

## INVESTMENT PROPOSAL \*



**Project:** Processing of municipality solid waste (MSW) together with industrial waste in full and power, heat and bioenergy generation. Sludges from waste water and waste products from livestock and poultry can also be treated and in addition to with high energy result.

**Corporate Profile:** International Investment Council – Washington, D.C., U.S.A. ("IIC") is credit reference agency (bureau), a supervising and advisory body for funding of publish-private partnership and engineering projects in the real economy developed by financial support of U.S. federal government agencies under their programs for assistance in financing the export of U.S. goods and services to international markets and enable U.S. companies—middle and small—to turn export opportunities into real sales that helps to maintain and create U.S. jobs. IIC works in business relationship in the clean energy and other innovation fields with **east electric Company LLC (eec)**, Boston, Mass., U.S.A. In 2009 the District Administration of Washington approved the registration of IIC with legal right to trade on behalf of **eec**, if the case so requires, when IIC has provided financial advisory service to the projects. [\[more for IIC\]](http://www.eec.us.com/news/02[276].pdf)






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\* Use the URL links for your convenience  
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**eec** and **IIC** are financial related entities, each experienced in its own field of competency. **eec** is a limited liability company.

**eec** does not construe plants, including waste processing. **eec** is a part of Consortium of six American companies, exercise its own patent in the system of online control of peripheral facilities and cash flows during the loan life as a part of the whole engineering design, and exercises dealer's rights for complex delivery of plants to specified regions of the world. More specifically under the subject of this **INVESTMENT PROPOSAL** **eec** and **IIC** are jointly involved into the following business:

- (i) **eec** performs in the U.S. projects contracted by **IIC** by Memorandum of Good Understanding about the terms and conditions for extending of credit loans by one of the American federal government credit or credit-export agencies (the "Agency"), collateralized only by corporate, non-bank, securities. Under this credit could be supplied American capital goods – equipment, engineering designs, other services and supporting facilities such as computers with periphery devices, trucks, motor cars, security systems, etc. **eec** creates contacts of American investors in friendly countries of the United States all over the world;
- (ii) **eec** studies the characteristics of the waste, subject of treatment, including pick out samples, laboratory tests in the U.S. and this makes identification based on site computer control, and prepares algorithms and software;
- (iii) **eec** makes technology design based on the results of the study and the mathematical model of technology process and financing together with pro-forma budgeting.
- (iv) **eec** makes inquiries/**purchase orders** for quotations in conformity with the specific project to the companies of the Consortium in the U.S.; and provides to the Project Company/Borrower (government, municipality or firm) general corporate offer, signs contracts for delivery with technical, price and financial conditions and guaranties (in the regions of its dealer's rights).
- (v) **IIC** determines the financial instruments – guarantees, insurance and debentures and advises the Borrower in concluding contracts.
- (vi) **IIC** provides financing of the Project under the following **STANDARD CONDITIONS**:
  -  85% of the Project price; the balance of 15% down payment the Borrower wires in advance for the benefit of the producer/exporter or through the Agency (in the U.S. Treasury), if he has hesitations about the transaction security and trustiness;
  -  Up to 30% of the U.S. made part of the export price for local country expenses that are integral connected to the Project;
  -  Credit loan is guaranteed by the Project entity (Borrower) against company/ municipality/state guarantee called „*Promissory Note(s)*“ **without requirement of any bank instrument of guarantee**;

#### **Options:**

-  In case the Borrower is not a **creditworthy** entity in order to secure the loan, its Promissory Notes need to be guaranteed (confirmed) by a **creditworthy** entity –

company, municipality or by a state guarantee; this the Borrower becomes and is certified as “Eligible Borrower”.



*In case the Borrower is not in a position to make the due front payment of 15% of the export contract price for the benefit of the manufacturer(s) (or its dealer) directly or through the U.S. Treasury to meet its ordinary obligation of involving own funds in a credit transaction, as usually, purposed for advance payment in cash (wire or draft), IIC and the Borrower may discuss orders opportunities for sponsorship or other options;*



*In case the Borrower is not able to provide own funds by one of the above mentioned manners, IIC negotiates with American sponsors or provides a part of this amount by its own funds/securities under pre-agreed terms.*

(vii) Within the life of the Joint Venture (when it is required by each separate case), **eec** may provide special electric-hybrid vehicles and containers for waste collection to replace the available in use.


(viii) **eec** keeps conservative overseas investment policy. We don't take part in collectively investment schemes wherefrom follow investments of own funds in projects to acquire ownership, independently of the proposed high profitability (except when it is obliged to do so due to specific financial situation). Our corporate concept is that the business of collection, carriage, landfilling and processing of industrial & MSW, including fee the assignation and collection in connection thereof are typically municipality problems and involving of private capital in such sort of public-private partnership should be done from time to time which usually is followed by problems that ultimately lead to public detrimental. Such a private concept is often not shared by our clients; however, this doesn't lead to contract performance problems.

(ix) **eec** may participate in JV with Borrower during the period of loan amortization and agreed return earned by the Project with minimum 40%, but usually with 50%, of the JV capital, this practice called in the United States as „Venture Capital Investment”. After the pre-agreed period the plant remains entirely in Borrower's ownership.

## BACKGROUND. BRIEF DESCRIPTION OF TECHNOLOGY




**(RCBC).** ROTARY CASCADING BED COMBUSTION technology for this project is most advanced at the moment. It is available at approximately one third the costs of other combustion systems. It is also more efficient, meeting exceeding all EPA emission standards. The technology was developed to create, within a rotating cylindrical combustion chamber, conditions for the clean combustion of diverse fuels and wastes ranging from high sulfur coals to municipal solid wastes. In the RCBC fuels are burned in cascading contact with sorbents, gases and recirculating solids, to form harmless byproducts preventing gaseous emissions. Fuels are burned in multi-dimensional cascading and recirculating contact with sorbents forming harmless combustion by-products and preventing harmful gaseous emissions. The highly stirred atmosphere provides excellent conditions for both combustion and accompanying chemical reactions to control gaseous emissions. Sorbent/chemical reactions take place at combustion temperatures low enough to greatly retard the formation of oxides of nitrogen. Unique internal and external fuels recycling systems foster high sorbent contact with combustion gases and extend fuel dwell times assuring clean and complete combustion of fuels and wastes. Unique characteristics of the RCBC allow "on the fly" fuel changing, making a boiler based on this technology extremely versatile in using fuels of highest availability and lowest cost.

 **(MRF). MATERIALS RECOVERY FACILITY**, set up as a part of the Project and tied into the RCBC for fuel preparation, is helping the county in recovery of recyclable and/or marketable materials.

**Table I** lists the anticipated ranges of emissions for sulfur dioxide, the oxides of nitrogen, carbon monoxide and hydrochloric acid.

<b>Table I</b>	
<b>Combustion Gas Component</b>	<b>Emission Level (ppm)</b>
<i>Sulfur Dioxide (SO<sub>2</sub>)</i>	<b>0-1,000</b>
<i>Oxides of Nitrogen (NO<sub>x</sub>)</i>	<b>0-1,000</b>
<i>Carbon Monoxide (CO)</i>	<b>0-5,000</b>
<i>Hydrochloric Acid (HCl)</i>	<b>0-10</b>

 **SOFTWARE.** The **eec's** computer program shall be furnished to prepare all reports required by the permitting agency and/or the EPA and such operating reports and logs as may be requested by those agencies and/or the RCBB operators. A **HCl monitor** shall be supplied. The HCl monitor shall be one approved by the EPA and shall meet the same operational requirements as the sulfur dioxide and oxides of nitrogen monitors.

 **RCBC SAFETY DATA.** RCBC has several integrated safety systems.

- Computerized Control & Monitoring System
- Opacity Monitoring System
- Gaseous Emissions Sampling
- Go-No Go Combustion System Operating Standards & Controls
- Steam Pressure Controls System
- Temperature Controls Systems

Instead of paying high costs to dispose of industrial and municipal waste, the owner can sell the recyclables, compost and energy created by the electricity-generating steam turbine.

There are more than 70 plants of the same type in operation mainly alongside the East Cost of the United States. They are implemented in their plants most practical innovations such as:

- ☀ The principle of operation - regardless of non-biological components – anaerobic burning in a unique cascade rotating furnace (combustor - patent of one of the Consortium companies) in conditions close to the plasma burning, but significantly lower energy consumption and low cost maintenance;
- ☀ Prevailing manual separation of the recycles (much more cheaper then to apply robotic manipulator, and revealing dozens of jobs for low-skilled staff),
- ☀ Computer automation control of the process burn and power generation, and the enterprise as a whole – input, output accounting records and data store;

The description is in four phases:

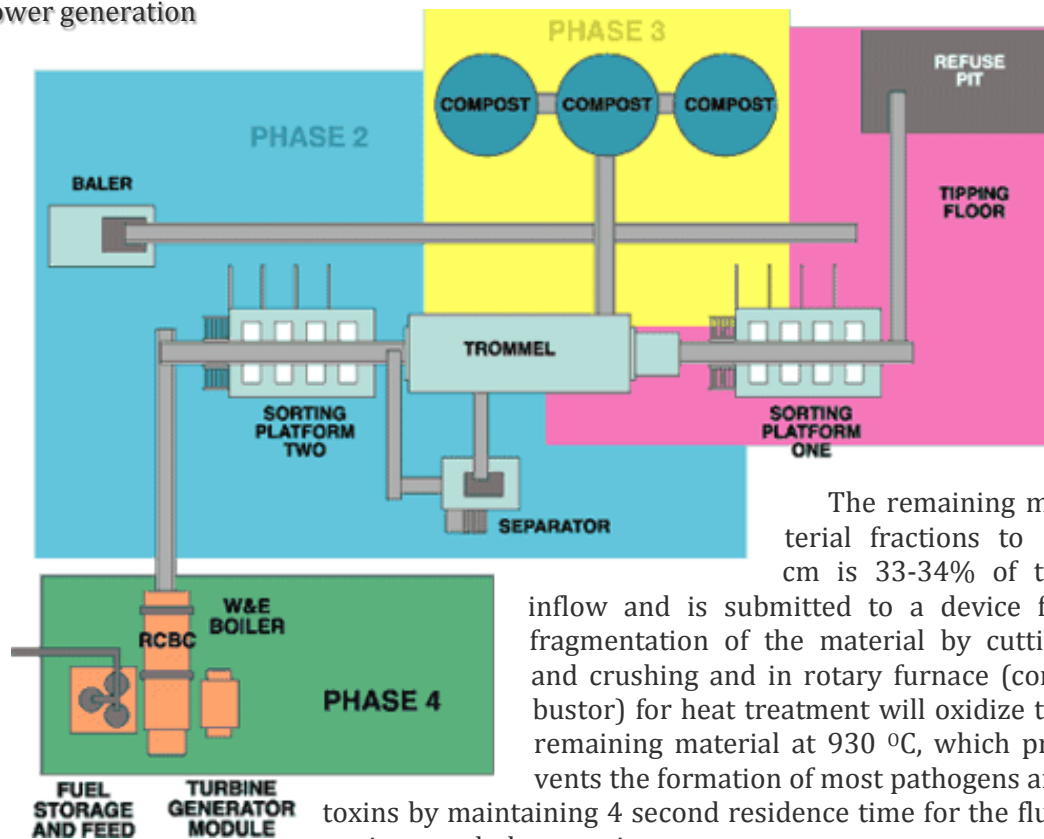
**First: Separation** – primary manual sorting of large fractions and baling of 20% of inflow (8 work places, 2-3 employees each).

**Second: Separation** – shaker screening, magnet separation and secondary manual separation (6 work places, 2-3 employees each) of 45% of inflow of the screening or totally 60-61% of inflow is separated.

MRFs typically remove and classify papers, plastics, metals, and other marketable recyclables, and bale or otherwise package them for resale. MRFs make an excellent line for RCBC fuel preparation, because they optimize the economic value derived from the incoming waste stream, while preparing the RCBC fuel.

**Thirth:** **Combustion** – transport of fine sieve fraction (up to 5 cm), which is 6.5 percent of all inflow to the composting site; for 45 days this fraction was stable end product - organic fertilizer (composting facilities can take other, untreated, convertible organic waste - wood, outgoing household, food, paper, manure).

**Forth:** **Power generation**








toxins by maintaining 4 second residence time for the flue-gas in a turbulent environment at constant temperature. These conditions are technological close to the plasma burning, but with significantly less energy consumption. This is a system for the clean combustion and degradation of diverse fuels and wastes, either individually or in infinitely diverse combinations, including some industrial wastes. It uses for fuel oil, naphtha or gas as the replacement is without going off and interrupting the process. The residual powder is added to the compost. In the work of the combustor the exuded superheated steam as energy source producec electricity, then it is cooling and remains in the system as hot water that can be used as intended.

**Results:** The waste is processed in real time, no need for landfill for more than 3 days storing the material to produce the "cleanest" green electricity and returned to the recycling production materials against payment of their costs - plastics, paper, glass and metals (without using the means of production, pollution of the environment of the manufacturing process and saving natural resources) as well as a valuable fertilizer, getting soil improvement.

waste2power technologies reduce or eliminate waste that is traditionally streamed to a "greenhouse gas" emitting landfill, or mine waste materials from existing landfills. Producing electricity from waste directly through combustion eliminates the intermediate

step of producing a combustible fuel commodity, such as methane, methanol, ethanol or synthetic fuels, and eliminates the need to contain potent greenhouse gas emitting fuels.



### Technical & Economic Data:

-  Produced heat produces superheated steam which drives turbines (General Electric last generation). Description of the Rotary Cascading Bed Combustor rated at 60,000 pounds (= 27.216 MT) per hour of 250 psi (= 17.5 kg/cm<sup>2</sup> ≈ 18 kg/cm<sup>2</sup>) saturated steam.
-  The typical amount of net electricity generated from one ton MSW is about 0.67 MWh of electricity. Thus (by way of example only) of 600 tons per day is produced about 17 MW of output power by so called “rotating combusting machine” – RCBC.
-  The minimum amount of waste submitted for processing under this technology is 120 up to 150 tons per day depending on the type and characteristics of waste.
-  Average relative price of the project is \$180 per one ton MSW. It provides the basis for approximately calculating the guide price of equipment. To get a quick idea about the process with all his options look the simplified block diagram.
-  Annual operating hours: 8,200.



### EXAMPLE

Cost & ROI

	<b>Small System:</b>	Initial investment:	\$15,000,000.- to \$18,000,000.-
		for Quantity of:	150 ton/day after sorting, producing:
		Output power Installed of	7 MW (that could power 2,000 average sized homes <i>or</i> 60.000 lbs of steam per hour for an industrial facility)
		Yearly Generated Energy:	57,400 MWh
		Price:	263.83 лв./MWh (Resolution #Ц-18 of June 20, 2011 of the State Committee of Energy and Water Control (ДКЕВР))
		Yearly Gross Revenues:	\$11,000,000.- (15,143,842 лв./1.38 лв/\$)
		Yearly Expenditures:	≈\$3,000,000.-
		<i>Operating Expenditures</i>	≈ 1,000,000.-
		<i>Loan Repayment</i>	≈ 2,000,000.-
		Yearly Operating Revenue:	≈\$8,000,000.-
	<b>Large System:</b>	Initial investment:	\$40,000,000.- to \$50,000,000.-
		for Quantity of:	300 to 600 ton/day after sorting, producing:
		Output power Installed of	25 MW (that could power 6,000 average sized homes
		Yearly Generated Energy:	200,000 MWh
		Price:	263.83 лв./MWh (Resolution #Ц-18 of June 20, 2011 of the State Committee of Energy and Water Control (ДКЕВР))
		Yearly Gross Revenues:	\$39,000,000.- (55,200,000 лв./1.38 лв/\$)
		Yearly Expenditures:	≈\$8,000,000.-
		<i>Operating Expenditures</i>	≈ 2,000,000.-
		<i>Loan Repayment</i>	≈ 6,000,000.-
		Yearly Operating Revenue:	≈\$31,000,000.-

The above estimations outline the general frame figures under which IIC would start negotiations with a Developer to arrange for and provide a line of credit available to a foreign buyer of U.S. equipment and services. Most of the parameters were developed from the information provided at our clients' inquiries, along with the practice with the management of our friendly banks. The above figures are subject to a uniform and comprehensive review and approval process, including full disclosure of all significant aspects of a credit and a business plan stipulating the purpose of the loan and the utilization of loan proceeds.

This EXAMPLE is an expression of interest to pursue a loan application primary based on the frame as outlined above. Any commitment on our part for financial support of a project would be contingent upon a comprehensive analysis of a final plan and the circumstances existing at that time.





### Schedule for Performance of the Project under the STANDARD CONDITIONS

1. IIC provides to Client/Borrower – government or municipality (or firm-concessioner) – this Proposal with the enclosure through the individuals – middlemen.
2. Borrower studies the materials (including and if required requests for additional information and/or meeting with **eec**'s experts and provides Letter of Assignment (LoA) of job (or as usually called "Letter of Interest" if his customary practice so requires) on its letterhead to IIC through e-mail communication, whereby he expresses his interest in: (i) the technology; (ii) the manner of financing the Project; (iii) the procedure; (iv) confirms the creditworthiness its own or of the guarantor; *and* (v) provides basic parameters such as the type of waste (only SMW or some mixed with industrial waste as the described types).
3. IIC provides draft of Memorandum or, as usually, **Letter Contract** (LC) which defines the parties obligations until approval of the loan applicant by the U.S. Agency as an eligible Borrower, prepayment of the technical expenses that usually associate with such an application and the agreed IIC's remuneration.

#### *After Signing LC:*

4. IIC provides two pro-forma invoice for (i) the initial technical expenses *and* (ii) remuneration to IIC's service and the achieved result.
5. Borrower makes conditional deposit with the servicing bank of IIC of the amount as mentioned in hereinabove set up Item 4 (ii) to be released for the benefit of IIC against presentation of written advice by the U.S. president administration represented by the governmental agency that the applicant is an eligible borrower.
6. Borrower concludes preliminary agreements for:
  - purchase of generated power,
  - purchase of industrial recycles; as well as the organic fertilizer for the agriculture,
  - gas and electricity consumption.
7. IIC makes: (i) analyses of the waste, (ii) inquires offers from the manufacturers for the expenses and data for the revenues of the Project, (iii) evaluation of profitability with the key financial indicators and risk factors *and* (iv) loan application to one of the American governmental credit agencies on behalf of the Borrower.
8. Borrower receives from said American Agency within one-week term general eligibility borrower confirmation stating that the application meets with the required criteria for extension of credit loan through e-mail and in the next couple of days will be posted by certified mail the instructions and drafts of the credit papers on hard copies. Parties conclude performance of LC obligations.
9. Borrower signs contracts for design and supply of equipment and credit agreement.

**We strongly recommend the Borrower's delegation of at least one expert and one top manager, accompanied by one of the leaders of **eec** to visit on a round business trip at least one plant in operation under the proposed technology on the east coast of the United States before confirming contracts with the U.S. parties for design, manufacture and supply the equipment.**

10. Borrower wires the amounts of front payment in amount of 15% of the corpus of the loan (principal only); this amount is advance payment for commencement of manufacturing the Project equipment and service performance.

11. **IIC** makes/adopts business plan, prepare insurance with the U.S. Federal Insurance Company and financing the Project with the balance of 85% of its price plus up to 15% of the export for local country expenses integral connected with the Project.
12. **eec** designs and constructs the building of the plant on the conceded construction site (if this it is so pre-agreed).
13. **eec** contract American forwarding company for the supply of equipment for the agreed port on the name of the Borrower, which transport it to the construction site and assigns the assembling to professional local country company under the supervision of the U.S. producer(s) under operative control of **eec**.
14. Organizes operation and training of the staff.
15. Repayment of the loan in equal six-month installments from the start of operation.

Followinf the practice the maximum term for entering in operation is 18 months from the date of financing the Project.

Enclosure: Modus Operandi



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