Title of the Practice: Energy Conservation

Goal

To reduce the consumption of energy without compromising on quality and set an example in the field of Energy Conservation, in accordance with the national objectives

Context

As detailed on the Bureau of Energy Efficiency (BEE), Ministry of Power, Government of India site, the efficient use of energy resources and their conservation assume tremendous significance in the context of curtailment of wasteful energy consumption and sustainable development. The UN Sustainable Development Goal no. 7, 'Affordable and clean energy' for all, envisages expansion of energy access. To expand access, it is important to enhance energy efficiency and to invest in renewable energy.

The Practice

The original buildings have 13 inch brick walls that keep the interiors cool during the Delhi summer. Rooms have ample windows and glass panelled doors for optimal utilization of natural light. 'Save Electricity' campaigns are conducted throughout the academic year. Student volunteers of *MH Vatavaran* have put up posters near the switchboards of classrooms urging users to switch off lights and fans on their way out. The New Academic Block has motion sensor-based electrical fittings. Gas burners in the laboratories are ignited only when necessary. In classrooms and labs, lights and fans are switched on only in the occupied area. While purchasing air conditioners or refrigerators, the Bureau of Energy Efficiency (BEE) star rating is checked. Students are urged to conserve every drop of water, especially in the hostel, so that in addition to conserving water, it is not necessary to switch on pumps frequently. The College community observes Earth Day when lights in the academic block, the hostel and the residences are switched off. The following practices have been adopted:

- *Use of LED Lighting:* In a concerted move, traditional lights which consume a greater amount of power have been substituted by LED's in the library and all corridors of the Old Block.
- *Use of renewable energy:* Seven Solar Water Heaters are installed on the hostel roof to cater to the needs of the residents and the hostel kitchen. The College has installed 40 Solar Photovoltaic (SPV) Street Lights: 20 SPV Lights of capacity 20 Wp in January 2013 facilitated by KPMG Foundation and another 20 Solar Street Lights facilitated by a 10-year MoU in January 2008 with M/s Sonen who have also maintain the luminaires.
- *Installation of* Rooftop *Solar Power Plant:* The 7kWp Grid Connected Roof Top SPV Power Plant became operational in 2017. This provides electricity to the *MirandaTech* Park area where the green technologies are installed and the surplus is contributed to the grid.
- *Installation of sensor-based lighting in the New Teaching Block:* The classrooms and laboratories in the New Teaching Block have been fitted with motion sensor-based lights and fans so that they automatically go off when the spaces are empty.

Evidence of Success

- The glass doors of classrooms and laboratories ensure that electric lights do not need to be switched on all the time.

- Dedicated work by the volunteers has ensured that students themselves switch off lights and fans when they move out of rooms, establishing a culture of energy conservation.
- Science students have developed a habit of switching off electrical equipment and gas burners when not using them.
- Since the surplus from the solar plant is contributed to the grid, the electricity charges are reduced for Miranda House as per government policy.

Title of the Practice: Solid Waste Management (SWM)

Goal

To take the College towards a Zero-Waste Campus by minimizing solid waste through the practice of the 3R principle

Context

The main objectives of SWM in a campus are the maintenance of clean and hygienic conditions and reduction in the quantity of solid waste for disposal in landfills. This is in keeping with the government's policy on source segregation of waste, in addition to reduction, in order to channelize the waste to wealth by recovery, reuse and recycle. In the SWM Rules 2016, source segregation is mandated.

The Practice

A Solid Waste Management System has been set up through several initiatives and innovation projects. MH Vatavaran volunteers conduct anti-litter drives in the College and its surroundings during events such as *Tempest*, the Annual College Festival and also just before the DU Students' Union elections which sets off large scale littering. The collected waste paper is recycled at the College plant. The College has set up garbage disposal structures just outside the front and back gates to help pedestrians who cross the gates to dispose of garbage neatly.

Paper Recycling Plant (2003 – onwards): After successful completion of the four-year paper recycling

Project set up by a grant from the Department of Science and Technology under its Women and Science Division, the College made special efforts to keep the plant running with help from the Department of Environment, Government of NCT of Delhi and a generous grant from Dr Urvashi Dhamija, a superannuating faculty member who was one of the founder members of *MH Vatavaran*.

Compost Plant: The College Compost Plant, set up with the help of M/s Greenbandhu, uses a mechanical The plant is currently functional and produces good quality recycled paper including printer quality paper. Thick marbled recycled paper is crafted into folders, big and small envelopes, gift bags and gift envelopes. The paper and products made in Miranda House are popular within the College and University community.crusher to crush wet waste from the College café and hostel kitchen. The large quantities of horticultural waste are also crushed and converted into mulch. The crushed waste is then mixed with lime and converted into compost by an aerobic composting process. When ready, the compost is utilized by the Garden Committee in the extensive College grounds.

E-waste: Obsolete computers and accessories are disposed of by auctioning to government-approved e-waste recyclers. Student volunteers occasionally collect mobile phones and

accessories which students wish to discard so that they can be handed over to authorized firms for correct disposal.

Plastic waste: A continuous campaign is carried out by the Environment Society and NSS volunteers for reduction of plastic waste by requesting people to carry their own water bottles and avoid the use of plastic cups, spoons and straws.

Evidence of Success

- At the National Environment Convention 2018 in June 2018, organised by the Indian Institute of Ecology and Environment (IIEE) and the National Institute of Cleanliness Education and Research (NICER) to celebrate World Environment Day, Miranda House received the 'Plastic Free College of the Year' award.
- The National Institute of Urban Affairs (NIUA) included a visit to the MH solid waste management facility (composting and paper recycling) as an example of Best Practice in the training programme for officials of Municipal Corporations from across the country under the *Swachh Bharat Abhiyan.*
- Dr. Shyamala Mani and some faculty members of TERI School of Advanced Studies along with a group of 17 students visited Miranda House on 20 November 2018 to observe the recycling plants operating in the College. The visitors were appreciative of the recycling efforts of MH which includes conversion of food waste and horticultural waste to compost, used paper recycling and making of recycled paper products.
- Miranda House recycled paper products such as folders, carry bags and gift envelopes are much appreciated in the University community and also by visitors to the College. The products are put on sale during events like the College Fest and departmental seminars etc. and substantial sales are made.
- The compost made at the MH plant is used in the gardens, reducing expenditure on buying manure.