REQUEST FOR EXPRESSIONS OF INTEREST ("RFEI")

FOR

SOURCE-SEPARATED ORGANIC MATERIALS PROCESSING FACILITY

DUE DATE FOR RESPONSES – June 1, 2012

Connecticut Resources Recovery Authority
100 Constitution Plaza, 6th Floor
Hartford, Connecticut 06103-1722

April 10, 2012

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Source Separated Organic Materials Processing Facility
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Introduction

The Connecticut Resources Recovery Authority (CRRA) is in the initial stages of evaluating the feasibility of developing a source separated organic materials processing facility to convert source separated organic materials (SSOM, primarily food waste) to renewable energy (electricity or fuels) and/or useable compost. As part of this evaluation, CRRA is seeking information and expressions of interest from companies who are capable of designing, building, and operating such a facility. CRRA will manage environmental permitting.

CRRA is a quasi-public entity, a body politic and corporate, created pursuant to C.G.S. Chapter 446e, Section 22a-261 as a public instrumentality and political subdivision of the State of Connecticut. CRRA has the responsibility for developing and implementing environmentally sound solutions and best practices for solid waste disposal and recycling on behalf of, and in the best interests of the municipalities and residents of Connecticut. CRRA oversees a regional waste-to-energy system in Central Connecticut, a single-stream recycling facility, five transfer stations, and five closed landfills.

Prompting CRRA's evaluation is recent legislation enacted in Connecticut mandating recycling and composting of source separated organic materials. In 2011, the State of Connecticut enacted Public Act No. 11-217, "An Act Concerning the Recycling of Organic Materials by Certain Food Wholesalers, Manufacturers, Supermarkets and Conference Centers". Effective October 1, 2011, the Act requires that commercial food wholesalers or distributors, industrial food manufacturers or processors, supermarkets, resorts, or conference centers that each generate not less than 104 tons per year of source separated organic materials, separate such materials from other waste and recycle such materials at a permitted source-separated organic materials processing facility either on the generator's site or not more than 20 miles from the generator. See Attachment 2 to this RFEI for a copy of the Act. Currently there is one facility operating in Connecticut Source separated organic materials as defined by the Act "means organic material, including, but not limited to, food scraps, food processing residue and soiled or unrecyclable paper that has been separated at the point or source of generation from nonorganic material".

CRRA has not at this time determined the quantity of SSOM that may be available for a facility. CRRA is considering potential sites for a facility in Central Connecticut, but a specific location has not yet been selected. Through this RFEI, CRRA is seeking information from interested companies to assist it in determining technologies that may be suitable, the size for such a facility to be technically and economically viable, the acreage required to site a facility and estimated costs. CRRA is also seeking to determine the level of market interest from companies to design, build, and operate such a facility. Technologies to be considered include high and low solids anaerobic digestion technologies. At this time CRRA is focused

primarily on anaerobic digestion technologies; however, companies which would like to submit information regarding traditional aerobic composting technology may do so.

It should be noted that this RFEI is not a formal procurement for services and providing a response to this request does not assure that CRRA will move forward with a project or that your company would be selected for services. This is solely a request by CRRA to obtain relevant information from interested companies.

Included in the remainder of this RFEI is a description of the information requested from interested companies and instructions for preparing a response.

Evaluation Process

In order to complete the evaluation for technologies, information categories have been established to describe information needs (see Attachment 1).

Request for Expressions of Interest

Companies responding to this RFEI are requested to provide information that enables CRRA to conduct an evaluation with current information regarding the company's technology, and the company's experience and qualifications. Attachment 1 provides guidance regarding the information to be submitted for each category of interest. It is requested that respondents supply as much information as is readily available for their technology. The more complete the response, the more accurately the evaluation can reflect the attributes of a particular technology.

Responses should be based on a project concept whereby the CRRA would finance and own the facility, permit the facility, enter into a 20 year organics material supply and operating agreement with the company, and provide a site for the facility. The company would design, build, and operate the facility. The company would also be responsible for marketing all products, would benefit from the revenues from sale of products, and would dispose of any residue from the facility. Responses to this RFEI should also be based on the following assumptions:

- **Project Size.** The project is to be a commercial (i.e., not a demonstration) facility designed to process SSOM. The favored technology is high or low solids anaerobic digestion; however, submitters may offer a traditional aerobic composting technology. A specific project size has not yet been selected. Respondents may respond for one or more of the facility size ranges described herein.
  - Up to 10,000 tons per year (TPY) of SSOM;
  - From 10,000 TPY to 30,000 TPY of SSOM; and
  - From 30,000 TPY to 60,000 TPY of SSOM.

- **Project Location.** CRRA is considering sites in Central Connecticut. A specific site has not yet been selected for the facility. Responses to the RFEI should state the acreage required to develop a facility, including consideration of space that will be left as open space used to buffer the visual or environmental impacts of the facility. Respondents should also describe site features that are considered favorable for siting a facility, including consideration of zoning and adjacent land use.

- **Environmental Considerations.** Respondents to the RFEI should assume that the facility will be designed, constructed and operated to comply with all Federal, State and local requirements for air emissions control, noise standards, stormwater management, water use, wastewater discharge and solids disposal. Companies should plan to enclose all waste receiving, processing and storage areas, and product storage areas, and treat odor emissions from such facilities. Final cure areas must be enclosed and odors treated, unless the company can demonstrate via an alternative design that such an enclosure is not necessary for odor control. Noise sources should be isolated and controlled to reduce noise impacts. Potable consumptive water use should be minimized. Process wastewater discharges should be minimized by reuse of facility process wastewater. Consideration should be given to minimizing the visual and environmental impact of the facility by creative use of berms and landscaping.

- **Production of Electricity and/or Gas, Fuel, Compost, Other Recovered Materials.** The Respondent should identify what products are produced and likely markets and values for such products.

RFEI Process

The schedule for the RFEI is as follows:

- Issue RFEI: April 10, 2012
- Deadline for Submitting Questions to CRRA: No later than May 18, 2012
- Responses Due: June 1, 2012.

Responses should be submitted electronically to the CRRA, attention Peter Egan, by 4:00 PM, local time on the due date specified above. Please submit responses to: Peter Egan at Pegan@crra.org with a copy to CRRA's consultant, Alternative Resources, Inc., care of Jim Binder at JBinder@alt-res.com. Also, one hard copy of the submittal should be sent to Peter Egan, Director of Operations & Environmental Affairs, Connecticut Resources Recovery Authority, 100 Constitution Plaza, Hartford, CT 06103-1722.

Any questions should be submitted electronically to both Peter Egan Pegan@crra.org, and Roger Guzowski rguzowski@crra.org.

Responses to questions will be provided by email to all parties that notify CRRA that they are interested. Such notifications will be made by email to both Peter Egan Pegan@crra.org, and Roger Guzowski rguzowski@crra.org.

Please note: to preserve the confidentiality of sensitive information that is requested through the RFEI (i.e., cost information), such information will be treated as confidential information to the extent permitted by law. Other information will be considered as public information.

Also, Respondents to the RFEI should note that CRRA will consider any cost or revenue information to be "planning level" estimates and not constituting formally proposed or guaranteed values.

Attachment 1

Information Requested

Information Category	Requested Information
1. **Technology Description**	• Describe, in narrative form, the proposed technology along with a description of how a facility would work including, as applicable: receipt of waste, preprocessing, aerobic or anaerobic digestion, precleaning of biogas, if any, prior to use for energy generation, energy or fuel generation, curing and post-processing of compost, and product and residue management. Provide an accompanying schematic process flow diagram to illustrate the narrative description. • Identify the plant capacity (short tons per day) and annual processing capacity (short tons per year, accounting for planned and unplanned maintenance and outages). Describe the number of processing lines and unit capacities to meet the overall facility capacity. Describe whether unit capacities and facility capacity are comparable to existing applications of the technology, or how scale-up will be achieved. Identify the annual availability of the facility and the annual waste throughput anticipated and describe how these estimates are comparable to existing applications of the technology. • Describe how the facility would be modularly expanded, if required over the 20 year operating term. • Identify the acreage required to develop the proposed facility. If the facility were to be expanded in size by 50% over a 20 year term, how much additional acreage is required? • Describe favorable attributes for a facility site, e.g., zoning, surrounding land use. • Provide a site drawing showing layout of buildings, structures, outside equipment, roadways. A site drawing for an existing, comparable facility by the respondent is acceptable. • Provide elevation drawings, if available for existing facilities, showing major buildings, structures, outside equipment. A drawing(s) for an existing, comparable facility by the respondent is acceptable. • Provide an artist's rendition of the facility, or photographs of a similar, existing facility. • Identify what outside utilities will be required at facility capacity-water, sewer, electric and natural gas.
2. **Facility Useful Life**	• Describe the useful life of the technology. Provide available supporting information, such as the length of time existing facilities have operated and the contractual operating periods for such facilities. If operating histories do not directly provide evidence of a 20-year useful life, provide information on fabrication, construction, operations, maintenance and/or capital replacement strategies intended to assure such useful life.

Information Category	Requested Information
3. **Source Separated Organic Materials Throughput, Products and Residue Produced.**	• Provide estimates (in short tons per day and in short tons per year) of the amount of SSOM that would be processed, recovery of any recyclables, the generation of compost and the amount of residue requiring disposal. Estimate the amount of energy produced (including biogas, electricity, fuels, as applicable). For recovered recyclables, identify the recyclable product and the quantity of material recovered for sale. For compost, describe the quantity and quality of the compost product produced and to be sold. For electricity or biogas generation, show both gross production and net quantity to be sold, after accounting for in plant use. For biogas please also describe its characteristics; i.e., percent of methane, carbon monoxide, carbon dioxide, other major constituents in the biogas, and its intended end use, such as for combustion to generate electricity, for pipeline injection, or for production of CNG, or other fuels. Please identify the facility annual availability (accounting for both planned and unplanned maintenance and outages) used for the above calculations. • Identify and describe the quantity of any materials, in addition to compost, that would be recovered through pre-processing or post-processing of the SSOM and sold as products. • Describe the quantity and quality of the residue resulting from the process that would require landfill disposal, including identification of the source of that residue in the process. • Provide available supporting information, such as diversion data from existing operating facilities.
4. **Facility Economics**	• For the proposed facility capacity, provide *planning-level* cost and pricing estimates (in 2012 dollars), including design and construction cost, operating cost, and product revenue (by product). See specifics below. Provide a breakdown of capital cost including: design and construction, and cost for structures, equipment, environmental control systems, utilities, ancillary systems, mobile equipment, and other costs. (Note: for purposes of this information, assume that site preparation costs do not include the need for pilings or abnormal foundations.) • Identify the number of construction workers anticipated. • Provide a breakdown of operating costs including: labor, utilities, chemicals, maintenance and repair, capital repair and replacement, and residuals disposal costs. (Note: for residuals disposal costs assume $80 per ton for transportation and disposal.) • Provide a staffing plan for the proposed facility, corresponding to the planning-level operating costs. In said staffing plan, identify the number of shifts per day, number of staff per shift and shift schedule. • Provide a breakdown of potential revenues by product type. • Provide an anticipated schedule for design and construction of the facility. • Provide a statement describing your ability to finance the facility, if requested to do so by CRRA. If private financing can be offered, provide a brief financing plan indicating the type of financing, e.g. from internal resources or a combination of debt and equity. Also, provide an economic proforma for the project for that case, assuming a 20 year operating period. **[NOTE: Respondents to the RFI should note that the CRRA will consider any**

Information Category	Requested Information
	cost or revenue information provided to be "planning level" information and not constituting formally proposed or guaranteed values as would be proposed and committed to as part of a formal procurement process. Also, to protect the confidentiality of sensitive information, please note that pricing information will be treated as confidential information to the extent permitted by law.]
5. **Marketable Products**	• Provide a listing of all potential products, including recovered recyclables, compost, electricity and/or gas or fuel products, and expected revenues by product (unit-price basis). For each product, identify in general terms the expected market and describe the anticipated strength of that market. • Describe contingency plans for products that may have less certain markets. • Describe experience in marketing products at existing facilities.
6. **Environmental Permits and Controls**	• Describe the facility design and operational measures to be taken to conform to anticipated environmental requirements identified in this RFI (See Section entitled "Request for Expressions of Interest", subsection entitled "Environmental Considerations".) For example, describe anticipated air pollution control devices and their effectiveness, noise and odor abatement measures, means to reduce consumptive water use and process wastewater discharge, stormwater management, and measures to reduce the visual impact of the facility. • Describe generally the types of permits expected to be needed to implement the technology. Note: CRRA will take the lead to obtain the environmental permits for the facility, and will be the permittee. • Describe expected environmental performance, and provide any supporting information associated with existing facilities (e.g., air emissions data as described below; consumptive water use; process wastewater quantity and quality; residuals disposal: traffic impacts; site and aesthetic considerations). • Identify the type and quantity of off-road equipment (e.g., front end loaders) to be used at the facility • Identify the number and describe the type of trucks that would be used to transport products and residue from the facility.
7. **Reference Facility(ies)**	• Provide a listing of the facilities that are currently or have previously been in operation, indicating location and name of facility, facility capacity, unit capacity, period of operation (including if operated continuously or on a limited basis), type of operation (e.g., demonstration or commercial facility), and type of waste processed. • Identify the facility or facilities that provide the best demonstration of the technology. • If available, provide photographs of the technology and facilities in a jpg format.
8. **Company Capabilities and Experience**	• If teaming arrangements exist or are in the process of being formed, identify principal project participants (e.g., lead developer; project manager; owner; investment banker or funders; engineering procurement and construction (EPC) contractor; suppliers of major equipment; operator; etc.).

Information Category	Requested Information

	• Describe the resources and experience of individual project team members in the following key areas, as applicable:
	  ○ Project development, design and construction, and operation of municipal solid waste facilities in general, and utilizing the proposed or similar technology
	  ○ Project financing experience
	  ○ Public-private partnership experience in the U.S. for municipal solid waste projects, including experience in responding to public procurements
	  ○ Experience marketing products from the technology
	• Provide the most recent information that is in the public domain, describing the financial resources of the company and project team members, e.g., annual report or comparable financial statement.
	• As applicable, describe the experience of the project team in working together previously in development, permitting, design, construction and operation of a solid waste management facility and with the proposed or similar technology, providing specific project examples, where available.

Attachment 2

Public Act No. 11-217

Substitute Senate Bill No. 1116

Public Act No. 11-217

AN ACT CONCERNING THE RECYCLING OF ORGANIC MATERIALS BY CERTAIN FOOD WHOLESALERS, MANUFACTURERS, SUPERMARKETS AND CONFERENCE CENTERS.

Be it enacted by the Senate and House of Representatives in General Assembly convened:

Section 1. Section 22a-207 of the general statutes is amended by adding subdivision (29) as follows (*Effective October 1, 2011*):

(NEW) (29) "Source-separated organic material" means organic material, including, but not limited to, food scraps, food processing residue and soiled or unrecyclable paper that has been separated at the point or source of generation from nonorganic material.

Sec. 2. Section 22a-260 of the general statutes is amended by adding subdivisions (26) and (27) as follows (*Effective October 1, 2011*):

(NEW) (26) "Composting facility" means land, appurtenances, structures or equipment where organic materials originating from another process or location that have been separated at the point or source of generation from nonorganic material are recovered using a process of accelerated biological decomposition of organic material under controlled aerobic or anaerobic conditions.

(NEW) (27) "Source-separated organic material" means organic material, including, but not limited to, food scraps, food processing residue and soiled or unrecyclable paper that has been separated at the point or source of generation from nonorganic material.

Sec. 3. (NEW) (*Effective October 1, 2011*) (a) Not later than six months after the establishment of service in the state by two or more permitted source-separated organic material composting facilities, as defined in section 22a-207 of the general statutes, as amended by this act, that have a combined capacity to service the needs of commercial food wholesalers or distributors, industrial food manufacturers or processors, supermarkets, resorts or conference centers that each generate an average projected volume of not less than one hundred four tons per year of source-separated organic materials, each commercial food wholesaler or distributor, industrial food manufacturer or processor, supermarket, resort or conference center that generates an average projected volume of not less than one hundred

four tons per year of source-separated organic materials shall: (1) Separate such materials from other solid waste; and (2) ensure that such source-separated organic materials are recycled at a permitted source-separated organic material composting facility that is not more than twenty miles from such wholesaler, distributor, manufacturer, processor, supermarket, resort or conference center, as applicable.

(b) Any such wholesaler, distributor, manufacturer, processor, supermarket, resort or conference center that performs composting of source-separated organic materials on site or treats source-separated organic materials via on-site organic treatment equipment permitted pursuant to the general statutes or federal law shall be deemed in compliance with the provisions of this section.

(c) Any permitted source-separated organic material composting facility that receives such source-separated organic materials shall report to the Commissioner of Environmental Protection, as part of such facility's reporting obligations, a summary of fees charged for receipt of such source-separated organic materials.

Approved July 13, 2011