



Energy, Environment and Society (5.92)

Student Project Results

Disclaimer

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Executive Summary

The purpose of this project was to assess the viability of small scale wind power as a means for Massachusetts Institute of Technology (MIT) to economically reduce its usage of dirty, non-renewable energy. We find that, although most of campus is a sub par resource, some wind sites offer the potential to produce electricity at half of the current utility cost. The results of this study concluded that if a Skystream 3.7 turbine were placed on top of Eastgate Graduate Housing it could supply electricity for as low as \$0.08 per kWh and would have a payback period within its lifetime. Carbon offsets at all sites however are unsurprisingly small compared to MIT's enormous carbon emissions, per year they would offset approximately 10 seconds worth of MIT carbon emissions. Additionally, we find overwhelming support from the MIT undergraduate community in support of on-campus wind power and carbon emission reductions.

One of the greatest concerns with this project was its ability to be accepted by the MIT campus as a whole. Would people be willing to see wind turbines on top of buildings? With the creation of a campus survey, the team was able to ascertain that not only would people be willing to see wind turbines, but they also would like to see MIT lower its greenhouse gas emissions. We created a personal opinion survey and sent it to both graduate and undergraduate dorms. We had responses from over 200 students. Also, this study has had a tremendous amount of support from MIT faculty and facilities, so there will be few problems with that aspect of implementation.

Overall, since MIT's goal is to reduce emissions in a cost effective way, we recommend on-campus wind power as a viable option. Its implementation sets precedent for MIT, helps publicize successful implementation of renewable technologies, and provides educational opportunities for future students.