

Commonwealth of Puerto Rico
Puerto Rico Energy Affairs Administration (PREAA)
Grease Biodiesel for Puerto Rico; Field Test Demonstrations
Project Work Plan

As part of the proposal approved by the Puerto Rico Energy Affairs Administration several demonstrations utilizing biodiesel will be performed in Puerto Rico. Each of the demonstrations will require a Memorandum of Understanding (see Appendix) between the potential biodiesel user and the University of Puerto Rico @ Mayaguez (UPRM). The former may include municipalities, state agencies and the private sector. The UPRM will provide both technical support and the biodiesel that will be utilized. The biodiesel will be purchased with the funding from this proposal. In addition, UPRM will provide the necessary infrastructure modifications that may be required by the potential users such as storage drums fueling stations. Organization of Workshops will also be part of the scope of this project.

UPRM is presently supporting several demonstrations that will be part of this project. There are others that are been considered. The ongoing and pending demonstrations are shown in the following page. It should be mentioned that all of the demonstrations shown in table 1 are supported by this project except Caguas. They provided funding for their demonstration.

Approved Project budget

The requested and approved funding from PREAA (\$25,000) will be used for purchasing the biodiesel (\$17,500) that will be used in the demonstrations as shown in table 1 except Caguas. There is also an infrastructure support and workshop component (\$7,500) in order to modify the demonstration sites and provide the necessary training for the demonstration participants. The former include items such as electric pumps, double wall drums etc. that are necessary in certain facilities that do not have the required infrastructure. The workshops expenses include safety glasses, lab robes and other materials (CD/disks) that are given to the workshop participants. It should be mentioned that \$17,500 is equivalent to 5,800 gallons of B100 @ \$3.00 per gallon since it is purchased in drums.

Table 1 – Biodiesel Demonstrations, Ongoing and Pending

Demo Participant	Start date	Application	Demo Biodiesel B100 Utilization	Comments
Isabela	February 2002	Waste Collection Truck and Digger	75 gallon per month	Ongoing
AMECO Mechanics (2)	June 2002	Personal Automobiles	20 gallons per month	Ongoing
Caguas	March 2002	Diesel fleet	300 gallons per month	Ongoing
Environmental Power	March 2002	F350 Pickup truck	50 gallons per month	Ongoing
UPRM Main Campus	June 2002	Diesel Fleet	100 gallons per month	Ongoing
UPRM Adjuntas Exp. Station	September 2002	2 Agriculture trucks	20 gallons per month	Ongoing
Natural Resources Mayaguez	June 2002	Watering Plants truck	10 gallons per month	Ongoing
Añasco Precision Manufacturing	November 2002	Boat, Generator and F350	50 gallons per month	Ongoing
Edelcar	November 2002	Diesel Fleet	150 gallons per month	Ongoing
Ethicon	April 2002	Generators	1,000 gallons	Air permit was obtained. Demo scheduled for Jan 2003
Vega Baja	December 2002	Waste Collection and another Truck. Diesel train is also considered.	100 gallons per month.	MOU signing December 4, 2002.
Abbott	2003	Generator	1,000 gallons	Pending
Baxter	January 2003	Truck then boiler	50 gallons per month (Truck)	MOU signing January 2003
Aguada	2003	Trucks???	50 gallons per month	Preliminary discussions
Toa Baja	2003	Trucks	50 gallons per month	Preliminary discussions
PREPA	2003	Truck and Turbine	50 gallons per month (truck); 2,000 gallons (turbine)	PREPA is coordinating the DEMOs.

Appendix

MEMORANDUM OF UNDERSTANDING
BETWEEN THE
UNIVERSITY OF PUERTO RICO AT MAYAGUEZ
AND
XYZ

THIS MEMORANDUM OF UNDERSTANDING is made by and between the University of Puerto Rico at Mayagüez (UPRM), a land-grant public institution of higher learning located in the Commonwealth of Puerto Rico, here represented by Doctor Jorge I. Vélez Arocho, UPRM Chancellor, and XYZ, a company established and operating in Puerto Rico, with federal id number _____, here represented by _____, (title) _____.

WHEREAS, UPRM and XYZ are aware that high quality education, training, research, development, knowledge dissemination, technology transfer, service, and outreach are the basis for the economic well being and development of Puerto Rico;

WHEREAS, UPRM and XYZ are concerned with issues of assessment and understanding, the advancement of knowledge, and the development of human resources as basic elements necessary for addressing economic development;

WHEREAS, UPRM and XYZ are interested in establishing close ties in research and development of environmental technologies in the areas of Biodiesel Applications, pollution prevention and waste minimization;

WHEREAS, UPRM and XYZ are concerned with issues of continued and sustainable development of high-technology industries, and the need for creative, competent, and entrepreneurial personnel;

WHEREAS, collaboration between the two institutions which share economic, and human development goals is highly desirable;

NOW, THEREFORE, in consideration of the mutual understanding set forth, the Parties do hereby mutually agree as follows:

I. UNDERSTANDING

- a. XYZ and UPRM will collaborate in the development of Biodiesel Applications in order to demonstrate the environmentally friendly performance properties of this fuel.
- b. In such project, UPRM will provide the necessary support, expertise and fuel up to 100 gallons of B100 during a demonstration of a _____ unit utilizing Biodiesel. Any additional fuel will be negotiated between XYZ and UPRM on a contract or requisition basis.
- c. In such project, XYZ will operate the aforementioned _____ unit for a period of 1.0 to 3.0 months depending on the success of the demonstration. XYZ will only provide the required supervision, maintenance and repairs that may result from the demonstrations. They will also perform the required infrastructure modifications. This includes all permitting activities related to the project.
- d. No additional expenses will be incurred by XYZ than those mentioned in **I.c.** except for any additional fuel exceeding 100 gallons of B20 as stated in **I.b.**
- e. In such project, XYZ shall in no event be responsible or held liable for any damage, including without limitation, any liability to UPRM personnel and equipment arising from the execution of this MOU.
- f. In such project, UPRM shall in no event be responsible or held liable for any damage, including without limitation, any liability to XYZ personnel and equipment arising from the execution of this MOU.
- g. The present MOU provides the mechanism whereby this and other demonstrations, interactions, initiatives and proposals development between XYZ and UPRM will be facilitated.

II. IMPLEMENTATION

UPRM and XYZ shall each appoint a program manager to be charged with implementing the terms of this Memorandum of Understanding.

III. OTHER TERMS AND CONDITIONS

- a. UPRM and XYZ shall be responsible for their respective costs associated with the activities in this Memorandum of Understanding. Payment for cost associated with future agreements will be subject to negotiations between UPRM and XYZ.
- b. Nothing in this Memorandum of Understanding shall obligate UPRM and XYZ, individually or collectively, to any current or future expenditure of resources in

advance of the availability of appropriations through their respective fiscal authorization procedures.

IV. PERIOD OF AGREEMENT

This Memorandum of Understanding shall be effective immediately when signed by authorized representatives of both UPRM and XYZ, and shall remain in force for one year from that date unless terminated according to the provisions of paragraph VII below. This Memorandum of Understanding shall be renewable for additional time period as mutually agreed upon by representatives of UPRM and XYZ.

V. EQUAL OPPORTUNITY

UPRM and XYZ subscribe to the policy of Equal Opportunity and will not discriminate on the basis of race, sex, age, political orientation, ethnicity, religion, or natural origin. UPRM and XYZ shall abide by these principles in the administration of this Memorandum of Understanding, and neither entity or any of its representatives shall knowingly impose criteria for the exchange of scholars, staff, or students that would violate the principles of nondiscrimination.

VI. MODIFICATION

This Memorandum of Understanding may be modified only in writing by authorized representatives of UPRM and XYZ. Modifications shall be incorporated by reference and made a part of this Memorandum of Understanding.

VII. TERMINATION

This Memorandum of Understanding may be terminated at any time by written mutual agreement or upon 90 days advanced notice by either Party.

UNIVERSITY OF PUERTO RICO
AT MAYAGUEZ CAMPUS

XYZ

Dr. Jorge I. Vélez Arocho
Chancellor
UNIVERSITY OF PUERTO RICO
AT MAYAGUEZ CAMPUS
DATE _____

NAME
Title
XYZ
DATE _____