financial savings through reduction of resource use. It gives an opportunity for the development of ownership, personal and social responsibility for the students and teachers. Thus it is imperative that the college evaluate its own contributions toward a sustainable future.

As environmental sustainability is becoming an increasingly important issue for the nation, the role of higher educational institutions in relation to environmental sustainability is more prevalent. A clean and healthy environment aids effective learning and provides a conducive learning

environment. There are various efforts around the world to address environmental education issues. ISO 14001-2015 Environmental Management Systems (EMS) and ISO 50001:2018 Energy Management System (EnMS) are very popular in the industrial sector, but the general belief is that these are something pertaining to industries only. Other parts of the world have started adopting compatible

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environmental management systems either voluntarily or for promoting standards by external certification.

Goals of Audit:

College has conducted Green audit with specific goals as:

- 1. Identification and documentation of good practices followed by college.
- 2. Identify strength and weakness in systems/practices.
- 3. Conduct a survey to know the ground reality about practices.
- 4. Analyze and suggest solution for problems identified from audit.
- 5. Assess facility of different types of waste management.
- 6. Increase environmental awareness throughout campus.
- 7. Identify and assess environmental risk.
- 8. Motivates staff for optimized sustainable use of available resources.
- 9. The long term goal of the environmental audit program is to collect baseline data of environmental parameters and resolve environmental issue before they become problem.

Objectives of the Audit:

The main objective of the Audit is to promote the Energy and Environment Management and Conservation in the College Campus. The purpose of the audit is to identify, quantify, describe and prioritize framework of Environment Sustainability in compliance with the applicable regulations, policies and standards. The main objectives of carrying out Green Audit are:

- •To examine the current practices which can impact on environment such as of resource utilization, waste management etc.
- •To identify and analyze significant environmental issues.
- •Setup goal, vision and mission for practices in campus.
- •Establish and implement Energy and Environmental Management in various departments.
- •Continuous assessment for betterment in performance in green practices and its evaluation.
- •To prepare Green Report on practices followed by different departments, support services and administration building.

In order to perform Green audit, the methodology included different tools such as preparation of questionnaire, physical inspection of the campus, observation and review of the documentation, interviewing key persons and data analysis, measurements and recommendations. The study covered the following areas to summarize the present status of environment management in the campus:

• Water management

- ✓ Raw Water
- ✓ Drinking Water
- ✓ Laboratory Waste Water
- ✓ Sewage Water

- ✓ Rain Water Harvesting
- ✓ Washroom water
- ✓ Water used in Canteen/Mess
- ✓ ETP/STP
- ✓ Waste water

• Energy Conservation

- ✓ Petrol
- ✓ Diesel
- ✓ LPG
- ✓ Electricity
- ✓ Batteries
- ✓ Solar Energy
- Green area management
- Air & Noise Quality Monitoring
- Waste Management
 - ✓ Hazardous Waste
 - ✓ Non- Biodegradable Solid Waste
 - ✓ Biodegradable Municipal Solid waste Bio- Medical Waste
 - ✓ Kitchen Waste
 - ✓ E-waste management

• Environment Consciousness

Review of the Documentation:

- Green Policy, Practices considering ISO 14001 guidelines & applicable legal requirements
- Data source for year 2022-23

Interviews:

Interviews were conducted with the Principal, and also faculties and students.

Physical Inspection:

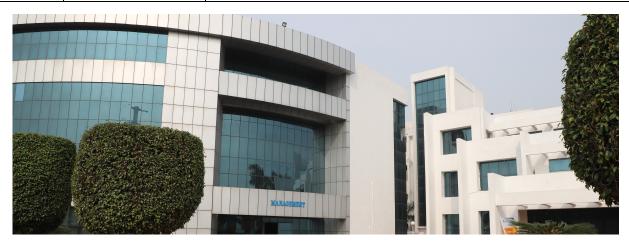
The audit team virtually inspects the college to inspect the campus and review Green and Environmental actions.

Auditors for Green audit:

Sr.No	Name of Auditor	Credentials
1	Dr. R. R. Lakhe	QCI registered Lead Auditor for QMS, EMS, OHSAS; Lead
		Auditor for QMS, EMS, OHSAS, EnMS, NBQFrQCOrregistered

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		QMS, LMS and business improvement with 35+ Years of		
		Industrial, Consultancy, Training, Audit and Research experience		
		Provided consultancy, Auditing, Training to more than 200		
		organizations for ISO 9001, ISO 14001, ISO 45001, ISO 50001,		
		ISO17025, Green/Environment/Energy		
2	Mr. Nasir Sayyad	BEE energy auditor, ISO 50001 LA, ISO		
		9001,14001,45001,50001 Internal auditor with 35+years of		
		experience in Thermal Power Plant		



ABOUT COLLEGE:

Accurate Institute of Management & Technology, Greater Noida

Approved by AICTE, New Delhi & Affiliated to Dr. APJ Abdul Kalam

Technical University, Uttar Pradesh Lucknow

Established in the year 2001, AIMT group of institutions has become one of the leading institutions for management and engineering programs worldwide. Our aim is to educate leaders who build a strong organization and wisely leverage the power of markets to create lasting value.

Vision:

"Our vision is to build "Accurate Institute of Management and Technology" (AIMT), a center for excellence in quality education and research with world-class standards, to provide well-educated and skilled technical professionals who can contribute to the well-being of society as well as the growth of the industry and our community."

Mission:

• To enrich our students with quality education, professional ethicsvalues & sound knowledge which leads to the development of self-esteem and for society.

• To ensure that students acquire excellent theoretical knowledge and practical training of industrial program through curricular and extra-curricular activities having human values accurate institute of Management & Technology Greater Noida

•To inspire innovational and entrepreneurship skills amongst students a face the challenges and demands of professional world.

Quality Policy:

Quality Education is our Main Objective and we are committe to provide Quality Education to all the students for preparing them well-versed Technical Professionals.



Core Values:

"At AIMT we believe in laying a solid foundation for our emerging professionals."

The current situation requires innovation, ingenuity, continuous improvement and the right ideas to make the way of our life easier. We strongly believe in these values and urge participants to adhere to them!"

Courses offered:

A. Bachelors Degree:

- 1. Bachelor of Technology (Artificial Intelligence And Data Science)
- 2. Bachelor of Technology (Civil Engineering)
- 3. Bachelor of Technology (ECE)
- 4. Bachelor of Technology (Computer Science & Engineering)
- 5. Bachelor of Technology (Computer Science & Engineering Artificial Intelligence)
- 6. Bachelor of Technology (Information Technology)
- 7. Bachelor of Technology (Mechanical Engineering)

B. Masters Degree

- 1. Master of Business Administration,
- 2. Master of Computer Application,

Ways of Learning

Learning at AIMT can be manifold and you will be encouraged to explore a variety of different approaches of studies during your time here with numerous opportunities for developing your individual potential.

Learning Curves

At AIMT traditional teaching methods such as Lectures and Seminars are complemented by team projects, tutorials and practical assignments. Interactive educational questionnaires are available, which permits you to study at your own pace at your own time.

Personal Growth

Personal growth and professional development are the key objectives of the professional education. At AIMT you will develop your ability to think independently, argue critically, solve problems and communicate effectively. These valuable life skills will make you highly employable in today's job market. Not only this you shall come out as an effective total personality.

Key To Success

Professional courses are valuable investment, bringing you immediate rewards and a life time of benefits but it is necessary for you to exert and take advantage of the variety of the courses which open to you a wealth of career choices. At AIMT, you can develop your expertise and knowledge in a supportive and stimulating academic environment. Studying at AIMT can be as challenging as it is captivating, but plenty of professional advises are available. You can use your valuable time here and become a committed professional.



Environment Policy:

- To raise awareness of environmental issues among its staff/students/visitors and encourages initiatives leading towards a clean environment.
- To plant more and more trees to sustain the biodiversity.
- To explore options for using waste / roof water wherever possible.
- To comply with all applicable legal and regulatory requirements for the protection of the environment.
- To minimize waste generation by developing recycling systems and eco-friendly waste disposal practices.
- To replace, wherever possible old conventional methods by more eco-friendly techniques.
- To develop paperless system wherever possible by giving emphasis on digitalization process.
- To develop operating procedures to conserve natural resources and energy by minimizing their consumption and wastage.
- To develop system and procedures to reduce sound pollution and air pollution.

Address:

Accurate Institute of Management & Technology, Greater Noida Plot no. 49, Knowledge Park III, Greater Noida UP (201310)

College Code = 225

Nearest Railway Station

Ghaziabad(28Km.)

Nearest Airport

IGI Airport, Delhi (60Km.)

Academic hours at the Institution

09:30 am to 05:00 pm

Type of Institution

Private-Self Financed Non-Minority Co-Ed

Name and Address of the Trust

Accurate Educational Trust .

Plot no. 49, Knowledge Park III, Greater Noida

Name and Address of the Director

Prof. (Dr.) Yogesh Bhomia

Name and Address of the Affiliating University

Dr. APJ Abdul Kalam Technical University,

Sec11, JankipuramVistar, Lucknow, U.P.

www.aktu.ac.in

Information of infrastructure and other Recourse Available

- Number of Class Rooms54
- Size: 80 Sq Meter

Number of Tutorial Rooms: 24

Size: 35 sqm

• Number of Laboratories:44

Size: 70 sqm

Number of Drawing Halls:02

Capacity: 200 Person

• Number of Computer Centers :12

Capacity:400 students

• Central Examination Facility: YES

Number of Rooms: 44

Capacity: 2000

•Barrier Free Built Environment for disabled and elderly persons: YES

Library

• Number of Library Books: 40000

• Number of Library Titles: 4500

• Number of Library Journals: 120

E-Library Facilities: Available

Membership: DELNET, NPTEL, SAWYAM, NDL, E-Shod Sindhu

E-Resources (E-Nalanda): Springer Link, Science Direct, Mc Graw hill, Pearson E-Books,

Taylor & Francis e-books, Wiley, JSTOR, Emerald, Cambridge Core, BSP E-Books, DOAJ -

Directors of open Access Journals

Director

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➤ Teaching Learning Process

- **❖** Interactive Classrooms
- **❖** Case method of Teaching
- ❖ Use of modern teaching aids
- ❖ Group discussion and presentation
- **❖** Audiovisual Classrooms
- ❖ Instructional films on various subjects
- Guest Faculty/Guest Speaker
- **❖** Visit to Industries
- **Summer Training**
- ❖ Project Work
- ❖ Detailed coverage of syllabus
- ❖ Coverage of topics beyond syllabus
- ❖ Personality Development Programs
- ❖ Well-designed Academic Calendar & implementation
- ❖ Faculty Development program in campus and off campus
- ❖ Seminars, Workshop & Research Work

➤ Internal continuous Evaluation System and place

The Institute holds two class tests and one Pre-University Test during a semester.

➤ Students' assessment of faculty, system in place

We are in practice to taking student feedback in every six months on the Institutional Governance/Faculty performance through Student ERP login.

➤ Games & Sports Facilities

Both indoor & outdoor sports activities are conducted at regular intervals for students to maintain their physical fitness essential for them to perform their best in academic also. The Institute has dedicated sports complex for the students to play football, cricket, volley ball, basketball, table-tennis and badminton etc.

Other indoor games facilities are also available.

➤ Extra Curriculum Activities

Yoga Classes: Regular yoga classes are available for the students, who are residing in the hostel.

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Seminar: The students have created various societies and through these societies with the help of Institute, they conduct seminars and conferences at regular intervals. This enables them to improve their communication and organizing ability.

Cultural Activities: Students are encouraged and provided necessary facilities and guidance to conduct cultural programs, to develop & display their talents. The cultural activities are carried out at regular intervals without affecting programs. The welcome party for the first year and farewell party for the final year students are conducted regularly

Frequency of the Board Meeting

Governing Body: Twice in an Academic Year

Academic Advisory Body: Every Three Months (Quarterly)

Student Feedback on Institutional Governance/ Faculty Performance

- a) After each semester reach student fills online feedback form for the faculty who taught them.
- b) The faculty is graded on scale of 1 to 5 for 1 each Attribute.
- c) The data is compiled, analyzed and the faculty is briefed accordingly by Director/HOD's.

Grievance Redressal mechanism for Faculty, staff and Students

Committee with Green Initiatives

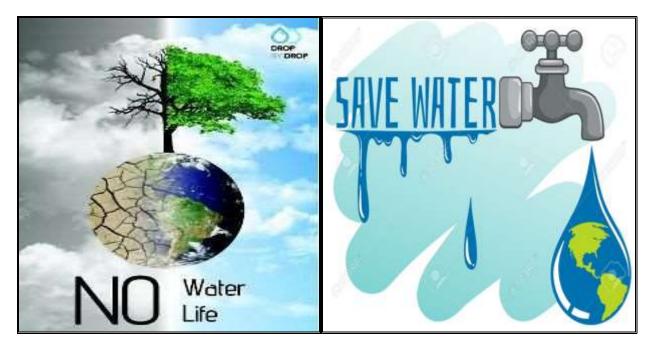


Good Points:

1. College has formed the team of faculty and student to enhance the green environment, to maintain biodiversity on the campus and also participates in preventing pollution in society through various drives. College is playing crucial role in Environment and Energy Conservation. Various programs are also conducted as a part of plantation

- 2. College has installed solar panels as renewable energy source in hostel.
- 3. Environmental subject is included as course contents in at graduation level as Environmental Chemistry etc.
- 4. Tree plantation at college premises and forest is taking place and encourages students to plant the tree
- 5. As a part of the Green Initiatives the practices followed are:
 - 1. Plantation at Campus and nearby area
 - 2. Solar Panels as renewable energy source
- 5. Environmental and Energy conservation related workshops, events are organized as per the guidelines of Institute.
 - Arranged training program for the staff of the college on Green Environment.

A. WATER MANAGEMENT:



This indicator addresses water consumption, water sources, irrigation, storm water, appliances and fixtures. A water audit is an on-site survey and assessment to determine the water use and hence improving the efficiency of its use.

Aim and objective:

- To save water
- Minimization of water wastage
- To conserve the water

Observation:

Water conservation is a key activity as water availability effects on the development of the campus as well as on all area of development such as farming, industries, etc. Keeping this in view water conservation activity is carried out by the college.

Water is used for drinking purpose, toilets and gardening. The waste water from the RO water purifier is used for gardening purpose. During the survey no loss of water is observed neither by any leakages nor by overflow of water from overhead tanks. The data collected from all the departments is examined and verified. On an average the total use of water in the college is 2,87,000 L/day.. Rain water harvesting units are also functional for recharging ground water level.







Wastage of water is prevented by closing the valves manually. No leakage of water is detected during the audit. The waste water mainly comes from labs, washrooms & kitchen & waste water is released to soap pit. At present waste water is not used for any other purposes and is is released in common drainage. Pre-Treatment of lab water is not carried out at present using neutralization.

The sources waste water are categorized in two types:

- I. Laboratory Waste Water which can be said as Effluent and
- II. Domestic Waste Water i.e. Sewage Water.





Institute has-

- 1. Drip/Sprinkler irrigation system
- 2. Rain Water harvesting system
- 3. Water conservation through sensor urinals, Autocut sensors for water tank



Recommendations:

The team of Auditors appreciates the College administration for the good practices in conserving water such as regular plumbing services, regulating the water flow from top. There is willingness to explore the option of Waste Water Treatment thus the (plant based) recycled water can be utilized for the toilet flushing and gardening if it is implemented successfully. It is not possible to estimate the exact quantity of water used by different departments. However the highest consumption of water is most likely happening in toilets, hostels, canteen and in chemical lab in view of the escalation of water scarcity in the region team recommend basic steps be carried out to optimize the water utilization at the college level, which will also contribute to reducing the related expense: College has also work on project like rain water harvesting.

- I. Recycling and reuse of waste water in labs can be thought of.
- II. Water testing to be carried out (Inlet, Outlet, Lab waste, bore well, mess etc.) on periodic basis and opportunity to be explored to retreat and reuse.
- III. Putting up notices in all washrooms and near all water coolers about the need for saving water, and simple tips like ensuring all the taps are properly closed.
- IV. Leakages are immediately brought to the notice of the management; respective floor cleaning staff could be given the responsibility to keep a check on every floor if any taps are open or leaking.
- V. To eliminate the spillage and over usage of water in washbasins, urinals and toiler push taps are highly recommended.
- VI. Training to the cleaners in economical use of water for cleaning purposes and a system in place for immediate response when issues of water leakage are observed so that water losses are prevented.

- VII. Need of monitoring, controlling overflow is essential and periodically supervision drills should be arranged. In campus small scale/medium scale/ large scale reuse and recycle of water system is necessary.
- VIII. Drip sprinkler irrigation system for gardening to be enhanced
- IX. Minimize wastage of water and use of electricity during water filtration process, if used, such as RO filtration (Drinking Water) process and ensure that the equipment's used for such usage are regularly serviced and the wastage of water is not below the industry average for such equipment's used in similar capacity.
- X. Ensure that all cleaning products used by college staff have a minimal detrimental impact on the environment, i.e. are biodegradable and non-toxic, even where this exceeds the Control of Substances Hazardous to Health (COSHH) regulations.
- XI. All water taps to be checked for its leakage particularly in toilet.
- XII. Identification of areas to be carried out such as compost making area, water harvesting tank, bore well used for water harvesting purpose, bore well used for consumable purpose, parking area of staff, students, hazard area etc.
- XIII. Water meter to be installed on bore well as well as well which is used and daily monitoring and record of water used to be maintained.
- XIV. Cleaning schedule of water purifier to be made and followed.
- XV. Water consumption of the college to be monitored and graphs/table to be prepared.
- XVI. Water to be tested from various sources including the potable water purifiers and in canteen.
- XVII. Maintenance of water purifier to be done including replacement of filters.
- XVIII. Special Internal Water Audit to be conducted quarterly and should be submitted to environment committee.
 - XIX. College does not have ETP, STP plant to treat the Sewage water, mainly comes from washrooms of college etc.
 - XX. The effluent produced in labs to be released after treating and neutralization and collected at single point and handed over to Municipal Corporation/CPCB approved agency. Which presently is not carried out by the college.



B. ENERGY USE AND CONSERVATION:

This indicator addresses energy consumption, energy sources, energy monitoring, lighting, appliance, natural gas and vehicles. Energy use is clearly an important aspect of campus sustainability and thus requires no explanation for its inclusion in the assessment. The college primarily uses energy in the form of electricity provided by State Distribution. A proper analysis of energy consumption, we need to understand the electricity consumption over at least one academic year, and ideally three previous years. Major use of the energy is at office and laboratories of different departments for lighting, practical and laboratory work. The main electric appliances in the college are fans, computers, LCD projectors, lab equipments, and accessories. Major energy consumption equipments are the high wattage electrical appliances such as Tube lights, Water coolers, fans, lab equipments etc.

Aim and objective:

- To save conventionally produce electric energy
- Use of non- conventional source of energy
- Use carbon neutral electricity
- Minimization of electric expenses

Observations:

In all sections of campus lecture rooms, office rooms, laboratories etc are spacious voluminous and airy, having proper natural light and ventilation. Hence actual requirement energy consumption in lightening is minimal. The air conditioner in the management chamber or in Phincipal Chamber are rarely used and avoiding unnecessary use of the same is a part of the green phintice in the College. Besides this, solar system is also installed in the campus as an alternate renewable source of energy for hostel.

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This indicator addresses energy consumption, energy sources, energy monitoring, lighting, appliance, natural gas and vehicles. Energy use is clearly an important aspect of campus sustainability and thus requires no explanation for its inclusion in the assessment.

Following Energy Sources are used in the college:

- > Electrical
- > Solar
- Diesel/ Petrol
- LPG



Details of on. Consuming device/utilities used in institute

Sr. No.	Utility	Quantity/Nos
1	Split AC	27
2	Window AC	147
3	LED Light	2000
4	Tube light (other than LED)	300
5	Cooler	-
6	Fan	1300
7	Laptop	-
8	Desktop LED	-
9	Desktop Tube type	-
10	Water cooler	-
11	Street light (write type)	LED - 50
12	Printer	-
13	Projector	-











- Computers have LED screens; Computers are always kept on standby mode with power saving screensavers.
- In order to save energy, the college saves energy by using LED tubes and bulbs: 70%.
- Since the design of classrooms is intended in a such a way that, the classrooms will remain well ventilated and full of light so the requirement of tube lights and fans will be very less hence energy can be saved.
- Non-teaching staff switches on all lights & fans in morning and shut down directly in evening.
- There are no signage encouraging users to switch off light and fans to save electricity. Providing signage through screensavers & posters near electrical switches will help in making students responsible for conservation of electricity.
 - There is no renewable source of energy used e.g. Solar, Wind. However, the institute isplanning installation of solar panels to meet the electricity requirements in the year.
- Save electricity by proper maintenance of the wiring and electrical equipment, maintenance of electrical appliance and fitting is essential.
- Adopt solar power to light up the roads, exterior site of campus section.
- Cleaning of tube-lights/bulbs to be done periodically, to remove dust over it. Green technology used for energy conservation:
 - Energy efficient electronic gadgets like 5* rated air conditioners are used andmaintained regularly.
 - Unwanted usage of electric power is prohibited in Institute.
 - •LED bulbs were used in the class rooms, laboratories, administrative of the libraries, auditorium hall and staff room. Now, the power consumption is reduced due officient use of LED bulbs.

Following simple ways to reduce electricity consumption can be followed:

1. Don't Leave Electronic Appliances On Standby Mode: It is a common tendency among the people to switch off their electrical appliances using the remote, leaving them on standby mode. They fail to realize that the device is still consuming 85% of electricity energy and wasting the valuable energy reserve. Instead, by switching off the main power button or by unplugging the socket, they can make a commendable contribution in saving electricity energy.

2. Lighting: The traditional bulbs and tube lights consume a large amount of electricity energy, making a contribution of almost 10 to 15 percent in the electricity bill. In lieu of these outdated bulbs, one must prefer purchasing an energy saving bulb and the fluorescent tubes that glows brightly without consuming more energy.

3. Bring Home Solar Garden Lights: To lighten your garden and add grace to its look, one can easily bring home the highly efficient solar garden lights as they do not entail you to dig trenches or set up wiring connections. Users can easily arrange these fitting anywhere they desire and highlight the dark areas of their gardens. These lights get charged up during the day and illuminate the garden at night.

4. Check out The Energy Star Label: While purchasing electronic appliances like air conditioner, fans refrigerator, microwave and other household appliances, one must make sure that the appliance has an energy star label on it that can help to cut almost 30 percent of the electricity bills.

Recommendations:

- 1. All electrical loose wire to be dressed up properly.
- 2. Electrical Earthing of the college to be checked regularly.
- 3. Equipments like Computers to be used with power saving mode. Also, campus administration to be runs switch –off drill on regular basis.
- 4. Awareness for the use of electricity and paper to be developed in the college

- 5. Instruction such as all electrical appliances (fans/AC) shall be switched off when "not in use or at the end of the day" to be displayed.
- 6. College takes steps to purchase fans, refrigerators and air conditioners with low energy consumptions with maximum star ratings.
- 7. Use of Diesel generator to be avoided (to reduce the consumption of oil, record of consumption of diesel to be maintained.
- 8. Enhanced renewable energy source capacity.
- 9. The display of the instruction boards/to be displayed on each classrooms/ lab for "switching of the fans and lights when not required".
- 10. Switching to star rating electric appliances in phase wise manner.
- 11. Carbon Sequestration study shall be carried out before plantation of Green Belt.
- 12. Energy Consumption for each building should be estimated to design the energy conservation plan.
- 13. Instead of out-sourcing the Annual Maintenance of Electrical Equipment college concern department staff shall take that responsibility
- 14. Energy saving awareness shall be done by displaying the boards at appropriate place.
- 15. List of electrical gadgets used in every section, departments, hostels, canteens to be prepared with electrical capacity required.
- 16. Encourage natural ventilation and illumination by alteration in the building structures whenever going for new constructions.
- 17. Air condition in offices needs to be set on 26°c.
- 18. Optimise temperature to 26 degree Centigrade in AC
- 19. Regular preventive maintenance of AC.
- 20. Installation of Capacitor Bank in Control Panel to improve power factor
- 21. Proper use of Day light in class room / faculty room.
- 22. Display Energy saving poster at prominent places
- 23. Extra protection MCCB to be installed in each control panel.
- 24. Proper Maintenance of Three Boring machines which are used for Drinking water
- 25. Installation of BEE Approved AC and BLDC Fan in future to reduce Energy consumption
- 26. Regular preventive maintenance of Solar Panel
- 27. Occupancy sensor to be installed in Wash room
- 28. Proper earthing of all equipment s to be checked regularly

C. GREEN BELT AREA & BIO-DIVERSITY:

The Green Belt Area is meant for conservation of nature and esthetic value of the college premises. The area of Green Belt in this College is around 18560 sq.mtr. The Green Area in the college includes the plants, greenery and sustainability of the campus to ensure that the buildings conform to green standards This also helps in ensuring that the Environmental Policy is enacted, enforced and reviewed using various environmental awareness programme.

The area is immensely diverse with a variety of tree species performing a variety of functions, Sprawling lawn/ garden. Most of these tree species are planted in different periods of time through various plantation Programmes organized by the authority and have become an integral part of the college. The trees of the college have increased the quality of life, not only the college fraternity but also the people around of the college in terms of contributing to our environment by providing oxygen, improving air quality, climate amelioration, conservation of water, preserving soil, and supporting wildlife, controlling climate by moderating the effects of the sun, rain and wind. Leaves absorb and filter the sun's radiant energy, keeping things cool in summer. Many spices of birds are dependent on these trees mainly for food and shelter. Nectar of flowers and plants is a favorite of birds and many insects. Leaf – covered branches keep many animals, such as birds and squirrels, out of reach of predators. Different species display a seemingly endless variety of shapes, forms, texture and vibrant colors. Even individual trees vary their appearance throughout the course of the year as the seasons change. The strength, long lifespan and regal stature of trees, enormous variety of flowering plant, give them a monument – like quality.

They also remind us the glorious history of our institution in particular. We often make an emotional connection with these trees and sometime become personally attached to the ones that we see every day. A thick belt of large shady trees in the periphery of the college have found to be bringing down noise and cut down dust and storms This includes the plants, greenery and sustainability of the campus to ensure that the buildings conform to green standards This also helps in ensuring that Environmental Policy is enacted, enforced and reviewed using various environmental awareness Programmes.

Observations:

Tree Plantation Program







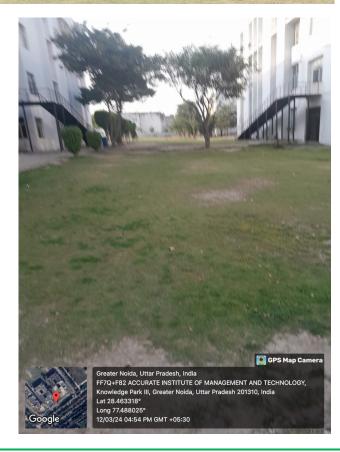
Clean and Green Campus

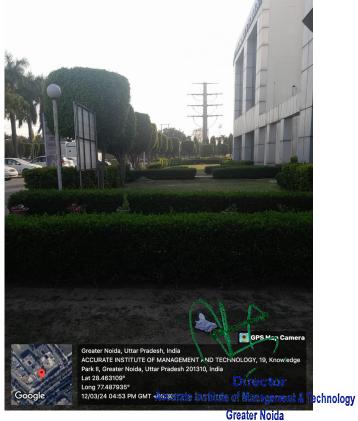












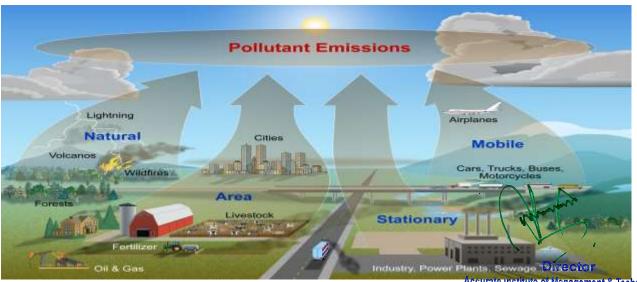
Recommendations:

The Management of College may consider on top priority that:-

- The Green Belt is to be developed as per the guidelines of NGT
- The Biodiversity is to be maintained while considering the plantation in future.
- The selection of trees species to be based on environmental conservation and carbon sequestration value.
- Competitions for bird species identification and plant species identification can be conducted.
- Artificial nests and water ponds are recommended to attract different birds in their migrating and breeding season.
- Watering schedule to be planned according the season.
- Drip irrigation is strongly recommended to conserve the water.
- Reuse of the water shall be done instead of use of fresh water for watering the plants.
- Details about the trees planted location wise/species wise etc. to be maintained every year.

D. AIR QUALITY & NOISE QUALITY MONITORING:

Since air quality plays a vital role for good health. Air Quality monitoring instrument is used to monitor quarterly the criteria pollutants. The most important air quality parameters, which are measured, are NO2, SO2 & PM10. The other criteria pollutants such as Ozone, Carbon Monoxide and Lead are not measured because there are no nearby Industries located near the institute, which are emitting these pollutants. Noise equally plays a vital role in the environment, hence noise measurement are also done at the institute quarterly.



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Carbon Foot Print:

A carbon footprint is a measure of how much someone is contributing to the gases that contribute to global climate change. More scientifically, it is the amount of anthropogenic carbon dioxide (CO2) emissions (those resulting from or produced by human beings) attributable to an individual or a household or an organisation, generally resulting from their direct or indirect use of energy. Although we talk about a 'carbon footprint', it would be more accurate to talk about a 'carbon dioxide footprint'. A carbon footprint is normally calculated in tonnes of carbon dioxide equivalent (tCO2e) but occasionally footprints are calculated in tonnes of carbon equivalent (tC). You will need to multiply by 44 and divide by 12 to convert from tonnes of carbon to tonnes of CO2 equivalent. In this unit we may talk interchangeably about carbon emissions, carbon dioxide emissions and CO2 emissions.



Carbon footprints may also include other gases that contribute to global climate change – the so called 'greenhouse gases' (GHGs). The most common of these is methane (CH4), but they also include nitrous oxide, hydro fluorocarbons, per fluorocarbons and sulphur hexafluoride (SF6). These other gases tend to be produced from agriculture or industrial processes. Most are much more powerful contributors to global warming than CO2. Water vapour (H2O) is also a significant contributor to global warming but, as its concentration varies little with time, it is not considered to be an anthropogenic greenhouse gas, except from aircraft vapour trail. However, the largest contributor to global warming is carbon dioxide itself, which is produced from burning fossil fuels such as coal, oil or gas. As well as the direct use of fossil fuels, people's carbon footprints normally include the use of electricity (where CO2 is emitted at the power station) and as a result of collective travel, such as on trains, buses and aircraft.

Institute promote use of bicycle for the campus: In the campus some of the faculty member use bicycle and they celebrated that day as No vehicle day. Also, promotes sharing of vehicle while coming to the institute. Institute promotes sharing of vehicle while coming to institute. Accurate Institute of Management & Technology **Greater Noida**

Recommendation:

- 1. Calculate the carbon foot print.
- 2. Check PUC certificate for each vehicle entering the campus.
- 3. Institute should carry out air and Noise monitoring.
- 4. Research/Study/Publication/Exposure to carbon foot print to be created and motivated.



E.WASTE MANAGEMENT:

This indicator addresses waste production and disposal of different wastes like paper, food, plastic, biodegradable, construction, glass, dust etc. and recycling. Furthermore, solid waste often includes wasted material resources that could otherwise be channeled into better service through recycling, repair, and reuse. Solid waste generation and management is a burning issue. Unscientific handling of solid waste can create threats to everyone. The survey focused on volume, type and current management practice of solid waste generated in the campus. The different solid wastes collected as mentioned above.

Observation:

For Plastic and waste generated in the college there is a provision to dispose the same with waste collection vehicle of corporation on daily basis under the swatch Bharat Abhyaan. The wastage from the canteen needs to be used in the composting purpose rather than disposing it through other sources.

Also college encourages their staff and students for using the plastic bags of more than 50 micron or use clothes bags or paper bags makes with the waste paper through awareness training.



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Type of waste generated

Solid Waste Management:

✓ Plastic free environment

Our campus is plastic free zone and is also creating awareness amongst the students and staff members regarding the bad effects of plastic by display boards and other programmes.

✓ Dustbins in the premises

In order to avoid the spreading of litter, all the laboratories, class rooms, cabins and corridor are provided with dust bins.

✓ Minimum use of Xerox / printing

In our college maximum data is converted to soft copies and procedures are digitalized which minimizes the use of printing papers. We also put warning stickers on each Xerox / printing machines to minimize use. Whatsapp, Messenger app and E-mail facilities are used to send the notice instead of paper print. Hence, maximum working procedures are paperless.

✓ Food/Green waste

College has not vermiculture composting facility





Liquid waste Management:

The entire sewage water from the campus is directed to soak pit and is subjected to disposal.

The hazardous chemicals used routinely for conducting experiments in the laboratories are handled and disposed with care. These chemicals are incinerated and disposed in a pit.

E-waste:

E-waste can be described as consumer and business electronic equipment that is near or at the end of its useful life. This makes up about 5% of all municipal solid waste worldwide but is much more hazardous than other waste because electronic components contain cadmium, lead, mercury, and Polychlorinated biphenyls (PCBs) that can damage human health and the environment.

- E-waste is the future coming environmental problem will create hazards to our environment, it is non-degradable waste can pollute water, soil and air.
- With keeping this view we are aware students and all staff about hazards effect of the e-waste on the health of man and ecosystem destruction, Waste material mainly metal, insulating materials present in the e-waste like CD, scrap mobile like devices, computer waste like monitor, CPU, mouse, Key board, cable and unused pen drive etc. are coated and deposed in scientific method.

Observation:

E-waste generated in the campus is very less in quantity. The cartridges of laser printers are refilled outside the college campus. Administration conducts the awareness programme regarding E-waste Management with the help of various departments. The E-waste and defective item from computer laboratory is being stored properly. The institution has decided to contact approved E-waste management and disposal facility in order to dispose E-waste in scientific manner.

Waste collection and disposal:

E-Waste materials are kept in a separate store-room with a dead stock register. Drives, Monitors, Keyboards, Cartridges, etc. is disposed through outside agencies as a scrap. UPS batteries are recharged/repaired/exchanged by the suppliers. The cartridge of laser printers is refilled outside the college campus. System to segregate the waste in various dustbins established. The segregated plastic waste and waste from college canteen is collected in a separate container and handover to scrap vendor.

Recommendations:

The management of college can consider the following recommendations on top priority:-

1. Lab waste to be pretreated prior to disposal as per state pollution board guide ines before disposal. Lab waste to be treated through ETP/STP or to be collected at single point and hander over to municipal corporation/regulatory approved agency.

- 2. The solid waste generated in the collage premises to be collected in scrap Yard or any identified place or in computer room (Notified Area) and segregated as per the category of solid waste management with proper well labeled.
- 3. Plastic waste registered vender(with whom MOU is made) with State Pollution Control Board as per "
 The Plastics Manufacture, sale and Usage Rules, 1999 and all its Amendments, legal license of same to
 be ensured.
- 4. Hazardous Waste to be disposed by identified disposal pathway within 90 days from its generation as per the guidelines of "Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules 2008 with all the Amendments.
- 5. Metal Waste to be reused in the college and workshop department shall be engaged for it, if they prove that the waste cannot be reused will be sale out to the venders who will recycle and reuse the same.
- **6.** Unused food waste to be used as cattle feed or for vermicomposting. College has to ensure vermin-culture composting facility
- 7. Non- Biodegradable waste shall be disposed to the registered vender with State Pollution Control Board
- 8. Biodegradable waste to be compost in the college premises in technical manner, it is observed that the vermin culture pans are present in the college but in technical institute it is expected that the composting shall be done in perfect technical manner.
- 9. Municipal Solid Waste to be disposed as per the guidelines "The Municipal Solid Wastes (Management and Handling) Rules, 2000 with its all Amendments.
- 10. The replaced or used batteries which could not be recharged as the life get exhausted shall be disposed as per the guidelines of "The Batteries (Management and Handling) Rules, 2001 and all its Amendments. It is also good to replace the old battery with new one.
- 11. The E-Waste Produced in the collage to be disposed off as per the guidelines in "E-Waste Management and Handling Rules, 2011 and all its Amendments.

Waste disposal Activity guidelines:

- a. With keeping view to minimize the pollution created through the e-waste, we have carried out the scientific disposal of e-waste by two ways
 - i. Collection of e- wastes in e- waste and handover to municipal corporation/authorized agency for disposal.
 - ii. Reuse of the component of unused electronic devices in latoratory v Physics.
- b. Recycle or safely dispose of white goods, computers and electrical instiplicative agement & Technology

 Greater Noida

- c. Use reusable resources and containers and avoid unnecessary packaging where possible.
- d. The records of proper disposal of all solid wastes to be maintained with its manifests at one central place.

F. ENVIRONMENT CONSCIOUSNESS:

Awareness building amongst staff, student and society evident. Various trainings and initiatives conducted.

Considering the fact that the institution is has significant environmental research both by faculty and students. The environmental awareness initiatives are substantial. The installation of solar panels and rain water harvesting system are note worthy. Besides, environmental awareness programmes initiated by the administration shows how the campus is going green. Few recommendations are added to curb the menace of waste management using eco-friendly and scientific techniques. This may lead to the prosperous future in context of Green Campus & thus sustainable environment and community development. As part of green audit of campus, we carried out the environmental monitoring of campus including Illumination and Ventilation of the class room. It was observed that Illumination and Ventilation is adequate considering natural light.

Botanical garden is nicely developed.

Training program related to green audit conducted:

The green audit committee will act as per the environmental policy and shoulder the responsibility of maintaining and protecting environment surrounding the college. The aim of the committee is to provide advice for the development of environmental policy and practices in the areas of...

Waste management.

- Soil management.

Biodiversity and threatened species preservation.

Energy use and conservation.

Eco-friendly techniques.

Noise pollution.

Air pollution.

Paperless operating procedures.

To create a healthier, tobacco-free campus.

To maintain plastic free College campus.

RECOMMENDATIONS:

- Environmental advisory committee could be formed. The discussions/ information sharing among different departments can generate lot of ideas and awareness on green issues.
- Maintain minutes of meetings of environmental committees; evaluate the
 effectiveness of various environmental programs conducted by the institutes. Set
 annual targets for Green Initiatives & monitor them closely. Create 'Green
 Champions'.
- Since student uses computer lab, the screen savers can be set up for creating environmental awareness. Short 30 second pop up can be displayed on computer screens when they are on standby mode. Or wallpapers informing students about environment conservation can be created.
- Consider detailed environment audit and water audit.
- Small composting facility can be provided to treat the biodegradable waste. Compost generated can be utilized for plants near compound wall.
- Vertical gardening can be done using indoor plants. Hydroponic garden can be an option where in small space also plants can be planted.
- Indoor air quality can be monitored to ensure safe and healthy environment.
- New green spots should be developed.

- Wild and locally important more plant species are to be planted in campus.
- Gymnospermic and palm plants should be planted in the campus.

OVERALL RECOMMENDATIONS:

- > Putting up notices in all washrooms and near all water coolers about the need for saving water, and simple tips like ensuring all the taps are properly closed.
- > To eliminate the spillage and over usage of water in washbasins, urinals and toiler push taps are highly recommended.
- Training to the cleaners in economical use of water for cleaning purposes and a system in place for immediate response when issues of water leakage are observed so that water losses are prevented.
- ➤ Need of monitoring, controlling overflow is essential and periodically supervision drills should be arranged.
- Minimize wastage of water and use of electricity during water filtration process, if used, such as RO filtration (Drinking Water) process and ensure that the equipment's used for such usage are regularly serviced and the waste water from RO to be used for some useable purpose.
- ➤ Ensure that all cleaning products used by college staff have a minimal detrimental impact on the environment, i.e. are biodegradable and non-toxic, even where this exceeds the Control of Substances Hazardous to Health (COSHH) regulations.
- ➤ All water taps to be checked for its leakage particularly in toilet (Hostels).
- ➤ Identification of areas to be carried out such as compost making area, water harvesting tank, bore well used for water harvesting purpose, bore well used for consumable purpose, parking area of staff, students, hazard area etc.
- ➤ Water meter to be installed on bore well as well as usage and daily monitoring record of water to be maintained.
- ➤ Water to be tested from various sources including the potable water purifiers and in canteen.
- > Special Internal Water Audit to be conducted quarterly and should be submitted to environment committee.
- Environmental policy to be displayed at prominent locations.
- Environmental objectives to be set in measurable form and to be displayed at prominent location.
- ➤ All electrical loose wire to be dressed up properly.
- Electrical Earthing of the college to be checked regularly.

- Awareness for the use of electricity and paper to be developed in the college.
- ➤ Use of Diesel generator to be avoided (to reduce the consumption of oil, record of consumption of diesel to be maintained.
- Enhanced renewable energy source capacity.
- > Carbon Sequestration study shall be carried out before plantation of Green Belt.
- Environmental data to be displayed at prominent place. These are
 - No of plantation done last year.
 - Electricity produced through renewable energy source (Solar).
 - Save electricity bill last year etc.
 - > Process of E waste to be defined and displayed (for all the E-Waste generated in the college).
- ➤ Room used for storing E-waste to be identified.
- ➤ E-waste generated at different departments other than the computer and its accessories needs to define the sections where these can be stored.
- > Separate identified bins for E-Waste to be placed in hostels and other identified places.
- ➤ Waste collected bins for wet and dry waste to be made available and place in college to be defined.
- Cleanliness in college to be improved.
- > Chemistry lab and other lab waste (chemical) to be neutralized before drained in to a waste pit.
- > Composting area to be properly identified.
- Plan for green belt development to be prepared. (Including college and other area of town as CSIR activity)
- > Drinking water analysis shall be done as per IS 10500.
- Air quality to be checked for SOx, NOx, PM2.5, PM10 etc.
- Monitoring of noise level to be done.
- Ensure that all the vehicles entering into the college has Valid PUC.
- > Installation of Effluent treatment plant (ETP) or other method of effluent treatment method to be explored.
 - Disposal of sanitary napkins / incinerator as per the latest guidelines under solid waste disposal. (As Sanitary pad disposal bags mandatory from January 2021) to be provided
- Tree plantation shall be done to maintain biodiversity as well as artificial nesting shall be installed. Area for plantation.
- > Plantation to be done with proper plan and by identifying the locations.
- Proper parking place with identification to be provided.

> Environment day to be celebrated on 5thJune.

Water & Wastewater

\square Recycle water, particularly for uses with less-critical quality requirements.
☐ Recycle water, especially if sewer costs are based on water consumption.
☐ Balance closed systems to minimize flows and reduce pump power requirements.
☐ Eliminate once-through cooling with water.
\square Use the least expensive type of water that will satisfy the requirement.
☐ Fix water leaks.
☐ Test for underground water leaks. (It's easy to do over a holiday shutdown.)
☐ Check water overflow pipes for proper operating level.
☐ Automate blow down to minimize it.
☐ Provide proper tools for wash down especially self-closing nozzles.
☐ Install efficient irrigation.
☐ Reduce flows at water sampling stations.
☐ Eliminate continuous overflow at water tanks.
☐ Promptly repair leaking toilets and faucets.
☐ Use water restrictors on faucets, showers, etc.
☐ Use self-closing type faucets in restrooms.
☐ Use the lowest possible hot water temperature.
\square Use multiple, distributed, small water heaters to minimize thermal losses in large piping systems.
□ Verify the water meter readings. (You'd be amazed how long a meter reading can be estimated
after the meter breaks or the meter pit fills with water!)
☐ Verify the sewer flows if the sewer bills are based on them



SQMS Credentials

- a. SQMS is ISO 9001, ISO 14001, ISO 45001, ISO 50001 certified
- b. SQMS had been accredited by CDC, Govt. of India
- c. SQMS had been accredited by Lab Consultancy Organization

SQMS has provided training, consultancy and audits of more than 200 organizations for ISO 9001, ISO 14001, ISO 45001, ISO 50001, ISO17025, Green/Environment/Energy

Following members of SQMS are involved in conducting Green/Environment/Energy audits.

- a. Dr. Ramesh Lakhe: QCI registered LA for QMS, EMS, OHSAS; LA for QMS, EMS, OHSAS, EnMS, NBQP QCI registered QMS, LMS and business improvement with 35+ years of experience.
- b. Mr. Nasir Sayyad: BEE energy auditor, ISO 50001 LA, ISO 9001,14001,45001,50001 Internal auditor with 40+years of experience
- c. Mr. M.M.Naveed: ISO 50001 & 22001 LA and ISO 9001,14001,45001,50001 Internal auditor with 20+years of experience
- d. Kranti Dharkar: ISO 9001,14001,45001,50001 transition Lead/Internal auditor with 14+ years of experience