

## 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. 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. 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 Campus for the institutes which will lead for sustainable development and at the same time reduce a sizable amount of atmospheric CO<sub>2</sub> from the environment.

## OBJECTIVES:

In recent time, the Green Audit of an institution has been becoming a paramount important for self-assessment of the institution which reflects the role of the institution in mitigating the present environmental problems. The university has been putting efforts to keep our environment clean since its inception. Therefore, the purpose of the present green audit is to identify, quantify, describe and prioritize framework of Environment Sustainability in compliance with the applicable regulations, policies and standards.

## METHODOLOGY:

The purpose of the green audit of Shoolini University is to ensure that the practices followed in the campus are in accordance with the Green Policy of the country. The methodology includes: collection of data, physical inspection of the campus, observation and review of the documentation and data analysis.

## Water Quality Assessment:

To cater the water requirement for the campus, seven bore wells and IPH water supply are used for the activities. However, in summer, to cater the additional shortage of water, a tanker from outside are hired to satisfy the needs of campus activities. The total quantity of water required for drinking is assessed for a population of 5000 students is assessed as 25000 liters per day. For hygienic drinking water, RO plants are installed in each block. In order to provide portable drinking water there are 60 RO's at various locations in the campus. Department of Estate tests the water every month. Once in six months the water is tested by Eco Laboratories & Consultants Pvt. Ltd. (An ISO 9001-2015 14001



&45001: 2018 certified & approved by MOEF, PPCB). The committee inspects the working of filters monthly and the quality of water is verify for suitability once in three months.

### **Recycling of waste water:**

The wastewater developed in university campus is treated in campus and is used for watering of garden. The institute is having Sewage Treatment Plant (STP) with the capacity 400Kld which treats 300000 liters capacity of water per day.

### **WATER ANALYSIS REPORT OF Shoolini University:**

Water quality testing is important because it identifies contaminants and prevents water-borne diseases. Drinking or using contaminated water can result in severe illness or death. That is why it is important to ensure that drinking water is safe, clean and free from bacteria and disease. The parameters for water quality are determined by the intended use. Work in the area of water quality tends to be focused on water that is treated for human consumption, or in the environment.

### **Drinking water indicators:**

The following is a list of indicators often measured by situational category:

- Color of water
- Alkalinity
- pH value
- Taste and odor (geosmin, 2-Methylisoborneol (MIB), etc.)
- Dissolved metals and salts (sodium, chloride, potassium, calcium, manganese, magnesium)
- Microorganisms such as fecal coliform bacteria (*Escherichia coli*), *Cryptosporidium* and *Giardia lamblia*; see Bacteriological water analysis
- Dissolved metals and metalloids (lead, mercury, arsenic, etc.)
- Dissolved organics: colored dissolved organic matter (CDOM), dissolved organic carbon (DOC)
- Heavy metals

### **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 NO<sub>2</sub>, SO<sub>2</sub> & PM<sub>10</sub>. 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 is also done at the institute quarterly.

*Jatinder Singh*  
07/11/2018  
Regd. No. CA/2007/39257  
ARCHITECT

## **NOISE LEVEL IN THE SURROUNDING OF SHOOLINI UNIVERSITY:**

The human ear is constantly being assailed by man-made sounds from all sides, and there remain few places in populous areas where relative quiet prevails. There are two basic properties of sound, (1) loudness and (2) frequency. Loudness is the strength of sensation of sound perceived by the individual. It is measured in terms of Decibels. Just audible sound is about 10 dB, a whisper about 20 dB, library place 30 dB, normal conversation about 35-60 dB, heavy street traffic 60 dB, boiler factories 120 dB, jet planes during take-off is about 150 dB, rocket engine about 180 dB. The loudest sound a person can stand without much discomfort is about 80 dB. Sounds beyond 80 dB can be safely regarded as Pollutant as it harms hearing system. The WHO has fixed 45 dB as the safe noise level for a city. For international standards, a noise level up to 65 dB is considered tolerable. Loudness is also expelling. One some equals the loudness of 40 dB sound pressure at 1000 Hz. Frequency is defined as the number of vibrations per second. It is denoted as Hertz (Hz).

## **ELECTRICAL POWER CONSUMPTION AT SHOOLINI UNIVERSITY:**

Shoolini university being one of the largest campus in H.P, consumes on an average 450.67 kW- hr (units) of electricity which turns out to be 3947869.2 kW-hr per year only to maintain its volumetric activities throughout the year. The authority keeps on replacing the old filament bulbs, CFL bulbs and tube lights by low energy consuming LED bulbs and LED tubes and bulky high-power consuming fans by energy efficient fans in order to keep the electricity consumption of the university as low as possible. In addition to making Environmental Studies a very vital subject in our syllabus, Shoolini University has gone a step further by putting that theory into practice. The university has installed twelve (12) sets of solar panels, two on girl hostel, two over parking area, two on the roof of G & H block, two on admin block, two on boys hostel Arya Bhatt, one on F- block and one near STP The energy from this solar installation is helping offset the institute's daytime peak electricity demand from the grid. Shoolini university with the installation of 391 KW solar rooftop plant in collaboration with M/s Cambridge Energy Pvt Ltd, was able to offset 60% of its energy usage from the state grid thus moving towards a more reliable and greener option and reducing its carbon footprint.

## **Percentage of annual power requirement of the Institution met by the renewable energy sources**

Response: 60%

Annual power requirement met by the renewable energy sources (in KWH)

Response: 754471

Total annual power requirement (in KWH)

Response: 3947869.2





J.A.S. & ASSOCIATES

ARCHITECTS, PLANNERS,  
INTERIOR DESIGNERS,  
STRUCTURAL CONSULTANTS

PAN NO: BEEPS2173F  
GSTIN: 02BEEPS2173F2ZR

To,  
Shoolini University,  
Bhajol (Solan)  
Himachal Pradesh,  
Pin - 173223,

Green Audit has been conducted by University in which we have found that University is taking appropriate measures in different fields for maintaining the ecological balance.

It was also found that University is initiating in Recycling of waste water, solar energy system, rain water harvesting system, waste management system, Water purification, noise level.

Detail Report of the University system is attached.

  
For J.A.S. & Associates  
Prop.  
(Ar. Jatinder Singh)



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# ENERGY POLICY

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[shooliniuniversity.com/center-of-excellence-in-energy-science-and-technology](http://shooliniuniversity.com/center-of-excellence-in-energy-science-and-technology)

# **Energy Policy of Shoolini University**

## **I. Purpose**

Shoolini University is committed to United Nations Sustainable Development Goals (SDG) through its energy policy which makes it sustainable, energy efficient green campus.

This energy policy applies to all operations and activities of the University including building construction and renovation, transportation, and other operations in Environment, Water management and various activities undertaken by the University.

## **II. Policy Objectives**

- Y To improve thermal comfort, energy efficiency, water conservation and to reduce energy consumption in all the new buildings at Shoolini University which are to be designed and constructed as per the solar passive building technology and other energy efficient and environment-friendly measures.
- Y To install solar roof-top systems for renewable energy generation.
- Y To install LED bulbs and other energy-saving devices in the campus.
- Y To install solar water heating systems in all the residential and hostel areas of the University.
- Y To install solar cooking systems in all the hostel areas of the University wherever possible.
- Y To reduce CO<sub>2</sub> emission generated by all means.
- Y To provide opportunities for students and employees to engage in initiatives which contribute to energy savings.
- Y To promote waste to energy generation.
- Y To ensure access to affordable, reliable, sustainable energy.to all.

## **III. Applicability**

This policy shall apply to all departments/extensions of Shoolini University and villages around the campus as well as students, employees, faculty who'd be encouraged to take initiatives for fulfilment of the policy objectives.

## IV. Policy on Energy Efficient Passive Solar Buildings for Zero Carbon Emission

### 1. Background

Under UN Sustainable Development Goal No.7 on Energy & 13 Climate Change decreasing the rate of increase in the concentration of atmospheric CO<sub>2</sub> can be achieved through reducing use of fossil fuels for removing CO<sub>2</sub> in building sector which consumes about 40% of the energy.

*Creating carbon zero and carbon positive buildings cost effectively takes carefully planned application including affordability, Passive solar heating, Passive cooling, and Energy efficient Hot water systems; Heating and cooling; Renewable energy; Smart meters, etc.*

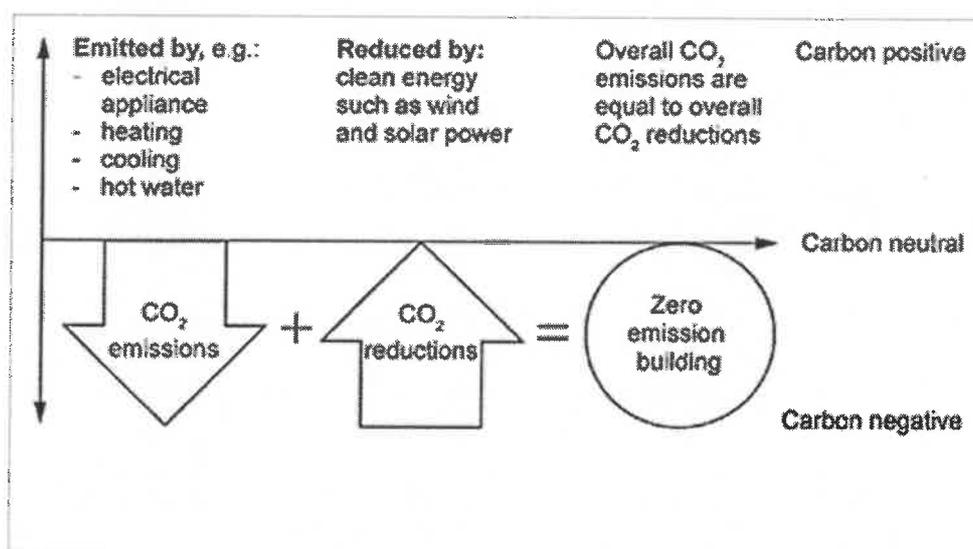


Fig. 1 Creating zero carbon and carbon positive buildings

### 2. Overall approach to carbon neutrality in buildings

Zero carbon buildings are defined as having no net annual emissions from direct fuel combustion (e.g., burning natural gas) and electricity use from operation of building incorporated services.

- Y Building incorporated services include all energy demands or sources that are part of the building fabric at the time of delivery, such as the thermal envelope (and associated heating and cooling demand), water heater, built-in cooking appliances, fixed lighting, shared infra structure and renewable energy generation.
- Y Zero carbon buildings must meet specified standards for energy efficiency and on-site generation.

Carbon positive moves beyond zero carbon by making or 'net export' contributions by producing more energy on site than the building requires and feeding it back to the grid (Net Metering PV Concept).

Carbon positive projects can make significant contributions by helping to address the carbon intensity and damaging impacts of past building practices and lifestyles, and by offsetting situations where carbon zero homes are not possible.

While zero carbon is considered to be today's benchmark of best practice, carbon positive buildings will play an increasingly important role in the future to limit global warming.

### **3. Policy Statement, Strategy & Guidelines**

#### **A) Policy Statement**

**Shoolini University makes it mandatory to design and construct all the buildings in its campus as per passive solar architecture and incorporating energy efficient building technologies according to the Solar House Action Plan & Policy of the State of Himachal Pradesh.**

**The feasibility of existing buildings for retrofitting of Passive Solar features/systems for improving energy efficiency and reducing energy consumption will be explored for urgent follow up action.**

#### **B) Co-ordination & Implementation Guidelines**

- a. The Centre of Excellence in Energy Science & Technology (CEEST) at the Shoolini University will co-ordinate the Solar Building Action Plan for Shoolini University.
- b. A technical Project Management Cell (TPMC) has been established in the CEEST with Director (Energy) as the Principal Coordinator along with expert team in solar building design, renewable technology analysis, Director (Estate) & building maintenance In charge with concerned architect, civil/electrical engineer team for the construction . implementation and maintenance.
- c. A Computer Aided Solar Passive Design Cell with architect, design engineer [structural], executive engineer, a Computer programmer well versed in building design software, Autocad, seismic analysis software, along with Solar radiation data & building performance monitoring, forecasting load analysis using Artificial Intelligence techniques will be established.
- d. The constructed buildings will be live laboratories for energy education, research and development for CEEST.
- e. Systematic efforts will be made by CEEST to orient & train University's technical. architecture and engineering sections for adopting the innovative technologies.
- f. The CEEST will also promote the technology around nearby villages to help design their houses as social obligation to the communities along with providing technology inputs for the State of Himachal Pradesh Housing Agencies for effective implementation & Policy formulation.

### **C) Strategy**

- Zero carbon buildings require that all carbon emissions be offset by passive solar design of buildings, reduction in conventional electricity consumption through on-site renewable energy generation by installation of rooftop solar or other renewable energy systems, as well as energy generation from waste.
- Incorporating energy efficiency strategies with renewable energy options
- Choosing a site that allows for renewable energy generation, passive solar heating and cooling
- Maximizing passive design strategies in the design of the building to reduce energy demand
- Reducing water use - particularly hot water -adopting Rainwater harvesting
- Identifying appropriate materials that enhance the passive design strategy and have a low embodied energy.

### **D) Guidelines**

Maximizing energy efficiency significantly reduces the amount of renewable energy required to meet the energy needs without carbon emissions. This improves viability at three levels:

Physical — reduces roof surface area requirements for PV and other renewable energy systems

Economic — needs a smaller capacity system.

Environmental — uses few resources to manufacture system components.

## **V. Review**

The Energy policy will be reviewed from time to time and updated whenever required.

## **Status of Policy Implementation Till Date**

To achieve the objectives of the Policy, the University has already taken the following initiatives:

### **Initiatives already taken under the Policy**

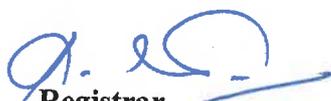
**Energy Saving:** Energy conservation was at the heart of planning the construction of buildings. Nestled in the green and salubrious clime of pine forests, the buildings have been constructed allowing maximum light and air circulation in all rooms and halls, thereby saving on electricity consumption. There is a major endeavor at Shoolini University to conserve energy and promote the usage of alternate sources. Actions taken in this direction have helped in making the campus green, energy efficient and energy surplus. Apart from the measures described below, there are buildings like the Yogananda Knowledge Center (Central Library) that need only the natural light during the day.

The faculty, employees and students lead initiatives to save significant electricity and have developed a policy for reducing electricity consumption by using LED and replacing the old tube lights with LEDs. All the computer monitors have been replaced with LED/LCDs displays. Replacement of old appliances like lights, fans with energy-efficient appliances is underway.

- **Green Energy Campus:** Under the Ministry of New & Renewable Energy, Govt of India, the Campus of Shoolini University is a Green Campus with Solar Energy utilization & environmentally friendly technology use. Research Center in Renewable Energy is specially formed to undertake research in this area and 24 nos of patents have already been filed through the same.
- **Solar Energy** is harnessed through Solar Photo Voltaic panels installed on the rooftops of most of the University building blocks and covered common areas exposed to sunlight, like the car park, part of the internal road etc, converting sunlight into electric energy. The University campus is connected to the State electricity grid through a grid interactive system. This solar power plant is generating electricity approximately in the range of 1400-1600 unit per day. This electricity so generated is used primarily is transferred to the grid sub-station.
- **Solar Steam Generating Cooking Systems (Scheffler Type) in Girls Hostel of Shoolini University:** A solar steam generating system based on Concentrated Solar Technology Solar radiation falling onto the dish is concentrated onto the receiver, which heats the water which is converted into steam to cook food for 500 students.
- **Solar Water Heating Systems for hostels:** Flat Plate Collector and evacuated Tube collectors are installed in all hostels of the University to provide hot water for about 3000 students.
- **Wheeling to the Grid,** transportation of the electricity generated by solar PV system to the power grid is accomplished over transmission lines. Time-of-use meters have been

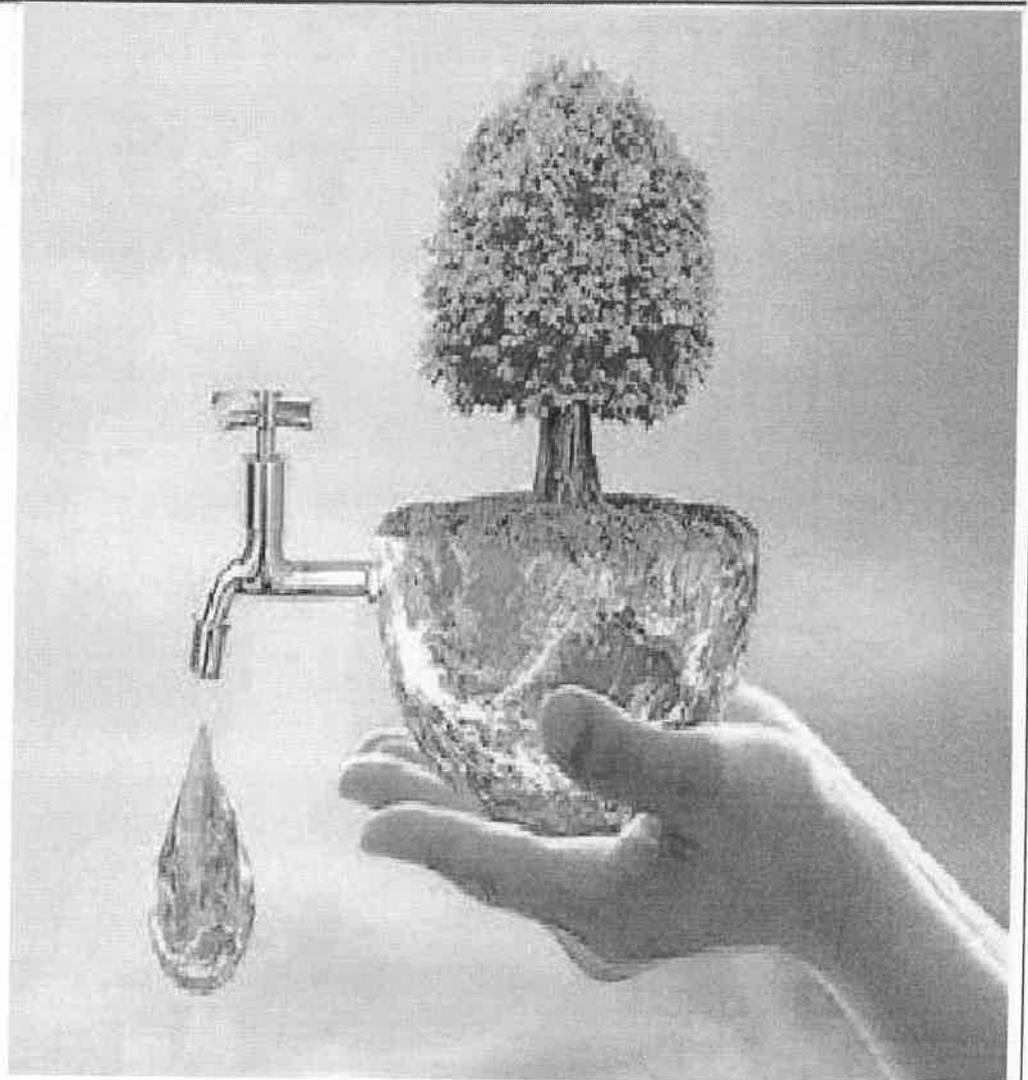
installed to recover the wheeling costs. The system moves the least-cost power to where it is needed, thereby maximizing efficiencies. Excess electricity generated through PV process gets transferred to the grid through the wheeling system. Shoolini University has installed a 400kWp grid-connected solar power system of which meets the partial electricity needs of University.

- **Sensor-Based energy Conservation** is being practiced. Most streetlights in the campus have photocell controllers, which switch the light on and off at the right natural light level, normally near dusk and dawn. They have time delays and hysteresis to prevent change-over too quickly. There is a plan to convert to 100% sensor-based street lighting/ outdoor lighting system to prevent wastage of electricity.
- **Use of LED Lighting:** University campus is totally on LED lighting system, far more efficient than incandescent light bulbs or compact fluorescent lighting (CFL).

  
**Registrar**

SHOOLINI  
UNIVERSITY  
SOLAN, HP

# Water Conservation Policy



## **POLICY FOR WATER CONSERVATION – SHOOLINI UNIVERSITY CAMPUS**

### **Introduction**

1. Scarcity of water will be the next biggest environmental challenge for mankind after climate change. They say that the next world war will be fought over water as a resource. It is therefore incumbent upon each one of us as responsible citizens of the state of Himachal Pradesh, to not only conserve water but also to contribute towards the overall national effort of sustainable development. Shoolini University ascribes great importance to this aspect of environment conservation in the Kasauli Hills of Himachal Pradesh and is single minded in its commitment towards the overall goal of sustainable development and conservation of water resources of the state and the country.

### **Water conservation policy goals**

2. The primary goal of Shoolini University Water Conservation Policy is to achieve water neutrality by 2022 and thereafter achieve a water surplus status by the year 2023. To achieve this policy goal, the following steps have been envisaged:

- a. Minimize wastage and use water efficiently by use of modern technology
- b. All buildings to be modified to ensure rainwater harvesting
- c. Water conservation to be incorporated in all future development projects
- d. Leverage technology to aid in water conservation
- e. Increased awareness and training in water conservation
- f. Recycling of the grey water for landscaping and irrigation purposes
- g. Encourage research and development in water conservation techniques
- h. Fully implement the Rainwater Harvesting project on the campus by 2022
- i. Create sufficient capacity for water storage to attain surplus status by 2025
- j. As part of the philanthropic ethos of the University, be able to supply water to the needy citizens living in close vicinity of the campus

### **Recycling of Water**

3. The sewage treatment plant setup in the university has capacity of treating 350 Kilo litre of water on daily basis. Presently approximately 1.00 lakh litres of water is being recycled after chlorination and is being used for irrigation purposes. It is planned to achieve a target of 50% recycling in near future. It will be ensured that separate supply lines with distinct red colour will be laid for this purpose. This network of pipes and plumbing will be well isolated and follow distinct routes from fresh drinking water supply. It is also planned to utilize the recycled water for flushing purposes. However, an economical solution needs to be found for higher degree of disinfection and prevention of foul odor to utilize recycled water for flushing purpose.

### **Rainwater harvesting**

4. A lot of emphasis has already been laid to harvest rainwater, so that this bounty of nature does not go waste. For this purpose, various elements of a rainwater harvesting project have already established. Natural drain catchments are being used to capture the rainwater and roadside catchment drains and roof top water harvesting systems are being employed. Additional water collection chambers will be constructed to enhance collection and storage of rainwater. To recharge the ground water, a number of rainwater harvesting recharge pits have already been created on the campus. Installation of rain gauge and rain recording system also needs to be done soon to create a fully integrated recording and monitoring system.

### **Restoring and Retaining Surface and Groundwater**

5. The amount of ground water drawn on daily basis will be measured so that ground water level (water table) is constantly monitored. Water use meters and flow meters have already been installed at all bulk water dispensing locations and tanks. An overall picture and awareness of ground water table will be maintained and monitored to optimize usage and prevent drastic depletion of ground water levels. The recharge wells constructed for replenishing ground water will be fully integrated with the rainwater harvesting scheme.

### **Bulk Water Storage Capacity**

6. A few water storage tanks are existing in the campus besides the overhead tanks for each building. However, these cater to one day's consumption only. The bulk water storage capacity in the university is planned to be expanded to 3,00,000 litres to have sufficient water for two day's consumption.

### **Implement Water Efficient Fixtures in all New Constructions**

7. Efficient meters help in pointing out the extent of water use and thus we can identify and calculate the excess use. It will support in repairing leaks, plumbing, and installing more efficient water-using fixtures. Periodic review of leaking taps and plumbing fixtures will be undertaken. All newly constructed buildings will have water efficient toilets. All fixtures in new buildings will be aimed at water conservation – smart faucets, flow saver taps, water saving aerators in taps etc will be compulsorily used.

### **Develop an Ethos of Sustainable Water Consumption Behaviour**

8. An ethos of sustainable water consumption behaviour will be developed through training and research, increased awareness, incentive to students and the teaching faculty for water conservation. Nearby villages must be engaged in various awareness programs where they are given right education and training to maximize the water use efficiency and minimize wastage of water. Campus Initiatives for spreading awareness regarding water conservation, rainwater harvesting, renovation of traditional and other water bodies/tanks, reuse and recharge structures, watershed development, intensive afforestation are some of the steps which need to be taken. A common questionnaire needs to be periodically circulated to get consistent information, seek ideas, opinions, and suggestions from stakeholders to improve the campus along with their willingness to participate.

9. Identify bulk consumption locations as well as non-bulk consumption locations and provide unique number for each location. Develop an alert system for informing the leakages in each of the location by identifying them through the unique number. Mend the leaks in taps and pipes periodically (daily/weekly/fortnightly/monthly) focusing more intensive approach for bulk consumption locations. Work on the toilet flushes and the optimum water use from the flush by installing two levels of flushing or inserting an object to occupy volume.

### **Plugging Leakages**

10. Leakage represents the largest share of wastage as well as unauthorized water use. Each source meter needs to be reviewed for accuracy, either by reviewing available meter test results or retesting the meter. System valves need to be checked periodically for malfunction. For instance, altitude control valves on storage tanks might be broken or set

improperly, resulting in the tank to overflow. These valves need periodic inspection, more so when there is observed leakage or overflow. Pressure relief valves which are set too low might cause spill when pressures reach the high range. These pressure relief valves need to be calibrated accordingly. When problems are discovered during routine inspections, possible water losses need to be estimated and corrective action can be taken up immediately.

#### Conclusion

11. Shoolini University is deeply committed towards protecting the surrounding environment and the available water resources. As an institute of higher learning, Shoolini University has a moral responsibility to promote and propagate the message among the students, academic community, and society in general. Over the past few years Shoolini University has undertaken several initiatives to utilize water more efficiently and effectively within the campus and for prevention of the degradation of water bodies around the campus. The university has also conducted awareness campaign and water literacy programs. We plan to build an organization which minimizes its water requirement from external sources. We are committed to achieve water neutrality by 2025.



Registrar

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# Transportation Policy



## Transportation Policy

General: University campus located in the mid hills of Kasauli is spread over 10 acres adjoining the pine forest. Over the last 10 years a major drive to plant multiple varieties of trees in the campus and the adjoining areas have been undertaken. Around 10000 trees have been planted and the campus stands out with a thick growth of trees from the adjoining areas. Creating Environment consciousness and education in environment friendly practices is part of the curriculum and everyday life on campus.

Aim : To lay down the policy of judicious and environment friendly practices in the use of transport on campus .

Responsibility to Implement : Director Operations will be responsible to implement the Policy.

The campus located on the hill slopes is very beautifully landscaped. There are limitations in the availability of parking space and has to be very judiciously used. Transport running on fossil fuels causes damage to the environment due to carbon emissions. The aim is to issue guidelines and enforce practices for judicious use of transport to reduce the emissions and thereby save the environment.

The transport on campus can be divided into two groups:

1. Vehicles of faculty, staff and visitors.
2. University buses and cars.

### General Guidelines

- a) Limit the use of transport to the bare minimum essential duties.
- b) Economy of effort by combining the duties.
- c) No movement of motor transport from 09.30 am to 5.00pm within the campus.
- d) Encourage all to walk to their destinations.
- e) Where required use E carts for movement within the campus.
- f) All cars of staff and visitors to be parked at the designated parking area only .
- g) Encourage and educate all to use University buses and create car pools. Have minimum vehicles on the road.
- h) Display banners and posters on campus of environment friendly practices and proper maintenance of vehicles to reduce emissions.

### University Buses and Cars

- a) Maintenance and servicing of all university vehicles as per the guidelines and periodicity given in the vehicle manual.
- b) Ensure regular checks for road worthiness of all vehicles.
- c) All drivers and conductors to be employed after proper verification and licence verified.
- d) Run upskill refresher class biannually for all drivers. Stress on adoption of environment friendly practices.

- e) Drivers to check for road worthiness daily before proceeding on duty. Defects noted to be reported and repaired and rectified immediately.
- f) All vehicles to have complete documentation. Log books, to be regularly maintained and checked monthly. Insurance to be annually renewed.
- g) All permits for buses and yellow plate cabs to be annually renewed and maintained as per RTO rules.
- h) Buses to be used for transportation of students and staff of the University on authorised routes only.
- i) Students and staff using the facility of the University bus for daily commuting to the campus to have a valid bus pass issued from the transport office.
- j) Whenever the buses are to be used for outstation tours , route permit to be applied for at the RTO office for permission.



**Registrar**

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# Recycling and Waste Management Policy



## Policy on Recycling and Waste Management

University campus located in the mid hills of Kasauli is spread over 10 acres adjoining the pine forest. The campus has Academic blocks, Student hostels, administrative block, Faculty residences, Sports and recreational facilities and beautifully landscaped open spaces. There are around 5000 students and employees on campus. A lot of waste in different forms is generated within and around the campus which requires to be managed in a scientific manner and within the norms issued by the Govt. As an educational institution it is our responsibility to educate and create consciousness towards generating less waste and correct ways of management of the waste on campus.

**Aim:** To lay down policy for the recycling and management of waste on the campus and create consciousness among the population of the University.

**Responsibility:** The following will be responsible for its implementation:

- a) Director Operation.
- b) Director Estate.
- c) Dean Student Welfare.

**Types of waste and its disposal:** The following types of waste are generated on campus.

- a) **Hazardous waste:** These are generated from labs. There are directions and rules issued with regards disposal of hazardous waste in a controlled manner by licensed agencies. The University will contract and dispose all such waste strictly as per the laid down rules and norms. The management and disposal of Hazardous waste will be done under the supervision of the Dean Biotechnology by a faculty nominated.
- b) **Bio Degradable :** Generated from kitchen, agriculture, cafeterias, and hostels. The Non toxic biodegradable waste generated from the kitchens, will be segregated and sent to the vermicompost pits located at the infirmary and the farm where they will be converted into vermicompost under the supervision of the Assistant director Landscape. All toxic bio degradable waste will be segregated and sent to the Municipal garbage treatment plant at Baddi / Salogra through a contracted agency. This will be coordinated by the Assistant Manager Operations.

The agriculture waste from the gardens and farms will be sent to the vermicompost pits as per requirement and capacity. Rest will be filled in the landfills in the campus and treated to form compost.

Vermicompost so generated will be used in the farms and gardens. All surplus will be distributed to the staff and the neighbouring villagers as per their need.

- c) **Non Degradable:** This waste is generated from construction activity, hostels, academic blocks and general use items. These will be collected and handed over to the contracted agency for recycle at the Municipal garbage treatment plant at Baddi / Salogra. The collection will be done three times a week.
- d) **Liquid Waste:** This waste is generated from the washrooms and kitchens. An STP and ETP are established on campus. Drains and separate pipelines are connected to these. All the waste liquid is piped through these drains and pipes to the STP and ETP. Here the waste is treated and the recycled water will then be piped back for use in watering the plants and gardens all over the campus.

**Collection of Waste**

For the collection of dry waste adequate bins will be placed in the campus. These will be regularly emptied and waste collected and disposed as per the laid down Policy.

**Creating Awareness for Recycling and Waste Management**

Adequate banners and posters will be designed and displayed on campus giving the message for recycling and managing waste. Campaigns and drives will be planned and conducted in the campus and nearby adopted villages to create awareness among the population, to educate and encourage them for recycling and techniques of waste management.

  
Registrar

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