

UR Biodiesel

Presentation to the University Council on Sustainability
February 18th, 2009

What Is UR Biodiesel?

- ❖ Student Initiative to Convert Waste Vegetable Oil (WVO) at UR into Biodiesel to Run a Campus Bus
- ❖ Step 1: Pick up WVO
- ❖ Step 2: Process it at UR Biodiesel Lab
- ❖ Step 3: Pump Biodiesel into Bus to Run Park Lot Shuttle, Gold Line, and Green Line (pun intended)



Connection to UR Council on Sustainability

- ❖ UR Biodiesel meets many of the goals set forth by the University Council on Environmental Sustainability
 - ❖ Recommendations for Establishing a Vision for Sustainability
 - ❖ Mission as research university
 - ❖ Operational stewardship
 - ❖ Community responsibility
 - ❖ Recommendations on Sustainability Principles
 - ❖ 25 Task Force Initiatives
 - ❖ Initiative I.4: Fry oil to diesel conversion and use
 - ❖ Linking operational initiatives to academic programs

Important Themes

- ❖ Role of Students
- ❖ Academic Involvement
- ❖ Collaboration with Campus Departments
- ❖ Complete Sustainability
- ❖ Promote UR's Commitment to Sustainability

Role of Students

- ❖ Students Make UR Biodiesel Unique
- ❖ Students:
 - ❖ Initiated Project, Secured Funding, Brought Together Campus Orgs.
 - ❖ Organized, Planned, Designed and Built Processor
 - ❖ Designed Logo and Bus
 - ❖ Designed and Built Website



Academic Involvement

- ❖ UR Biodiesel is a great educational opportunity
- ❖ Interdisciplinary
 - ❖ Students working on project from Chemical Engineering, Mechanical Engineering, Biomedical Engineering, Political Science, Art & Art History Departments
- ❖ Opportunities for Independent Research
 - ❖ Some students are receiving Independent Study Credit
- ❖ Integration with existing courses
 - ❖ CHE228: Energy Alternatives Lab and CHE218K: Solving UR's Environmental Footprint
- ❖ Opportunities for working with Center for Entrepreneurship

Bringing Everyone Together: Collaboration with Campus Departments

- ❖ Major benefit is opportunity to bring many campus offices and departments together toward common goal of sustainability
- ❖ Rare for students and operations offices to work closely together – great opportunity for collaboration
- ❖ **Facilities**
 - ❖ Working with Richard Pifer, Jeff Foster and Eris Oleksyn
 - ❖ Provided space, assistance as processor is built
- ❖ **Transportation**
 - ❖ Working with Glen Sicard
 - ❖ Provided campus bus, will run bus on routes
- ❖ **Dining**
 - ❖ Working with Cam Schauf and Mary Locke
 - ❖ Provided WVO and support

Bringing Everyone Together:

Collaboration with Campus Departments

- ❖ **School of Engineering and Applied Sciences**
 - ❖ Support from Former Dean Parker and Current Dean Clark
 - ❖ Support from Professor Ebenhack, particularly to solidify academic components
- ❖ **Art and Art History Undergraduate Council (SA Club)**
 - ❖ Designed logo, organized bus design competition
- ❖ **Engineers for a Sustainable World (SA Club)**
 - ❖ Acted as a student group anchor
 - ❖ Provided students to assist building and operating processor

Complete Sustainability

- ❖ Sustainability is key in every part of UR Biodiesel
 - ❖ Effort to keep involvement of students sustainable
 - ❖ Too many student sustainability projects die when the students graduate
 - ❖ Keep UR Biodiesel sustainable at the institutional level
- ❖ Sustainability of Materials
 1. Cogen/Radiant Heating
 2. Recycled Sink
 3. WVO Stand from Recycled Metal
 4. Surplus Shelving
 5. Lab Bench from Campus Lab
 6. Recycled 55-gallon Drums
 7. Salvaged Piping
 8. Re-Used Exit Sign
 9. Recycled Door Hardware
 10. Heat Exchanger from Previous Location Where it Was Unused
 11. Processor is Previously Unused Water Heater
 12. Reuse of Methanol

Promote UR's Commitment to Sustainability

- ❖ UR Biodiesel Bus will serve as billboard showing the University's commitment to sustainability
 - ❖ Visible within the UR Community
 - ❖ Visible to the Rochester Community
- ❖ Project promotes UR in the sustainability world
 - ❖ Generating excitement in the media – Working with Office of Communications
- ❖ Admissions
 - ❖ Provides strong encouragement to prospective students in engineering, entrepreneurship, sustainability
- ❖ Alumni
 - ❖ Meliora Weekend tours, bus rides, kids activities (making biodiesel) provide hands on demonstrations for alumni
 - ❖ Opportunities for support from alumni, including with Alumni for Social Responsibility, toward developing Student Sustainability Fund

Opportunities For Growth

- ❖ WVO from Off Campus Restaurants and Strong Hospital
- ❖ Expand to Other Garages Adjacent the UR Biodiesel Lab
- ❖ Use Cogen to Heat WVO and Biodiesel
- ❖ Add Solar and Wind Power Capabilities
- ❖ Create “The Ultimate Sustainability Playground”
- ❖ Development of a Student Sustainability Fund to Provide Grants for Other Student Sustainability Initiatives

Bus Wrap

- ❖ Student design competition currently underway
 - ❖ Working with University Publications to involve them in the selection process and refine the winning design
- ❖ Working on receiving bids from two bus-wrapping companies
- ❖ Fundraising to wrap the bus
 - ❖ Campus Departments
 - ❖ Off-Campus Advertising



UR Biodiesel Kickoff

- ❖ Tentatively April 22nd, 2009, 1pm
- ❖ Tentative Location: On road between Optics/BME, Gavett, Wallis, Hutchison
- ❖ Outdoor Presentation with Reception in Goergen Atrium
- ❖ Highlighted by “Maiden Voyage” of the Bus with University Officials and Media

Questions?

Want More Information?

Visit www.urbiodiesel.com or email me at eric.weissmann@rochester.edu