



Green Opus 2013-14

Pre-Conduction Report



**Group For Environment & Energy Engineering
Students Gymkhana
Indian Institute Of Technology Kanpur**

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Introduction:

Green Opus is the inter hostel food and energy conservation competition. It will be conducted in two phases, each in a different semester.

Phase I: It will involve reducing energy consumption in different hostels. It will be held from 1st September to 30th September.

Phase II: It will involve both food wastage reduction as well as reduction of electricity consumption. It will tentatively be held from 1st January to 31st January. It will also involve a few miscellaneous events such as quizzes, poster designing, video making, etc. to increase the popularity of the event. The miscellaneous will carry little weightage in the overall weightage of Green Opus.

The pool structure for Green Opus is the same as that for the General Championship.

Points Structure:

The weightage of the various events in Green Opus will be as follows:

Electricity Consumption: 50%

Food Wastage: 30%

Miscellaneous Events: 20%

For any competition held in Green Opus 2013-14, the points shall be awarded finally to the pool. Every competition has got some specified maximum points, and the points would be awarded as follows:

1st Place: 100% of the maximum points

2nd Place: 60% of the maximum points

3rd Place: 30% of the maximum points

4th Place: 10% of the maximum points

- The overall final rankings of Green Opus will be announced after adding the points obtained by each pool in each of the above competitions.
- For the smooth and fair conduction of Green Opus, volunteers will be selected from each pool. This will ensure that there is no discrepancy in collecting data for the competition.



Methodology of Judging:

1) Electricity Consumption Reduction:

Base months: September 2012, January 2013

Judging months: September 2013, January 2014

- ❖ Percentage reduction in per capita energy usage from “Base Months” to “Judging Months” will be calculated.
- ❖ To take into account the limited scope of reduction for halls with low per capita consumption, a Hall Scaling Factor (HSF), based on the hall’s per capita consumption relative to the average per capita consumption of all the halls, will be included and the reduction will be scaled.
- ❖ Pools will be ranked on the basis of their percentage reduction in per capita consumption scaled by HSFs. (Details of calculations given in Appendix)
- ❖ Since there is no previous set of readings available for GH-Tower and Hall-11, the electricity reduction cannot be calculated and hence they won’t be active participants in this part of the competition for Green Opus 2013-14. The pre-existing part of GH1 will be considered for judging.
- ❖ Hall 1 and Hall 9, being parent halls, will not be considered for judging.

2) Food Wastage Reduction:

Judging Month: January 2014

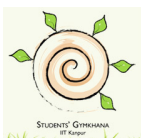
- ❖ Average per capita food wastage will be calculated for each pool during the judging month.
- ❖ The average per capita food wastage will be compared across all the pools and based on that rankings will be decided.
- ❖ Hall 1 and Hall 9, being parent halls, will not be considered for judging, but food wastage readings will be displayed on these halls aswell.

3) Miscellaneous Events:

Month of Conduction: January 2014

Proposed Events:

- ❖ Case Study and Presentation: Take any issue related to environment in the campus. Suggest a solution to it. (One entry per pool) (30 %)
- ❖ Environment Quiz: (2 teams per pool) (20%)
- ❖ Poster Design: Design a poster to create awareness about environment issues in the masses.(more than one entry per pool) (20 %)
- ❖ Pool Video: A video showing what efforts/steps have been taken by the residents to reduce energy or food wastage. (30%)



- ❖ Further details about the various competitions to be conducted, their coordinators and judges will be made available to President, Students Gymkhana in a mid-term report (tentatively in the month of December 2013).

APPENDIX

The procedure for calculating the HSF will be as follows:

- Per capita energy usage will be calculated for each hall.
- Average per capita energy usage will be calculated for all the participating halls.
- Per capita usage of each individual hall will be divided by average per capita to get the Hall Scaling Factor for that Hall. (lets assign it a value HSF)
- For each hall percentage reduction in per capita energy usage from “Base Months” to “Judging Months” will be calculated.
- This percentage reduction/increase in per capita energy uses will be divided or multiplied by the HSF:
 - Suppose the consumption decreases by X, then the final score will be calculated by :
 $SCORE = X / HSF$
 - Suppose the consumption increases by Y, then the final score will be calculated by :
 $SCORE = Y * HSF$
- The HSF will be advantageous for the halls which have their energy consumption below the institute average and will be disadvantageous for the halls which have a higher energy consumption.

For example, if the average per capita consumption in the institute is 800Wh. Let's assume two halls as Hall A and Hall B. Hall A has a consumption of 500Wh and Hall B has a consumption of 800Wh. Then the HSF for the two halls will be

Now, if Hall A reduces its consumption by 50Wh and Hall B reduces its consumption by 100Wh. The effective reduction in the consumption of the two halls will be:

Effective reduction by Hall A = $50 / 0.625 = 80$

Effective reduction by Hall B = $100 / 1.25 = 80$

Therefore, as illustrated above, the HSF will ensure that all halls will be on a more or less equal footing in Green Opus.