- ➢ **Green Audit (2nd phase)**

Green audit is done regularly every year between March and May since 2015.

Green audit enables and empowers an Organization to address all the Global Warming-related challenges and help to contribute to Environmental responsibility. A clean and healthy environment aids effective learning and provides a conductive learning environment. In line with the Green/Sustainable Agenda approved by the IIT Council on 2 March 2013 at the IISC Bangalore, steps have been initiated to implement it.

The Green / Sustainable Agenda for Educational Institutions:

Accordingly a very simple indigenized system has been devised to monitor the environmental performance of MBCET through a Green Audit in the form of an Online Questionnaire. Environmental conditions may be monitored from angles that are relevant to Indian requirements, without any legal implications. This innovative scheme is user-friendly and totally voluntary. The Environmental monitoring system helps the Institution to set Environmental examples for the community and to educate Young Learners. It can be adapted or extended to urban and/or rural situations or Sister Institutions too.

Objectives

The broad aims/benefits of the eco-auditing scheme are:

1. Environmental Education through systematic awareness via Green Audit. From 2019 onwards Water Audit and Energy Audit based on 2018 data are also planned.
2. To inculcate the habit on thinking for improving Environmental Standards and create awareness on reduction of waste at sources.
3. Benchmarking for Environmental Protection Initiatives – to impart learning from one's exposure and experience or interactions with other organizations
4. Curriculum enrichment through practical experience and financial savings through a reduction in resource use.
5. Development of ownership, personal and social responsibility for eco-friendly MBCET and implore in developing an environmental ethics and value systems in the minds of younger generation.

The green audit acts as baseline for quantification of certain Green Initiatives to:

1. Develop a mechanism to prepare a baseline scenario for green assessment- energy, water, biodiversity and carbon emission,

2. Develop targets for achieving sustainability; % reduction in electricity use, %CO_2 emission reduction, % reduction in water use, paperless campus etc – over 2015, 2020...

3. Development of Green Technology Packages through Inter-Institutional Workshops and expert groups and Strategy generation and identification of Green indicators,

4. Developing milestones, targets and time-line to achieve sustainability and Implementation of the plan in a phased manner,

5. Suggesting ways of recognizing "Greening" initiatives on the campus and its neighbourhood.

In spite of the various policies to be implemented, where to start the greening is an important aspect. For this purpose and to trigger the green consciousness in individuals we have adopted the Green Audit in the form of a survey of 38-40 questions to the various batches of students. From among the First year students, we could collect about 701 responses, from the percentage of response of students from respective branches are shown in fig.7.1.
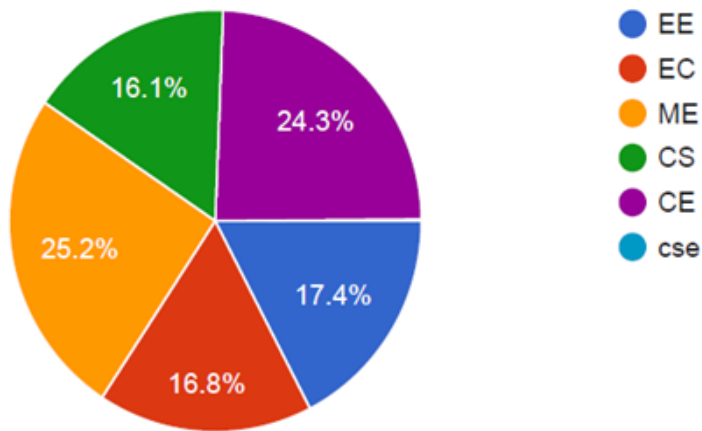
701 responses

Fig.7.1. Percentage response from students of various braches

The detailed analysis of data collected as charts are plotted and provided in Annexure 7.1.1 (a)

Feedback from students collected through the survey is given in Annexure 7.1.1(b)

Proposals and Action Taken:

Based on the feedback received as part of the Green Audit, certain actions such as regular Liter Free Clean Drives, Rain Water Harvesting, Solar Plant and Biogas Plant, Waste Management, planting of trees every year as part of Environment Day Celebration, White Boards, Smart Boards, PPT and Video Lectures- enabled class rooms have been implemented. And some like Reuse, Recycle concepts, more Workshops/ Seminars on the Greening strategies, are considered for implementation.

- **Rainwater harvesting** - MBCET initiated three years ago the Rainwater Harvesting Project and a huge collector pond with a capacity of 40 lakh litres of water storage has been built near the bus-bay on the campus.
- **Grid interactive Solar plant** of 100 kW capacity has been installed in our campus in 2013 and partial energy requirements of about 40% is tapped using the renewable energy resource.
- **The biogas plant** of a capacity of 80 cubic metres has been installed in the Men's Hostel. The biogas produced is used in the hostel canteen for cooking.
- **Incinerator** is also installed which does not have long term environmental impacts such as in landfills, providing 99.99% destruction of waste to ash which is sterile and non-reactive with clean emissions.

Suchitwa Mission - Guidance and awareness sessions are planned in collaboration with "Suchitwa Mission Kerala" to initiate and categorize the possibilities of Waste Management. The mission focuses on 3 kinds of waste – Bio-waste, Plastic waste and e-waste. The Bio-waste is being fed to the Biogas plant for conversion to Biogas used for cooking in the Hostel Canteen, and the byproduct such as bio slurry can be used as manure to grow vegetables .

> ➢ Android App to locate the plants within the campus towards the promotion of the reduction of Carbon Sequestration.(Status: on progress)

With recent technological advancement of modern science people are now expecting the information about the location of any object for tracking purposes. A technique to track the location offline of a plant whenever necessary. These tracking greatly impact to find location and to record the position of the plant at regular intervals. Offline location tracking mechanism which can overcome the problems of online location tracking such as no network area or low signal strength. With the popularity of smart phones network traffic gets increased, it is increasingly

becoming important to track the location offline. Typically the number of location tracking maps that people uses. This makes it difficult in no network area or weak signal strength to track the location. Offline location tracking is an emerging trend that locates users even if they are not connected to the internet. The work focused on android based technology by modifying GPS for offline location tracking.