

Mini - Project Idea Note

Generic Name of Project: **Palm Oil Company (POC) #1 - 6.6 MW Palm Oil Residues Power Plant Project**

Date submitted: **10 April 2007**

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| Technical summary of the project | |
| Greenhouse gases targeted | <input checked="" type="checkbox"/> CO ₂ / <input checked="" 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 checked="" 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 type="checkbox"/> j. Agriculture and livestock |
| Objective of the project | To reduce greenhouse gases due to displacement of CO ₂ emissions from electricity generation by other sources (displacement of grid electricity); and avoidance of CH ₄ emissions from uncontrolled burning or decay of palm oil residues in the open-air environment. |
| Project description and proposed activities | <p>The project is a palm residues fired power plant in Prachuabkirkhan province, Thailand, with approximately 6.6 MW-gross capacity. Biomass fuel to be used in the project is palm oil residues: waste from crude palm oil production process which consists of palm shell, palm fiber, and empty fruit bunch (EFB). The power plant shall consume approximately <i>150 ton/year</i> of palm empty fruit bunch, <i>36 ton/year</i> of palm shell, and <i>36 ton/year</i> of palm fiber. Water consumption of the project will be of approximately 120 m³/day.</p> <p>The Biomass power plant shall export approximately <i>43,200 MWh/year</i> of electricity to the National grid through the Very Small Power Producer (VSPP) scheme. GHG emission reduction shall come from (i) the amount of electricity substituted from Thailand's grid electricity generation; and (ii) amount of palm waste used in the project instead of disposing it in open-uncontrolled conditions through open-dumping in the palm field.</p> |
| Technology to be employed | The technology to be employed in this project is a biomass thermal-steam cycle power plant, which uses palm residues, namely, palm shell, palm fiber, and empty fruit bunch as the energy source of the power plant. The power plant is expected to have a thermal-electrical conversion efficiency of approximately 22%. |

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| Location of the project | |
| Brief description of the location of the project (Region and Country where the project will be implemented) | The power plant project is located at the existing Palm Oil factory, in Prachuabkirikhan Province, Thailand. |
| Expected environmental and social benefits | |
| Estimate of Greenhouse Gases abated (in metric tons of CO ₂ -equivalent) | Potential GHG-emission reduction is approximately <i>27,205 tCO₂-equivalent/year</i> , or <i>544,103 tCO₂-equivalent</i> for the project duration. |
| 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? | <p>The project activity will contribute to the sustainable development of Thailand in the following ways:</p> <ul style="list-style-type: none"> • Enhance Thailand economic sustainability by reducing the country's dependence on the use of fossil fuels in power generation, which is now dominated by natural gas, lignite and imported fuel oil; • Support the government policy in promoting the use of renewable energy; • Enhance Thailand economic efficiency through more efficient use of abundant agricultural residues such as palm fiber, palm shell, and empty fruit bunch; • Increase local employment; and, • Improve stability of electricity supply in local area |
| PIN/PDD Developer-Intermediary | |
| Name of the PIN/PDD Developer | <p>Dr. Thierry LEFEVRE, Managing Director Energy Economy Environment Consultants Co. Ltd. SLD Building (7B), 13 Soi Saladaeng 1, Rama IV Road, Silom Sub-district, Bangrak, Bangkok 10500, Thailand Tel: (662) 235-5817, (662).629.0912 Fax: (66 2) 236-9574</p> |
| E-mail and web address, if any | t.lefevre@eeec.co.th or t.lefevre@ceerd.net |
| Expected schedule | |
| Earliest project start date | <i>2007</i> |
| Expected first year of CER delivery | <i>2008</i> |
| Project lifetime | <i>20 years</i> |
| Current status or phase of the project | <p> <input type="checkbox"/> Identification and pre-selection phase <input type="checkbox"/> Opportunity study finished <input type="checkbox"/> Pre-feasibility study finished <input checked="" type="checkbox"/> Feasibility study finalized <input checked="" type="checkbox"/> Negotiations phase <input type="checkbox"/> Contracting phase (mention what contracts) <input type="checkbox"/> etc. </p> |