

Project Idea Note or PIN

Description of size and quality expected of a PIN

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

- the type and size of the project
- its location
- the anticipated total amount of Greenhouse Gas (GHG) reduction compared to the “business-as-usual” scenario (which will be elaborated in the baseline later on at Project Design Document [PDD] level)
- the suggested crediting life time
- the suggested Certified Emission Reductions (CER) price in US\$/ton CO₂eq reduced
- the financial structuring (indicating which parties are expected to provide the project’s financing)
- the project’s other socio-economic or environmental effects/benefits

While every effort should be made to provide as complete and extensive information as possible, it is recognised that full information on every item listed in the template will not be available at all times for every project.

PROJECT IDEA NOTE**A. Project description, type, location and schedule****Name of Project: Biodiesel Farming, Processing and Utilization for the 5MW Small Power Plant in Boac, Marinduque**

Technical summary of the project Date submitted: _____

Objective of the project	The Biodiesel Project aims to produce sustainable locally-sourced biodiesel supply for the municipality of Boac, Marinduque province, which shall be used in the generation of power in the area, thereby displacing 20% of traditional industrial diesel oil/fuel presently utilized by the existing 5MW power plant and in the process, generating additional savings for the government.
Project description and proposed activities (including a technical description of the project)	<p>The project shall be utilized the biodiesel produced from an indigenous crop, <i>Jatropha curcas</i>, locally known as “tuba tuba” as fuel blend for the power plant in Boac, Marinduque. The use of biodiesel from the <i>Jatropha</i> tree is perceived as a first of its kind in the Philippines.</p> <p>The project constitutes of 3 main components, namely:</p> <ol style="list-style-type: none"> Biodiesel crop farming Biodiesel processing – extraction of oil from the seeds and processing said <i>Jatropha</i> oil into an ester product or Biodiesel. Biodiesel Utilization – blend of Coco-Biodiesel and <i>Jatropha</i> Biodiesel to displace 20% of fossil fuel used for power generation.
Technology to be employed	<ol style="list-style-type: none"> (Traditional) Introduction of new agricultural practices in the planting of the indigenous biodiesel/energy crop. Utilization of an Expeller to extract the oil from the crop nuts. The extracted oil will undergo into esterification process to covert vegetable oil into derived ester using biodiesel refinery. Blending of the <i>Jatropha</i> methyl ester (JME) with the coconut methyl ester (CME) enhance the quality of the biodiesel end-product using the ratio 15% JME : 5% CME

Project developer	
Name of the project developer	Philippine Coconut Authority as project developer and implementer. Other institutions should be collaborated for efficient implantation of the project (DOE, TUP and DOST-PCIERD)
Organizational category	Government
Other function(s) of the project developer in the project	Research and development of coconut and other palm oils
Summary of the relevant experience of the project developer	Development of coconut methyl ester as petroleum diesel enhancer and development of bio 2T for 2-stroke spark ignition engine for tricycles
Address	Philippine Coconut Authority, Elliptical Road Diliman, Quezon City
Contact person	Engr. Roberto C. Ables

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Name of Project
Date of Submission

Telephone / fax	PCA, Biodiesel Program Office 02-4267726 / 9281085
E-mail and web address, if any	robertcables@yahoo.com
Project sponsors	
(List and provide the following information for all project sponsors)	
Name of the project sponsor	DOST – PCIERD
Organizational category	Government
Address (include web address, if any)	DOST Compound Bicutan, Taguig Metro Manila
Main activities	Industry and Energy Research and Development
Summary of the financials	Capital Cost of the project includes local and foreign procurement of most equipment.
Type of the project	
Greenhouse gases targeted	CO ₂ emission reduction : fossil fuel displacement
Type of activities	CO ₂ abatement
Field of activities	Biodiesel generation Displacement of diesel consumption of the 5MW power plant Blends of biodiesel for power supply
a. Energy supply	Biodiesel energy supply, partial fuel switching
b. Energy demand	Provision of biodiesel fuel for electric power generation onsite
c. Transport	N/A
d. Waste management	Cake resulting from the extraction process will be used as agricultural fertilizer and the biodiesel by-product, glycerine, may be processed into other high value products like soap, paint resin, and among other by high value products.
e. Land Use Change and Forestry	a. Utilization of marginal land, like the mine tailing in Marinduque. b. Intercropping to coconut trees.
Location of the project	
Region	Southeast Asia
Country	Philippines
City	Municipality of Boac, Marinduque Province
Brief description of the location of the plant	The project is located within the Municipality of Boac, on the island of Marinduque, Region 4B, with all 3 components of the project situated adjacent to one another, near the existing 5MW power plant
Expected schedule	
Earliest project start date	Project construction is expected to start in June 2005, and is expected to be completed within 18 months
Estimate of time required before becoming operational after approval of the PIN	18 months
Expected first year of CER delivery	2007
Project lifetime	21 years

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Current status or phase of the project	Continuation of biodiesel development; Identification and pre-selection phase
Current status of the acceptance of the Host Country	PIN for submission to DNA
The position of the Host Country with regard to the Kyoto Protocol	Host country has signed and acceded to the Kyoto Protocol and has designated the DENR as the CDM National Authority in June 2004.

B. Expected environmental and social benefits

Estimate of Greenhouse Gases abated / CO₂ Sequestered (in metric tons of CO₂-equivalent)	3,380 mtCO ₂ e per annum
Baseline scenario	Without the biodiesel fuel, use of traditional industrial diesel fuel would continue, generating higher emissions of CO ₂ and continuous reliance on imported fossil fuels
Specific global & local environmental benefits	Fossil fuel displacement / Fuel switching – the use of biodiesel from Jatropha and coconut, the combustion of which is seen as carbon-neutral, will displace a percentage of the fossil fuel consumed by the power plant, thereby reducing CO ₂ emissions as compared to the existing CO ₂ emissions from 100% reliance on traditional diesel fuels.
Which guidelines will be applied?	Modalities and Procedures for Small Scale CDM Projects
Local benefits	Displacement of fossil fuel with biodiesel resulting to carbon dioxide emission reduction
Global benefits	Greenhouse gas benefits through partial displacement of fossil fuel
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?	Savings in foreign investments for the country and additional savings for the municipality of Boac, Marinduque with the use of an indigenous source of fuel (biodiesel) and resulting reduction in the consumption of imported fossil fuel; employment creation for the local communities in the farming, processing and utilization of biodiesel; training and education associated with the introduction of biodiesel generation from Jatropha; supplementary income from sales of the fertilizer (Jatropha cake waste) or savings from fertilizer use in the Jatropha farm and income from the sale of glycerine for soap production
Which guidelines will be applied?	Guidelines set by the Host DNA for power projects
What are the possible direct effects (e.g., employment creation, capital required, foreign exchange effects)?	See “socio-economic benefits” above.
What are the possible other effects? For example: <ul style="list-style-type: none"> training/education associated with the introduction of new processes, technologies and 	Training of local farmers in jatropha farming which also aimed to incorporate the cooperative training. Training of Marinduqueños in the processing of biodiesel Lower cost of electricity for Marinduque and savings in operating costs

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<p>products and/or</p> <ul style="list-style-type: none"> the effects of a project on other industries 	<p>Possibilities of adoption and replication of the biodiesel project by other potential beneficiaries (e.g. other provinces, transport sector)</p>
<p>Environmental strategy/ priorities of the Host Country</p>	<p>The Philippines has passed the Clean Air Act and with biodiesel as a cleaner fuel alternative, will readily comply with the requirements under the law.</p> <p>The Philippine Government is also promoting the use of clean and indigenous sources of energy as one of the priority development areas and the biodiesel project is an affirmative act in response to this policy. At the same time, the project enhances the diversity of power sources for the island community of Marinduque.</p>

C. Finance

Total project cost estimate	
Development costs	USD 80,000
Installed costs	USD 535,800
Other costs	USD 50,000 including taxes
Total project costs	USD 665,800
Sources of finance to be sought or already identified	
Equity	
Debt – Long-term	
Debt - Short term	
Not identified	
CDM contribution sought	
CDM contribution in advance payments. (The quantum of upfront payment will depend on the assessed risk of the project by the World Bank, and will not exceed 25% of the total ER value purchased by the World Bank for the project. Any upfront payment will be discounted by a factor considered appropriate by the World Bank for the project.)	
Sources of carbon finance	World Bank – Community Development Carbon Fund
Indicative CER Price (subject to negotiation and financial due diligence)	USD 4.50
Total Emission Reduction Purchase Agreement (ERPA) Value	USD 106,470 (first seven years of CER delivery)
A period until 2012 (end of the first budget period)	USD 106,470 (first seven years: 2005-2012)
A period of 10 years	USD 152,100
A period of 7 years	USD 106,470
A period of 14 years (2 * 7 years)	USD 212,940

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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/tCO₂e. 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.

$$\begin{aligned} \text{Ratio} &= (\text{ERPA} + \text{Net Income}) / \text{Total Project Cost} \\ &= (\text{USD } 106,470 + 1,720,714.34) / \text{USD } 665,800 \\ &= 2.74 \end{aligned}$$

without ERPA:

$$\begin{aligned} \text{Ratio} &= \text{USD } 1,720,714.34 / \text{USD } 665,800 \\ &= 2.58 \end{aligned}$$