STUDENT SUSTAINABILITY COMMITTEE
Step II Application

Please submit this completed application and supporting documentation to Sustainability-Committee@Illinois.edu. The Working Group Chairs will be in contact with you regarding any questions about the application. If you have any questions about the application process, please contact the SSC Program Advisor, Micah Kenfield, at kenfield@illinois.edu

GENERAL INFORMATION

Project Title:	Pilot Scale Demonstration of Plastic-to-Fuel Technology to Produce Fuels for Campus Use
Total Amount Requested from SSC:	$133,000.00
Amount Requested as:	GRANT (LOAN or GRANT)

SCOPE, SCHEDULE, AND BUDGET VERIFICATION

If the project required you to obtain information from Facilities & Services Planning Division, please include that here and attach any supporting documentation.

Scope & Schedule

What is the plan for project implementation? Describe the key steps of the project including the start date, target completion date, target date for submitting a final report, and any

Task	Timeframe (# of weeks to completion)	Estimated Completion Date
Demonstrate the feasibility of converting waste plastic to fuels	26 weeks	3/1/2019, assuming project starts 9/1/2018
Engage students to identify the parameters	13 weeks	6/1/2019
Support the education and training of students from various discip	13 weeks	9/1/2019
Involve students to study the impact of feedstock composition and	21.7 weeks	2/1/2020
Evaluate and compare various fuels thus produced	17.3 weeks	6/1/2020
Generate mass/energy balance data for entire process	13 weeks	9/1/2020
Create awareness in the larger community by participating in varic	104 weeks	9/1/2020

Budget

List all budget items for which funding is being requested under the appropriate category in the following table. Include cost and total amount for each item requested. Please be as

Item	Cost Per Item	Quantity	Total Request
Equipment & Construction Costs			
Continuous pilot scale system	$40,000.00	1	$40,000.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
		Subtotal	$40,000.00
Publicity & Communication			
Printed material/Fee for expo for Year 1	$500.00	1	$500.00
Printed material/Fee for expo for Year 2	$500.00	1	$500.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
		Subtotal	$1,000.00
Personnel & Wages			
One month/year BKS for 2019 and 2020	$9,177.00	2	$18,354.00
One month/year JP for 2019 and 2020	$5,711.00	2	$11,422.00
Student hourly rate of $15/hr	$15.00	2,320	$34,800.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
		Subtotal	$64,576.00
Project Budget per F&S			
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
		Subtotal	$0.00
General Supplies & Other			
Supplies for air emission analysis	$3,712.00	2	$7,424.00
Services/Supplies/Analysis of distilled fuel	$5,000.00	2	$10,000.00
Materials including nitrogen gas, catalyst, crude oil storage tanks	$5,000.00	2	$10,000.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
		Subtotal	$27,424.00
		TOTAL BUDGET	**$133,000.00**

ENVIRONMENTAL AND ECONOMIC IMPACTS

Please include any other sources of funding that have been obtained or applied for, and please attach any relevant letters of support.

We have earlier obtained funding from Environmental Research and Education Foundation to do feasibility study on this project and after completing the feasibility study, now we would like to demonstrate this technology on a continuous scale on campus. We will apply for EREF funding again in Fall and will keep you updated on progress from that, but as of now, SSC is the only place, where our proposal application will be pending.

Please estimate the greenhouse gas impact this project will have, if applicable. Use the University of Illinois at Urbana-Champaign Energy Management website to determine the cost of energy on campus and the following chart to determine GHG emissions.

Electricity: 1.672 CO2lb/kWh	Diesel: 22.2 CO2lb/gallon
Steam: 244.9 CO2lb/klb	Gasoline: 19.4 CO2lb/gallon
Chilled Water: 144.6 CO2lb/mmbtu	

The potential environmental benefit of this project to the campus will be (1) waste diversion from landfills and (2) reduction of its carbon footprint associated with upstream production of transportation fuels by reduced reliance on fossil fuels. It has been estimated that CO_2 emissions from well to gas pump before it is consumed, can range from 3.35-6.7 lbs/gallons and ANL study also suggested that plastic-to-fuel technology helps reduce up to 14 percent in greenhouse gas emissions, up to 58 percent in water consumption, and up to 96 percent in traditional energy use when compared to ULSD from conventional crude oil, using GREET model. Assuming replacement of 175 gallons of ULSD with plastic diesel in UIUC will prevent 543.9 lb of CO_2 emissions everyday along with reduced water consumption and traditional energy use.

End of Application