

Sarah Williams
 California Energy Commission Grants and Loans Office
 Attn: American Recovery and Reinvestment Act of 2009 Cost Share
 1516 Ninth Street, MS-1 Sacramento, CA 95814

RE: Ohio BioSystems Cooperative (OBSC), National Transportation Energy Program (NTEP), Project 1.
REF: California Energy Commission Grants and Loans Office, PON-08-10

We would like to first acknowledge Ms. Williams's unexpected effort in the immediate response that we experienced when an inquiry regarding this pre-proposal was emailed – Ms. Williams well done and thank-you! ;o)

Ohio BioSystems Cooperative is an Ohio not-for-profit, federal 501(c)(3) pending IRS determination. Ownership: minority (Hispanic), Women, Disabled Veteran, and Rural Appalachian organization based in Holmes and Ashland Counties in Ohio. Our business model is as a nonprofit think-tank engaged in focused scientific research and development for energy independence through concentrated knowledge, synergistic collaborations, and precise technical knowhow through and to the implementation of for-profit spin-offs across the U.S. In addition, when possible or practical, the aid and assistance of other renewable energy based business models for Research Development and Implementation (RDI).

1. It is opined by scientific basis that the direction the United States as a Nation must take in transportation energy solutions must initially be Cellulosic Ethanol. Abject Reality of the Transportation Energy Problem: 1) 192M Vehicles on the road today that can be converted into Flex Fuel Vehicles; 2) US petroleum industries infrastructure including the vehicles is TOO costly to replace immediately, or anytime in the near future. Focus effort on “Technological Phased Transition.” similar in concept and context to the IT and Telecommunications industries.
 - a. Liquid fuel types, E85-E100, should be immediately implemented at State and U.S. National levels beginning in California.
 - b. This is accomplished by a methodological “Technology Roll” into:
 - i. retrofitting roughly 192 Million EFI (Electronic Fuel Injection) Light and Medium duty vehicles from 1990 utilizing existing technology at a cost factor ranged from \$300US to \$500US;
 - ii. retrofitting Light and Medium duty vehicle fueling stations to allow for “dial-a-blend” E0 through E100 at the pump citing the need for ranged fuel types.
2. Number of Jobs Created or Retained for the entire NTEP is estimated to be \geq 30,000 per participating state.
3. The first two Phases are specific to the entire implementation are accomplishable in 6-9 months with the “technology roll” as outlined in this PON pre-proposal as provided in the following pages.
4. The entire life-cycle of the NTEP will reduce direct GHG emissions between 48-59% comparative to E0 with carbon monoxide emissions by as much as 30%, toxics content by 13% (mass) and 21% (potency), and tailpipe fine particulate matter (PM) emissions by 50% across the nation and eventually the globe.

We wish to express our most sincere thanks to the California Energy Commission, the State of California, and Governor Schwarzenegger for entertaining our directional context based in focused fundamental sciences through to deployment and implementation as an award of 35% of **\$668,704** for this initial thrust, Phase I, to national cellulosic ethanol implementation (E85) beginning in the State of California. At this time, we would also like the State of California and the Energy Commission to consider Phases II and III as a follow-on to this initial phase, Phase-I, as provided. Moreover, propose a California-Ohio Partnership in four of the remaining five projects of the NTEP program: Projects II., III, IV, and VII. respectively as provided in this communication.

Sincerely,



Glenn T. Chipner (419-903-0707)
 Volunteer President & CEO
 Ohio BioSystems Cooperative, Inc.,
 an Ohio Not-For-Profit.

American Recovery and Reinvestment Act of 2009 Cost Share Pre-Application Cover Page

- a. Project Title: OBSC National Transportation Energy Program, Project 1-E85 Conversions & Retrofit
- b. ARRA Funding Requested: **\$668,704**
ARRA solicitation FOA/number/identifier: /Clean Cities Round 1/DE-PS26-09NT01236-04/CA Energy Commission, PON 08-10
- c. Energy Commission Funding Requested 35%. \$234,046
 Minimum amount of Energy Commission funding required for the project to go forward: 35%. \$234,046
 If no funding limitation existed, how much would you request of the Energy Commission: \$334,352
- d. Proposed Project Duration: Project-1, Phases I & II, 6-9 months (Must not exceed 4 years.)

Project Details (Please check the boxes that best characterize the project):

Project Type

- Fuel Production
- Fuel Transport/Storage/Blending Facility
- Fuel Infrastructure (Station, Pump, Electric Charging Facility, Fueling System)
- Vehicle Deployment (Fleet, Consumer)
 - Light-Duty
 - Medium-Duty
 - Heavy-Duty
- Vehicle/Engine Technology or Components
- Performance Test/Protocol Development
- Workforce Training, Public Outreach, Education
- California Manufacturing Plant
- Other _____

Fuel/Technology

- Electric Drive
- Plug-in Hybrid EV
- Battery Electric Vehicle
- MD/HD Hybrid or Hydraulic Hybrid
- Non Road Electric
- Other _____
- Natural Gas (CNG, LNG)
- Renewable Diesel/Biodiesel
- Hydrogen
- Ethanol
- Propane
- Vehicle Efficiency
- Other _____

Development Stage

- Widespread commercial Availability-Consumer Acceptance
- Early Market Deployment/Development
 - Fleets
 - Consumers
 - Fuel Producers
 - Infrastructure owners
 - Manufacturing Plants
- Market Niche Demonstration and Feasibility
- Application Research and Development (Validation Test, Prototype Development)
- Other _____

- e. Principal Investigator/Project Manager (PI/PM): (serves as single point of contact for all communications)

Name: Glenn Chipner
 Address: PO Box 381, Nashville, OH 44661
 Phone: 419-903-0707 Fax: 419-903-0707
 Email: obsc@ohiobiosystems.org
 Organization: Ohio BioSystems Cooperative, Inc., an Ohio not-for-profit.
 Position/Title: Volunteer President and CEO

PI/PM: To the best of my knowledge, I certify that the information contained in this grant application package is true, and discloses all requested information. Proposal does not contain proprietary information, unrestricted distribution authorized.

PI/PM Signature:  Date: 5/8/2009 2:02 PM

- 1. **OBSC National Transportation Energy Program (NTEP)**, Meets 3101 general criteria in sections, 1-6, 8, 9, 12, 13, & 15.
 - A. OBSC et al. Ashland-U, OARDC, OSU, has researched the national transportation energy problem conjunctive of UGARF & U-Utah technologies. OBSC has determined the specific-focused course the U.S. MUST follow as related to current transportation fuel infrastructure, petroleum industry, 192M light duty vehicles (2007) to retrofit and the continued or increased U.S. financial stability.
 - a. Research, Develop, Test, Evaluate, Implement. By sequenced Project:
 - I. E85 Conversions & Retrofit; \$15M/3-Phase Cost sharing: OH, CA, D.O.E. Patents Pending.

- II. Renewable Cellulosic Biomass Feedstocks – \$30M/5-Phase. Cost sharing: OH, CA, IN, PA, NY, IL, MS, WV, TN, and USDA. Patents Pending.
 - III. C5/6 Pre-digesters and Lignin Kerosene; Cost sharing: \$5M/5 Phase. Cost sharing: OH, CA, IN, PA, NY, IL, MS, WV, TN, and USDA. Patents Pending.
 - IV. Cellulosic Ethanol Production; \$130M/7 Phases. Cost sharing: OBSI, OH, CA, IN, PA, NY, IL, MS, WV, TN, and USDA. Patents Pending.
 - V. Science & Research Center; Cost sharing: OBSC, OBSI, OH, D.O.E.; \$15M/5-Phase.
 - VI. Ethanol to Hydrogen; Cost sharing: OBSI, OH, CA, D.O.E.; \$28M/7-Phase. Patents Pending.
- B. Specific OBSC NTEP Projects' criteria & preliminary budgets available for review totaling \$223M +-50%.
- C. **Project-1 U.S. E85 Conversion and Retrofit and E0-E100 Evaporation Offset & Exhaust Analysis. [2-3 Yrs; \$3M-\$50M]**
- a. Phased, CARB & EPA based approach as discussed and in and of our;
 - i. Project 1 – E85 Late Model Conversion and Retrofit:
 - 1. **Phase I – CARB based evaporative and exhaust emissions testing.**
 - a. Developmental Analytics.
 - i. Evaporative E0 through E100 baseline (Ashland University).
 - ii. Per and Reference CARB and EPA documents.
 - b. Durability Data Vehicle (DDV) data collection, ATDS (Live) [7-9 Mos; \$700K].
 - c. Juncture, Decision Point:
 - i. A single California vehicle may prove to expedite testing results for determinative release. However, it should be noted that a non-California vehicle(s) in range may prove to be the worst-case scenario and perhaps should be initiated in phased testing. Both scenarios are desirable. The second, Non-CA LDV, against CARB Emissions standards.
 - ii. CARB and EPA document criteria germane analytics by ATDS Ontario, CA.
 - 2. **Phase II – Qualitative Fuel System Material Characteristic(s) Development.**
 - a. Comparative per CARB/EPA documents. [Estimated: 9-12 Mos; \$1-1.5M]
 - i. Tier 1 and 2 Light Duty Vehicle fuel system suppliers;
 - 1) Identification, Location and Parts List cross reference database build (UCLA & AU);
 - a) Federal clearance approval to access OEM data via federal confidentiality stipulations. Legal context to access private company information: [...] contracted by the DOE and I quote, “or any private person or entity acting on behalf of a Federal, State, or local agency in carrying out its functions.” DPPA 18 U.S.C. § 2721 et. seq.
 - b) Response Analysis and Certification (UCLA & AU).
 - i. Public Technology Transfers; data released in “Energy Technology Transfer(s)” to the public. Data is scrubbed per confidentiality agreements and related as; Whether Part Number meets or does not meet E0-E85 CARB and EPA duration analysis Criteria and IF there is a corrective action for that vehicle specifically or its relative class and what it is.
 - 3. **Phase III – CARB based OEM device testing to Certification and/or Delineated certification by all OEMs.**
 - a. National E0 to E85 Conversion & Retrofit. [Estimated: 1 Yr; \$2M-\$8M]
 - i. Locate and Contact US & Foreign based OEMs.
 - 1) Request conversion OEMs participation.
 - ii. Generate a reusable Project Plan segues into a segmented project dependencies array. This insures sustainable methodology for national transformation relative to this technological roll as a retrofit.
 - 1) Milestone to action levels and cost criteria tracking via MS Project (UCLA & AU).
 - 2) Development (ATDS), Certification CARB, ATDS & EPA), and Deployment (OBSC/OBSI implementation).

- b. Impact Effect/Affect Derivatives Analysis (OBSC, UCLA, AU).
 - i. Report Criteria for Public Release
 - 1) Tangibles.
 - 2) Intangibles.

D. OBSC Research, Development & Implementation (RDI) Team

- b. ***Ohio BioSystems Cooperative (OBSC), Program/Project Management/Developmental Engineering, Testing/Evaluation and Implementation.***
 - i. **Glenn Chipner, Volunteer President & CEO;** Principle Researcher, IT Engineering, Executive Level Program/Project Management and Developmental Implementation; Multifaceted team player; over 24 years of combined experience in the Information Technology, Telecommunications, Audio/Video Technologies, and U.S. Military Intelligence fields. Demonstrated record of accomplishment analyzing/creating business strategies and developing technology response strategies through creative thinking and strong team leadership. Strong focused ability to motivate and communicate at all levels of the business landscape, technology, and Intelligence organizations. Experience encompasses the ability to develop effective business and technological strategic and tactical planning, technology/architectural strategy for large-scale executive program and senior project management planning through various implementation strategies.
 - ii. **Adina Chipner, Executive Communications,** responsible for handling the flow of information through the department and that all material is given to the correct individual to ensure completion. Also responsible for representing the official at meeting or events or even presenting prepared information on behalf of OBSC and for processing all correspondence from the department managers as well as opening and prioritizing all incoming information.
 - iii. **Tim Sage, BIO & Sciences Directorate,** Bachelor of Science degree Ashland University. Taught and instructed 15-35 student classes in Biologic Sciences for college preparatory classes, Junior High and High School Science Biologist, Health and Physical Education instructor.
 - iv. **Bud Stanton, Financials and Financials Inventories,** over 20 years of management, planning and organizational leadership. Experienced in developing, implementing, and overseeing projects. Organized and directed personnel to achieve specific goals. Trained in computer systems, time management, and financial analysis & management.
- c. ***Automotive Testing & Developmental Services (ATDS)/Development & Regulatory Compliance.***
 - i. **Lin Freeman, VP, and Senior Manager of ATDS Testing Laboratories** in Ontario, California specializing in automotive exhaust and evaporative emissions, million plus mile vehicle durability programs, federal, state, and local regulatory automotive certifications for new vehicles and components to California and Federal regulations.
- d. ***Ashland University (AU) & The Dauch College of Business and Economics/Department of Chemistry, Geology & Physics.***
 - i. **Dr. Jeff Weidenhamer, Ashland University Chair** of the Department of Chemistry, Geology & Physics; Laboratory Research & Analytical Chemistry. Trustees' Distinguished Professor of Chemistry Chair, Department of Chemistry, Geology & Physics Ashland University. B.S., Chemistry, Ashland University, M.S., Agronomy, Ohio State University, M.S., Analytical Chemistry, Louisiana State University, Ph.D., Biology, University of South Florida, Postdoctoral, Louisiana State University.
 - ii. **Read Wakefield of Ashland University; Director, The Burton D. Morgan Center for Entrepreneurial Studies;** Grant Management & Implementations advisory council; The Dauch College of Business and Economics, offers state of the art curriculum, facilities, programs and services dedicated to student entrepreneurship across the Ashland University campus as well as support to entrepreneurs in the community at large. Prior to Ashland University, a merger, acquisitions, and strategic planning consulting firm serving manufacturing, distribution and service companies. Industry experience includes marketing and product management positions with ITT Indoor Lighting, a division of International Telephone & Telegraph Corp., and business development, finance, marketing and strategic business units with Ciba Corning Diagnostics Corp., a worldwide leader in medical diagnostics segments and division of Ciba Geigy (now Novartis). B.A. in economics from Denison University and an M.B.A. in marketing and finance from Northwestern University.
- e. ***Ohio State University, Ohio Agricultural Research and Development Center (OARDC)***
 - i. **Dr. Fred Michel** and his research team conduct research and develop engineered systems for the conversion of biomass into bioproducts and bioenergy. Focus is on using agricultural feedstocks and byproducts as well as municipal solids wastes for the production of ethanol, biogas, and compost

products. Methods include bench to full-scale bioreactor systems, thermo chemical pretreatment and process equipment, biomass compositional analysis using HPLC, and microbial community analysis. Research is a central part of the OARDC Bioproducts and Bioenergy Research Center and the Ohio Composting and Manure Management program. An alumnus of the University of Colorado, Boulder from which he earned bachelor's degrees in Biochemistry and Chemical Engineering. Also obtained a Ph.D. in Chemical Engineering from Michigan State University and a Postdoctoral Scientist at the NSF Center for Microbial Ecology. He is currently an Associate Professor in OSU's Department of Food, Agricultural, and Biological Engineering with adjunct status in the Department of Chemical and Biomolecular Engineering. In 2006, he completed a sabbatical leave at the DOE National Renewable Energy Laboratory in Golden, CO. Published 36 peer-reviewed journal articles and has been a PI on externally funded grants of over \$8 M in the last 5 years.

E. Initial Research baselines, Phase I - Development and Implementation Grant Budget (Cost Sharing)

Budget Period: September 2009 – March 2010

Pending CA EC, DOE, and Ohio

Line Items	Cost/P/M	Total
STAFF:		
Salaries – OBSC	3,334	
Health/Life Insurance – OBSC	<u>2,000</u>	
Total Salary and Benefits:	5,334	240,030
TRAVEL (7 Trips and 2 OBSC personnel):		
Airfare (\$1,200/person roundtrip)	2,400	16,800
Vehicle Rentals	1,200	8,400
Lodging	3,500	24,500
Meals (\$64/diem)	1,792	<u>12,544</u>
Total Travel Expenses:		62,244
General & Administrative	37,760	37,760
EQUIPMENT:		
Test vehicles (2) late model, California and Non-California	30,000	60,000
IT (hardware, software and miscellaneous)	25,000	25,000
Office	6,000	<u>6,000</u>
Total Equipment:		91,000
OTHER:		
R. L. Polk Proprietary Vehicle Data		20,000
Telecom, Postage, General Office	750	18,000
Automotive Testing – ATDS		<u>125,000</u>
Total Other:		163,000
E0-E100 Analysis – Ashland University:		
Laboratory Supplies (Gas Chromatography etc.)		1,000
Analytical Sciences		26,000
4 Research Students (Chemistry & Physics)		<u>15,827</u>
Total Laboratory Analysis:		42,827
SUB-TOTAL		636,861
Grant Management Fee – Ashland University		31,843
COST SHARING:		
California EC.	35.0%	\$234,046
D.O.E.	25.0%	167,175
State of Ohio	35.0%	234,046
OBSC	<u>5.0%</u>	<u>33,435</u>
TOTAL PROPOSED BUDGET	100.0%	\$668,704