



power managed with little, or no, annoyance to the users. The major milestones for Phase 2 are a) roll-out of power management software to open use and library PCs, b) an understanding of energy savings and user annoyance trade-offs, and c) roll-out of power management software to faculty and staff PCs. Phase 3 will require 6 months from the end of the previous phase. Phase 3 will explicitly measure energy savings and will make the project fully sustainable without additional funding. The \$50,000 funding will be fully expended at the end of Phase 3. Large scale surveying of users will be conducted in Phase 3 (we expect to conduct smaller scale surveys in Phase 2 as may be needed). The major milestones for Phase 3 are: a) complete energy savings measurements, b) survey all users, and c) complete education of USF community.

Evaluation Metrics:

We will consider the project successful if the following objectives are achieved: 1) Measurable, significant, and sustainable energy savings are achieved 2) There is no annoyance to users

ENERGY SAVINGS We estimate that the total annual energy savings of this project is approximately 1,640,310 kWh per year, or an annual \$164,031 reduction in the university's annual electricity bill (assuming a cost of \$0.10 per kWh). This corresponds to an annual reduction of about 1132 Metric Tons of CO2 emissions (equal to removing 222 cars from the road). The energy savings will continue after the completion of the project. We assume (see attached document for photographs of actual measurements):

- * Average power consumption of a desktop PC including monitor when on: 75 Watts
- * Power consumption of a desktop PC when sleeping: 5 Watts
- * Power management software, as described in this proposal, will enable a desktop PC to sleep on average 12 hours per day where today this same PC is fully powered-on at all times (or "24/7")

We believe that these are conservative estimates where some PCs will consume greater than 75 W when on (for example, from the use of multiple monitors) and some PCs will be able to sleep more than 12 hours per day on average. Thus, the annual energy used by a single PC today (for \$0.10 per kWh) is:

