

**PROJECT IDEA NOTE****A. Project description, type, location and schedule**

**Name of Project:** MSW treatment Project of Water Sorting and comprehensive utilization in the City of Boluo

**Technical summary of the project**      **Date submitted:** June 2007

<b>Objective of the project</b>	Apply water sorting and comprehensive utilization in municipal solid waste treatment replacing landfill to realize waste reduction, recycling and harmless treatment.
<b>Project description and proposed activities</b>	<p><i>About ½ page</i></p> <p>This project was developed under the collaboration of WST International (Holdings) Limited and Boluo MSW Treatment Co. Ltd. Boluo company is the research base of Chinese Academy of Sciences, Guangzhou Institute of Energy Conversion for solid waste treatment and Refuse Derived Fuel Production and application. Basing on Boluo existing waste treatment plant site, a full size 500 Ton per day waste sorting system will be installed through the implementation of this project. From the operation start it will process 300 ton per day MSW from Boluo and the will receive MSW from other nearby districts as well</p>
<b>Technology to be employed</b>	<p><i>Describe in less than 5 lines.</i> Please note that support can only be provided to projects that employ commercially available technology. It would be useful to provide a few examples of where the proposed technology has been employed.</p> <p>The main technology employed in this project is automatic water sorting technology and comprehensive resource recycling and utilization technologies.</p> <p>the sorting system separates mixed MSW into 5 types of materials : non-organic fraction(such as sand and stone, etc), organic fraction, plastics fraction, flat and thin fraction(such as plastic and paper packing materials) and combustible fraction. The different sorted materials are then processed by different recycling technologies: the non-organic fraction will be landfilled or used for producing bricks, organic fraction will be produced as refined organic fertilizer, plastics and flat and thin fractions will be sold to recycling factories, and the high heat valued combustible fraction will be used for producing RDF for electricity generation through gasification (technology developed by GIEC).</p> <p>The automatic water sorting technology has been granted eight patents in China, USA, Taiwan, and has also achieved patents from Patents Cooperation Treaty in June 2004.</p>

<b>Project developer</b>	GIEC, Guangzhou Institute of Energy Conversion, Chinese Academy of Sciences
Name of the project developer	
Organizational category	a. Government b. Government agency c. Municipality d. Private company e. Non Governmental Organization
Other function(s) of the project developer in the project	Research institute. a. Sponsor b. Operational Entity under the CDM c. Intermediary d. Technical advisor
Summary of the relevant experience of the project developer	GIEC is a special research institute engaged in research and development of clean energy in engineering and science field and has an experienced working group in CDM project development.
Address	2# Nengyuan road, Wushan, Guangzhou, 510640, China
Contact person	Ms. Zhao daqing
Telephone / fax	8620-87057601
E-mail and web address, if any	<a href="http://www.giec.ac.cn">http://www.giec.ac.cn</a> , <a href="mailto:luozg@ms.giec.ac.cn">luozg@ms.giec.ac.cn</a>
<b>Project sponsors</b>	
<i>(List and provide the following information for all project sponsors)</i>	
Name of the project sponsor	WST International (Holdings) Limited Boluo MSW Treatment Co. Ltd.
Organizational category	a. Government b. Government agency c. Municipality d. Private company f. Non Governmental Organization
Address (include web address, if any)	d WST International (Holdings) Limited Sino Center, 7/F Room C 221 Chang Gang Zhong Road Hai Zhu Section Guangzhou , 510250 China  Boluo MSW Treatment Co. Ltd. Mei Hua Forest Centre MSW treatment plant Guangdong Boluo 516100, China
Main activities	WST is a corporation devoted to resolving the problems associated with municipal waste treatments by offering a wide range of services: <ul style="list-style-type: none"> <li>▪ Engineering Design for Environmental Protection</li> <li>▪ Project Consulting, Planning, Installment, Operational Management</li> <li>▪ Municipal Waste Treatment Projects</li> <li>▪ Waste Sorting System and Technology</li> </ul>

	Boluo MSW Treatment Company is mainly resolving the problems associated with municipal waste treatments using technologies: composting, pyrogenation incineration and gasification power generation.
Summary of the financials	<p><i>Summarize the financials (total assets, revenues, profit, etc.) in not more than 5 lines.</i></p> <p>In 2005, for Boluo MSW Treatment Co. Ltd. , the total assets is \$69,611(RMB556,891), revenues is \$124,819(RMB998,552), profit is \$-11,878(RMB-95,030)</p>
<b>Type of the project</b>	
Greenhouse gases targeted	CO <sub>2</sub> / CH <sub>4</sub> / N <sub>2</sub> O / HFCs / PCFs / SF <sub>6</sub> <i>(mention what is applicable)</i> CH <sub>4</sub>
Type of activities	Abatement
Field of activities	
a. Energy supply	Renewable energy, excluding biomass / biomass / cogeneration / improving energy efficiency by displacing existing equipment / minimization of transport and distribution / fuel switch (e.g., switch coal to biomass) <i>(mention what is applicable)</i>
b. Energy demand	Replacement of existing "household equipment" / improvement of energy efficiency of existing production equipment <i>(mention what is applicable)</i>
c. Transport	More efficient engines for transport / modal shift / fuel switch (e.g. public transport buses fuelled by natural gas) <i>(mention what is applicable)</i>
<u>d. Waste management</u>	<u>avoidance of methane production from biomass decay through composting and controlled combustion</u>
e. Land Use Change and Forestry	Afforestation/ reforestation/ forest management/ wetlands management/ watershed management/ improved agriculture / land degradation prevention <i>(mention what is applicable) -&gt; Additional information to be provided in Annex I</i>
<b>Location of the project</b>	
Region	East Asia & Pacific / South Asia / Central Asia / Middle East / North Africa / Subsaharan Africa / Southern Africa / Central America & the Caribbean / South America/Central & Eastern Europe <i>(mention what is applicable)</i>
Country	East Asia & Pacific China
City	Guangdong Boluo
Brief description of the location of the project	<p><i>No more than 3 - 5 lines</i></p> <p>The Boluo waste treatment company occupies 4.8 ha. and located in Boluo Mei Hua Forest Centre.</p>

<b>Expected schedule</b>	
Earliest project start date	Dec 2006
Estimate of time required before becoming operational after approval of the PIN	Time required for financial commitments: xx months Time required for legal matters: xx months Time required for negotiations: xx months Time required for construction: 12 months
Expected first year of verified Emission Reduction or CER / ERU delivery	2007
Project lifetime	20 years
Current status or phase of the project	Identification and pre-selection phase / opportunity study finished / pre-feasibility study finished / feasibility study finished / negotiations phase / contracting phase / etc. <i>(mention what is applicable and indicate the documentation [e.g., the feasibility study] available)</i>
Current status of the acceptance of the Host Country	Now the project implementation is under way. Letter of No Objection is available / Letter of Endorsement is under discussion or available / Letter of Approval is under discussion or available / Host Country Agreement is under discussion or signed / Memorandum of Understanding is under discussion or available / etc. <i>(mention what is applicable)</i>  Letter of Endorsement is not yet available
<b>The position of the Host Country with regard to the Kyoto Protocol</b>	The Host Country a. <u>signed or acceded to the Kyoto Protocol</u> or b. signed and has demonstrated a clear interest in becoming a party in due time (e.g., countries which have already started or are on the verge of starting the national ratification, acceptance or approval process) or c. signed the Kyoto Protocol, d. is a Party to the UNFCCC.

**B. Expected environmental and social benefits**

<b>Estimate of Greenhouse Gases abated / CO<sub>2</sub> Sequestered (in metric tons of CO<sub>2</sub>-equivalent)</b>	2007 : 10482 tonnes CO <sub>2</sub> e 2008 : 26185 tonnes CO <sub>2</sub> e 2009 : 38698 tonnes CO <sub>2</sub> e 2010 : 48676 tonnes CO <sub>2</sub> e 2011 : 56643 tonnes CO <sub>2</sub> e 2012 : 63012 tonnes CO <sub>2</sub> e total (2007-2012 ) : 243697 tonnes CO <sub>2</sub> e average(2007-2012) : 40616 tonnes CO <sub>2</sub> e
---	---

<b>Baseline scenario</b>	<p>CDM/JI projects must result in GHG emissions being lower than “business-as-usual” in the Host Country. At the PIN stage questions to be answered are at least:</p> <ul style="list-style-type: none"> <li>• Which emissions is the proposed Clean Development Mechanism (CDM)/Joint Implementation (JI) project displacing?</li> <li>• What would the future look like without the proposed CDM/JI project?</li> <li>• What would the estimated total greenhouse gas (GHG) reduction be?</li> </ul> <ol style="list-style-type: none"> <li>1. The project using the aerobic composting and RDF gasification power generation displacing the waste landfill so to avoid the CH<sub>4</sub> emission and abate the GHG emission.</li> <li>2. The scenario, without this project implementation, is mostly waste landfill and also without capture of landfill methane emissions.</li> <li>3. the types of GHG considered in GHG reduction calculation are CH<sub>4</sub>, N<sub>2</sub>O, CO<sub>2</sub> and the estimated GHG emission reduction is 243697 tonnes CO<sub>2</sub>e totally and 40616 tonnes CO<sub>2</sub>e averagely from 2007 to 2012,</li> </ol>
For sequestration projects only: Existing vegetation and land use	<i>(What is the current land cover and land use? Is the tree cover more or less than 30%?)</i>
<b>Specific global &amp; local environmental benefits</b>	<i>(In total about ¼ page)</i>
Which guidelines will be applied?	<p>Name and, if possible, the website location</p> <p>Regulations in prevention of solid waste pollution in the PRC Municipal Waste Management regulations in Guangdong regulations in prevention of solid waste pollution in Guangdong <a href="http://www.gdepb.gov.cn/flhbz/flfg/index.htm">http://www.gdepb.gov.cn/flhbz/flfg/index.htm</a></p>
Local benefits	<p>Less land resources taken up by landfill, and less solid waste contributing to ‘waste wall.’ Reduction in waste going to landfill also extends the life of the landfill.</p> <p>Minimization of secondary pollution such as soil contamination, land leachate and the methane gas, which causes conflagration and explosion, release of carbon gases to the atmosphere.</p> <p>The time waste is required to be stored in the plant is reduced to less than 2 hours, preventing the occurrence of liquid penetration, insects and odor accumulation, and chemical and biological reactions.</p> <p>Refuse derived fuel will offset diesel generators with higher criteria pollutants and/or grid electricity with higher criteria pollutants.</p> <p>The ashes produced by the burning of RDF are less than burning coal.</p>
Global benefits	Reduction of global GHG emissions.

<p><b>Socio-economic aspects</b> What social and economic effects can be attributed to the project and which would not have occurred in a comparable situation without that project? Indicate the communities and the number of people that will benefit from this project.</p>	<p>Compost will provide a high quality fertilizer product to the market. Organic fertilizers are high value added products, which are greatly demanded by the local market.</p> <p>The compost system minimizes the harmfulness to crops and improves fertilizer efficiency. It also has low electricity consumption and greatly reduces cost of fertilizer production.</p> <p>Demand for recycled plastic is high. The process creates great economic value.</p> <p>Refuse Derived Fuel is a source of sustainable energy.</p> <p>The electricity generated by burning RDF is 50% higher than burning untreated waste directly, thereby creating more electricity with fewer resources. Quality fuel at low cost.</p>
<p>Which guidelines will be applied?</p>	<p>Name and, if possible, the website location</p>
<p>What are the possible direct effects (e.g., employment creation, capital required, foreign exchange effects)?</p>	<p>The facility will employ 122 people locally.</p>
<p>What are the possible other effects? For example:</p> <ul style="list-style-type: none"> <li>•</li> </ul>	<p><i>training/education associated with the introduction of new processes, technologies and products and/or the effects of a project on other industries</i></p> <p>The project will lead to training/education associated with the introduction of new processes, technologies and products.</p>
<p><b>Environmental strategy/ priorities of the Host Country</b></p>	<p>A brief description of the relationship of the consistency of the project with environmental strategy and priorities of the Host Country <i>(Not more than ¼ page)</i></p> <p>In 1995, the 8<sup>th</sup> Standing Committee of the National People's Congress, the 16<sup>th</sup> meeting approved the "Regulations in prevention of solid waste pollution in the PRC" focusing on promotion of waste reduction, recycling and harmless treatment. The State Environmental Protection Administration of China state that in the 11<sup>th</sup> "Five Year Plan, the government will invest RMB 1,300 Billion in the area of environmental protection.</p>

**C. Finance**

<b>Total project cost estimate</b>	
Development costs	RMB 80,000,000
Installed costs	RMB 20,000,000
Other costs	RMB 20,000,000
Total project costs	RMB 120,000,000
<b>Sources of finance to be sought or already identified</b>	Sources of finance is not identified at present
Equity	Name of the organizations and finance (in xx US\$million)
Debt – Long-term	Name of the organizations and finance (in xx US\$million)
Debt - Short term	Name of the organizations and finance (in xx US\$million)
Not identified	xx US\$million
Carbon finance contribution sought	xx US\$million
Carbon finance contribution in advance payments. (The quantum of upfront payment will depend on the assessed risk of the project by the World Bank.)	xx US\$million and a brief clarification ( <i>not more than 5 lines</i> )
<b>Sources of carbon finance</b>	Name of carbon financiers other than PCF that you are contacting (if any)
<b>Indicative CER/ERU or vER Price (subject to negotiation )</b>	
<b>Total Emission Reduction Purchase Agreement (ERPA) Value</b>	
A period until 2012 (end of the first budget period)	xxUS\$ / €
A period of 10 years	xx US\$ / €
A period of 7 years	xx US\$ / €
A period of 14 years (2 * 7 years)	xxUS\$ / €
If financial analysis is available for the proposed CDM activity, provide the forecast financial internal rate of return for the project with and without the CER revenues. Provide the financial rate of return at the expected CER price above and US\$3/tCO <sub>2</sub> e. DO NOT assume any up-front payment from the PCF in the financial analysis that includes PCF revenue stream.  Please provide a spreadsheet to support these calculations.	financial analysis report is not available at present