



**REQUEST FOR PROPOSALS FOR THE FINANCING, DESIGN,  
CONSTRUCTION, OPERATION, AND MAINTENANCE OF A SOLID  
WASTE MANAGEMENT PROJECT**

**ISSUED BY THE COMMISSIONER OF THE DEPARTMENT OF ENERGY AND  
ENVIRONMENTAL PROTECTION, IN CONSULTATION WITH  
THE MATERIALS INNOVATION AND RECYCLING AUTHORITY**

**NOVEMBER 6, 2015**

**JANUARY 13, 2016: AMENDED WITH NEW PROPOSAL SUBMISSION  
DEADLINE OF MARCH 15, 2016. SEE CHANGES  
ON PAGES 10 AND 13 OF THIS DOCUMENT.**

**FEBRUARY 3, 2016: AMENDED WITH NEW QUESTION DEADLINE  
OF FEBRUARY 19, 2016. SEE CHANGE ON PAGE  
10 OF THIS DOCUMENT.**



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## Introduction

In 2014 Connecticut Governor Dannel P. Malloy signed Public Act 14-94, calling for the Commissioner of the Connecticut Department of Energy and Environmental Protection (CT-DEEP), in consultation with the Materials Innovation and Recycling Authority (MIRA), to solicit proposals for the redevelopment of the Connecticut Solid Waste System Project (CSWSP). Following the selection of a final proposal, CT-DEEP will direct MIRA to enter into agreements with the selected developer to execute the project.

### I. Description of the Connecticut Solid Waste System Project

The Connecticut Solid Waste System Resource Recovery Facility (CSWS RRF) (formerly referred to as Mid-Connecticut RRF), has operated since 1988 with a permitted capacity to process 888,888 tons of Municipal Solid Waste (MSW) per year. The CSWS RRF is approaching the end of its service life and must be upgraded or replaced. The facility is at the hub of a “hub and spoke” system of facilities that are owned and managed by MIRA (formerly Connecticut Resources Recovery Authority or CRRA).

The CSWSP is composed of six (6) facilities (collectively the Facilities):

- the Connecticut Solid Waste System Resource Recovery Facility (CSWS RRF) in Hartford, CT;
- the MIRA CSWS Recycling Facility in Hartford, CT;
- a transfer station in Watertown, CT;
- a transfer station in Torrington, CT;
- a transfer station in Essex, CT (site owned by Town of Essex, leased to MIRA); and
- a transfer station in Ellington, CT (not currently in operation).

Detailed descriptions of the currently operating Facilities and the CSWSP sites on which they are located are found in Appendix I. Permits, operations plans, and other information can be accessed at [www.ct.gov/deep/ResourceRediscovery](http://www.ct.gov/deep/ResourceRediscovery). Additional information pertaining to the existing sites and facilities will be posted on or before December 1, 2015, and updated as needed.

### II. Purpose

#### 1. General

CT-DEEP encourages all interested and qualified proposers to submit proposals pursuant to this RFP on or before March 1, 2016, for the financing, design, building, operation, and maintenance of a solid waste management project, as well as the marketing of recoverable materials, products and/or energy recovered therefrom.

#### 2. Goals of the Project

The proposals shall take into account the following goals of CT-DEEP:

- i. The selected project will result in an integrated materials management system modeled after the state’s materials management hierarchy. Thus, the project will maximize materials recovery, with remaining waste managed through efficient conversion to compost, renewable energy, fuel, chemicals, and/or other usable products. A successful project will



be consistent with achieving the state's goal of 60 percent diversion from landfill and combustion by the year 2024.

- ii. To serve contracted communities and other customers, the selected project will have the capacity to process a minimum of 1,500 tons/day of post-recycled MSW (465,375 TPY at 85% availability) and 50,000 TPY of source-separated recyclables, and up to 2,250 tons/day of post-recycled MSW (698,063 TPY at 85% availability) and 100,000 tons/year of source-separated recyclables. As detailed in this RFP, proposers are to describe their ability to provide both system capacities in the proposal.
- iii. The selected project will provide stable and competitive pricing for municipalities, including the ability to provide uninterrupted services to the Connecticut towns under contract with MIRA through the year 2027 at contracted or lower prices (and within contracted opt-out prices for Tier 1 long-term municipal service agreements).
- iv. The selected project will enhance host communities by providing quality jobs, purchasing of local goods and services, and taking steps to mitigate potential negative impacts such as traffic, odors, human health and environmental impacts.
- v. The selected project will maintain services at CSWSP transfer stations for as long as required by current contracts through the year 2027.
- vi. The selected project will minimize negative environmental and health impacts of waste management, including minimizing greenhouse gas emissions.
- vii. The selected project will continue current practices for source separation and collection of designated recyclables (including glass and metal containers, HDPE and PETE plastic containers, paper, old corrugated cardboard; yard waste; and food scraps).
- viii. The selected project will include technologies to sort incoming post-recycled MSW to recover additional recyclables and organics and/or achieve optimal feedstock compositions for conversion to compost, fuels, chemicals, electricity or other products.
- ix. It is planned that the project will be privately financed. The state retains the right of public financing.
- x. The selected project will make use of existing sites within the CSWSP as advantageous and to the greatest extent possible.
- xi. The selected project will make use of the existing patterns of municipal and subscription-based collection services for waste and recycling.
- xii. The selected project will commence operations within five (5) years of contract execution, contingent upon timely state and local approvals.



### 3. Diversion

The RFP criteria allow a range of technologies and configurations to achieve the goal of 60 percent diversion of MSW from landfill and combustion. Materials that are combusted, including through processes with advanced thermal recovery, and materials that are disposed in a landfill, are not considered to be diverted. Residues left over from conversion processes that are subsequently combusted or sent to a landfill are not considered diverted. Currently, Connecticut estimates a rate of diversion of 35 percent, based on recycling, yard waste composting, home composting, and bottle deposit redemptions. Therefore, proposals may assume 35 percent diversion as a baseline that is currently achieved with no technological changes.

Technologies that may be considered to increase diversion include but are not limited to:

- Materials Recovery Facilities
- Mixed Waste Processing Facilities (to separate organics from post-recycled MSW and/or otherwise preprocess the waste for further conversion or use)
- Anaerobic Digestion
- Composting
- Gasification (including plasma arc, pyrolysis, and other forms of gasification)
- Other conversion processes that convert waste to renewable fuel, chemicals, electricity or other usable products

Consistent with Connecticut's materials management hierarchy, waste combustion for energy recovery may be acceptable means of disposal once diversion is achieved, with landfill disposal as the least-favored option.

### 4. Use of CSWSP Sites

This RFP provides certain assumptions proposers should use in crafting proposals. These assumptions are necessary to provide all proposers with a common baseline to understand their costs. Final agreements to utilize sites for development are subject to negotiations between the relevant parties. See Section III for a description of the procurement phases for this RFP.

Proposals for Phase 1 of this RFP process may be submitted under the assumption that each of the Facilities at each of the CSWSP Sites, with the exception of the transfer station in Essex, will be leased by MIRA for one (1) dollar per year each for a term of 30 years for each site. Proposals that address the Essex Transfer Station may assume, for the purpose of Phase 1 only, the option to lease the site from the Town of Essex at the current rate, which is \$15,000 per year through the year 2027. Notwithstanding these assumptions, proposals may include other arrangements for use of the Facilities at the CSWSP Sites within the limits set forth by the Minimum Evaluation Criteria as defined in Appendix III.

### 5. Host Community Agreements

The selected facility developer, in coordination with MIRA or on its own, will negotiate host benefit agreements with host communities, and may be subject to any applicable taxes. The costs and details of such agreements will not be considered in Phase 1.



## 6. Permits

The selected project developer must secure all necessary state and federal permits and local approvals before commencing construction of the project. Current CSWSP permits, which may in some cases be transferred to the selected project, are available at: [www.ct.gov/deep/ResourceRediscovery](http://www.ct.gov/deep/ResourceRediscovery).

## 7. Available Waste and Recyclables

MIRA is currently in contracts with fifty-one (51) towns that together send over 350,000 tons per year of post-recycled MSW and over 40,000 tons per year of recyclables to the CSWSP for processing (see Summary Table below). In addition, the CSWSP receives approximately 400,000 tons/year, on average, of additional post-recycled MSW from private haulers, and an additional 10,000 tons of recyclables.

Prior to entering an agreement with the selected developer, MIRA may renew or establish new contracts. For purposes of Phase 1 of this RFP, proposers should assume sufficient waste and recyclables will be available for the system capacities called for by this RFP.

Proposals may also assume that the project will not be limited to materials from towns currently under contract; it may source MSW and recyclables from inside or outside the current service area and use the transfer station infrastructure of the project to deliver such materials for processing. In such case, contract communities in the CSWSP service area shall receive priority for delivery of waste and recyclables, and tip fees at point of delivery to the processing facility(ies) shall be no higher than those for waste or recyclables received from outside the CSWSP service area.

A list of municipal service agreements, a summary of key terms and conditions, and web links to MIRA's template municipal service agreements are available at: [www.ct.gov/deep/ResourceRediscovery](http://www.ct.gov/deep/ResourceRediscovery).

	Post-Recycled MSW (to CSWS RRF)	Single Stream Recyclables including clean paper, glass, plastics, OCC, ferrous and nonferrous metals (to the MIRA CSWS Recycling Facility)
Tier 1 Long-Term (ending 6/30/27)	207,401.34	33,939.75
Tier 3 Long-Term (ending 6/30/27)	2,504.41	504.55
Tier 2 Short-Term (ending 6/30/17)	147,317.08	9,501.26
Total from Contracted Towns	357,222.83	43,945.56

## 8. Waste Characterization

2010 and 2015 waste characterization reports will be posted online on or about December 1, 2015 at [www.ct.gov/deep/ResourceRediscovery](http://www.ct.gov/deep/ResourceRediscovery).



### III. RFP Process

#### 1. Overview of RFP Process

This RFP process will be conducted in two (2) phases:

- In Phase 1, CT-DEEP will receive proposals and based on the review as described in the RFP, select up to three (3) finalists (the Finalists).
- In Phase 2, the Finalists will be invited to respond to a supplemental RFP (i) to conduct further analyses based on the specific technology or mix of technologies proposed during Phase 1, and (ii) to submit a final proposal including (a) firm pricing and additional details on the technical approach, proposed project structure, such as business, marketing, legal, financing, and administrative aspects of the project (this additional information taken together shall comprise the “feasibility study” described by CGS Sec. 22a-268g), and (b) contracts, firm letters of intent, or memoranda of understanding with lenders, financial sponsors, guarantors, and insurers required to proceed swiftly with contract negotiations with MIRA and CT-DEEP. At the conclusion of Phase 2, CT-DEEP will select one or more Finalist(s) on the basis of the responses to both Phase 1 and the supplemental RFP in Phase 2.

#### 2. Project Agreements

Following a final selection, CT-DEEP will direct MIRA to enter an agreement for the redevelopment of the CSWSP in accordance with CGS Sec. 22a-268g.

#### 3. Additional Information on RFP Website

This RFP, all appendices, any supplements or clarifying statements, answers to questions received, copies of permits, operations and management plans, example municipal contract terms, and other documents will be posted online at [www.ct.gov/deep/ResourceRediscovery](http://www.ct.gov/deep/ResourceRediscovery). All proposers are encouraged to review this information and check often for updates.

#### 4. Timetable for RFP Phase 1

All dates below are subject to change at the discretion of CT-DEEP:

11/17/15, 12/1/15	Proposers' Conferences
<b>2/19/16</b>	<b>Last date for questions</b>
<b>3/15/16</b>	<b>Phase 1 proposals due</b>
3/16-4/16	Interviews (if required by selection team)
5/30/16	Phase 1 Finalists announced. Supplemental Phase 2 RFP issued within 60 days of announcement of Phase 1 Finalists.



11/1/16	Phase 2 Proposals Due
7/31/17	Final selection announced

### 5. Pre-proposal Conferences

Two pre-proposal conferences will be held November 17, 2015 and December 1, 2015, at the MIRA Trash Museum, 211 Murphy Rd., Hartford beginning at 8 a.m. Interested parties may attend one or both dates. Attendance is not mandatory.

These conferences will include a Q&A session that will be recorded and posted to the project website at [www.ct.gov/deep/ResourceRediscovery](http://www.ct.gov/deep/ResourceRediscovery) as well as tours of the MIRA CSWS Recycling Facility and the CSWS Resource Recovery Facility. Thereafter, follow-up visits to these facilities and visits to CSWSP transfer stations may be requested by appointment.

Attendees should register using the links provided at [www.ct.gov/deep/ResourceRediscovery](http://www.ct.gov/deep/ResourceRediscovery).

### 6. Proposal Bond or Deposit

Phase 1 proposals must be accompanied by a bond or certified/cashier's/treasurer's check in the amount of \$25,000, payable to **CT-DEEP Commissioner**. The bond or deposit is subject to full or partial forfeiture if a proposer withdraws from the process prior to selection of the Phase 1 finalists, is selected as a Phase 1 finalist and fails to respond to the Supplemental RFP (Phase 2) or thereafter fails to proceed in good faith negotiations of a contract. At the conclusion of Phase 1, bonds and deposits will be refunded to proposers who are not selected to continue in Phase 2. At the conclusion of Phase 2, all remaining nonforfeited bonds and deposits will be returned to Finalists.

### 7. Proposal Team

Companies may propose independently or as part of a proposal team with other companies.

### 8. Amended Proposals

In Phase 1 and Phase 2, CT-DEEP may invite amended proposals based on new information. In that event, all proposers from that particular procurement phase will be given the opportunity to make amended proposals according to the guidance issued by CT-DEEP.

### 9. Communications

CT-DEEP welcomes questions, comments, and other communications until February 5, 2016. Parties should not expect to receive individual replies. Periodically, CT-DEEP will post summaries of questions and answers at [www.ct.gov/deep/ResourceRediscovery](http://www.ct.gov/deep/ResourceRediscovery).

**All communications must be conducted via email to [DEEP.RFP@ct.gov](mailto:DEEP.RFP@ct.gov).** Phone calls will not be returned.

All communications should state the name and affiliation of the inquiring parties.



## 10. Disqualifying Conduct

Any proposer or proposer's representative who seeks to influence the RFP process to gain an advantage may be barred from submitting a proposal or from having a proposal considered at the sole discretion of CT-DEEP. Examples of prohibited conduct include but are not limited to:

- Engaging in direct communication on any matter related to the RFP with any individuals involved in the evaluation or selection of proposals, except through the procedures outlined in this RFP or subsequently set forth by CT-DEEP.
- Requesting or otherwise obtaining records related to any proposal at any time before a contract award is announced.

## 11. Rights of the State

CT-DEEP reserves, holds and may exercise, at its sole discretion, the following rights and conditions with regard to this RFP (Phase 1 and Phase 2). By responding to this RFP, proposers acknowledge and consent to the following conditions relative to the procurement process and the selection of Finalists:

- This RFP does not obligate the State or MIRA to procure or contract for any services.
- CT-DEEP reserves the right to change or alter at any time the schedule for any events associated with this procurement upon notice to the proposers, and a proposer by submitting a proposal agrees to be bound by any modification made by CT-DEEP.
- All costs incurred by a proposer in connection with responding to this RFP, the evaluation and selection process undertaken in connection with this procurement, and any negotiations entered into in connection with developing the contract will be borne by the proposer.
- CT-DEEP reserves the right to reject, for any reason, any and all proposals and components thereof and to eliminate any and all proposers responding to this RFP from further consideration for this procurement.
- CT-DEEP reserves the right to eliminate any proposer who submits incomplete or inadequate responses or is not responsive to the requirements of this RFP.
- CT-DEEP reserves the right, at any time, to determine that any or all proposers will not be selected for further consideration and to notify such proposers of CT-DEEP's determination.
- CT-DEEP may require proposers to send representatives to its offices for interviews and presentations.
- CT-DEEP reserves the right to discontinue negotiations with any proposer.
- CT-DEEP reserves the right to negotiate with one or more proposers, sequentially or concurrently.



- CT-DEEP may conduct clarification discussions, at any time following the submission of proposals, with one or more proposers.
- CT-DEEP reserves the right to receive questions concerning this RFP from proposers and to provide such questions, and the CT-DEEP's responses, if any, to all proposers.
- CT-DEEP reserves the right, for any reason and without prior notice, to supplement, amend or otherwise modify this RFP, or otherwise request additional information.
- Any and all responses not received by the proposal due date, will be rejected and returned.
- All proposals become the property of the CT-DEEP and will not be returned.
- All activities related to the project shall be subject to Applicable Law.
- Neither CT-DEEP, MIRA, its staff, its representatives, nor any of its consultants or agents will be liable for the completeness or accuracy of any data or other information presented at any time and in any form in connection with this RFP. The proposer will be responsible for conducting any and all studies, investigations and tests necessary to prepare its proposal.
- Neither CT-DEEP, MIRA, its staff, its representatives, nor any of its consultants or agents will be liable for any claims or damages resulting from the solicitation, collection, review or evaluation of responses to this RFP.
- CT-DEEP (including its staff, representatives, consultants and agents) reserves the right to visit and examine any of the facilities referred to by the proposer in its proposal and to observe and investigate the operations of such facilities.
- CT-DEEP reserves the right to conduct investigations of the proposers and their responses to this RFP and to request additional evidence to support the information included in any such response.
- CT-DEEP reserves the right to contact references and parties knowledgeable of the proposer and its performance.
- CT-DEEP reserves all rights with respect to the evaluation, clarification, selection, and negotiation process set forth in this RFP.
- By submitting a proposal, the proposer waives its right to sue CT-DEEP in the event CT-DEEP does not select the proposer.

## 12. Required Information

In order to be considered, proposals must include all the information required under Appendix II ("Required Information"). Proposers should submit items listed under Appendix II Section 5 in a separate envelope.



### 13. Format

It is requested that all proposals be printed double sided, and use consistent fonts and formatting throughout.

### 14. Submission of Proposals

**Amended 1/13/16: Proposals must be received no later than 4:00 p.m. EST March 15, 2016 at the following address:**

Connecticut Department of Energy and Environmental Protection  
Central Permit Processing  
79 Elm Street  
Hartford, CT 06106-5127

Every submission must include, contained in one package, all of the following items:

1. A transmittal letter stating the intent to propose for the Resource Rediscovery RFP, the legal name of the lead proposer, contact name, telephone number, email address, and mailing address.
2. A bond or check in the amount of \$25,000, attached to or enclosed in the transmittal letter.
3. One (1) original hard copy of the complete proposal.
4. Ten (10) hard copies of the executive summary of the proposal.
5. Ten (10) CD-ROMs containing the proposal with the exception of Appendix II Section 5 information (Facility Economics).
6. Ten (10) CD-ROMs containing only the Appendix II Section 5 information (Facility Economics).

### 15. Freedom of Information Act

The information and materials submitted to CT-DEEP for consideration under this RFP are subject to the terms of the Connecticut Freedom of Information Act ("FOIA") and all applicable rules, regulations and administrative decisions regarding their disclosure to third parties.

Responses to this RFP or any records or files made by CT-DEEP or MIRA in connection with the RFP process and contract award are exempt from disclosure until a determination has been made whether to enter into an agreement with a proposer, in accordance with CGS Section 1-210 (b) (24). After such determination, CT-DEEP and MIRA may determine as protected from disclosure such materials or portions of such materials to the extent permitted by FOIA and all applicable rules, regulations and administrative decisions. Any final determination on the status of a specific document or the portion of such document withheld from disclosure may be determined by the Connecticut Freedom of Information Commission and the courts, if applicable.

### 16. Optional Supplements

The proposer may submit optional supplements, **in addition to their primary proposal**, that extend beyond the scope and criteria of this RFP. Optional supplements need not repeat information that is unchanged from the primary proposal, but must describe the concept and the potential benefits of the concept in sufficient detail to allow a full review of the concept proposed. Examples of optional supplements could include the use of other publicly-owned sites and/or



facilities, privately-owned sites, options for public financing, or changes to state regulations, laws, the State Solid Waste Management Plan, or other measures to enhance the proposer's ability to achieve the state's diversion goals.

## IV. Proposal Evaluation

### 1. Evaluation Process

Proposals shall be reviewed as follows:

During Phase 1, advisory teams assembled by CT-DEEP, including technical and financial advisors as appropriate, will evaluate whether the proposal complies with minimum evaluation criteria described in Appendix III (the Minimum Evaluation Criteria). A proposal that does not meet such Minimum Evaluation Criteria will not be evaluated further. Advisory teams will then use the technical Comparative Criteria and cost considerations to recommend a ranking of proposals to the Commissioner. The Commissioner may consider the ranking in selecting up to three (3) Finalists.

During this review advisory teams or CT-DEEP may request clarifications and/or other information. Such clarifications or information received will be considered part of the proposal.

The advisory teams or CT-DEEP will score technical proposals based on the Comparative Criteria and by category as follows:

Proposer's technical resources and experience:	[15% (15 points)]
Financial resources and strength of proposer:	[15% (15 points)]
Record of performance and reliability of technology:	[25% (25 points)]
Technical approach:	[25% (25 points)]
Business and financial proposal (excluding cost):	[20% (20 points)]
TOTAL:	<hr/> 100% (100 points)

Although it is not necessary for the advisory teams to choose the lowest cost proposal, cost is an important factor in selecting the Finalist(s). Proposed tipping fees and the net present value of the annual projected cash flow will be considered. Ultimately the review will include a value analysis considering both the ranking according to comparative criteria and the cost. Proposed costs will be considered in conjunction with the above technical evaluation criteria in choosing the Finalist(s), guided generally by the following:



LEAST PREFERABLE	MOST PREFERABLE
<p>Tipping fees charged to receive post-recycled MSW at any proposed processing facility in the CSWPS service area (excluding transfer and transport costs from the existing transfer stations) projected <b>to exceed</b> \$70/ton when project commences (estimated 2022). In proposal review, costs for transfer and transport of waste and recyclables to facilities out of the CSWPS area will be included in the figure of \$70 per ton.</p> <p>Tipping fee charged to receive source-separated recyclables.</p>	<p>Tipping fees charged to receive post-recycled MSW at any proposed processing facility in the CSWPS service area (excluding transfer and transport costs from the existing transfer stations) projected <b>at below</b> \$70/ton for first five years or longer of project operation. In proposal review, costs for transfer and transport of waste and recyclables to facilities out of the CSWPS area will be included in the figure of \$70 per ton.</p> <p>No charge to receive source-separated recyclables, or provides rebate.</p>

## V. Sources of Information

Please visit [www.ct.gov/deep/ResourceRediscovery](http://www.ct.gov/deep/ResourceRediscovery) for updates on the RFP process and links to information, including expected additional information on CSWSP sites and facilities on or about December 1, 2015.

Detailed information about the Connecticut Solid Waste System Project:

- **Connecticut Resources Recovery Authority Transition Plan (2013):** Online at [http://www.crra.org/pages/pub\\_rec\\_communications.htm](http://www.crra.org/pages/pub_rec_communications.htm)
- **Comprehensive Operational Review of the Connecticut Resources Recovery Authority (2013):** Online at [http://www.ct.gov/deep/lib/deep/waste\\_management\\_and\\_disposal/solid\\_waste/transforming\\_matls\\_mgmt/resources\\_recovery\\_task\\_force/crra\\_operational\\_review\\_report\\_110813.pdf](http://www.ct.gov/deep/lib/deep/waste_management_and_disposal/solid_waste/transforming_matls_mgmt/resources_recovery_task_force/crra_operational_review_report_110813.pdf)
- **MIRA Website:** Online at: <http://www.ctmira.org>

Information on Connecticut materials management policies:

- **CT Solid Waste Management Plan (2006):** Online at [www.ct.gov/deep/swmp](http://www.ct.gov/deep/swmp)
- **Report of the Modernizing Recycling Working Group (2012):** Online at [http://www.ct.gov/deep/lib/deep/waste\\_management\\_and\\_disposal/solid\\_waste/transforming\\_matls\\_mgmt/gov\\_recycling\\_work\\_group/report\\_dec\\_27\\_2012.pdf](http://www.ct.gov/deep/lib/deep/waste_management_and_disposal/solid_waste/transforming_matls_mgmt/gov_recycling_work_group/report_dec_27_2012.pdf)
- **Municipal Solid Waste Management Services in Connecticut (Report of the Legislative Programs Review and Investigations Committee) (2010):** Online at [http://www.cga.ct.gov/2009/pridata/Studies/PDF/MSW\\_Services\\_Final\\_Report.pdf](http://www.cga.ct.gov/2009/pridata/Studies/PDF/MSW_Services_Final_Report.pdf)



- ***State-Wide Waste Characterization and Composition Study (2010)***: Online at [http://www.ct.gov/deep/lib/deep/waste\\_management\\_and\\_disposal/solid\\_waste/wastecha\\_rstudy/ctcompositioncharstudymay2010.pdf](http://www.ct.gov/deep/lib/deep/waste_management_and_disposal/solid_waste/wastecha_rstudy/ctcompositioncharstudymay2010.pdf)
- ***Comprehensive Materials Management Strategy (SWMP update) main page***: [www.ct.gov/deep/cmms](http://www.ct.gov/deep/cmms)
- ***CT-DEEP Waste Transformation Materials***: [www.ct.gov/deep/cwp/view.asp?a=2718&q=502042&deepNav\\_GID=16459](http://www.ct.gov/deep/cwp/view.asp?a=2718&q=502042&deepNav_GID=16459)



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## Appendix I: CSWSP Facilities and Site Descriptions



### ***Connecticut Solid Waste System (CSWS) Resource Recovery Facility (formerly known as MidConnecticut RRF)***

Address: 300 Maxim Rd. & Gate 20, Reserve Rd., Hartford, CT

Site characteristics: 79.87 acres, remediated to commercial/industrial standard, subject to land use restrictions. Power plant 190,000 SF.

Capacity: Permitted 2,850 TPD MSW, 888,888 Tons per Year (TPY).

The Mid-Connecticut Resource Recovery Facility includes:

- the Waste Processing Facility (WPF);
- the Power Block Facility (PBF); and
- the Electrical Generating Facility (EGF)

The Connecticut Solid Waste System (CSWS) Resource Recovery Facility is located in the City of Hartford, Connecticut. The site is located along the Connecticut River at 300 Maxim Road and 20 Reserve Road, Hartford, Connecticut. The site is comprised of approximately 80 acres of land and is bordered to the north and east by the Connecticut River, to the west by the Hartford Regional Market, and to the south by Maxim Road and Hartford-Brainard Airport.

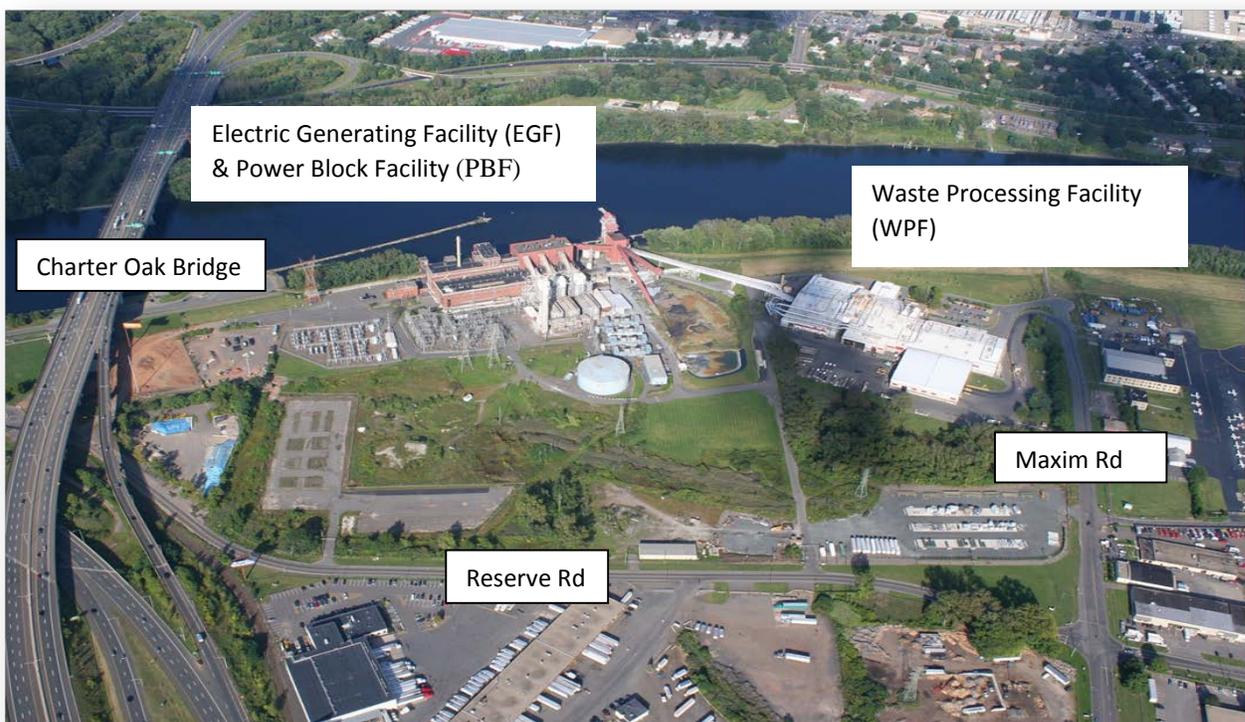
The operation is comprised of two (2) individual, yet interrelated process facilities. The Waste Processing Facility (WPF), occupies approximately 13 acres of the site, and the Power Block Facility (the PBF), occupying approximately 57 acres is located immediately north of the WPF.

The Facility operates through membership and contractual arrangement from participating municipalities and private waste hauling companies which provide Municipal Solid Waste (MSW) collected within individual municipal jurisdictions, which is then transported to the WPF portion of the facility for processing into Refuse Derived Fuel (RDF). Once processed, the prepared RDF is transported through an interconnected conveyance system to the Power Block Facility (PBF) for delivery into the combustion process.



The RDF process differs from mass-burn technology used at many other waste-to-energy facilities. Whereas Mass-Burn Technology conveys MSW into the combustion process with little if any up-front processing, the CSWS RDF Facility shreds the MSW in a two-step process, removing ferrous metal during the process.

The Facility has been in operation since 1988 and is permitted to process 888,000 tons of MSW per year. It currently receives MSW from approximately fifty (50) Connecticut municipalities, serving the needs of these municipalities, residences, commercial businesses, and private commercial waste haulers. The Facility is a refuse-derived fuel (“RDF”) plant comprised of the waste processing facility (the “WPF”), the power block facility (the “PBF”) and the electrical generation facility (the “EGF”). The Facility was designed by Combustion Engineering.



### Waste Processing Facility (WPF)

The WPF is located at 300 Maxim Road in the South Meadows section of Hartford, Connecticut. The WPF is comprised of a scale house, spare parts storage building, facility grounds, mobile equipment, and waste processing building. The WPF houses administrative offices, a truck maneuvering hall, an MSW tipping floor, an RDF storage floor, and several storage areas and



equipment rooms. Also located on the Facility grounds are two (2) regenerative thermal oxidizers (“RTOs”) that are part of the Facility’s Air Processing System which serves to control odors.

The WPF prepares MSW for combustion by removing non-processible waste and ferrous metals and reducing the remaining waste to a size suitable for use as RDF in the PBF combustion boilers. The processing system includes five key steps: manual picking from in-feeds, coarse shredding, magnetic separation, coarse screening, and fine shredding.

The WPF layout includes two (2) conveyor feed lines to carry MSW from the receiving floor through a dual processing system to produce RDF. Each piece of equipment used to process MSW is designated by number and has a nominal and maximum capacity value. These designated values represent the operating speeds or MSW throughput capacity of each of the conveyor lines. In general, these lines are rated at a nominal capacity of 100 tons/hour and a maximum rated capacity of 150 tons/hour.

The major pieces of equipment comprising the processing trains are:

- a) C-E Raymond Horizontal flail mill hammers,
- b) REG Associates Electrodrum magnets,
- c) C-E Raymond Trommel Screens, and
- d) Williams Patent Crusher

The major systems housed in the WPF include the compressed air systems, electrical system, and the fire detection and protection system.

**Truck Deliveries.** All MSW transfer vehicles are weighed on either of two (2) 60-foot, 60-ton capacity scales located adjacent to the central scale house. All delivery trucks are pre-permitted by MIRA with registered sources, vehicle descriptions and tare weights. This information is used to produce Scale House Transaction Detail reports.

**MSW Receiving and Inspection.** After weighing, vehicles proceed to a staging area/queue outside of the truck maneuvering hall. A facility operator directs trucks to the bay doors at the entrance of the MSW tipping hall. Once the material is discharged onto the tip floor, the facility operator inspects the material for non-processible or unacceptable wastes. The MSW receiving hall has a holding capacity of approximately 5,000 tons of waste material. The MSW can be compacted, when necessary, to store up to 9,000 tons. MSW is staged and managed on the tipping floor in a manner that helps to ensure processing occurs on a first-in/first-out basis.





*Photo: Aerial View of WPF*

**Waste Processing.** Each of the two (2) processing lines carry MSW through the WPF as processing is performed.

### ***Picking and Feed Conveyors***

The MSW is pushed from the tip floor onto the load conveyors, then to an inclined leveling conveyor, over a “waterfall” drop area and onto a horizontal conveyor where the picking stations are located. The “waterfall” action helps to expose large objects that should be removed by picking station operators. The picking station operators use grapples to pick large or unacceptable materials from the waste stream. Rejected material is placed on the non-processed feed conveyor, which leads to the non-processed load-out conveyor and into a trailer staged to accept the material.

After the picking station, the waste moves up inclined conveyors to the Primary Shredder. All conveyor lines in the twin systems have a nominal rated capacity of 100 tons/hour and a maximum rated capacity of 150 tons/hour.

### ***Coarse Primary Shredding***

The remaining waste (96%-99% of the MSW received) is fed by the conveyors to flail-type shredders (bag breaker), which produce a coarse material at a rated capacity of 100 tons/hour nominal and 130 tons/hour maximum. The shredder opens plastic garbage bags, loosening and exposing all materials.

The shredders are located in separate silos to provide insulation from noise and explosions (e.g., from a gas grill propane tank). In the event of an explosion or fire, the silos are vented through the



top of the silos which are fitted with frangible “blow away” fabric roof tents. The silo consists of four (4) compartments that house the shredders and dust control units. Each compartment is equipped with blast doors that are kept locked to personnel when waste is being processed.

### ***Magnetic Separation***

Large drum-type magnets remove ferrous metal from the waste stream. The primary magnet is rated at a 100 tons/hour nominal capacity and 150 tons/hour maximum capacity. Removed ferrous is conveyed to a load-out area where 100-cubic yard trailers are staged for loading. When filled, the trailers are staged in the Facility yard to await transport to a recycling facility. Between two and six (6) loads of ferrous (averaging 3.5% of the MSW stream by weight), are removed from the site each day.

Material that is not removed by the ferrous magnets drops to a flow splitting conveyor, separating the waste stream onto two (2) rubber belts that feed the two primary separators. Each belt has a 50 tons/hour nominal, 75 tons/hour maximum throughput capacity.

### ***Primary Separator***

The remaining waste (92%-97% of the original waste stream), passes through one (1) of the two (2) primary rotary separators. The primary separator is equipped with screens incorporating openings that remove waste already suitable for use as RDF without additional shredding.

(Note: Historically, there were two (2) sections to this stage. The first section, which was removed in CY 2013, was equipped with screens incorporating small openings to remove small pieces of non-combustible waste (sand, dirt, broken glass, etc.), which is removed from the facility and shipped to landfill.)

### ***Secondary Separator***

The waste that is already suitable for use as RDF is conveyed to the secondary separator. The waste passing through the secondary separator drops onto the RDF conveyors and travels through a stationary packer and is deposited onto the RDF storage hall floor. This represents between 15-30% of the total waste stream.

### ***Fine Shredding***

The secondary shredder, or fine shredder, is a hammer mill designed to produce three to four inch-sized pieces of RDF. The secondary shredders have a nominal and maximum throughput rating of 50 tons/hour. Each shredder has an air sweep system to pull air through the shredder and to clean the air. Dust and other fine particles are collected in a cyclone separator and bag house and returned to the RDF stream. The RDF leaving the secondary shredder is conveyed to the RDF storage hall floor.





*Photo: Aerial View of PBF and EGF*

### ***Power Block Facility (PBF)***

The PBF is located at 20 Reserve Road, Hartford, Connecticut. The PBF includes all equipment and systems necessary to receive RDF from the WPF, combust this fuel to produce steam to generate electricity in the EGF, and clean the boiler combustion gases of acid gases, metals, combustion particulates, and other materials in order to comply with air emission regulations.

### ***RDF Handling***

RDF from the WPF is conveyed to the boilers on two (2) parallel belt conveyors, each having a rated capacity of 78 tons per hour. Small metering bins located at each boiler receive the RDF and deliver it by gravity at a controlled rate through long chutes to the pneumatic RDF distributor located in the boiler wall.

### ***Boiler System***

The PBF has three (3) C-E Model VU-40 travelling grate, spreader-stoker boilers, each with a rated throughput capacity of 677 tons of RDF per day. These boilers are a “waterwall” furnace design. The boiler walls are constructed of closely spaced, welded steel tubes through which boiler water circulates. Steam is separated in the upper steam drum from the water heated in the boiler waterwall tubes and passes through tubular superheaters located at the top of each boiler. The steam is further heated there by combustion gases before such gases exit the boiler through flue gas ducts.



All steam from the three (3) boilers is directed to the two (2) turbine generators in the EGF by a single pipe header. After passing through the turbine generators, the steam is condensed in water-cooled condensers and re-circulated to the boiler to be fed through the waterwall tubes once again. The rated steam capacity of each boiler when burning RDF is 231,000 pounds per hour of steam at a superheater outlet temperature of 825 degrees Fahrenheit at a pressure of 880 pounds per square inch gauge (“psig”).

The travelling grates are a continuous ash discharge type which travel from the rear toward the front of the boiler in the fashion of a wide conveyor.

A feeder in the bottom of each RDF metering bin is controlled by individual boiler outlets that respond to the steam demand of the turbine generators. RDF descends through chutes to the pneumatic fuel feeders where high pressure air promotes an even feed of the RDF to the grate surface. Coal can be fed directly below the RDF feed location through pneumatic distributors. Because RDF delivered to the boiler has a range of particle sizes and densities, combustion of the RDF occurs partly in suspension and partly on the grate.

### ***Spray Dryer Absorbers and Baghouse***

The hot combustion gases exiting the boilers pass through an economizer, an air heater and flue gas ducts to air pollution control equipment comprised of a spray dryer absorbers (SDAs) followed by a baghouse system. A lime slurry is introduced through a mechanical rotary atomizer to mix the lime additive with the combustion gases to neutralize the acid gases in the quench reactor. The slurry is dried by the heat of the combustion gases to form combustion particulates that are removed by fabric filters contained in a baghouse; the material that is captured in the baghouses is removed as fly ash. The flue gas continues on and is emitted through a 218-foot, single-flue stack.

### ***Ash Handling***

Bottom ash and grate siftings fall into water-filled conveyor troughs below the grate having submerged drag chain conveyors. The ash is dewatered as it travels up the inclined section of the submerged drag chain and then onto belt conveyors, later mixed with flyash in a pugmill and is subsequently discharged into the ash receiving building where it is loaded into dump vehicles for conveyance to a landfill for disposal.

### ***Electric Generating Facility (EGF)***

The EGF is located adjacent to and within the same structure as the PBF and consists of two (2) General Electric 45 MW steam turbine generators, two (2) steam condensers, and related circulating water systems to cool steam exhausted from the turbine generators, high voltage step-up transformers and switchgear, and auxiliary equipment. The turbine-generators were manufactured by General Electric and originally installed in the late 1940s and operated until 1975. These units were refurbished by the Connecticut Light and Power Company in the mid-1980s for use by MIRA.



Monitoring and control of the EGF equipment is provided for in the PBF control room. Power generated at 11.5 kV is carried from each steam turbine generator by non-segregated phase bus duct and open switchyard bus to a 30/40/50 MVA step-up transformer, where the voltage is raised to 115 kV prior to being transmitted to the switchyard by way of overhead conductors. A tap at the main bus between each generator and the main transformer feeds a 12/16/20 MVA auxiliary transformer where the voltage level is dropped to 4160 volts for in-house loads.

MIRA currently employs a private sector power marketing company to sell electric power on a day-ahead basis into the ISO-New England power market.

Additional information on facility operations can be found in the Operations and Management Plan for the Facility, which is available at this link: [www.ct.gov/deep/ResourceRediscovery](http://www.ct.gov/deep/ResourceRediscovery). The major air, water and solid waste environmental permits may be found at the following link: [www.ct.gov/deep/ResourceRediscovery](http://www.ct.gov/deep/ResourceRediscovery).

### ***MIRA CSWS Recycling Facility***

Address: 211 Murphy Road, Hartford, CT

Uses: Recycling Center & Trash Museum

Capacity: 560 Tons per day (174,720 TPY)

Permit No. 0600734 – PC/PO

General description: The site is comprised of a recycling MRF and a museum. The buildings are located on 7.287 acres of land.

MIRA developed the recycling facility as a dual stream recycling operation in 1991 as part of its Mid-Connecticut Project, and began operations in 1992. The facility was upgraded with single-stream processing equipment in 2008. The site comprises approximately 9-acres, which also includes a scalehouse and an operating rail spur. The facility is supported by two (2) 70-foot platform truck scales. The facility is equipped to accept both single-stream and dual-stream recycling deliveries of commingled paper, and commingled glass, metal and plastic containers. Processing equipment separates the various materials (e.g., ferrous metal, aluminum, #1 plastic, #2 plastic, cardboard, mixed paper, glass), which are baled or otherwise consolidated for shipment offsite as commodities.

The trash museum is situated in the front building and is composed of offices, a board room, and an amphitheater with a gross building area of about 16,000 square feet. Real-time recycling operations are displayed on close-circuit television in the mezzanine of the museum.

Additional information on recycling facility operations can be found in the Operations and Management Plan for the Facility, which is available at this link: [www.ct.gov/deep/ResourceRediscovery](http://www.ct.gov/deep/ResourceRediscovery).



### ***CSWS Ellington Transfer Station (560 tpd)***

The Ellington Transfer Station is constructed on an eight-acre parcel adjacent to the Ellington Landfill at 217 Sadds Mill Road in Ellington, Connecticut. The Transfer Station acts as a transfer point for processible and non-processible municipal solid waste (MSW) generated in towns in the area. The Transfer Station provides facilities for weighing, unloading, and transferring processible MSW. The Ellington Transfer Station is not permitted to receive source separated “single stream” or “dual stream” recyclables. Only self-dumping municipal and commercial waste collection vehicles that have been issued permits by MIRA are allowed to unload MSW and recyclables at the Transfer Station. Private vehicles are not allowed to deliver waste to the Transfer Station.

Additional information on facility operations can be found in the Operations and Management Plan for the Facility, which is available at this link: [www.ct.gov/deep/ResourceRediscovery](http://www.ct.gov/deep/ResourceRediscovery).

### ***CSWS Essex Transfer Station (645 tpd)***

The Essex Transfer Station is constructed on a 4.1-acre parcel on Town Dump Road in Essex, Connecticut. The Transfer Station acts as a transfer point for processible and non-processible municipal solid waste (MSW) and recyclables generated in towns in the area. The Transfer Station provides facilities for weighing, unloading, and transferring processible MSW and recyclables. Only self-dumping municipal and commercial waste collection vehicles that have been issued permits by MIRA are allowed to unload MSW and recyclables at the Transfer Station. Private vehicles are not allowed to deliver waste to the Transfer Station.

Additional information on facility operations can be found in the Operations and Management Plan for the Facility, which is available at this link: [www.ct.gov/deep/ResourceRediscovery](http://www.ct.gov/deep/ResourceRediscovery).

### ***CSWS Torrington Transfer Station (650 tpd)***

The Torrington Transfer Station is constructed on a 4.7-acre parcel on Vista Drive (a.k.a. Old Dump Road) in Torrington, Connecticut. The Transfer Station acts as a transfer point for acceptable municipal solid waste (MSW) and recyclables generated in municipalities in the area. The Torrington Transfer Station provides facilities for receiving, weighing, unloading, and transferring MSW and recyclables. Only self-dumping municipal and commercial waste collection vehicles that have been issued permits by MIRA are allowed to unload MSW and recyclables at the Transfer Station. Private vehicles are not allowed to deliver waste to the Transfer Station.

Additional information on facility operations can be found in the Operations and Management Plan for the Facility, which is available at this link: [www.ct.gov/deep/ResourceRediscovery](http://www.ct.gov/deep/ResourceRediscovery).

### ***CSWS Watertown Transfer Station (550 tpd)***

The Watertown Transfer Station is constructed on an approximately ten-acre parcel on Echo Lake Road in Watertown, Connecticut. CRRRA, in conformance with state law, has retained a contractor to operate the Watertown Transfer Station (the Transfer Station Operator). The Transfer Station acts as a transfer point for acceptable municipal solid waste (MSW) and recyclables generated in towns in the area. The Watertown Transfer Station provides facilities for receiving, weighing,



unloading, and transferring MSW and recyclables. Only self-dumping municipal and commercial waste collection vehicles that have been issued permits by MIRA are allowed to unload MSW and recyclables at the Transfer Station. Private vehicles are not allowed to deliver waste to the Transfer Station.

Additional information on facility operations can be found in the Operations and Management Plan for the Facility, which is available at this link: [www.ct.gov/deep/ResourceRediscovery](http://www.ct.gov/deep/ResourceRediscovery).



## Appendix II: Required Information

Where noted below, **address both minimum and alternative system capacities**. Proposals that rely on transfer of materials out of the CSWPS to achieve capacity targets must provide the destinations for such materials and include the cost of transfer in their pricing estimates. For RFP purposes, proposers should assume the availability of tonnages sufficient for both system sizes (see Section II-7: Available Waste and Recyclables).

	Minimum	Alternative
Post-Recycled MSW	465,375 TPY at 85% availability (1,500 TPD)	698,063 TPY at 85% availability (2,250 TPD)
Single Stream Recycling	50,000 TPY	100,000 TPY

Information Category	Required Information
1. <b>Executive Summary</b>	Provide an Executive Summary (not to exceed 20 pages) that summarizes the key features of the proposal (addressing both minimum and alternative system capacities). Do not include the required information in item 5 below in the Executive Summary.
2. <b>Technology description</b>	<p><i>All of the following must address both the minimum and alternative system capacities.</i></p> <ul style="list-style-type: none"> <li>Describe, in narrative form, the proposed technologies along with a description of how a facility would work including, as applicable: receipt of waste, materials separation, recovery and preprocessing, waste conversion (composting, anaerobic digestion, gasification, other conversion processes, etc.), products produced and process and residue management. Provide an accompanying schematic process flow diagram to illustrate the narrative description.</li> <li>Identify the plant capacity (tons per day) and annual processing capacity (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.</li> <li>Describe how the facility or facilities would be modularly expanded, if required over the 30-year operating term.</li> <li>Identify the acreage required to develop the proposed facility or facilities.</li> <li>Describe how the proposed facility would fit within the CSWSP Sites and/or Facilities, include a site drawing showing layout of buildings,</li> </ul>



Information Category	Required Information
	<p>structures, outside equipment, roadways. A site drawing for an existing, comparable facility is acceptable.</p> <ul style="list-style-type: none"> <li>• If the CSWS RRF site is not utilized in the proposed project, include a brief narrative outlining recommendations for the future use, redevelopment, or other disposition of the CSWS RRF site.</li> <li>• Provide elevation drawings, if available for existing facilities, showing major buildings, structures, outside equipment. A drawing(s) for an existing, comparable facility is acceptable.</li> <li>• Provide an artist's rendition of the facility, or photographs of a similar, existing facility.</li> <li>• Identify what outside utilities will be required at facility capacity-water, sewer, electric and natural gas.</li> <li>• Provide a plan to ensure continued service to contracted customers over the course of the redevelopment, including end destinations for waste that would be diverted from current CSWSP facilities to accommodate construction of new facility(ies).</li> </ul>
<p><b>3. Facility useful life</b></p>	<p><i>All of the following must address both the minimum and alternative system capacities.</i></p> <ul style="list-style-type: none"> <li>• 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 30-year useful life, provide information on fabrication, construction, operations, maintenance and/or capital replacement strategies intended to assure such useful life.</li> </ul>



Information Category	Required Information
<p><b>4. Materials throughput, products and residue produced</b></p>	<p><i>All of the following must address both the minimum and alternative system capacities.</i></p> <ul style="list-style-type: none"> <li>• Provide estimates (in tons per day and in tons per year) of the amount of materials that would be processed, recovery of any recyclables, the generation of products and the amount of residue requiring disposal. Estimate the amount of energy produced (including syngas, 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 syngas or biogas generation, show both gross production and net quantity to be sold, after accounting for in plant use. For biogas and syngas 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 or chemicals. Please identify the facility annual availability (accounting for both planned and unplanned maintenance and outages) used for the above calculations.</li> <li>• Describe proposed beneficial uses of residual materials.</li> <li>• Describe the project’s ability to scale/transition to changes in the composition of the waste stream, including potential increased source-separation of recyclable materials and food scraps.</li> <li>• Identify and describe the quantity of any materials that would be recovered through pre-processing or post-processing and sold as products.</li> <li>• Describe the quantity and quality of the residue resulting from the technology that would require landfill disposal and/or incineration, including identification of the source of that residue in the process.</li> <li>• Provide available supporting information, such as diversion data from existing operating facilities.</li> </ul>
<p><b>5. Facility economics</b></p>	<p><i>All of the following must address both the minimum and alternative system capacities.</i></p> <ul style="list-style-type: none"> <li>• For the proposed facility capacities for the facilities that process source separated recyclables and post recycled MSW, provide separate <i>planning-level</i> cost and pricing estimates (in 2016 dollars), including design and construction cost, operating and maintenance cost, product revenue (by product), and proposed tipping fees (separately for post-recycled MSW and source-separated recyclables for a minimum of the first five years of system</li> </ul>



Information Category	Required Information
	<p>operation). Provide a breakdown of capital cost including: design and construction, and cost for site preparation, 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 or demolition or remediation of existing facilities or sites).</p> <ul style="list-style-type: none"> <li>• Provide a breakdown of operating costs separately for facilities receiving post recycled MSW and source separated recyclables including: labor, utilities, chemicals, maintenance and repair, capital repair and replacement, and residuals disposal costs.</li> <li>• Include as a separate line item, the cost of operating the existing transfer stations for transport of waste or recyclables to proposed processing facilities.</li> <li>• <b>Do not</b> include the cost of host community agreements or property taxes.</li> <li>• Provide a breakdown of potential revenues by product type.</li> <li>• Provide an economic proforma for the project showing costs, revenues and tipping fees (separately for post-recycled MSW and source-separated recyclables), assuming a 30 year operating period.</li> </ul> <p><i>NOTE: Candidates should note that CT-DEEP and MIRA will consider Phase 1 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 the Phase 2 procurement process.</i></p>
6. <b>Financing</b>	<p><i>All of the following must address both the minimum and alternative system capacities.</i></p> <ul style="list-style-type: none"> <li>• Provide a statement describing your ability to privately finance the facility.</li> <li>• Provide a brief financing plan indicating the type of financing, e.g. from internal resources or a combination of debt and equity.</li> </ul>
7. <b>Staffing, Supplier Diversity and Affirmative Action</b>	<p><i>All of the following must address both the minimum and alternative system capacities.</i></p> <ul style="list-style-type: none"> <li>• Identify the number of construction jobs anticipated.</li> <li>• Provide a staffing plan for the proposed facility(ies), 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.</li> <li>• Provide evidence for one or more of the following factors: (1) success in implementing an affirmative action plan; (2) success in developing an</li> </ul>



Information Category	Required Information
	<p>apprenticeship program complying with §§ 46a-68-1 to 46a-68-17, inclusive, of the Regulations of Connecticut State Agencies; (3) promise to develop and implement a successful affirmative action plan; or (4) information indicating that the composition of the proposer's current workforce is at or near parity in the relevant labor market area.</p>
<p><b>8. Marketing plan</b></p>	<p><i>All of the following must address both the minimum and alternative system capacities.</i></p> <ul style="list-style-type: none"> <li>• Provide a listing of all potential products, including recovered recyclables, compost, electricity and/or gas, fuel, or chemical 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.</li> <li>• Describe contingency plans for products that may have less certain markets.</li> <li>• Describe experience in marketing products at existing facilities.</li> </ul>
<p><b>9. Environmental permits and controls</b></p>	<p><i>All of the following must address both the minimum and alternative system capacities.</i></p> <ul style="list-style-type: none"> <li>• Describe the facility design and operational measures to be taken to conform to anticipated environmental requirements. 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.</li> <li>• Provide a planning-level assessment of potential greenhouse gas emissions (provide results in terms of CO<sub>2</sub>e emissions).</li> <li>• Describe generally the types of permits expected to be needed to implement the technology.</li> <li>• Describe expected environmental performance, and provide any supporting information associated with existing facilities (e.g., air emissions data; consumptive water use; process wastewater quantity and quality; residuals disposal; traffic impacts; site and aesthetic considerations).</li> <li>• Identify the type and quantity of off-road equipment (e.g., front end loaders) to be used at the facility(ies).</li> <li>• Identify the number and describe the type of vehicles that would be used to transport products and residue from the facility.</li> </ul>



Information Category	Required Information
<p><b>10. Reference facility(ies)</b></p>	<p><i>All of the following must address both the minimum and alternative system capacities.</i></p> <ul style="list-style-type: none"> <li>• 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, type and quantities of products produced and residue disposed, period of operation (including if operated continuously or on a limited basis), type of operation (e.g., demonstration or commercial facility), annual availability, and type of waste processed. Such facilities may be anywhere in the world.</li> <li>• Identify the facility or facilities that provide the best demonstration of the technology.</li> <li>• If available, provide photographs of the technology and facilities.</li> </ul>
<p><b>11. Company capabilities and experience and project management plan, schedule</b></p>	<p><i>All of the following must address both the minimum and alternative system capacities.</i></p> <ul style="list-style-type: none"> <li>• Describe in reasonable detail key project development, permitting, financing, design, construction, operations, and marketing milestones with estimated dates for each milestone.</li> <li>• Provide an interim operations work plan describing in reasonable detail how the current level of service to MIRA’s customers will be maintained during the facility upgrade or construction, and commissioning.</li> <li>• If the proposer is a team, 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.).</li> <li>• Describe the resources and experience of individual project team members in the following key areas, as applicable: <ul style="list-style-type: none"> <li>○ Project development, design and construction and operation of municipal solid waste facilities in general, and utilizing the proposed or similar technology.</li> <li>○ Project financing experience, including a description of the total amount of money raised, source, and project type.</li> <li>○ Public-private partnership experience in the U.S. for municipal solid waste projects.</li> <li>○ Experience marketing products from the technology.</li> </ul> </li> </ul>



Information Category	Required Information
	<ul style="list-style-type: none"> <li>• Provide the information for the most recent three years describing the financial resources of the company and project team members, e.g., annual reports or comparable financial statements.</li> <li>• Provide current liquidity ratios for the most recent three years.</li> <li>• 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.</li> </ul>
<b>12. Community relations and economic impact</b>	<p><i>All of the following must address both the minimum and alternative system capacities.</i></p> <ul style="list-style-type: none"> <li>• Describe in narrative form your strategy to develop and maintain professional, responsible, and responsive working relationships with host communities.</li> <li>• Provide estimates of the number of jobs and wages associated with the development and operation of any proposed facilities.</li> </ul>
<b>13. Solid waste management hierarchy</b>	<p><i>All of the following must address both the minimum and alternative system capacities.</i></p> <ul style="list-style-type: none"> <li>• Describe quantitatively and qualitatively how the proposal is consistent with the state's materials management hierarchy.</li> </ul>
<b>14. Diversion from disposal</b>	<p><i>All of the following must address both the minimum and alternative system capacities.</i></p> <ul style="list-style-type: none"> <li>• Describe the percentage of materials (by weight) to be diverted from landfill and combustion within the proposed system. May include source-separated recycling (proposers may assume a present baseline of 35 percent diversion by recycling).</li> </ul>
<b>15. Bonding Capability</b>	<p><i>All of the following must address both the minimum and alternative system capacities.</i></p> <ul style="list-style-type: none"> <li>• Provide a letter from surety demonstrating bonding capability for the cost of the construction and operation of the proposed facility(ies).</li> </ul>
<b>16. Proposal bond</b>	<ul style="list-style-type: none"> <li>• Provide a bond or check for a bid deposit in the amount of \$25,000.</li> </ul>



## Appendix III: Minimum Evaluation Criteria

Proposals must meet the following Minimum Evaluation Criteria below in order to be considered:

1. Any proposed system must be capable of processing a minimum of 1,500 TPD (post recycled MSW) and 50,000 TPY of source separated recyclables with the potential for an alternative system capacity of 2,250 TPD (post recycled MSW) and 100,000 TPY of source separated recyclables. Proposals must describe both the minimum and alternative capacities as directed in Appendix II (Required Information).
2. Any proposed facilities or equipment will have a minimum design life of 30 years.
3. Any proposed system must produce end products that have probable, identifiable or existing markets (including compost, products designated as recyclable by statute, electricity and/or fuel/chemical products).
4. Any proposed system must ensure uninterrupted service to all contracted towns during construction/redevelopment and commissioning and operation of any facilities on the CSWSP Sites.
5. Any proposed system must address the future status of the CSWS RRF, including a recommendation for using, redeveloping, repurposing, or decommissioning the facility.
6. Any proposed system must be compatible with the state Solid Waste Management Plan (SWMP), and comply with current laws and regulations of Connecticut. Proposers who wish to suggest changes to the SWMP, laws, or regulations that would enhance their proposed project may include such suggestion as an optional supplement (see Optional Supplements, RFP Section III-16)
7. Any proposed system must have been demonstrated at a minimum of one (1) facility of similar size or unit size reasonably scalable to project requirements (1,500 and 2,250 TPD of post recycled MSW and 50,000 and 100,000 TPY of source separated recyclables), and must have been in operation processing similar feedstock for at least six months prior to the date of submission of the proposal. Demonstration facilities that have operated intermittently, but processed at least 1,000 tons of feedstock over a six month period, will be considered to meet the requirement of this minimum criterion. Such demonstration may occur anywhere in the world. A proposed system may include a combination of technologies consistent with the RFP.
8. Any proposed system must have a project team that has experience with financing, designing, building, operating, and maintaining a solid waste management facility, and marketing end-products, either individually or as a team.
9. The proposer must have bonding ability equal to the estimated cost of facility design and construction, and, during operation, equal to the estimated annual operating cost; must not be in bankruptcy; and must provide a financing plan that reasonably demonstrates that it can offer private project financing.



10. The proposer must not be debarred from contracting in Connecticut.

11. The proposer must provide a bid bond / deposit of \$25,000 as described in the RFP.



## Appendix IV: Comparative Technical Evaluation Criteria

Criteria	LOWEST VALUE	MID VALUE	HIGHEST VALUE
<b>1. Proposer's technical resources and experience (15%, 15 points)</b>			
<i>Note: Will be judged based on all members of the proposal team</i>			
1.1 Experience of the proposer in project development, permitting, design and construction of the facilities proposed	Proposer has successfully developed, permitted, designed and constructed, and put in operation a municipal solid waste management facility, but <u>not</u> of similar technology as proposed.	Proposer has successfully developed, permitted, designed and constructed, and put in operation a solid waste management facility of similar technology as proposed.	Proposer has successfully developed, permitted, designed and constructed, and put into operation more than one (1) facility of the same technology and similar size as proposed.
1.2 Experience of proposer in operation of the facilities proposed	Proposer has relevant experience in the successful operation and maintenance of a municipal solid waste management facility, but <u>not</u> of similar technology.	Proposer has relevant experience in the successful operation and maintenance of a solid waste management technology similar to that proposed.	Proposer has successfully operated a facility of the same technology as proposed for at least one (1) year, and at a similar facility size as proposed.
1.3 Experience of proposer as a team with the development, design, construction and operation, and maintenance of the facilities proposed	Not all team members have worked together previously in development, permitting, design, construction and operation of a municipal solid waste management facility.	Team members have worked together as a team in development, permitting, design, construction and operation of a solid waste management facility, but <u>not</u> of similar technology.	Team members have worked together as a team in development, permitting, design, construction and operation of a similar solid waste management facility.
1.4 Depth and location of resources	Proposer capabilities and resources to perform the requested services are not primarily in the United States.	Proposer has requisite capabilities and resources to perform the requested services primarily located in the U.S. and Canada.	Proposer has requisite capabilities and resources to perform the requested services, primarily located in the U.S. or relocated to the U.S.



<b>Criteria</b>	<b>LOWEST VALUE</b>	<b>MID VALUE</b>	<b>HIGHEST VALUE</b>
1.5 Regulatory, permitting experience	Proposer has <u>not</u> permitted the construction and operation of a similar solid waste management facility anywhere in the world.	Proposer has permitted the construction and operation of a similar solid waste management facility outside of the U.S.	Proposer has permitted the construction and operation of a similar solid waste management facility in the U.S. or Canada.
1.6 Record of regulatory compliance	Proposer has <u>not</u> demonstrated a satisfactory compliance record for a municipal solid waste management facility anywhere in the world.	Proposer has demonstrated a satisfactory compliance record for a similar solid waste management facility outside of the U.S.	Proposer has demonstrated a satisfactory compliance record for a similar solid waste management in the U.S. or Canada.
1.7 Experience in selling products – electricity, fuels, compost, chemicals recovered plastics and paper, other products	Proposer does <u>not</u> have experience in marketing similar products as those proposed anywhere in the world.	Proposer has experience marketing similar products as those proposed outside of the U.S.	Proposer has experience in marketing similar products as those proposed in the U.S.
1.8 Record of contract performance	Proposer lacks a satisfactory contract performance record for a similar solid waste management facility anywhere in the world.	Proposer has a satisfactory contract performance record for a similar solid waste management facility outside of the U.S.	Proposer has a satisfactory contract performance record for a similar solid waste management facility in the U.S. or Canada.
1.9 Record of labor relations	Proposer lacks a satisfactory record of labor relations for any similar solid waste management facility anywhere in the world.	Proposer has a satisfactory record of labor relations for a similar solid waste management facility outside the U.S.	Proposer has a satisfactory record of labor relations in for a similar solid waste management facility in the U.S. or Canada.



<b>Criteria</b>	<b>LOWEST VALUE</b>	<b>MID VALUE</b>	<b>HIGHEST VALUE</b>
1.10 Safety record	Proposer lacks a satisfactory safety record for a municipal solid waste management facility anywhere in the world.	Proposer has a satisfactory safety record for a similar solid waste management facility outside of the U.S.	Proposer has a satisfactory safety record for a similar solid waste management facility in the U.S. or Canada.
1.11 References and reference project descriptions	Proposer has identified and described at least one (1) relevant municipal solid waste facility that the candidate has been involved with as a service provider, but not of similar technology to that proposed and/or with the candidate having limited involvement with the project.	Proposer has identified and described at least one (1) relevant solid waste facility that the candidate has been involved with as a service provider, of similar technology to that proposed.	Proposer has identified and described two (2) or more relevant solid waste facilities that the candidate has been involved with as a service provider, with at least one being the same technology as that proposed.



Criteria	LOWEST VALUE	MID VALUE	HIGHEST VALUE
<b>2. Financial resources and strength of proposer (15%, 15 points)</b>			
<i>Note: proposer means an individual company or the members of the proposed consortium.</i>			
2.1 Financial strength of proposer	Proposer did not have a positive net worth in any of the last three fiscal years, and/or other indicators suggest difficulty in completing project development, achieving full-scale facility operation and providing on-going financial benefits over time.	Proposer had a positive net worth for the last fiscal year, with a current liquidity ratio of 1.3 or better, and/or supplied other evidence which, in the judgment of CT-DEEP, demonstrates equivalent liquidity.	Proposer had a positive net worth for the immediate past three fiscal years, with a current liquidity ratio of 1.6 or better, and/or supplied other evidence which, in the judgment of CT-DEEP demonstrates equivalent liquidity.
2.2 Experience securing financing for solid waste projects	Proposer has not participated in a financing for a similar project.	Proposer has experience in the financing of one (1) similar project.	Proposer has experience in the financing of two (2) or more similar projects.
2.3 Record of business integrity	Not Applicable.	Strong record of business integrity and performance.	Exemplary record of business integrity and performance.
<b>3. Record of performance and reliability of technology (25%, 25 points)</b>			
3.1 Number of similar facilities	Proposed technology has been demonstrated at one (1) facility of similar size and processing feedstock similar to the municipal solid waste described in the characterization report.	Proposed technology has been demonstrated at two (2) facilities of similar size and processing feedstock similar to the municipal solid waste described in the characterization report.	Proposed technology has been <u>commercially operating</u> for one year or longer at two (2) or more facilities of similar size and processing feedstock similar to the municipal solid waste described in the waste characterization report.



Criteria	LOWEST VALUE	MID VALUE	HIGHEST VALUE
3.2 Experience operating	Proposed technology has been in operation for at least six (6) months prior to the date of submission of the proposal.	Proposed technology has been in operation for at least one (1) year prior to the date of submission of the proposal.	Proposed technology has been in operation for at least two (2) years prior to the date of submission of the proposal.
<b>4. Technical approach (25%, 25 points)</b>			
4.1 Completeness of technical proposal	Proposal includes limited detail, and/or contains inconsistencies that require significant clarification and request for submittal of supplemental information.	Proposal is generally complete and responsive, with limited need to request clarification and/or supplemental information.	Proposal is complete and responsive, with information presented in a clear and organized manner and inclusive of supplemental, relevant information as applicable.
4.2 Project management plan	The project management plan does not show strong understanding of key project development, permitting, financing, design, construction, operations, product marketing and public outreach issues, nor does it show a well thought out approach or commitment of key, experienced staff.	The project management plan demonstrates strong understanding of key project development, permitting, financing, design, construction, operations, product marketing and public outreach issues, describes a well thought out approach and shows commitment of the proposer, including assignment of experienced staff to most key positions, to resolve issues and achieve project success.	The project management plan demonstrates superior understanding of key project development, permitting, financing, design, construction, operations, product marketing and public outreach issues, describes superior approach and shows stronger commitment of the proposer, including assignment of experienced staff to all key positions, to resolve issues and achieve project success.



Criteria	LOWEST VALUE	MID VALUE	HIGHEST VALUE
4.3 Permitting plan	The permitting plan does not show strong understanding of key permitting requirements and issues, nor does it describe a well thought out approach to obtaining permit approvals.	The permitting plan demonstrates strong understanding of key permitting requirements and issues, and describes reasonable approach for obtaining permit approvals.	The permitting plan demonstrates superior understanding of permit requirements and issues, and demonstrates superior approach for obtaining permit approvals.
4.4 Solid waste management hierarchy	The proposal lacks qualitative or quantitative demonstration of consistency with the solid waste management hierarchy (CGS 228(b) / 229 & Section 1.5.2 Solid Waste Management Plan).	The proposal includes qualitative or quantitative demonstration of consistency with the solid waste management hierarchy (CGS 228(b) / 229 & Section 1.5.2 Solid Waste Management Plan).	The proposal includes <u>both</u> qualitative and quantitative demonstration of consistency with the solid waste management hierarchy (CGS 228(b) / 229 & Section 1.5.2 Solid Waste Management Plan).
4.5 Diversion from Disposal	The proposed system, including source-separated single stream recycling and the conversion of post-recycled MSW achieves less than 60 percent diversion from disposal (disposal includes landfilling and/or combustion).	The proposed system, including source-separated single stream recycling and the conversion of post-recycled MSW achieves 60 percent diversion from disposal (disposal includes landfilling and/or combustion).	The proposed system, including source-separated single stream recycling and the conversion of post-recycled MSW achieves above 60 percent diversion from disposal (disposal includes landfilling and/or combustion).



Criteria	LOWEST VALUE	MID VALUE	HIGHEST VALUE
4.6 Design, construction, start-up plan	The design, construction, start-up plan does not show strong understanding of key design, construction and start-up elements and issues, nor does it describe a well thought out approach for addressing said elements and issues.	The design, construction, start-up plan demonstrates strong understanding of key design, construction, and start-up elements and issues, and presents reasonable approach for addressing said elements and issues.	In addition to meeting the mid value criterion, the design, construction, start-up plan is based on the proposer's demonstrated ability to achieve similar results on similar projects using proposed approach.
4.7 Operation and maintenance plan	The operation and maintenance plan does not demonstrate strong understanding of key operation and maintenance issues, nor does it describe a well thought out approach for addressing said issues.	The operation and maintenance plan demonstrates strong understanding of issues and presents reasonable approach for addressing said issues.	In addition to meeting the mid value criterion, the operation and maintenance plan is based on the candidate's demonstrated ability to achieve similar results on similar projects using proposed approach.
4.8 Scalability to changes in waste composition and quantities	The proposal does not highlight how the proposed system would handle potential changes in waste composition and quantities like those that would result from increases in recycling and the diversion and processing of organic materials from the waste stream, or changes in consumer choices, product packaging.	The proposal highlights in reasonable detail how the proposed system would handle potential changes in waste composition and quantities like those that would result from increases in recycling and the diversion and processing of organic materials from the waste stream, or changes in consumer choices, product packaging.	The proposal specifically addresses and provides detailed highlights of how the proposed system would handle potential changes in waste composition and quantities like those that would result from increases in recycling and the diversion and processing of organic materials from the waste stream, or changes in consumer choices, product packaging.



<b>Criteria</b>	<b>LOWEST VALUE</b>	<b>MID VALUE</b>	<b>HIGHEST VALUE</b>
4.9 Product marketing plan	The product marketing plan demonstrates a poor understanding of product marketing issues.	The product marketing plan demonstrates a strong understanding of product marketing issues and presents a plan for acquiring product markets.	In addition to showing an understanding of product marketing issues and presenting a plan for acquiring product markets, the proposer has provided letters of interest for purchase of key products.
4.10 Community relations plan and economic impact	The community relations plan does not demonstrate a strong understanding of the need to develop and maintain professional, responsible, and responsive working relationships.	The community relations plan demonstrates a strong understanding of the need to develop and maintain professional, responsible, and responsive working relationships.	The community relations plan demonstrates a superior understanding of the need to develop and maintain professional, responsible, and responsive working relationships. The community relations plan describes in detail the number of jobs and estimated wages associated with the development and operation of any proposed facilities.
4.11 Proposed project schedule	The proposal includes a project schedule showing that the proposed facility will be operational by dates specified in the RFP.	N/A	The proposal includes a project schedule showing that the proposed facility will be operational before dates specified in the RFP.
4.12 Interim operations work plan	The candidate provides only minimal information about how the current level of service to MIRA's customers will be maintained during the facility upgrade or construction, and commissioning.	The candidate provides adequate information about how the current level of service to MIRA's customers will be maintained during the facility upgrade or construction, and commissioning.	The candidate provides adequate information about how the current level of service to MIRA's customers will be maintained during the facility upgrade or construction, and commissioning demonstrating that it has been fully integrated in the



Criteria	LOWEST VALUE	MID VALUE	HIGHEST VALUE
			project schedule and in cost projections.
4.13 Environmental permits and controls	The proposal does not demonstrate that the proposer understands issues relating to emissions and odor controls, means to reduce consumptive water use and to process wastewater discharge, stormwater management, and measures to reduce the visual impact of the facility.	The proposal demonstrates an adequate understanding of issues relating to emissions but does not provide details on how the proposed technology would decrease emissions (including CO <sub>2</sub> e emissions) and eliminate odors, means to reduce consumptive water use and to process wastewater discharge, plans for stormwater management, and measures to reduce the visual impact of the facility.	The proposal demonstrates a thorough understanding of issues relating to emissions and odor controls and provides details on how the proposed technology would decrease emissions (including CO <sub>2</sub> e emissions) and eliminate odors, provide means to reduce consumptive water use and to process wastewater discharge, plans for stormwater management, and measures to reduce the visual impact of the facility. Particularly, the proposal highlights how the proposer will comply with emissions standards.
<b>5. Business and financial proposal (20%, 20 points)</b>			
5.1 Proposer's organization	The proposer has provided a description of project organization, but roles of all participants are not clearly/fully established.	The proposer has provided a description of project organization, with the roles of all participants clearly established.	In addition to meeting the mid value criterion, the proposer's project organization and corresponding description demonstrate a superior determination of defined roles and relationships.



Criteria	LOWEST VALUE	MID VALUE	HIGHEST VALUE
5.2 Financing plan	The financing plan demonstrates minimal understanding of key financing issues nor presents a detailed approach for obtaining financing.	The financing plan demonstrates a strong understanding of key financing issues and presents a comprehensive and well thought out approach for obtaining financing, including principal terms and conditions of financing, equity and debt positions.	In addition to meeting the mid value criterion, the financing plan includes appropriate levels of financing commitments from appropriately experienced investors and bankers/lenders.
5.3 Use of local labor, goods and services	Proposal does not demonstrate a commitment to use local labor, goods and services	Proposal demonstrates a commitment to use local labor, goods and services.	Proposal demonstrates a substantial commitment to use local labor, goods and services.

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