

Sector:

Forest ,Environment and Herbal

Project Title:

Jatropha Plantation and Processing Plant for Biodiesel Production

Project Description

Biodiesel is an environmental friendly alternative to the fossil fuel and hold immense potential to mitigate the future energy needs of the country and also to impart economic prosperity in the poor and backward areas of the country. Jatropha (biodiesel Plant) cultivation is economic, convenient and could provide a steady alternative source of income to the farmers.

The Government of Madhya Pradesh is keen to promote Jatropha cultivation at a substantial scale in the State. For the purpose the Government has identified 2000 hectares of land in various clusters across the States. Further the Government proposes to establish a biodiesel production unit on a pilot scale in the State to produce high quality ready to use bio-fuel.

The processing plant would be set up at a suitable location near to the cultivation base so as to contain transportation overheads. To assist the farmer in the cultivation techniques the Government would open a facilitation cell to train farmers in the cultivating and harvesting techniques and would further disseminate high yielding variety of jatropha seeds for cultivation.

The proposed facility would be set up on over 5 acres of land. Initially the production capacity of the plant would be 30 tonnes per day but it would have sufficient provision for expansion in the future. The biodiesel plant would have an expeller unit to extract crude oil from the plant, a production unit, a refinery and a warehouse and an organic manure production unit which would process the non-edible oil cakes left as by product in the process into high quality manure. Thus the plant would be an integrated unit and would facilitate complete utilization of jatropha plant.

Project Rationale

Jatropha plantation has been identified as a most suitable option for the production of bio-fuels utilizing non-edible sources. Jatropha is a wild plant and is well adapted for growth in harsh conditions climatic conditions. It does not require any particular soil type for growth and can flourish on almost any soil composition.

The plant is extremely drought resistance as its water requirement is extremely low. It can be easily propagated and grows rapidly. Sufficient amount of waste land is available in the State which could be utilized for jatropha cultivation.

Jatropha cultivation is already popular in Madhya Pradesh. It is cultivated by villagers as a live fence for protecting homesteads, orchards and farms, as it is non-browseable and has a long life. Biofences of jatropha can supply seeds and provide other economic and ecological benefits to the farmers.

More than 70% of the State population is presently engaged in agriculture which form a large base of economic manpower which could be easily made to adept to Jatropha cultivation.

MP is poised to be the future logistics hub of the country. The number of transportation and other vehicle are estimated to increase manifold in the near future which would significantly augment the State energy demand. Jatropha cultivation has the potential to produce large quantity of biodiesel which can be a substitute to the convention fossil fuel and would thus assist the State to become self sufficient in its energy needs.

Due to rapid industrialization, the electricity needs of the State are increasing rapidly. MP is not able to generate enough electricity to support the increasing number of industries which relies on captive power plant and DG sets to meet their power requirements. Biodiesel can substantially replace the large demand of diesel to generate power in these plants.

The social implications of Jatropha plantation are immense. The Government of India proposes to take up the bio-fuel development program mainly in the poverty ridden areas of the country. As a result of this program, it is estimated that around 50% of the wages in cash and rest in the form of food grain would percolate down to the poor's. MP can pursue jatropha cultivation as a key driver of economic prosperity in the rural areas.

Market Potential and Demand Dynamics

The demand of bio-diesel is increasing across the globe especially in the view of increasing environmental concerns and proven environmental friendly features of bio-diesel. US has accepted bio-diesel as clean alternative fuel. The current production in the country is estimated around 100 mn gallons.

Jatropha seed is a source of non-edible oil which is processed to produce bio-diesel. A single Jatropha seed contains 27% to 31% extractable oil. 10,000 Hectares of jatropha is expected to yield 250,000-300,000 tons of crude jatropha oil per annum. The estimated revenues from 100,000 hectare farm would yield USD 100 mn per annum.

Bio-diesel has the potential to provide a reliable and a cost effective alternative to India's increasing future energy concerns. India is the world most populous country and with economic development on full throttle, meeting energy requirement in a sustainable manner is a major challenge for the country. India produce only about 30% of its annual crude requirement while for the remaining 70%, the country is dependent on imports. There is an immense potential for Jatropha cultivation in the country.

Why Madhya Pradesh?

- The State has ample availability of economic land mass which can be utilized for the Jatropha cultivation. Further, large chunks of wasteland and deforested land are available which could be utilized for jatropha cultivation.
- The State has ample availability of cost effective manpower to facilitate large scale cultivation and production as it is a labour intensive sector.
- MP's farmers are already engaged in jatropha cultivation for biofencing. With demonstrated commercial profiting from the plant these could be easily persuaded towards its cultivation on a large scale.
- The strategic central location of MP provides unmatched advantage to the industrial units for their logistics function.

Location Analysis

The appropriate location for establishing the processing plant would be identified in consultation with the State Government. The key criteria for selecting the location would be its proximity with the Jatropha cultivation.

Government Support

The State Government is keen to promote the Jatropha cultivation on a large scale in the State. The Government would assist in identification of land clusters for the plantation.

The Central Government is likely to announce the bio-fuel policy in the near future under which key fiscal and policy incentives would be offered for bio-diesel

manufacturers. Some of the key features of the policy would be:

- Zero excise duty for bio-diesel production.
- The Central Government would assist and encourage States in bio-diesel production.
- Provision for minimum buy-back price.

Proposed Capacity

- The 2000 hectares of the land is estimated to yield around 50,000 tonnes of crude jatropha oil per annum.
- The Plant would have the biodiesel production capacity of 30 tonnes per day.

Proposed Investment

USD 5.5 million or INR 250 million

Returns

16-18%

Coordinating Agency

Madhya Pradesh Minor forest Products Corporation

Madhya Pradesh Industrial Development Corporation