

CDM SUSAC INTERNATIONAL INVESTORS WORKSHOP

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NOVASEN PEANUT SHELL PROCESSING PROJECT / VALORISATION DES COQUES D'ARACHIDES DE LA NOVASEN

PROJECT PROPONENT

NOVASEN (Nouvelles Valorisation d'Arachide du Senegal)

- a local private enterprise established in 1999 and located at Kaolack, about 200 kms from Dakar
- It processes about 60,000 tons of peanut per year to produce oil and oilcake
- peanut shells are not used nor processed. They are just stored and sold.
- from 10 000 to 15 000 tons are stored. It should be noted that Senegal produces about 1 million of ton of peanut every year.

PROJECT OVERVIEW

Main objective the project:

- to process peanut shells in order to produce charcoal, pyrolysis oil and biogas for electricity

Main motivation for the implementation of the project:

- a large quantity of peanut shells is stored in a landfill whereas it could be used to produce energy
- the company could become autonomous in its production and consumption of energy
- it becomes more and more difficult to supply the Kaolack region with charcoal.

Products:

The annual processing of 15,000 tons of peanut shells should release:

- 4,350 tons of briquettes of charcoal for households and businesses. The other by-products
- 900 tons of pyrolysis oil and
- biogas (6,200 MWh per year)
- 12,400 MWh of heat will also be available

Use of products: -company to replace the fuel and diesel they use at present with oil and biogas

- charcoal will be commercialized

BASELINE

Calculated on the basis of consumed energy i.e.:

- the production of electricity at NOVASEN
- the electricity bought from the national grid, assuming that the combustion is complete.

The quantity of CO₂ emitted by the combustion of liquid fuels is obtained by the equation:

$m_{CO_2} = V \times d_{com} \times c_{com} \times f_{com}$ (V stands for the volume of the fuel; d_{com} stands for the density; c_{com} stands for the content of carbon and f_{com} stands for the mass proportion)

The quantity of CO₂ emitted through the connection to the grid is calculated according to each mode of processing:

- total CO₂ emissions through the combustion of liquid fuels is: 1590 TCO₂/year
- total CO₂ emissions through the national grid is estimated at: 186 TCO₂/year
- total CO₂ emissions through the production of electricity at the Lyndiane plant is estimated at: 817 TCO₂/year
- total CO₂ emissions through the production of thermic energy is estimated at : 1470 TCO₂/year

Baseline : total CO₂ emitted by NOVASEN estimated at: 4062 TCO₂ / year

ESTIMATED CARBON SAVINGS

Total CO₂ emitted by the CDM project using the BASA technology : 44 TCO₂ / year

Total GHG emissions avoided by : 4018 TCO₂ / year.

ESTIMATED PROJECT COSTS

Total investment cost estimated at: 2,700,000 Euros

SUSTAINABLE DEVELOPMENT AND OTHER IMPACTS

The project is meant to:

- alleviate the energy bill of the company
- will also help meet the energy demand of local households without any environmental pressure
- it could produce more electricity that could be sold to the national utility.

Will contribute to meeting the national energy demand.

Will indirectly contribute to the improvement of local people livelihoods as it should encourage the production of more peanut.

Pressure on the local environment will decrease: it will help 2000 ha per year saved i.e. about 4.4% of deforestation

**In addition to the avoidance of GHG emissions (methane),
the project will contribute to forestry protection,
help supply consumers with probably a cheaper fuel.
At NOVASEN, several jobs will be created
the stored peanut shells will be processed: no risk of fire.
The population of Kaolack will be the main beneficiaries of the project.**

RISKS

**Major factor that might alter the baseline calculation during the project lifetime is:
- the future liberalisation/privatisation of the electricity sector. The national utility is being privatised and if this fails it may result in an irregular supply of power.**

The emissions may change depending on the increase or decrease in the peanut shell supply