

Project Idea Note (PIN)

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

Name of the Project	Tanga Cement Fuel Switching Project
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A. Project Participants

Project developer (proponent)	
Name of the project developer	Tanga Cement Company Limited
Organizational category	Private company
Other function(s) of the project developer in the project	---
Summary of the relevant experience of the project developer	Tanga Cement Company Ltd is situated in Tanga Region. Currently, the company produces about 600,000 tons of cement per year. In the near future the company is planning to expand its production to 1,400,000 tones/ year.
Address	P.O. Box 5053, Tanga, Tanzania
Contact person	Mr. Onesmo Kitomari
Telephone / fax	+255 27 2644500
E-mail and web address, if any	www.simbacement.co.tz
Project sponsors	
<i>(List and provide the following information for all project sponsors)</i>	
Name of the project sponsor	Not yet secured
Organizational category	
Address (include web address, if any)	Address, PO Box, City, Country
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

Technical Summary of the Project	
Objective of the Project	The objective of this project is to construct a 17.5 MW capacity co-fired power plant (using biomass and coal as fuels) at Tanga cement factory for onsite and grid consumption.
Project description and proposed activities (including a technical description of the project)	
<p>Currently, Tanga Cement Company Limited receives its electricity from the national grid owned by Tanzania National Electricity Supply Company (TANESCO). Due to high cost of grid electricity, Tanga Cement Company proposed an independent power generation of 17.5MW capacity using coal as fuel. This plant will be running on coal 100% in the first year, and subsequently replaced with biomass (saw dusts, rice husks, cashew nut shells, sunflower cakes, cotton cake, coconut shells, wood pieces, sisal plant residues, and Jatropha). It is expected that, 8000h of land will be established for production of the required 120,000tons of biomass per year. After three years, the project will be running 100% on biomass. The trucks used to collect cement will be used to transport biomass from the production site to the power plant within the factory.</p>	
Technology to be employed	
<p>The power plant will consist of two co-fired steam generators with efficiency of 60% based on the Circulating Fluidized Bed Combustion (CFBC). This technology is used as it provides highest fuel flexibility and best ash quality, possibility of using various types of fuels, high combustion</p>	

efficiency, and low emissions of other pollutants such as NO _x and SO _x . The plant will use bituminous coal (average lower heating value of 25MJ/kg) and biomass (average lower heating value of 17.2 MJ/kg). The two boilers will be directed to one steam chamber and also a 17.5 MW generator will be installed. The emission reductions will be ensured by installing a direct injection of lime into the combustion chamber and a bag house filters before the stack.	
Type of Project	
Greenhouse gases targeted	Carbon Dioxide (CO ₂)
Type of activities	Manufacturing industries
Field of activities	
a. Energy supply	Fuel switching
b. Energy demand	N/A
c. Transport	N/A
d. industrial processes	N/A
e. waste management	N/A
Location of the Project	
Governorate	Tanzania
City	Tanga
Brief description of the location of the plant	Tanga Cement is situated at Pongwe, in Tanga urban District in Tanga Region. Pongwe is located which is about 18 km west of Tanga City Centre. Tanga region is located in north eastern Tanzania xxx
Expected schedule	
Earliest project start date	2010
Estimate of time required before becoming operational after approval of the PIN	Time required for financial commitments: 3 months Time required for legal matters: 3 months Time required for negotiations: 3 months Time required for construction: 6 months
Expected first year of CER delivery	2011
Project lifetime	20 years
Current status or phase of the project	
Current status of the acceptance of the Host Country	
The position of the Host Country with regard to the Kyoto Protocol	Tanzania has signed and ratified the Kyoto Protocol.
Project Size	
Is the project a small-scale project?	No

C. Avoided/ Reduced GHG Emissions

Selected Crediting Period	
10 years	
Estimated Avoidance/Reduction of emissions in accordance with the Kyoto Protocol	
<input type="checkbox"/> Carbon Dioxide(CO ₂)	846,732 tCO ₂ equivalent
<input type="checkbox"/> Methane (CH ₄)	N/A
<input type="checkbox"/> Nitrous Oxide (N ₂ O)	N/A

<input type="checkbox"/> Hydrofluorocarbons (HFCs)	N/A
<input type="checkbox"/> Perfluorocarbons (PFCs)	N/A
<input type="checkbox"/> Sulphur Hexafluoride SF ₆	N/A
Reference Scenario or Baseline :	
Description of the reference level:	
Baseline Methodology to be used An approved consolidated baseline methodology ACM 006 “Consolidated methodology electricity generation from biomass residues” will be used.	
What modifications the project would induce? The project would generate electricity using renewable biomass instead of fossil fuel hence reduce emissions of CO ₂ to the atmosphere.	
What would be the situation in the absence of the project activity? In the absence of the project activity, coal would continue to be the only fuel used by the factory in cement manufacturing process ‘business as usual scenario’. This is mainly due to the high costs of alternative fuels such as natural gas and diesel; this would increase the emissions of CO ₂ to the atmosphere and contribute to the problems of global warming.	
Expected Emission Reductions During the Crediting Period	
Total Certified Emission Reductions (CERs) per year: 84,673 tCO ₂ equivalent.	
Total emission reduction for the crediting period: 846,732 tCO ₂ equivalent for 10 years	

D. Financial Aspects

Total Estimated Costs(*)	
Development Costs	US\$ 7.0 M
Installation Costs	US\$ 15.0 M
Other Costs	US\$ 4.7 M
Total Cost of Project	US\$ 26.7 M
(*) Please add any additional relevant information in this table if needed.	
Sources of Identified Financing	
Cash	
Long Term Loan	
Short Term Loan	
Expected Revenues from <u>CERs transfer</u>:	

Projected Price of the CERs	15 US\$/tCO ₂ equivalent
Estimated total CDM Revenues	US\$ 1.27 M per year
Details of the expected Revenues during the accountability period	US\$ 12.7 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
Additional Financing	
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

Specific global & local environmental benefits	<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	- Reduce local environmental pollutions from coal combustions.
Global benefits	- Reduction of GHG emission to the atmosphere will reduce the negative impacts of global warming
Socio-economic aspects 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.	- Potential to increase cement production at a cost affordable to majority. - Collection of agricultural residue will create income generation possibilities to the communities hence improved standard of living. - Use of residue will reduce the amount of solid waste to be disposed of in the community's local areas.
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)?	- Sustained direct employment in Tanga Cement - Availability of extra power may enhance industrial growth and thus contribute to creation of new jobs - Collection of agricultural residue and transportation of the same will also create another avenue of income generation activities.
What are the possible other effects?	- Having generating its own power will ensure availability of

For example: training/education associated with the introduction of new processes, technologies and products and/or the effects of a project on other industries	power to other users in Tanga and stimulate the economic growth in the region. - Replication of the technology to other industries.
Environmental strategy/ priorities of the Host Country	Tanzanian prioritizes environmental protection and promotes renewable energy technologies for achievement of sustainable development

F. Risks

Risks in the Project	
Estimate the Degree of Risk	
Technical risk	<input type="checkbox"/> Medium since the technology to be employed will be proven with reasonable track record, however, it is not common in Tanzania
Timing risk	<input type="checkbox"/> High since lack of venture capital may delay the time for start.
Budget risk	<input type="checkbox"/> High as lack of venture capital partner(s) if project return not attractive enough, biomass price inflation, lack of interested EPC Contractor.

G. Other Relevant Information

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