
Contest for Capping Rutgers Carbon Emissions

The Energy Contest for Rutgers New Brunswick Undergraduate Students
Sponsored by The Rutgers Energy Institute

The Rutgers Energy Institute recently issued a challenge to the Rutgers undergraduates to develop implementable plans for reducing the carbon emissions. The following proposals (4 winning entries and 1 honorable mention) were awarded prizes for the ideas they contributed towards helping Rutgers-New Brunswick become carbon neutral.

Winners of the 2008 Energy Contest for Undergraduates

Green Roof Systems

by

Ronela Belasa, Robert Kennedy, ChenryLee Lewis, Jihoon Park, and Michael Sitaras

Award: \$2,500

Summary of the proposal:

The following proposal will show how Rutgers University can manage their fuel consumption and carbon dioxide emissions by using existing campus building rooftops to implement a low cost and efficient system of "green roofs". Green roof systems provide insulation to buildings that create an overall cooling effect in the summer and reducing heat/gas consumption in the winter. Green roof systems address rainfall runoff and noise pollution, reinforce the strength of existing building infrastructures, create research opportunities for students, job opportunities for the community, and create additional habitat for animals. Application of the system to the Neilson Dining Hall, on the George H. Cook campus, yields an estimated annual savings of 39,762.10 therms in energy consumption with a calculated savings of \$19,733.34 in gas consumption costs every year while removing 830.855 kg of potentially hazardous air particulates a year.

The Use of Solar Panels to Reduce the Carbon Emissions and Energy Costs of Rutgers University

by

Christopher Binz

Award: \$2,500

Summary of the proposal:

The severe budget cuts sustained by Rutgers University have put financial stress on every aspect of the University. The University must divert a significant portion of the budget to costs associated with electricity. Also, environmental concerns are becoming a more pressing issue, and there is a strong push towards energy efficiency. This proposal provides a solution to both of these problems by outlining plans to fit the Science and Engineering Resource Center on Busch Campus with rooftop solar panels. These will eliminate the cost of electricity for the building; and in doing so, greatly reduce the carbon footprint made by Rutgers. In addition, it will be a grid-tied system, meaning any excess energy can be sold back to the electricity provider, generating extra revenue. Many other schools have taken a step in this direction, and the Adam Joseph Lewis Center at Oberlin College in Oberlin, Ohio provides an excellent example of how energy efficiency leads to cost efficiency. A "pilot" project similar to this one is outlined for Rutgers University, and the success of the Adam Joseph Lewis Center provides proof that using solar panels is a cost effective way to both balance the budget and benefit the environment.

The Route Towards Carbon Neutrality: Reducing Carbon Emissions at Rutgers University

by

Amy Tsui

Award: \$2,500

Summary of the proposal:

This proposal focuses mostly on the transportation-related (or commuting) portion of CO₂ emissions from Rutgers University, which accounts for half of the University's emissions. Solutions listed in this proposal to address commuting problems involve improved integration of public transit options, increased infrastructure for carpooling, carbon offset purchasing and incentives for hybrid car use. Additionally, a comprehensive bike plan is proposed to significantly reduce the dependence on the bus system as well as benefit student and faculty health. Also included is a discussion and analysis of additional campus improvements to buttress the transportation-related emissions reductions. This includes changing dorm life and practices, improving green space and reducing black space. Combined, these solutions can reduce the University's 150,000 ton transportation-related output by 98% by 2030, with most of the reduction occurring in the first few years. Overall, this achieves a 49% reduction of the 300,000 total tons emitted by the university.

Rutgers University Carbon Neutrality by 2030

by

Mark Pomerantz and Sho Ohata

Award: \$2,500

Summary of the proposal: This is a proposal to reduce Rutgers University New Brunswick Campus' carbon emissions to zero. There is a four branched approach to the problem by making the University more efficient, finding new sources of energy on campus which emit less CO₂, utilizing certain CO₂ sequestration techniques and changing the mindset of students and faculty. There are many methods of reducing all of the University's carbon emissions, but an effective plan needs to be economically feasible and not use too many other resources. The ideas proposed are presented realistically and are easily implementable otherwise administrators would not apply them. There are several separate sections of the proposal; a main description of each idea, calculations and a timeline. New technologies such as solar power, biofuels, and green building are utilized to reduce the University's carbon footprint. With the threat of global warming becoming a real world concern, Rutgers needs to assert the dedication to its slogan of having Jersey roots and a global reach.

Up Stream, Red Team, Let's Go Green

by

Neil Ramchandani

Honorable Mention Award: \$1,500

Summary of the proposal: The Rutgers administration has been actively involved in reducing the size of the University's environmental footprint. However, the majority of the 27,000 students who attend Rutgers New Brunswick are not at all involved in increasing our level of sustainability. To alter this situation, the student body needs to be motivated to take action. More recently, thousands of students have flocked to athletic events to cheer on our fresh and upcoming teams. Not only have some of our athletes gained the respect and admiration of the students, they have also brought thousands of residents from the area together in supporting Rutgers. The influence these high profile players and coaches have can be channeled into encouraging people to be environmentally responsible. Brief videos and public service announcements at the games with such people promoting recycling and conservation of water, gas and electricity would reach the ears of countless numbers of people and give them role models to follow. Athletic venues could provide the perfect places for people to apply these actions, which will spill over into the community and make a significant contribution to reducing our environmental footprint.

Useful resources from the contest information session:

Presentation on Rutgers Energy Use (pdf) by the Rutgers University Energy Conservation Manager, Mike Kornitas.

University Sustainability Committee Annual Report for 2007 (pdf), or visit their website for more information on RU sustainability.

Online resources to understanding utilities and energy consumption at Rutgers:

- Rutgers Facilities Information
- Rutgers Utilities Operations Information
- Rutgers University Facilities & Capital Planning
- Rutgers University Committee for Sustainability
- NJAES Bioenergy Assessment Report