On-farm Oil Seed Crushing/ Biodiesel Facilities Project

Status Report

for

Colorado Department of Agriculture

November 1, 2009

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Project Background

In recent years Colorado has experienced a decline in agriculture, increasing food and fuel prices, and has developed policies encouraging the use of renewable energy for powering its economy. Small-scale biodiesel production has been studied to increase Colorado's agricultural production, reduce operating costs, and revive the economy with a locally produced, renewable, and high-quality fuel source. Several promising feasibility studies have been completed. This work led to a proposal for "Implementation of Pilot Projects for Colorado Farm-Scale Oil Seed Crushing and Biodiesel Production" and to this project which aims to demonstrate the positive environmental, economic, and social impacts of farm scale biodiesel production in the state of Colorado. Colorado's agricultural sector will benefit by the provision of cheaper fuels with which to run their operations and by the emergence of new value-added production in the form of meal fed to livestock.

Work Completed/Accomplishments

REQUEST FOR PROPOSAL (RFP)

The first step in the contractual Plan of Work was to distribute a request for proposal, initally amongst producers who have already completed a feasibility study. The latter requirement was included in order to achieve the objective of demonstrating economically viable oil seed crushing and farm-scale biodiesel production facilities capable of being replicated by other agricultural producers. Two awards of up to $40,000 each are expected to be made to producers interested in establishing demonstration facilities as part of this Advancing Colorado's Renewable Energy (ACRE) project funded by the Colorado Department of Agriculture (CDA).

An RFP was prepared by iCAST. This RFP allows all producers to participate as long as they provide a simple business plan which can be used as a basis for evaluating feasibility of producer-proposed facilities. The RFP is included in Attachment A. This RFP was issued on September 29, 2009 as follows:

- By calling and e-mailing or mailing a copy to potential producers for whom iCAST had previously performed biodiesel feasibility studies.
- By posting on iCAST's website.
- Through biodiesel industry contacts in Colorado such as the Costilla County Economic Development Council.
- By distribution through selected agricultural agencies.

NETWORKING WITH AGRICULTURAL AGENCIES

The Plan of Work calls for spreading the word about this opportunity through agricultural agencies. The CSU Agricultural Extension Service office was contacted, but the Rocky Mountain Farmer's Union was considered to be the organization best able to timely notify a broad spectrum of Colorado producers. Mick McCallister (RMFU's Director of Communications) agreed to e-mail notice of the RFP to the roughly

half of RMFU's members who are on line. In addition, we spread the word while meeting with agricultural agencies such as the USDA's Burlington office and Akron Research Station on other matters.

DEMONSTRATION SITE CRITERIA

Demonstration sites were proposed to be chosen based on the following criteria:

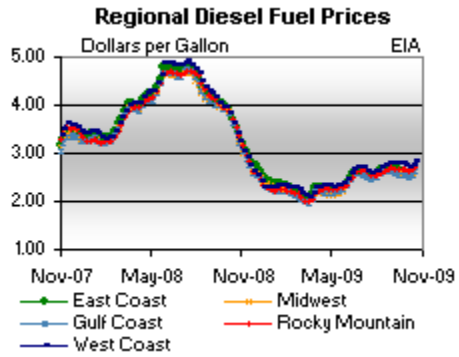
- Feedstock (oil seed) used
- Use of co-products such as meal, glycerin, and wash water on site or in community
- Possibility of project to include neighbors and become a community project
- Willingness of producer to invest time in long term success of project
- Wide geographic allocation

Weighted criteria were developed so that proposals submitted by producers could be evaluated. These criteria include the original ones listed above, together with criteria used to evaluate the economic feasibility of each proposal. The resulting weighted evaluation form is shown in Attachment B.

Problems Encountered/Mitigating Circumstances

RESPONSE TO RFP

Despite the notification to producers detailed above, iCAST has received what it considers to be an unusually low response rate. The main reason for this is the much different economic environment now versus that in 2008 when the project was originally proposed. This has impacted the project in at least two ways. First, the global recession has reduced regional petro-diesel fuel prices from approximately $4.70/gallon in the summer of 2008. Regional prices corresponding to the RFP due date (10/19/09) were $2.70, which represented a decline of $0.85 from a year ago.[1]



Second, the credit crisis makes it much more difficult for producers to commit the resources to acquire equipment for an oil seed crushing and/or biodiesel operation, even though the ACRE grants covered by this project would reimburse up to $40,000 of the producer's cost. Verbal feedback from the producers

[1] http://tonto.eia.doe.gov/oog/info/gdu/gasdiesel.asp U.S. Energy Information Administration

with whom we have spoken, indicates both these economic factors contributed to depressing interest in the RFP.

The RFP only elicited one respondent who submitted an application, plus a handful of respondents expressing initial verbal interest that did not submit applications.

The mitigating circumstance available to iCAST and the State is that the contract schedule will allow for another RFP submittal period, an even more broad-based effort to notify potential producers, and time for producers to consider current, upward-trending diesel prices when it comes time to submit applications. These are discussed in more detail in the Next Steps section that follows.

GEOGRAPHIC REACH

The contract as written calls for "oil seed crushing biodiesel production facilities in *eastern [ital. added]* Colorado". This is an issue given the distribution of potentially interested producers in the southern and western parts of the State, and the lack of RFP responses. This limitation has been discussed with Colorado Department of Agriculture personnel and iCAST will notify CDA of any changes recommended to the above contract language as soon as a final list of applicants from the planned second RFP round is available.

Next Steps

FURTHER PUBLICIZE AND REISSUE RFP

iCAST plans to even more aggressively publicize the RFP and reissue it. Additional ways in which it can be publicized include placing write-ups in the RMFU newsletter (reaching those members not receiving the e-mail alerts), contacting individual Conservation Districts (beyond those already contacted), County Extension Agents, the Farm Bureau, USDA Rural Development, and broadening the outreach campaign to include workshops, conferences, community forums, and local media. These steps were not fully pursued due to: (a) confidence that the most viable producer candidates had been notified of the RFP, and (b) a desire to maximize the amount of time available for demonstration purposes. However, the negative impact of the current recession on the number of applicants was not fully appreciated nor expected.

REWORK EVALUATION CRITERIA

Prior to reissuing the RFP, iCAST will modify the evaluation criteria such that a reasonable number of additional points are awarded to the sole respondent of the first RFP round, and provide CDA with the chance to comment on same, so that this applicant is not penalized by reissuing the RFP. Alternately, iCAST will determine whether this applicant would like to withdraw his current application, modify it, and resubmit his application during the second RFP round.

Updated Project Timeline

TIME AVAILABLE TO FURTHER PUBLICIZE AND REISSUE RFP

iCAST has recently had experience with an oil seed crushing expeller imported from Germany. The procurement process took five months from quote to clearing customs. Adding another three months for installation, commissioning, and demonstration (and two weeks for holiday-related delays) means the project's 4/1/11 end date can still be met, provided RFP responses are received, evaluated, and an award is made to the producers by 7/15/10. Consequently, we propose additional efforts to publicize the RFP through the first Quarter 2010, with a target date of 3/31/10 for reissuing the RFP.

TIMELINE OPTIONS

This revised project timeline presumes changes in the economic climate (including easier credit, higher petro-diesel costs, recovery in commodity prices) that will increase interest in the ACRE funding. Given past trends in these areas, we believe it is very likely we will see these changes occurring to some degree in the first half of 2010. A corresponding increase in the number of applicants will place this project back on track, i.e. bring it into line with expectations about how the contract would be implemented at the time it was awarded.

There is another option, however, which iCAST and the Colorado Department of Agriculture could consider. An award to the first round RFP applicant could be made in parallel with publicizing and reissuing the RFP for the remaining funding. This would help ensure a longer demonstration period by one facility in eastern Colorado prior to the 4/1/11 project end date.

Findings To Date/Conclusion

The primary finding to date is that national and global economic conditions have negatively impacted interest in implementing agricultural biodiesel projects in Colorado. However, it is also reasonable to conclude that the current economic climate will be temporary and that the same drivers that have resulted in several promising feasibility studies of farm-scale biodiesel projects in the state of Colorado over years of research will apply in the future. In addition, recent progress of climate change legislation makes this project all the more relevant, with US Department of Agriculture Secretary Vilsack highlighting the need for--and benefits to producers of--producing biofuels to limit greenhouse gas emissions.[2] Even though the economy is not cooperating, this project's purpose of demonstrating successful on-farm oil seed crushing and/or biodiesel production facilities is still very applicable and achievable.

[2] North American Biochar Conference, Boulder, CO, August 11, 2009.

ATTACHMENT A

9/29/09 REQUEST FOR PROPOSAL

www.colorado.gov/ag

www.iCASTusa.org

REQUEST FOR PROPOSAL TO BUILD BIODIESEL FACILITY

iCAST is pleased to announce that they are the recipients of an ACRE implementation grant from the Colorado Department of Agriculture. iCAST is offering up to $40,000 to successful applicants who will build an on-farm straight vegetable oil and/or biodiesel facility in Colorado. Successful applicants agree to work with iCAST in a timely fashion. The request for proposals can be found at: www.iCASTusa.org/. The deadline for application is 4:30pm on **October 19th**, 2009. Applicants will be notified of a funding decision by October 26th, 2009. Funding is limited to two awards. **All application material should be e-mailed to johnw@iCASTusa.org.** If e-mail is impossible then application may be faxed to (720) 881-4639.

iCAST will reimburse successful applicants following successful installation of equipment. Applicants chosen for funding who have not purchased equipment for reimbursement by May 30th, 2010 will not be eligible for cost share assistance. It is the responsibility of each applicant to obtain necessary insurance, permits and abide by all applicable federal, state and local laws.

This grant is meant to fund projects to demonstrate the applicability of farm and community scale straight vegetable oil and biodiesel production. Successful applicants agree to cooperate with iCAST (International Center for Appropriate & Sustainable Technology) in coordinating a tour to showcase their operation once operational. Grant recipients also agree to cooperate with iCAST on the creation of educational material. For questions call John Winkel at: 866.590.4377 x809 or Luke Ilderton at: x810 or e-mail us at: johnw@iCASTusa.org or lukei@iCASTusa.org.

Applicants must provide a business plan and completed application form. Ranking will prioritize farm and community scale operations. Additionally, consideration will be given to operations that have plans to maximize net energy gain, environmental stewardship and economic viability. The project's current status and the level of local involvement as well as geographic coverage will also be taken into account.

International Center for Appropriate & Sustainable Technology
8745 W 14th Avenue, Suite 220, Lakewood, CO 80215 p 866.590.4377 f 720.881.4639 info@iCASTusa.org www.iCASTusa.org

COLORADO DEPARTMENT OF AGRICULTURE
www.colorado.gov/ag

iCAST
www.iCASTusa.org

APPLICANT INFORMATION

Name: _____
Phone number: _____
e-mail: _____
Date: _____
Physical Address: _____
City: _____ County:_____ State:_____ Zip:_____

Mailing Address (If different): _____
City: _____ County:_____ State:_____ Zip:_____

PROPOSED SYSTEM INFORMATION

1. **Please attach business plan.**

2. **Feedstock:**
   - Describe the feedstock and source to be used in the facility: _____
   - Total quantity to be used in a year: _____
   - Estimated cost: _____

3. **Facility location:**
   - Address of the proposed facility: _____
   - Please attach pictures if available of the facility site and any existing building (and equipment) that will be used.
   - Please attach a map indicating location of proposed facility.

4. **Energy:**
   - What will be the source of power for the facility: _____

5. **Equipment:**
   - Proposed oil extraction equipment: _____
   - Manufacturer's web address: _____
   - Capacity: _____
   - Proposed filtering equipment: _____
   - Manufacturer's web address: _____
   - Capacity: _____
   - Proposed reactor details: _____

6. **Output:**
   - Predicted Annual Output: _____ gallons
     - How was it determined: _____

7. **Co-products:**
   - How will meal be used: _____
   - How will glycerol be used: _____

8. **Environmental Concerns and Initiatives**
   - Please describe environmental concerns and initiatives that relate to the project.

     _____

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ATTACHMENT B

WEIGHTED EVALUATION CRITERIA

FOR REVIEWING PRODUCER PROPOSALS

	Producer	Total Points	Feasibility/Bus.Plan:		
			BreakEven	ROI	Vol (gal/yr)
Producer	Points	100	10	10	10
No.	%		10%	10%	10%
1					
2					
3					
4					

	Feedstock	Use of co-products:			Reach:	
		Meal	Glycerin	WashH_2O	Farm	Community
Producer		5	5	5	5	10
No.		5%	5%	5%	5%	10%
1						
2						
3						
4						

	Producer Investment:			Location:	Demo Support:
	Equip$ tot	$ to date	Op $		
Producer	8	10	5		5
No.	8%	10%	5%		5%
1					
2					
3					
4					

	Environmental:	-pollutants:			Comments
	GHG<t/yr>	Methanol	Air	Water	
Producer	3	3	3	3	
No.	3%	3%	3%	3%	
1					
2					
3					
4					