Student Green Energy Fund
Proposal Application Form

Section 1: Summary Information

Project Title:	Marshall Student Center (MSC) Solar Panel Installation
Duration (months):	4 months
Total Budget ($):	$1,435,880.95
Requested SGEF Funds ($):	$1,309,058.73
Matching Funds ($):	$0 (maintenance by MSC)
Proposed Starting Date:	January, 2016 (as soon as possible)
PI Graduation Date (if applicable):	June, 2016

Section 2: Applicant Information

	Full Name	**Unit/ Department**	**Phone**	**Email**
Principal Investigator	John Pilz	College of Arts and Sciences	(727)452-0603	johnpilz@mail.usf.edu
Investigator 1	Chi-Kai Hung	College of Business	(813)300-0216	Chikai@mail.usf.edu

Investigator 2	Jakob Hartung	ISES Member	(702) 953-2631	jakobhartung@mail.usf.edu
Investigator 3	Sujit Chemburkar	Director Phyllis P. Marshall Student Center	(813)974-5002	sujit@usf.edu
Investigator 4	Daniel Iglesias	ISES President	not provided	diglesias1@mail.usf.edu
Investigator 5	Arun Kumar Narasimhan	PhD Student in Clean Energy Research	813-451-0612	arunkumar@mail.usf.edu

Section 3: Project Description

Describe the project, including goals and objectives, methods to be used to assess the outcome of the project, and how the results of the project will be communicated to the USF community and the sustainability of the project

- Project background and purpose

Several years ago, USF Tampa's Judy Genshaft signed the Climate Action Plan for the university's commitment to becoming carbon neutral. This proposal is meant to address the goals set therein.

The Marshall Student Center is an innovative building, home to many of USF Tampa's signature events. It is recognized as a building that represents USF's commitment to progress. USF Tampa's most remarkable building, the MSC, can be continue to lead in the alternative energy trend it has started to an even larger capacity, being the new definition of "turning green into gold". Solar panels on the roof to generate power for the MSC is putting action to where USF's mouth is. The more we save on our carbon footprint, the more we save on unnecessary energy costs. The MSC has a vast amount of roof space, with some already devoted to solar energy generation. The plan we have is to build on an existing solar energy installation and provide the building with more solar energy that can make it get as close to carbon neutral as possible. With some of the roof where the installation will take place being visible to those on the fourth floor, this project will be able to educate students about the school's dedication to solar energy. Installing solar panels on the MSC can achieve both goals simultaneously, and bring USF a whole new dimension of being truly green and gold.

- Project activities

There has already been an approved submitted space impact form. Personnel from relevant departments at USF are already making preparations for the approval of this SGEF fund request, and the careful installation of the solar panels. The solar panels will be installed on the MSC's roof, and they will generate electricity for the school. There is a monitor on the first floor of the MSC dedicated to showing the energy created by the already installed solar panels. Since that monitor has been forgotten as it has been in disrepair over the past few years, the intent of this project is to utilize that same monitor and join the new project into the same monitoring system as the old project is included in.

SUPERSEDING AMENDMENT
The total amount of panels to go on the MSC roof is going to be 1176 panels for the north and south roofs at a cost of $1,020,000.

- Project results

This will result in a very educational outcome for the students, as they witness the power of the sun first hand. The monitor on the first floor of the MSC will be maintained (SGEF should repair it as it will need minimal attention/maintenance), and the project's energy production will be shown in a practical sense to any and all bystanders present.

SUPERSEDING AMENDMENT
The project is estimated to produce 634,995 kWh/yr with $50,803 in yearly energy savings. Over 25 years, it will be at $1,270,071 in total energy savings.

- Outcomes of the project

We have internal rate of return (IRR) of 9.2% for north building and 9.1% for south building which is proximately doubled return comparing to bond or risk free rate, and we also calculate Net Present Value (NPV) equaled $364,978 for north building and $88,785 for south building which means this project is profitable in the long run.

IRR is a common measure of investment efficiency, and is the annualized effective compounded rate of return earned on the invested portfolio. In our case, both IRRs are higher than average bond or treasury bill yield (approximately 4% for 20 years contract)

- Annual Cost Savings

The project is estimated to produce 634,995 kWh/yr with $50,803 in yearly energy savings. Over 25 years, it will be at $1,270,071 in total energy savings.

ROI is 0.64%

- Annual Greenhouse Gas Reduction

CO2 reductions – 13,018 tons of CO2

- Project Sustainability

This project is sustainable because the plan is to install solar panels that are planned to last 25 years. The project's monetary savings for the school will pay back more than the value of the entire project during its lifetime. The warranty as well as the monitoring system will ensure that the panels that don't function will be replaced accordingly. Dollar for kWh, this project is expected to produce the most green energy for the school that the Student Green Energy Fund has ever funded in its entire history. To stress the name "green energy," solar energy doesn't get anymore synonymous to green energy. This project will help sustain the Student Green Energy Fund as students find their green fee dollars being put to their intended use, and vote to keep funding this excellent green fund initiative.

With a major project on MSC's roof, the idea is that the USF will be a very first leader that influences alternative energy awareness. Through our most representative building like MSC, we can proudly announce that we are in the new era of green and gold. There is nothing more exciting to witness our innovation and creativity shining from USF to other US universities, and this is just a beginning.

Section 4: Additional Materials

Provide detail all activities and responsibilities including schedule for the project from start to finish, noting the general dates of major milestones and accomplishments.
Also provide details of expenditures for the project, including a brief statement describing the nature and necessity of the expense. Provide a schedule for the project from start to finish, noting the general dates of major milestones and accomplishments (These may be uploaded as additional files)

- Detailed work plan/schedule of activities (Max 250 words)

The project was under review with a submitted space impact form, and it is currently under the official bidding process under direction of a project manager, Antonio Lourenco. The work will commence once the official bidding process is complete, and after necessary funds have been allocated towards the project. The project should be quick in procession once the work has started - the solar panels will be installed over the course of a few days, the inverters will be installed, the connection to the power grid will be made and the monitor will be reset to include the entire solar energy array on top of the MSC.

- Budget breakdown and justification

Given estimates from the Project Manager assigned to the project:

- Architect and Engineering ----------$90,000.00
- Construction and solar panels----------$1,160,000.00
- FP&C Cost Of Services (6% of Construction Cost)$ 69,000.00
- **TOTAL----------$1,319,000.00**

Project Budget breakdown must follow the following format:

Category	Request from SGEF	Applicant Contribution	Total
Personnel (include all involved)	$126,822.22		
Equipment	$50,000		
Supplies/Materials	$905,873		
Contractual	$90,000		
Construction	$254,127		
Signage			
Other (contingency)		$11,000.00 (system maintenance, and the $500 TECO fee to connect panels to grid)	
Total Project Cost	$1,426,822.22	$1,437,822.22	

NOTE: We added in extra for unforeseen contingencies so we don't have to return to the SGEF Council for more funding. WE PLAN TO HAVE THIS PROJECT COST UNDER **$1,319,000.00.**

THE ABOVE VALUES ARE INFLATED FOR IN CASE ADHERENCE TO USF/STATE REGULATIONS CAUSE NEED FOR ANOTHER PROCEDURE.