UNIVERSITY OF SOUTH FLORIDA

STUDENT GREEN ENERGY FUND

PROJECT PROPOSAL

SUBMITTED BY: Shalaun Franklin, Graduate Student

1. Abstract:
    a. This project will address a serious need on our campus in terms of having tennis and basketball court lights that are currently inadequate and highly energy inefficient. The University allows the tennis and basketball court lights to stay on until midnight seven days a week and this is a drain on budget with the current metal halide lights. Converting these lights to LED style lights would be in the University's best interest as well as contributing positively to the environment in terms of energy consumption.
    b. Current lighting systems remain on despite poor weather conditions that make play impossible

2. Sustainability Benefits:
    a. Energy savings of more than 50% over metal halide system:

    10 Tennis courts:

    Current kilowatt hours used (metal halide)
    40 fixtures X 1000W fixtures =40KW
    40KW X 6 hrs/day X 7days/wk X 52 wks/yr = 87,360 KWH/yr

    Switch to LED: kilowatt hours used (LED) includes reduction of 20% in usage due to ability to control lighting for individual courts
    48 fixtures X 630W X 6 hrs/day X7 days/wk X 52 wks/yr X 80% = 52,835 KWH/yr

    SAVINGS:
    Energy: 87,360 KWH with Metal Halide – 52,835 KWH with LED = 34, 525 KWH/yr
    Cost: 34,525 KWH/yr X .08 $/KWH = $2,762 /yr

    Basketball courts:

    Current kilowatt hours used (metal halide)
    10 fixtures X 1000w fixtures=10KW
    10KW X 6 hrs/day X 7days/wk X 52 wks/yr = 21,840KWH/yr

    Switch to LED: Kilowatt hours used (LED) includes reduction of 20% in usage due to ability control lighting for individual courts
    10 fixtures X 630W X 6 hrs/day X 7 days/wk X 52 wks/yr X 80% = 11,007 KWH/yr
    SAVINGS:
    Energy: 21,840 KWH with Metal Halide – 11,007 KWH with LED = 10,833 KWH/yr

Cost: 10,833 KWH/yr X .08 $/KWH =$867/yr

Total reduction of 45,358 KWH/yr is equivalent to:

- Carbon Dioxide reduction: 31.3 metric tons, or
- 802 urban trees planted, or
- 3,519 gallons of gasoline not burned, or

3. Project Implementation Plan:
    a. A Space Impact Form will be submitted for approval.
    b. Installation will last approximately two months
    c. Existing poles will be reused for mounting new LED light fixtures.
    d. Existing poles will be inspected and evaluated for structural integrity. The poles that appear unfit for reuse will be replaced at the expense of REC department.
    e. At completion of the project, photographic evidence will be submitted to the SGEF Committee
    f. Construction Manager will oversee project and provide engineering drawings.
    g. Project design and specifications will be managed through USF Facilities Management
    h. Students will work with Project Manager and will monitor the lighting system so that it meets student demand

4. Long Term Sustainability Plan:
    a. After installation, USF Campus Recreation will operate and maintain, the lighting systems
    b. Musco C10 warranty and maintenance program eliminates 100% of University of South Florida's maintenance costs for 10 years, including labor and materials (cost savings)
    c. If over time existing light poles need to be replaced, Campus Recreation will cover the cost

5. Cost Benefit:
    a. For the first 10 years, the vendor will service and supply all needs for these lights at no additional cost to the University
    b. After 10 years, USF Campus Recreation will again maintain these lighting
    c. REC will save estimated $20,000/yr in maintenance of existing outdated lighting.
    d. REC will pay for the evaluation and replacement of light poles that need to be replaced.
    e. Energy cost saving of $3,629/yr in energy cost.
    f. Return on Investment: Simple Payback = Initial investment $205,000 divided by net annual savings of $ 23,629/yr = payback of 8.7 years (ROI of 11.5% yearly)
    g. Expected life of LED lamps 50,000 hours, or about 28.5 yrs at expected usage rate.

6. Project Cost:

a. Total project cost = Tennis court re-lamp $143,700 + Basketball court re-lamp $61,300 = $205,000. This cost includes design, construction, and management costs.