



GREEN FUND

Sustainability Through Student Innovation

Green Fund Project Application

Green Fund Mission Statement: “The NAU Green Fund promotes student participation in and provides funding for projects that reduce NAU’s negative impact on the environment and create a culture of sustainability on-campus.”

Requirements for funding:

- We highly recommend meeting with a Green Fund member prior to submitting the application.
- Since the Green Fund distributes funding on a [reimbursement basis](#), project teams must partner with an administrative office to provide upfront funding for the project. Once the project has met its agreed upon deliverables, the administrative partner will be reimbursed by the Green Fund.
- The person submitting the project must be an NAU student, faculty, and/or staff.
- Projects must provide all necessary documents, letters of support, and authorizations prior to reviewal.
- The project must be implemented on campus.

Disclaimer: This application is preliminary; you may be asked to provide more information in order for your project to be considered for evaluation. Incomplete applications will not be considered; however, applications may be conditionally approved with certain stipulations. If your project is approved, you may be asked to provide more detailed information regarding specific deliverables corresponding to the milestones defined in your timeline. The Green Fund is not responsible for acquiring the necessary permits, permissions, or approvals for a project; though, we will help if assistance is needed. Additionally, the Green Fund does not provide any ongoing costs. The sponsoring department must take responsibility for operations and management. All applications must and will go through a vetting process.

Reviewal timeline: Once your application is submitted, the Green Fund will review your project within three weeks during the regular school semester. Incomplete applications *will not* be reviewed until all components are submitted. The application review may take one meeting or several months as additional questions may be asked or approval from administration may be needed.

Application Components: All components *must* be included for the application to be reviewed by the committee.

1. Project Overview
2. Green Fund Criteria
3. Application Information
4. Detailed budget
5. Project timeline, including milestone
6. Any and all necessary permits, permissions, or approvals
7. Operations & Maintenance Plan addressing:
 - a. Necessary maintenance schedule and duration
 - b. Individuals responsible for the maintenance
 - c. Any and all costs associated with the maintenance
 - d. Project Evaluation Plan

Project Overview

Contact Information

Project Leader Name: Domenico Galati

Phone: (847)917-0869

E-mail: djg323@nau.edu

Project Advisor Name: Jennifer Wade

Phone: (928)523-1528

E-mail: jennifer.wade@nau.edu

Sponsoring Department: Facility Services

Project name: SBS West Roof Melt System

NAU Department/Unit for funding reimbursements (Attach letter of commitment from departmental representative): Facility Services

Does this project involve space needs or construction on campus (y/n): No

Executive Summary

Please provide a brief overview of your proposal. Please address how this project will support the goals of the Green Fund (student involvement, creating a culture of sustainability, and lessening NAU's impact):

This project involves the replacement of the snow-melt cables on top of SBS West with newer, temperature/moisture sensing snow-melt cables. The current system is constantly running regardless of the amount of snow on the roof, wasting energy an estimated 85.73% of the time. Installing a new system would support the goals of the Green Fund by eliminating **3.56 tons of carbon** emissions per year. Additionally, this project would provide an annual energy savings of **\$262.93**, thus incentivizing the university to implement this newer system in more locations where possible.

A second component to this project is to exactly quantify the electricity savings, and in turn emissions reduction through the use of the new GreenFund electricity meter. Engineering students will analyze the data and quantify the effects for GreenFund's records. This project will also demonstrate the utility of energy meters.

Green Fund Criteria

Please address with a short answer how your proposal meets the Green Fund criteria for funding a project. Your project does not need to fulfill each criterion, but your project should align with most.

Relationship to Carbon Neutrality/Green Fund Goals

1. Carbon Neutrality Goals - Please review [NAU's Sustainability Action Plan](#) and identify how your project aligns with the goals.
 - a. This project reduces NAU's carbon emissions through increasing building efficiency. The upgraded snow-melt cables will only be on when temperatures fall below 34C. This means less overall electricity is consumed by this technology.
2. Impact - What are the environmental costs and benefits associated with this project?
 - a. The environmental costs would be the installation cost of the new-snow melt system and the disposal of the old.
 - b. The environmental benefits would be the reduction in electricity and associated carbon emissions from the implementation of the new system.
3. Three Pillars of Sustainability: Describe how your project impacts economic, social, and/or environmental sustainability:
 - a. Economic – provides energy savings for NAU
 - b. Environmental – reduces annual energy usage and subsequent carbon emissions

Campus Community

4. Visibility - Is there a public outreach plan? How will faculty, staff, students learn about this? How will this project impact students educationally?
 - a. This project lacks visibility. Most are not aware that electricity is used to keep snow from building on a rooftop. However, this project strongly influence the earlier project criteria. We recommend highlighting this project in Green Fund presentations to give more awareness to the kinds of projects that can reduce emissions.
5. Meets Student Priorities - Based on the [survey](#) results, does your project contribute to one or more of the student priorities?
 - a. This project contributes to Q44 where the most selected choice was that the Green Fund should contribute to reducing NAU's negative impact on the environment. Because carbon emissions negatively impact the environment, and this project reduces carbon emissions and other associated with grid electricity (e.g. air pollutants like NOx and particulates), this project aligns with student priorities.
6. Campus Community Involvement – How are you working with other groups on and off campus?
 - a. This project engages engineering students with facility services. The project also provides students the opportunity to evaluate the techno-economic viability of sustainability technologies

through the use of an energy meter to monitor the changes of energy with the updated de-icing cable.

Project Parameters

7. Economic Feasibility - Is your project financially efficient? Is this a one-time expense or will you need future funding? Does the project have additional funding sources?
 - a. This project is financially efficient as it is a one time expense and provides energy savings.

8. Program Longevity – Who will run the program after you leave NAU? Will students continue to use the project in the future?
 - a. Once implemented, this project needs no student involvement to continue to function. With low maintenance taken over by facility services, the new system would only need a little troubleshooting and cheap repairs due to the modularity of the system.

9. Reasonable Timeline - How long will it take to implement your project? What is your timeline for when you will start and when you expect to begin to see results?
 - a. Implementation of this project could be completed in one weekend. Prior to installation, the electricity meter will be installed on the electrical feeder lines for one week to precisely evaluate the electricity draw of the existing de-icing cable. Once the cable has been procured and installed, the electric meter will be connected once again to measure changes in electricity consumption from this system. From this we will quantify electricity savings and reduced emissions.
 - b. The only long term aspect of this project would be to attach a current monitoring system to the electrical feed for the heat cables once the new system is installed to see what an entire winter seasons energy consumption

Preliminary Questions

Please answer the following questions:

1. Does your project require space or construction on campus? If so, where?

_____No_____

If yes, review the “Space Committee Document” located on our Get Involved webpage and follow the steps to begin requesting a location.

2. Have you obtained all necessary approvals for this project?
 - a. If Yes, please attach all letters of support. Letters of Support should include confirmation from the sponsoring department that they will cover all upfront expenses and work with the Green Fund manager to acquire reimbursement after project completion. If any ongoing operations and maintenance is required of your project, provide a Letter of Support from the entity that will be covering those costs and/or services.
 - b. If No, please explain your progress and plan for attaining letters of support.
3. Will this project provide funding for student wages?
 - a. No
4. Please list all additional sources of funding you have asked. Include departments, grants, ASNAU, GSG, etc.
 - a. None
5. Has this project been submitted for consideration before?
 - a. No
6. Have any of the Green Fund Committee members been involved in this project?
 - a. If Yes, please identify all committee members:
 - i. Dr. Wade
 - ii. James Owen Murphy

Detailed Budget

For the detailed budget, please include detailed information on how money will be spent on this page. Must be very specific, **please add a line item of 5% for contingency.**

Item	Quantity	Price Per	Total
Heat Tape Pro - 150ft	4	\$454.95	\$1856.39
Shipping and Handling			\$36.59
Meter Installation	6	\$65.00	\$390.00
Install New Cables	4	\$65.00	\$260.00
5% Contingency			\$115.09
		Total:	\$2657.98

Timeline

The timeline should include significant implementation dates for your project. Please add information such as shipping time and consider any holidays or breaks.

Item	Action	Who	When
1	Install meter to begin collecting data on old system - collect data for one week	Facility Services	4/5-4/22
2	Order new cables	Facility Services	4/28
3	Replace old cables with new cables	Facility Services	5/6 - 5/8
4	Install meter to collect data on new cables	Facility Services	December 2019