

## PROJECT IDEA NOTE

### **Description of size and quality expected of a PIN**

Basically a PIN will consist of approximately 5-10 pages providing indicative information on:

- A.** Project participants
- B.** Project description, type, size, location and schedule
- C.** Avoided / reduced GHG emissions
- D.** Financial aspects
- E.** Expected environmental and socio-economic benefits
- F.** Risks
- G.** Other relevant information

<b>Name of the Project</b>	Mukwano Fuel Switching Project
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### A. Project Participants

<b>Project developer (proponent)</b>	
Name of the project developer	Mukwano Industries (T) Limited
Organizational category	Private company
Other function(s) of the project developer in the project	The project developed will raise funds to finance the development of the proposed project activity.
Summary of the relevant experience of the project developer	Mukwano Industries (T) Limited is part of Mukwano Group of companies engaged in manufacturing of edible oil and soaps. The company has two sections, an edible oil refinery and a soap factory. The proposed project will be implemented at oil refinery factory. For a long time the project developer has been conducting researches and studies on how to shift from using HFO to other fuel(s) which is less carbon intensive as well as inexpensive under CDM mechanism. The research revealed that the cost of the project development surpassing the CERs revenues but the deficit will be taken care of by the savings from using natural gas which is less expensive compared to HFO.
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<b>Project sponsors</b>	
<i>(List and provide the following information for all project sponsors)</i>	
Name of the project sponsor	
Organizational category	
Address (include web address, if any)	
Main activities	<i>Not more than 5 lines</i>
Summary of the financials	<i>Summarize the financials (total assets, revenues, profit, etc.) in less than 5 lines.</i>

### B. Project Description, Type, Size, Location and Schedule

<b>Technical Summary of the Project</b>	
<b>Objective of the Project</b>	The objective of this project is to reduce emissions of CO <sub>2</sub> to the atmosphere by substituting 100% of high carbon intensive heavy fuel oil currently used in the factory with less carbon intensive natural gas.
<b>Project description and proposed activities (including a technical description of the project)</b>	The project activity will replace 2,190,000 litres of heavy fuel oil per year currently used in running a boiler (specification: 6 ton, 17 bar, 85% efficiency) to generate heat (steam) which runs turbines to generate electricity at the oil refinery section with (87,600m <sup>3</sup> /year) of natural gas using boiler with 90% efficiency. The heat generated is 75,977.55 GJ/year which is equivalent to 21,127.31MWh of electricity/year. As natural gas emits less CO <sub>2</sub> to the atmosphere compared to heavy fuel oil, the project will reduce emissions of 2,656 tCO <sub>2</sub> equivalent per year. The project will involve installation of

	<p>new boilers in order to use natural gas instead of HFO as well as connecting the factory with Songosongo gas pipeline.</p> <p>The project developer together with Pan African Energy (Songosongo gas supplier) has started construction of natural gas supply pipelines from the main pipeline to the proposed project site. The gas will be supplied directly to the plant and no natural gas storage facility will be constructed at the proposed project site. After construction of natural gas supply system, the next phase will be replacing of HFO using boiler with natural gas using boiler to be procured by the project developer. The project developer has planned to train local existing technicians on how to operate and maintain the new technology to be employed.</p>
<b>Technology to be employed</b>	The technology to be employed involves installation of a new high pressure boiler (6 ton, 17 bars) run by natural gas. The boiler will replace completely the existing heavy fuel oil based boiler. Apart from minor equipment changes in the factory such a removal of HFO distribution system and storage facility, the main changes will involve replacement of HFO using boiler at the production section with natural gas using boiler. The installation of natural gas pipelines from the Songosongo gas pipeline to the production section in the oil refinery plant will also be done.
<b>Type of Project</b>	
Greenhouse gases targeted	Carbon Dioxide (CO <sub>2</sub> )
Type of activities	Manufacturing industries
<b>Field of activities</b>	
a. Energy supply	N/A
b. Energy demand	N/A
c. Transport	N/A
d. Industrial processes	Replacement of high carbon intensive fuel (Heavy fuel oil) with less carbon intensive fuel (natural gas)
e. waste management	N/A
<b>Location of the Project</b>	
Governorate	United Republic of Tanzania
City	Dar es Salaam
Brief description of the location of the plant	The project is located in Ilala District, Dar es Salaam region, eastern Tanzania. The company has two sections; an edible oil refinery situated 10 km from the Dar es Salaam city centre and a soap division located in Keko area about 6 km from the city centre.
<b>Expected schedule</b>	
Earliest project start date	2011
Estimate of time required before becoming operational after approval of the PIN	Time required for financial commitments: 2 months Time required for legal matters: 3 months Time required for negotiations: 3 months Time required for construction: 8 months
Expected first year of CER delivery	2011

Project lifetime	15 years
Current status or phase of the project	Pre-feasibility Study
Current status of the acceptance of the Host Country	Letter of No Objection is under discussion
<b>The position of the Host Country with regard to the Kyoto Protocol</b>	Tanzania has signed and ratified the Kyoto Protocol
<b>Project Size</b>	
<b>Is the project a small-scale project?</b>	Yes

### C. Avoided/ Reduced GHG Emissions

<b>Selected Crediting Period</b>	
10 years	
<b>Estimated Avoidance/Reduction of emissions in accordance with the Kyoto Protocol</b>	
<input type="checkbox"/> Carbon Dioxide(CO <sub>2</sub> )	2,656 tCO <sub>2</sub> equivalent per year
<input type="checkbox"/> Methane (CH <sub>4</sub> )	N/A
<input type="checkbox"/> Nitrous Oxide (N <sub>2</sub> O)	N/A
<input type="checkbox"/> Hydrofluorocarbons (HFCs)	N/A
<input type="checkbox"/> Perfluorocarbons (PFCs)	N/A
<input type="checkbox"/> Sulphur Hexafluoride SF <sub>6</sub>	N/A
<b>Reference Scenario or Baseline</b>	
<b>Description of the reference level:</b>	
<p><b>Baseline Methodology to be used</b> The SSC baseline methodology Type III B “<b>Switching fossil fuel</b>” will be used. This methodology is applicable to project activities that switch from heavy fuel oil/boiler used in generation of heat/power in industrial processes to natural gas/boiler.</p> <p><b>What modifications the project would induce?</b> The project activity will reduce emissions of CO<sub>2</sub> to the atmosphere by replacing the heavy fuel oil currently used in heat/power generation with natural gas. The project will also contribute to achievement of sustainable development by promoting cleaner industrial production in Tanzania</p> <p><b>What would be the situation in the absence of the project activity?</b> The absence of the project activity would mean continuation of emission of CO<sub>2</sub> to the atmosphere resulting from the use of heavy fuel oil in heat/power generation ‘business as usual scenario’.</p>	
<b>Expected Emission Reductions During the Crediting Period</b>	
<p>Total Certified Emission Reductions (CERs) per year: 2656 tCO<sub>2</sub> equivalent</p> <p>Total emission reduction for the Crediting period: 26,560 tCO<sub>2</sub> equivalent for 10 years</p>	

#### D. Financial Aspects

<b>Total Estimated Costs(*)</b>	
Development Costs	US\$ 0.5.0 M
Installation Costs	US\$ 2.0 M
Other Costs	US\$ 1.0 M
Total Cost of Project	US\$ 3.5 M
(*) Please add any additional relevant information in this table if needed.	
<b>Sources of Identified Financing</b>	
Cash	
Long Term Loan	
Short Term Loan	
<b>Expected Revenues from <u>CERs transfer</u></b>	
Projected Price of the CERs	US\$ 15/tCO <sub>2</sub> equivalent
Estimated total CDM Revenues	US\$ 0.03984M for 1 year
Details of the expected Revenues during the accountability period	US\$ 0.3984 M for a period of 10 years
Amount and Modalities for the transfer of the CDM Contribution	
Advanced allocation.....	.....In \$ US
Yearly transfers.....	.....In \$ US
<b>Additional Financing</b>	
Will the project receive co-financing under ODA (Overseas Development Aids) or from any other sources like GEF? Please mention the amount(s)	No

#### E. Expected Environmental and socio-economic Benefits

<b>Specific global &amp; local environmental benefits</b>	<i>(In total about ¼ page)</i>
Which guidelines will be applied?	Tanzania environmental and social guidelines for sustainable development as identified in the CDM national investor's Guide of 2004
Local benefits	- Reduction of smokes and bad odour which might threaten health of both workers and the surrounding community. - Preventing environmental pollution caused by leakage of heavy fuel oil.
Global benefits	The project will generate heat using natural gas which emits

	less CO <sub>2</sub> than the currently used heavy fuel oil, hence helps mitigates the negative impacts of global warming.
<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? Explain the relationship between the project and the benefiting community/ies.	- Encouraging environmental friendly technology transfer. - Creation of new job opportunities to both skilled and unskilled people during the construction of natural gas pipelines and installation of boilers. - As there will be no importation of heavy fuel oil, the foreign money saved can be spent on other important things relating to socio-economic development in the country.
Which guidelines will be applied?	Tanzania environmental and social guidelines for sustainable development as identified in the CDM national investor's Guide of 2004
What are the possible direct effects (e.g., employment creation, capital required, foreign exchange effects)?	- Decrease unemployment by employing semi-skilled workers during the construction process. - Improve environmental friendly technology transfer for cleaner industrial production
What are the possible other effects? For example: - training/education associated with the introduction of new processes, technologies and products and/or - the effects of a project on other industries	- Upgrading skills of professionals through training on new processes associated with project implementation. - The project will encourage other industries to switch from using high carbon intensive fuel to less carbon intensive fuels with possible cost reduction impacts.
<b>Environmental strategy/ priorities of the Host Country</b>	Tanzanian prioritizes environmental protection and promotes renewable energy technologies for achievement of sustainable development.

#### F. Risks

<b>Risks in the Project</b>	Please describe the factors that may cause delays in, or prevent implementation of the project
<b>Estimate the Degree of Risk</b>	
Technical risk	<input type="checkbox"/> High since the proposed technology is not commonly practised in Tanzania
Timing risk	<input type="checkbox"/> Low since project implementation depends very much on the finalization of CDM legal process, which might take longer time.
Budget risk	<input type="checkbox"/> Low since the developer will finance the project.

#### G. Other Relevant Information

Please mention any additional information or precisions to justify the project under CDM
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