



The Meteor Clean Energy Fund

▶ PROJECT OVERVIEW

PROJECT CODE NAME: DENDRO
 PROJECT TYPE: BIOMASS BASED 10MW ELECTRICITY POWER STATION
 TECHNOLOGY: STEAM POWERED TURBINE
 LOCATION: BIBILE AREA, SRI LANKA
 DELIVERY DATE: 2010
 TARGET RETURN: 16% P.A. IRR GENERATING 65,000 CER'S P.A.



Objective

Dual income stream:

- Generate income from sale of electricity through Sri Lanka power grid
- Earn carbon credits for resale or retirement

Key Benefits

Clean Energy: Greenhouse Gas emission reduction

Job Creation: 2000 jobs in local community
Improved status for women involved in operations

Environmental Improvement: Improve regions soil fertility
Improve local livestock health and economy



Project Description

This project involves a biomass based-electricity generating power station of 11 MW capacity in the Uva Province in Sri Lanka.

The Fuel

The small farmers surrounding the proposed power plant location, within an area of about 25 km radius, will be contracted to grow the fuel wood in their homesteads and small farms.

As an extra level of safety, an alternative source of biofuels will be established by the power company to serve as a buffer for the fuel wood supply which will be a nucleus plantation of about 500 ha. This site will also act as a demonstration and resource centre to support the out grower farmers.

Coppice fuel wood systematically harvested from these plantations in 8 month cycle will be used as fuel for an 11.0 MW net biomass power plant located at the centre of these plantations.

The Power Plant

The power plant will consist of a boiler and a steam turbine driving an electricity generator. The production of 11.0 MW electrical power will consume 250 tones of fuel wood per day.

The location of the project has been selected based on the availability of underutilized lands suitable to grow Gliricidia Sepium trees and supply adequate cooling water (48+ cubic meters per hour) and the proximity to a grid substation of the Ceylon Electricity Board to feed the electricity generated to the national grid. The net export of power is estimated as 10.0 MW. To put this into perspective, this is enough electricity to power a city with a population of 100,000.

Technology

The technology being utilized generates steam using a 50 TPH boiler fired by Biomass. The steam will run a steam turbine which efficiently produces electricity. This technology is widely used in many parts of the world, especially in the sugar industry.

Social/Environmental Benefits

The concept of using sustainably grown short rotation coppicing species of fuel wood for the power generation supports all the key features illustrated below:

- The use of fuel wood is recognized as carbon neutral and hence would replace the equivalent amount of GHG emissions, which would otherwise be issued by fossil fuel power plants
- The supply of fuel wood will be by the local farmers and this would pump in more than SL Rs. 125,000,000 per year to the local farmers contributing to poverty alleviation
- The fuel wood chosen is a nitrogen fixing species which will enhance the fertility of the lands and reverse land degradation
- In addition, the leaves are rich in nitrogen and are a recognized source of organic manure to replace the imported Urea. This source will enhance the organic farming and avoid the environmental degradation by the excess urea finding its way to the water ways.
- The foliage is rich in protein and will help develop the livestock industry and thus help improve the nutrition levels both locally and country wide which adding substantially to the income of the local farmers.
- The cultivation and harvesting activities can be handled by the womenfolk to a large extent and will help improving the income levels and status of the women

The collection of wood will create approximately 2000 jobs in the vicinity of the project location.

CER Generation

- 65,000 pa
- 10 year time scale
- 2010 delivery date

Investment Information

- 3 year Exit Strategy
- 17% IRR
- 60% equity holding