

Project Idea Note

A. Project description, type, location and schedule

Name of Project: Co production of Bioethanol and co-firing using pellets bagasse's residues

Date submitted: 28/03/08

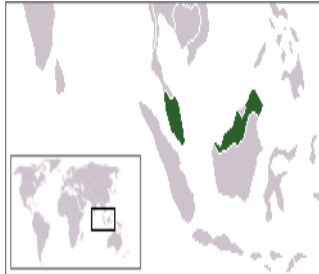
Technical summary of the project

Objective of the project	Promoting technology through CDM for production of bioethanol from Sweet Sorghum and using the residues trashes and bagasse for making agri-pellets. These pellets will be co-fired in a coal power plant for energy production.
Project description and proposed activities	<p>Promotion of the pelletiser technology for making grains and sugar juice, pellets directly from humid agriculture residues and baggages generated from sweet shorghum plantations. Production of the ethanol from the sweet sorghum</p> <p>Major Activities:</p> <ul style="list-style-type: none"> • Establishment of production unit • Promotion of the Sweet sorghum plantations • Modification of the thermal power plant for co-firing of agri pellets • Supply of pellets for co-firing to the thermal power plant • Because the moisture of A.P. is < 10% a max cofiring level of 20% can be envisaged.
Technology to be employed	<ul style="list-style-type: none"> • New pelletising technology, able to pelletise mixtures of most biomass and to dry mechanically the biomass; • Micro-distilleries for Sweet Sorghum • Blending of biomasses is thus possible to limit noxious compounds (like Cl-K...)

Project developer	EUBIA
Name of the project developer	Giuliano Grassi
Organizational category	<input type="checkbox"/> a. Government <input type="checkbox"/> b. Government agency <input type="checkbox"/> c. Municipality <input type="checkbox"/> d. Private company <input checked="" type="checkbox"/> e. Non Governmental Organization
Other function(s) of the project developer in the project	<input type="checkbox"/> a. Sponsor <input type="checkbox"/> b. Operational Entity under the CDM <input checked="" type="checkbox"/> c. Intermediary <input checked="" type="checkbox"/> d. Technical advisor <input type="checkbox"/> e. Others:

Summary of the relevant experience of the project developer	<ul style="list-style-type: none"> - Technical advisor for the development of pelletising technology - Technical advisor for governments for energy strategy (Brazil, Chili, Russian Federation, China...) - Consultant on Biomass sector for EU. - Partner and coordinator in related projects for the European Commission
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Project sponsors	
<i>[List and provide the following information for all project sponsors]</i>	
Name of the project sponsor	Investors in ETS, possibly through Carbon Trade Platform
Organizational category	<input type="checkbox"/> a. Government <input type="checkbox"/> b. Government agency <input type="checkbox"/> c. Municipality <input type="checkbox"/> d. Private company <input type="checkbox"/> e. Non Governmental Organization
Address (include web address, if any)	
Main activities	
Summary of the financials	
Type of the project	
Greenhouse gases targeted	<input checked="" type="checkbox"/> CO ₂ / <input type="checkbox"/> CH ₄ / <input type="checkbox"/> N ₂ O / <input type="checkbox"/> HFCs / <input type="checkbox"/> PFCs / <input type="checkbox"/> SF ₆
Field of activities	<input checked="" type="checkbox"/> a. Energy supply <input type="checkbox"/> b. Energy demand <input type="checkbox"/> c. Transport <input type="checkbox"/> d. Waste management <input type="checkbox"/> d. Manufacturing industries <input type="checkbox"/> e. Chemical industries <input type="checkbox"/> f. Mining/mineral industries <input type="checkbox"/> g. Fugitive emissions from fuels (solid, oil, gas) <input type="checkbox"/> h. Fugitive emissions from production and consumption of halocarbons and sulphur hexafluoride <input type="checkbox"/> i. Solvent use <input checked="" type="checkbox"/> j. Agriculture and livestock

Location of the project							
City	Not Identified						
District							
Brief description of the location of the project	<p style="text-align: center;">Malaysia</p> <p>Area: 329,750 sq km Crops: rubber, rice, wheat. Maize, Cassava. Sugar cane. Minerals: barite, bauxite, coal, dolomite, gold, iron, feldspar. Industries: electrical and electronics, agriculture, forestry, fisheries. Major city: Kuala Lumpur (over 1.6 million population) Power Plants:</p> <table border="1" style="width: 100%;"> <thead> <tr> <th>Power plant</th> <th>Installed capacity</th> </tr> </thead> <tbody> <tr> <td>Manjung coal-fired power plant</td> <td>2100 MW</td> </tr> <tr> <td>Kapar Power Station</td> <td>2420 MW</td> </tr> </tbody> </table> 	Power plant	Installed capacity	Manjung coal-fired power plant	2100 MW	Kapar Power Station	2420 MW
Power plant	Installed capacity						
Manjung coal-fired power plant	2100 MW						
Kapar Power Station	2420 MW						
Expected schedule							
Earliest project start date	2009						
Estimate of time required before becoming operational after approval of the PIN	Time required for financial commitments: 2-3 months Time required for legal matters: 2 months Time required for negotiations: 2 months Time required for construction: 12 months						
Expected first year of CER delivery	2010						
Project lifetime	20						
Current status or phase of the project	<input checked="" type="checkbox"/> Identification and pre-selection phase <i>Available documents:</i> <input type="checkbox"/> Opportunity study finished <i>Available documents:</i> <input type="checkbox"/> Pre-feasibility study finished <i>Available documents:</i> <input type="checkbox"/> Feasibility study finished <i>Available documents:</i> <input type="checkbox"/> Negotiations phase <i>Available documents:</i> <input type="checkbox"/> Contracting phase (<i>mention what contracts</i>)						

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	<p><i>Available documents:</i></p> <p><input type="checkbox"/> etc.: <i>Available documents:</i></p>
Current status of the acceptance of the Host Country	<p><input type="checkbox"/> Letter of No Objection is available</p> <p><input type="checkbox"/> Letter of Endorsement is under discussion or available</p> <p><input type="checkbox"/> Letter of Approval is under discussion or available</p> <p><input type="checkbox"/> Host Country Agreement is under discussion or signed</p> <p><input type="checkbox"/> Memorandum of Understanding is under discussion or available</p> <p><input type="checkbox"/> etc.:</p>

B. Expected environmental and social benefits

<p>Estimate of Greenhouse Gases abated (in metric tons of CO₂-equivalent)</p>	<p>Annually :</p> <ul style="list-style-type: none"> - 1 ton of A.P. saves (substitution): ~ 1.3/1.4 ton CO₂ - Biorefinery from Sweet sorghum : Has high energy yield (~ 10/12 TOE/ha) and thus able to absorb a large amount of atmospheric CO₂ : 30 - 50 tCO₂ /ha.cycle. - Potential CO₂ saving up to 30t CO₂/ha.cycle
<p>Baseline scenario</p>	<p>CDM 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"> • Which emissions is the proposed CDM project displacing? <ul style="list-style-type: none"> - Coal replacement using agro-residues pelletised for optimized power generation (cofiring) - Reduced transportation distance and thereby vehicular emission for transportation of coal. - Replacement of fossil fuel by bio-ethanol • What would the future look like without the proposed CDM project? <ul style="list-style-type: none"> - No reduction in emission and problems of energy production with decline of fossil fuel availability. • What would the estimated total greenhouse gas (GHG) reduction be? <ul style="list-style-type: none"> - 20% cofiring level means about the utilization of 0,35 t of Agro-pellets (4000 Kcal/Kg) for every 0,8 ton of coal.
<p>Specific global & local environmental benefits</p> <p>Which guidelines will be applied?</p>	<p>-----</p>
<p>Local benefits</p>	<p>The proposed technology for production of ethanol is environmentally more efficient than sugarcane based production system :</p> <ul style="list-style-type: none"> - Sweet sorghum cultivation uses almost 1/3 of the water in comparison with sugarcane and thus avoids adverse effect on the water table contrary to sugarcane and corn. - Environmental impacts of use of biofuel (ethanol) as transport fuel especially in urban areas. - Help the local Farmers increasing the labour revenue bringing out numerous socio-environmental benefits like new diversified jobs.
<p>Global benefits</p>	<p>Help to reduce GHG emission</p>
<p>Socio-economic aspects</p> <p>What social and economic effects can be attributed to the project and which would not have occurred in a comparable situation without that project?</p>	<p>Malaysia energy consumption has increased and become comparable to larger energy consumers worldwide. Thus, Malaysia is increasing its efforts to promote renewable energy and energy efficiency especially in buildings.</p> <p>Regarding forestry and crops resources, it is noted that logging only began to make a substantial contribution to the economy. Forest residues could be utilised profitably also for co-firing activity.</p>

	<p>The diverse biofuels policy initiatives are reviewed and the potential for domestic biofuels production and consumption assessed. In addition, the opportunity for the agricultural sectors to export either raw materials or finished biofuels into the global fuels market.</p>
<p>Which guidelines will be applied?</p>	
<p>What are the possible direct effects (e.g., employment creation, capital required, foreign exchange effects)?</p>	<ul style="list-style-type: none"> • Generate additional employment for harvesting, transportation of the stalks and at production unit • Double cropping of the sorghum would generate addition employment opportunities. • Could promote secondary service like dairy activity, better ROI, as the by product from the ethanol processing unit could be used as feed or energy (DDG and stillage).
<p>What are the possible other effects? For example:</p> <ul style="list-style-type: none"> • training/education associated with the introduction of new processes, technologies and products and/or • the effects of a project on other industries 	<ul style="list-style-type: none"> • Training and promotion of sweet sorghum cultivation • Operations: Apart from the technology to be used for processing of the sweet sorghum, some efforts would be needed on the operational aspects of the project like Cultivation (whole range from providing high quality seeds (hybrids) to cultural practices), harvesting , transportation (modelling to reduce transportation time and processing the stalks within the stipulated time), processing, which would generate additional employment and would also demand capacity building of the manpower • This activity could also bring about the multiplier effect and would set example for initiation of new units • Directly: Thermal power plant, Refineries • Indirectly: automobile (engine adaptation for high diesel oil/gasoline blending with bioethanol)...
<p>Environmental strategy/ priorities of the Host Country</p>	<p>National energy policies reflect environmental protection requirements in conjunction with concerns for competitiveness and supply security. Improvements in energy efficiency both benefit supplies by reducing the amount of energy consumed and reduce emissions of greenhouse gases (GHGs) and pollutants by reducing the consumption of fossil fuels. As represented by the Kyoto Protocol, energy and the environment are interrelated issues that must be addressed together. They are fast becoming the focus of widespread attention as global priority issues. It is increasingly important for consumers to control their usage of energy resources from the standpoint of environmental preservation and for industrial sectors to increase their efficiency of energy consumption.</p> <p>Subsequently, the implementation of renewable energy systems, cleaner production tactics as well as energy efficient production methods have been proven to reduce both operating and maintenance costs for factories. The implementation of energy efficiency measures can lead to a reduction of 28% of Malaysia’s current GHG emissions. Thus, the potential viability of energy efficiency and renewable energy, together with carbon trading credits via the CDM, needs to be seriously looked into as a way of achieving cost, energy and environmental savings for the nation.</p>