

AMENDMENT #2

Mid-Conn Fiscal Year 2011 Proposed Budget Amendment

In light of current personnel resources constraints, management felt undertaking two major projects in Fiscal Year 2011 would create difficult and unnecessary challenges and therefore presented the Budget with only one of the two major projects contemplated. If the Board determines to delay the implementation of a new bale operation then Management recommends advancing the turbine #6 overhaul work currently scheduled in the Fiscal Year 2012 Capital Improvement Plan to Fiscal Year 2011.

See attached discussion and analysis

- A) Implementation of a new bale operation
- B) Turbine #6 overhaul

Connecticut Resources Recovery Authority Mid-Connecticut Resource Recovery Facility

Municipal Solid Waste Baling Equipment

February 25, 2010

Discussion

CRRRA Management recommends the inclusion of capital funds for the development of a MSW logistics and supply management system located at CRRRA facility in Hartford. The initiative would provide benefits to CRRRA and the State by optimizing the performance of the CRRRA Mid-Connecticut facility and increasing the potential for reducing costs of operation for other public facilities serving Connecticut municipalities by lowering seasonal spot waste prices. The initiative would provide for the construction of a baler for the Refuse Derived Fuel (RDF) and a storage building for baled RDF storage. The present Municipal Service Agreements between CRRRA and its municipal customers provide for "...renewal, replacements, repairs, extensions, enlargements, alterations or improvements..." to the facility. Installation of baling equipment may be considered an improvement to the facility.

CRRRA management has conducted conceptual engineering and operational analysis sufficient to provide for the following assumptions:

- \$2,720,000 capital expenditure.
- Capital payback between approximately six and ten years.
- Provides a reduction to the Mid-Connecticut MSW tip fee, based on the avoided costs associated with exporting MSW at times of excess, and attracting MSW on the spot market at times of insufficient supply.
- Potential additional dividends by optimization of seasonal deliveries and peak shaving of the seasonal disposal market.
- Optimization of electric sales at peak times, and potentially minimizing facility energy consumption at peak times.

The initiative would provide benefits to the state and municipalities and serves to fulfill CRRRA's statutory mission. The initiative:

- Supports the Connecticut Solid Waste Management Plan, and supports the Connecticut statutorily established solid waste management hierarchy by increasing the amount of MSW which is combusted, therefore decreasing the amount that is landfilled.

- Serves to reduce air emissions from waste hauling vehicles which, absent baling capability, would be used to export the MSW out of the state at times of excess generation, or import the MSW into state at times of inadequate supply.
- Improves Connecticut's in-state MSW capacity assurance and self-sufficiency. Baling MSW for temporary storage in the context of CRRA's Mid-Connecticut RDF facility is a revolutionary technology, analogous to the on-site battery storage of electric power produced at an electric utility.
- Optimizes CRRA's 24/7 production through enhanced management and control of maintenance and production schedules to maximize electric generation revenue and minimize production costs. This technology will enable CRRA to better match the ISO-New England electricity demand curve.
- Serve to lower spot waste disposal pricing across the state to the benefit of SCRRA, CRRA Southwest Project (Bridgeport), Wallingford area towns, and Bristol Project towns.

CRRA Baling Operation

Incremental Analysis using FY2011 as Baseline

KEY ASSUMPTIONS

Annual Excess MSW
Mid-CT Tip Fee
Estimated Spot Waste Price/Ton

FY2011 Budgeted Diversion Cost per Ton MSW
Transportation cost per Ton from Transfer Stations
Marginal Cost per ton MSW for Producing Baled RDF

23,015
\$69.00
\$40.00

\$76.01
\$18.00
\$25.00

LEAST CASE SCENARIO

	Year 1	Year 2	Year 3	Total	NPV
Revenues					
Avoided Cost of Diversions	\$ 1,749,337	\$ 1,749,337	\$ 1,749,337	\$ 5,248,012	\$ 5,044,884
Subtotal	\$ 1,749,337	\$ 1,749,337	\$ 1,749,337	\$ 5,248,012	\$ 5,044,884
Costs					
Revenue Reduction due to Lower Spot Waste	\$(920,583)	\$(920,583)	\$(920,583)	\$(2,761,748)	\$(2,654,853)
Transportation Costs to MidCT for MSW Previously Exported	\$(414,262)	\$(414,262)	\$(414,262)	\$(1,242,787)	\$(1,194,684)
Baling Materials	\$(33,667)	\$(33,667)	\$(33,667)	\$(101,000)	\$(97,091)
Labor Cost	\$(249,600)	\$(249,600)	\$(249,600)	\$(748,800)	\$(719,817)
Maintenance Cost of Baler & Accessories	\$(18,000)	\$(36,000)	\$(18,000)	\$(72,000)	\$(69,211)
Electrical Cost of Baler & Accessories	\$(8,022)	\$(8,022)	\$(8,022)	\$(24,065)	\$(23,134)
Subtotal	\$(1,644,133)	\$(1,662,133)	\$(1,644,133)	\$(4,950,400)	\$(4,758,789)
Annual Net Revenue	\$ 105,204	\$ 87,204	\$ 105,204	\$ 297,612	\$ 286,095
Annual NPV	\$ 103,141	\$ 83,818	\$ 99,136	\$ 286,095	
Cumulative NPV	\$ 103,141	\$ 186,959	\$ 286,095		

BEST CASE SCENARIO

	Year 1	Year 2	Year 3	Total	NPV
Revenues (based on additional 20,000 tons MSW Direct Deliveries)					
Avoided Cost of Diversions	\$ 1,749,337	\$ 1,749,337	\$ 1,749,337	\$ 5,248,012	\$ 5,044,884
Optimization of Seasonal Deliveries	\$ 580,000	\$ 580,000	\$ 580,000	\$ 1,740,000	\$ 1,672,652
Subtotal	\$ 2,329,337	\$ 2,329,337	\$ 2,329,337	\$ 6,988,012	\$ 6,717,537
Costs (based on additional 20,000 tons MSW Direct Deliveries)					
Revenue Reduction due to Lower Spot Waste	\$(920,583)	\$(920,583)	\$(920,583)	\$(2,761,748)	\$(2,654,853)
Transportation Costs to MidCT for MSW Previously Exported	\$(414,262)	\$(414,262)	\$(414,262)	\$(1,242,787)	\$(1,194,684)
Baling Materials	\$(62,923)	\$(62,923)	\$(62,923)	\$(188,770)	\$(181,464)
Labor Cost	\$(466,506)	\$(466,506)	\$(466,506)	\$(1,399,518)	\$(1,345,349)
Maintenance Cost of Baler & Accessories	\$(33,642)	\$(67,285)	\$(33,642)	\$(134,569)	\$(129,356)
Electrical Cost of Baler & Accessories	\$(14,993)	\$(14,993)	\$(14,993)	\$(44,978)	\$(43,237)
Subtotal	\$(1,912,909)	\$(1,946,552)	\$(1,912,909)	\$(5,772,371)	\$(5,548,943)
Annual Net Revenue	\$ 416,428	\$ 382,786	\$ 416,428	\$ 1,215,641	\$ 1,168,593
Annual NPV	\$ 408,263	\$ 367,921	\$ 392,409	\$ 1,168,593	
Cumulative NPV	\$ 408,263	\$ 776,184	\$ 1,168,593		

Revenues (based on additional 20,000 tons MSW Direct Deliveries)

Avoided Cost of Diversions
Optimization of Seasonal Deliveries
* (In @ \$69 and Out @ \$40)
Subtotal

Costs (based on additional 20,000 tons MSW Direct Deliveries)

Revenue Reduction due to Lower Spot Waste
Transportation Costs to MidCT for MSW Previously Exported
Baling Materials
Labor Cost
Maintenance Cost of Baler & Accessories
Electrical Cost of Baler & Accessories
Subtotal

Connecticut Resources Recovery Authority Mid-Connecticut Resource Recovery Facility

Turbine Outage Repairs and Reliability

February 25, 2010

Discussion

CRRA Management recommends the inclusion of capital funds totaling \$3.0 MM for the Repair and improvements to Turbine #6 at the EGF. Unlike steam turbine #5, which had its last major outage in February 2008, steam turbine #6 has been operating without a major outage since January 2004. Industry standards and insurance underwriters suggest that a steam turbine of this vintage (circa 1952 and refurbished in 1986 for waste-to-energy applications) should perform major outages every five years.

Based upon the scope of work associated with the 2008 outage for steam turbine #5, CRRA has assumed \$1MM for steam turbine # 6's outage in FY2011 (winter 2011). These dollars provide for costs associated with complete disassemble, inspections, repairs and re-assembly on steam turbine #6, its generator and all auxiliary systems.

Due to the limited window of opportunity for repairs, the value of electric revenue to the Mid-Connecticut Project and the expense and opportunity costs associated with opening the casing of this asset, CRRA has plans to invest in Turbine and Turbine Control upgrades. These upgrades focus on insuring the reliability, improving the efficiency, maximizing the Capacity (KW/ton) and maintaining the integrity of the steam turbine going forward.

Upgrades for steam turbine #6 are recommended as follows:

- Install five new diaphragms (worn due to end stage erosion) in steam turbine # 6 on the High Pressure (HP) rotor section, stages #13 to #17. Estimated cost \$900,000.00.
- Upgrade of existing steam turbine #6 controls (original 1980's analog type systems currently in service are antiquated, and parts are scarce along with miscellaneous repairs are difficult). Estimated cost \$1,400,000.00.
- Upgrade of existing steam turbine #6 control rack from mechanical design to electro-mechanical type design. Estimated cost \$700,000.00. Justified by need for safe operation and control of turbine capacity, speed and shut down.