

Minutes of the Meeting of Green Committee of IIT Roorkee held on June 18, 2024

The following members were present:

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| 1. Prof K K Pant, Director | - Chairman |
| 2. Prof U P Singh, Dy Director | - Special Invitee |
| 3. Prof Arun Kumar, HRED | - Convener |
| 4. Prof Umesh Kumar Sharma, Dean Infrastructure | - Member |
| 5. Prof PK Jha, Asso. Dean (Bhawan & Mess) | - Member |
| 6. Prof M L Kansal, WRDM | - Member |
| 7. Prof Anubrata Dey, Asso. Dean Infra (El) | - Member |
| 8. Shri Ajay Sharma, Institute Engineer | - Member |
| 9. Shri Bhavneesh Lal, Institute Architect | - Member |
| 10. Prof Avlokita Agarwal, Arch & Planning | - Member |
| 11. Prof Bhanu Prakash Vellanki, CED | - Member |
| 12. Prof Ram Manohar Singh | - Member |

Dean (Saharanpur campus) and Prof Abhijit Maiti and 2 Student members could not join the meeting.

Prof K K Pant, Director asked Prof Arun Kumar, Convener Green committee to present the agenda scheduled for the meeting

1. Action taken report on the last meeting

The last meeting was held on September 13, 2023 and minutes were circulated vide email dated Oct. 15, 2023 and were uploaded on the website https://iitr.ac.in/GP/green_committee.html.

Action taken on the minutes are highlighted in *italic*.

1. The IWD put up a tender for IITR solid waste management many months ago. The management was to include shredder, trommel, conveyor belt for separation of around 4.6 TPD waste, followed by in vessel composting/vermicomposting/aerated windrow composting of segregated organic. Part of sale value of recycled waste was to be given to IITR, in the principle of waste to wealth.

Report from institute on the present status of the solid waste management as given at annexure-1 and review by Prof Vellanki given at annexure-2 were presented and discussed.

The contractor for solid waste management are not receiving the solid waste as envisaged since solid waste having residual cash value is being taken away before a waste reach them causing financial difficulties to them

A committee comprising of Prof Bhanu Prakash Vellanki and Executive Engineer nominated by Dean Infra shall review and examine the whole matter and the same shall be taken administratively for further implementation by IWD.

2. Sanitary Waste Management: PadCare Labs are proposed to be developed for which may cost a sum of Rs. 4 – 5 lakhs per year as per the bids which has been invited and may be

finalised by March 31, 2023. It is estimated that about 1.5 – 2 Lakh sanitary pads are to be disposed off annually in the campus. Proposed technology gives sterilized output out of used sanitary pads which is further used in manufacturing objects like plant pots, paper, paver blocks, and utilization in the Agri industry with the help of their patented technology of Sensor Operated Dustbins.

It was decided that more numbers of bins for collection of sanitary pads shall be procured by IWD and placed in every bathroom to mitigate the difficulties presently being faced the residents and their proper disposal can be taken care.

3. Regarding bio-methanation plant.

DPR from Consultant has been received and subject is to be tendered by IWD.

It was decided that bio-methanation plant should be taken up by IWD on priority basis.

4. Water supply – Monthly water consumption during 2023 as measured/ assessed is 2276320 cubic meter.

This gives per capita consumption as 415 litre per capita per day against the national norms for city like Roorkee as 135 lpcd. This is addition to 3 mld water which after treatment is being reuse in lawns etc. The matter require attention as sustainability campus requires to follow the norms and institute loses rating on this account.

A concern towards the per capita water consumption was noted and following actions have been decided

- (a) Already built infrastructure for reuse of treated waste water in hostels and buildings be started immediately. However, care need to be taken for complete disinfection of treated waste water at the STP.*
- (b) The lawns / grounds where the infrastructure for reuse of treated waste water is existing, the fresh water taps be closed and removed.*
- (c) The incomplete pipeline work for reusing the treated waste water in the lawns of the departments / units and residences be taken up at the earliest, so that use of fresh water is reduced. Sprinklers be supplied to the departments/units and residences by IWD and regular monitoring for their use be taken.*
- (d) Regular awareness sessions by IWD with the residents and department staff be taken with the help of eco group of the students.*

5. As per the biodiversity report, labelling of trees to be carried out by Institute Horticulture Section

As per the biodiversity report, labelling of trees is being carried out by Institute Horticulture Section and in Phase-I (around 800 tree) in the areas around the J.T Building including Director Lodge, N.C Nigam Visitor's Hostel, nursery etc. are completed.

It was found nails of some labels from tree have come out and the same may be taken care by IWD.

6. E -bikes Indeanta: Use of e - bikes within the campus be increased.

Action Taken: The matter was being dealt by Dean Infra and DOSW being related to student affairs. However, the contract did not materialized due to required payment during summer vacation to the contractor. This matter may be considered.

The matter was discussed and decided that DOSW may sign the contract and the user cost may be suitably adjusted by considering use of 300 days in a year.

7. To encourage the use of e-Cars, e-scooters and e-cycles by institute community (staff), it has been decided that the charging points shall be installed at the different location in the campus and details of those be informed to the institute community frequently.

Based on the inputs received from IWD following has been decided:

(a) Users shall pay the electricity charges at the prevailing tariff.

(b) Suitable user charge mechanism such as use of prepaid cards may be implemented.

8. E-Waste Management: To avoid the hazardous effect of these wastes on environment, institute is in discussion and is in the process of collaborating with Attero, who is India's Electronic Asset Management Company dedicated to the recycling of the electrical and electronic industry with zero landfill. As per MOU proposed by them, Attero will be picking up the e-waste from Bhawans and faculty apartments. They will recycle this waste by using their cutting edge technologies. In exchange for e-waste, Attero will provide monetary benefits to the waste generators. Bids process expected to be completed by March 31, 2023.

E-waste were taken by eco-group students from few Bhawans and Hill view and Shivalik apartments and given to NGO for disposal. Attero is not ready to take low volumes of the e-waste.

As suggested by Prof Pant, Director IITR, Prof Nikhil Dhawan of Metallurgical and Material Department shall be able to handle about 15 kg of e-waste from Hostels and residences monthly. This may be collected by NSS volunteers or other suitable mechanism.

9. Majority of canteens are using biodegradable cutlery but some like Vigyan Kunj canteen & night canteen, Kasturba canteen, Jawahar Canteen and RKB night canteen are not using it. Associate Dean (Bhawan) has been advised to issue notification of different rates for the commodity in the canteen who are using biodegradable cutlery and who are bringing their owned cutlery. No non-biodegradable cutlery shall be used in the bhawans.

A report from eco group was discussed in the meeting along with a proposal by Prof ML Kansal on use of jute bag in leave of plastic disposal through ATM machine etc.

It was decided that Associate Dean of Student Welfare (Bhawan and Mess) shall take immediate action to ensure that no non-biodegradable cutleries and disposal item are being used in Bhawan canteens and messes. Any defaulter need to be penalized with regular monitoring.

Prof Kansal may prepare a detailed proposal for the consideration by GC.

10. Data Related to Solar Energy Produced in the campus:

Solar Energy Generation with following SPV Systems

1.	1.812 MWp SPV System installed by M/s. Tata Power	
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Year	April 2018 to March 2019	April 2019 to March 2020	April 2020 to March 2021	April 2021 to March 2022	April 2022 to March 2023	April 2023 to March 2024
kWh	2133050.1	2089061	2034752	1769079	1783500	1519513
2.	1.0 MWp SPV System installed under RESCO Model					
kWh				801032	1320384	1318821

The above shows that the 1.81 MW capex installation is not generating the desired capacity which is due to dismantling of units from several roof and absence of low monitoring. The committee may consider the subject of monitoring and re installation of dismantled systems.

A concern about reduction in annual solar energy generation from 21.33 Lakh units (2018-19) to 15.19 Lakh units (2023-24) from 1.81 MW installed capacity SPV systems was noted.

IWD has been asked to ensure that solar panels are immediately installed on completion of roof treatment is being done of any blocks and regular pruning of trees are taken so that the solar energy generation is not lost.

An efficient supervising staff by IWD may also be deployed for optimum use of installed solar capacity in all forms.

11. New Miyawaki Forest Proposal – Land Identification

In addition to the successful agenda of implementation of Mini-forests in IITR in the form of Miyawaki Forest beside the temple, out of three proposed site, site by the side of Saraswati Mandir (proposal-3) was selected.

IA the member secretary ISMC vide their following email dated June 06, 2024 made the decision of non-suitability of the proposed site by the side of Saraswati Mandir.

It was decided that new sites shall be visited jointly by ISMC Member Secretary along with Prof Avlokita Agarwal and Prof Bhanu Prakash Vellanki.

12. Massive Tree Plantation Drive: One Student One Tree-2023 under the “MeriLiFE” Mission of the Dept. of Higher Education, Ministry of Education, pplanting of 1100 trees in all three campuses during July-Aug 2023.

As per report from IA survival of planted trees has been noted and appreciated by the committee. Plantation of more trees may be planned for this year. Some of the locations where tiling work has been done, canopy based trees may be planned.

13. No carbon emitting vehicle

The first of every month was notified by the institute to be observed as no fossil fuel based vehicle day from January 1, 2024. There have been instances of extreme weather events such as hail storm and heat waves on the first day of some of the months (February and June). It was decided that the matter may be made voluntary rather than compulsory. The security and Green Committee did make arrangements of providing e rickshaws and buggies to assist the commuters.

From May 2024 onwards, the observation of non-fossil fuel based vehicles has been voluntary during first of each month from 8 am to 6 pm.

14. World Sustainability Ranking

Institute participate for world sustainability ranking in two systems every year.

- (a) QS World Sustainability Ranking
- (b) UI Green Metric System

At the time of filing information most of the data is generally prepared based on assumption and many times become difficult to gather with limited resources, time and understanding of the matter. Now a Professor in charge has been appointed as coordinator/chairman for this purpose.

Institute loses lot of points on the following fronts

- (a) Setting - Open permeable space – Every year we lose / reduce this space and reduce on account of concrete based car parking/tiling.
- (b) Energy and Climate Change
- (c) Solid waste management
- (d) Education and research

Institute need to review the whole procedure of handling this matter to get high score for raising the institute rank.

The matter has been deliberated in details including the request received from the different sections of the campus and challenges emerging. It has been decided that no open space shall be converted into non permeable space. Any such requirement received by IWD need to be deliberated along with area details and repercussions such as surface runoff and temperature rise in Green Committee. IWD may notify this matter.

15. Drainage and possible retention of storm water

Efforts of IWD for ensuring the cleanness of the drains inside the campus as well as outside nearby drains has been noted and appreciated.

Agenda Item 2: Electricity Consumption in the main campus:

Electricity consumption during 2021 – 1.94 Crore units, 2022 – 3.33 Crore units, 2023 – 3.51 Crore units is a matter of concern. Even though the institute has taken lot of initiatives for improving energy efficiency by deploying energy efficient appliances, but the consumption is growing rapidly. An audit of energy consumption, especially for the classrooms and laboratories maybe considered.

It has been decided that setting of all the ACs in common facilities such as class rooms, meeting rooms, laboratories (except those labs requiring specified low temperature) at 24°C be implemented by adopting suitable technical arrangement.

An awareness among the staff who open the class rooms and meeting rooms in the department for timely opening and closing so that ACs are not kept ON for non-occupancy hours for which required instructions be initiated by Dean Academic and Head of Departments / units. IWD may prepare the awareness material and be shared with users.

Agenda Item 3: Any other item with the permission of chair

Director IIT Roorkee and Chair acknowledged and thanked Prof Arun Kumar, convener, for his commitment and contributions from the time of formation of Green committee in the year 2014 till his superannuation in June 2024.