Based on the study results, the following recommendations as a hospital management strategy are suggested in order to make PGIMER, Chandigarh more ecofriendly:

i. A clear policy and mechanism should be established for efficient EMS in PGIMER.

ii. Clear cut environmental and HPH policy should also be framed.

iii. EMS and HPH activities should be declared and labeled. Officers, staff and requisite funds should be earmarked specifically for this purpose.

iv. Quality assessment of EMS and HPH activities should be done regularly.

v. A package effluent treatment plants essentially consisting of screening chamber, chlorination unit, coagulation and flocculation units followed by biological treatment process such as extended aeration should be installed in the hospital so that the waste water/effluent thrown in the public sewers does not play havoc with the Nature.

vi. Testing of air emissions, effluent water samples, noise level etc. should be conducted regularly and steps to mitigate their possible detrimental effects should be taken.

vii. Pollution devices e.g. scrubbers should be installed at some of the chimneys to reduce the emission levels of SPM so as to emanate pollution free air in the hospital and its surroundings.

viii. Noise reduction measures should be ensured e.g. reduction of crowd, well-oiled trolleys/wheelchairs with rubber wheels etc.

ix. Segregation of biomedical waste should take place as close as possible to where the waste is generated, and should be maintained in storage areas and during transport.
x. Appropriate protective clothing (including masks, gloves and gum boots) with disinfections and disposal arrangements for all workers involved in hospital waste management should be provided and all such workers should be vaccinated against Hepatitis B.

xi. Practice of spot checks/ surveys and random supervision at all levels of waste management to ensure proper implementation should be adopted.

xii. Sharps should all be collected together, regardless of whether or not they are contaminated. Containers should be puncture-proof (usually made of metal or high-density plastic or dense cardboard) and fitted with covers. They should be rigid and impermeable so that they safely retain not only the sharps but also any residual liquids from syringes. To discourage abuse, containers should be tamper-proof (difficult to open or break) and needles and syringes should be rendered unusable.

xiii. Appropriate containers or bag holders should be placed in all locations where particular categories of waste are generated with instructions on waste separation and identification posted at each waste collection point to remind staff of the procedures.

xiv. Containers for collecting BMW should be removed when they are three-quarters full.

xv. Staff should never attempt to correct errors of segregation by removing items from a bag or container after disposal or by placing one bag inside another bag of a different colour. If general and hazardous wastes are accidentally mixed, the mixture should be treated as hazardous healthcare waste.

xvi. The importance of imparting technical know-how in the management of biomedical waste should be an integral part of waste management process. Raise awareness among those responsible for regulating, generating and handling waste and provide training in safe Practices.

xvii. The hospital staff should clearly guide the patients and its attendants about the use of color-coded bins for throwing different categories of waste.
xviii. PGIMER should adopt vermiculture biotechnology to convert organic wastes into valuable products such as biofertilizers, biopesticides, vitamins, enzymes, antibiotics and proteinaceous worm biomass.

xix. Environmental auditing should also be a regular feature. The results of the EMS audits should be linked to the corrective action system.

xx. A separate division to look after environmental issues should be created in the engineering department of the Institute and posts like Assistant Environmental Engineer and Senior Environmental Engineer should be created.

xxi. PGIMER should strive for conformance to ISO: 14000 norms.

xxii. Hospital engineering services of the institute should be further strengthened.

xxiii. Hospital engineering courses should be started in PGIMER at graduate and postgraduate level.

FUTURE SCOPE OF WORK

1. A study can be undertaken to assess the level of indoor air pollution and its impact on patients in the critical areas of a tertiary care hospital viz. Emergency and OPDs whereby a suitable model can be designed to tackle the problem.

2. A design for the package effluent treatment plants in a tertiary care hospital can be proposed to tackle the hazards of waste water emanating from a hospital.

3. A study to plan acoustically designed wards for recuperating patients in a hospital can be undertaken.

4. A study to assess the nosocomial infections in a hospital environment and measures to control it can be undertaken.