

RURAL DEVELOPMENT AND PANCHAYAT RAJ SECRETARIAT

NOTIFICATION

No. RDP 19 DGS 2006, Bangalore, Dated : 9th March 2009

Sub : Karnataka State Bio-fuel Policy -2009

India is one of the largest consumers of fossil fuels namely, coal, petroleum, etc., in the world. It imports 85 percent of the petroleum demand, thus draining precious foreign exchange reserve with serious implications for economic growth and sustainable development. Possibility of unearthing any major indigenous sources of petroleum or high quality coal or wide spread exploitation of natural gas or nuclear energy is either remote or costly. Alternative sources of energy like solar, wind etc., have their own limitation. In this context, biofuels provide a ray of hope to offset a reasonable quantum of imports serving as good substitute for the fossil fuels.

Karnataka is a fast growing State in India, especially Bangalore City, which has registered a population growth of 3.5 percent, being also the IT Capital of India. Everyday, about 1250 vehicles are added to the city which is already having about 28 lakhs vehicles. Such a growth, by leaps and bounds, brings in its wake not only pollution, but also heavy import of fuel. Global warming is no longer a theoretical threat but it is a reality as evidenced by the on going change in the monsoon pattern in India itself and the melting of glaciers in Himalayan mountains. Hence it is better to adopt a renewable energy, like bio-

fuels, which could be extracted from seeds and molasses available in the country and the State. In this context, the Government is pleased to declare the Karnataka State Bio-fuel Policy-2009, as detailed in the annexure to this Notification.

The Karnataka State Biofuel Policy comes in to force from 1st March, 2009.

In order to oversee the implementation of the State Biofuel Policy, an apex agency by name the Karnataka State Bio-fuel Development Board (KSBD) will be set up for this purpose with the Hon'ble Chief Minister as its Chairperson. The Board will have an Executive Committee headed by the Additional Chief Secretary & Development Commissioner which would look into the day-to-day administration of Board. The Board will have a senior officer exclusively as the Managing Director to drive the policy prescriptions.

By order and in the name of the Governor of Karnataka.

K.R. SHASHIDHARA

Secretary to Government (Pan. Raj) Rural
Development and Pan.Raj Department

Annexure to Government Notification No.RDP 19 BGS 2008 Dated 08.03.2009

KARNATAKA STATE BIOFUEL POLICY - 2009

I. INTRODUCTION :

India is one of the largest consumer of fossil fuels namely, coal, petroleum, etc., in the world. It imports 85 percent of the petroleum demand, thus draining precious foreign exchange reserve with serious implications for economic growth and sustainable development. Possibility of unearthing any major indigenous sources of petroleum or high quality coal or wide spread exploitation of natural gas or nuclear energy is either remote or costly. Alternative sources of energy like solar, wind etc., have their own limitation. In this context, biofuels provide a ray of hope to offset a reasonable quantum of imports serving as good substitute for the fossil fuels.

- 1.1 Growing fuel crunch :** Karnataka is a fast growing State in India, especially Bangalore City, which has registered a population growth of 3.5 percent, being also the IT Capital of India. Everyday, about 850 two wheelers and 400 cars are added to the city which is already having 22,79,170 two wheelers and 5,28,855 cars. Such a growth, by leaps and bounds, brings in its wake not only pollution, but also heavy import of fuel. Global warming is no longer a theoretical threat but it is a reality as evidenced by the on going change in the monsoon pattern in India itself and the melting of glaciers in Himalayan mountains. Hence it is better to adopt a renewable energy, like bio-fuels, which could be extracted from seeds and molasses available in the country and the State.

1.2 Advantages of Bio-fuel :

- a) Biofuel is a substitute and requires very little or no engine modification in motor vehicles up to 20 per cent blend and minor modification for higher percentages of blends

- b) The use of bio-fuel results in a substantial reduction of un-burnt hydro carbons, carbon monoxide released in to the atmosphere and particulate matters.
- c) It has almost no sulphur, no aroma and has about 10 per cent built-in oxygen, which helps it to burn fully. Its higher cetane number improves combustion.
- d) Bio-fuels are environment friendly being neutral in as much as it does not add to the green house gases which result in global warming. Such measures are needed to meet national and international environmental concerns including climate changes.
- e) Bio-fuels could be either carbohydrate-based (ethanol) or oil-based (bio-diesel). The carbohydrate based bio-fuels are more easily grown and commercialized, but the possibility of competition with the scarce food grains for the masses in terms of land use, makes it a less favoured choice. The oil based bio-diesel are more attractive.

1.3 Bio-fuel could be defined as liquid or gaseous fuels produced from biomass and used in place of or in addition to diesel, petrol or other fossil fuels, for transport, stationary, portable and other applications.

1.4 Bio-Diesel and Ethanol : the proposed policy will deal with two types of renewable bio-fuels : a) Bio-diesel, and b) Ethanol.

a) Bio-diesel could be defined as a methyl or ethyl ester of fatty acids produced from vegetable oils, both edible and non-edible or animal fat of diesel quality, to be used as bio-fuel. For the purposes of this policy, only non-edible vegetable seed oil will be considered. Bio-diesel is transesterified oil exclusively derived from the non-edible type of oil-seeds and grown in marginal lands/non-agricultural lands, where food crops cannot normally be grown. This differentiation is made in order to ensure that food security of the state is not compromised on account of these policies. For certain stationary applications where transesterification is not required, the term straight vegetable oils (SVOs) can be used interchangeably with bio-diesel.

b) Ethanol could be defined as ethanol produced from bio-mass such as sugar containing material like sugarcane, sugar-beet, sweet sorghum, molasses etc., also starch containing materials such as corn, cassava, algae etc., and cellulosic materials such as bagasse, wood waste, agricultural and forestry residues, etc.. For the purposes of this policy, molasses from sugarcane and green waste will be considered. Ethanol is the distillate of the substrate obtained by alcoholic fermentation of sugars, hydrolysed starches and hydrolysed cellulosic materials.

1.5 Bio-Diesel Plant Species : Important Tree Oil seed (TBOs) species growing in Karnataka are Pongamids, Neem, simarouba and Mahua and shrub species such as Jatropha. There is a possibility of promoting the development, selection and cultivation of these trees yielding oil seeds in the dry, marginal and waste lands available in the State. Oil derived from these seeds is suitable for converting into bio-diesel. The seed oil content of each of these seeds is shown below :

Common name of the Plant	Botanical Name	Oil content
1. Jatropha	Jatropha curcas	25-30%
2. Pongamida	Pongamia Pinnata	27-30%
3. Neem	Azadirachta indica	20.25%
4. Simarouba	Simarouba glauca	60-75%
5. Mahua	Madhuca indica	30-35%

As of today, much of the oil extracted from these oil seeds are tree borne and non-edible. These oils are sold in unorganized local markets and used for lighting lamps, herbal medicines, paint and leather industries. Owing to increased awareness about the use of these oils as biofuel and the resultant accrual of additional income, there is an expectation among the people about higher economic benefits through planned bio-fuel exploitation.

1.6 Ethanol in Karnataka : Karnataka is a surplus sugar State, consuming 1.2 million MT of sugar. Production of sugar is 2.52 to 3 million MTs. Hence the excess production which now leads to fall in prices could be converted into ethanol to avoid fluctuation in the prices to the cane growers. In Karnataka State, there are 52 sugar cane crushing factories with an operational capacity of 1,85,750 TCD per day. Karnataka also produces 200 million litres of alcohol per annum and it can divert sugarcane used for 600,000 MT of sugar per annum in to ethanol production by direct conversion. It is possible to produce up to 400 million litres of ethanol from 5 million MT of cane. There is a huge demand for ethanol in major industries. The processing of ethanol should be subject to quality control. More distillation units may be encouraged by the Excise Department, while direct conversion of sugarcane to ethanol may be permitted only after fixing ceiling for sugar production. Production of Ethanol from molasses could be encouraged, so as not to use the irrigated lands, even indirectly, for production of fuel.

2 Policy decision by the Government of India :

- 2.1 India is a signatory of the Kyoto Protocol and bio-fuel is an instrument of Clean Development Mechanism(CDM). India also can profitably trade carbon credits which may be generated from using bio-fuel, with the developed countries, apart from curtailing emission of carbon dioxide into the atmosphere.
- 2.2 A land mark proposal mandating the 5 per cent blending of bio-fuel with fossil fuel was endorsed by Government of India and the use of 5 per cent ethanol-gasoline blend has already been approved by the Bureau of Indian Standards (BIS) and is in progressive state of implementation in the country.
- 2.3 Government of India has plans to increase this blending to 10 per cent by 2017 (earlier plan was from October 2008). The aim is to project 5 percent by 2012 and 10 per cent by 2017 and above 10 per cent beyond 2017. Karnataka State, in tune with the national plans, has set the target to achieve 10 per cent blending of bio-fuel with petrol by 2017. This will go a long way in ensuring energy security for the State.

3. Policy Statement of Karnataka

- 3.1. Only non-edible oil seed would be harnessed for the purpose of producing bio diesel, so that the edible oil is left for cooking purposes for the people.
- 3.2. Cultivation of non-edible oil seeds required for bio-diesel would be promoted on dry land, marginal land, waste land and degraded forest land, owned by private or government, including "Block Plantation". Use of food crop land to grow non-edible oil seeds will be not encouraged, so as not to compromise food security.
- 3.3. The State will encourage de-oiled cake, a by-product of non-edible oil, to be used as organic manure.
- 3.4. The government will encourage public-private-partnership models in this regard, e.g. long-term lease of wastelands to private agencies to promote growing of plant species producing seed will be envisaged.
- 3.5. The conversion to oil will be encouraged in a time bound and decentralized manner, where oil seeds collection and processing are promoted in rural areas and small towns.

- 3.6. Traditional communities involved in oil seeds collection and or oil extraction activities in rural areas, self-help women groups, and local user groups would be encouraged to participate in the related activities.
- 3.7. The State will facilitate, organizations with suitable expertise, both governmental and non-governmental to promote research, dissemination, and out reach activities in promoting bio-fuel use.
- 3.8. The State will establish required administrative and fiscal mechanism to facilitate all the above activities.

4. In order to oversee the implementation of the State Biofuel Policy, an apex agency by name the **Karnataka State Bio-fuel Development Board (KSBDB)** will be set up for this purpose with the Hon'ble Chief Minister as its Chairperson, the Board will have an Executive Committee headed by the Additional Chief Secretary & Development Commissioner who would look into the day-to-day administration of the Board. The Board will have a senior officer exclusively as the Managing Director to drive the policy prescriptions.

4.1. **The State Task Force on Bio-fuel, established on 12.09.2008** and will remain as an independent body and continue to advise the Government and the KSBDB on policy and programs related to bio-fuel from time to time. The Chairman, State Task Force on Bio-fuel will be a member of KSBDB.

4. Strategy for Implementation :

- 5.1. Revenue Department & Forest Departments to identify and declare the uncultivable waste land in the State, both under government and private hands/owners. This list is to be prepared Grama Panchayat-wise, Taluk-wise and District-wise, vetted by Agriculture Department.
- 5.2. Entrepreneurs to be invited to the State through media, who would like to set up industrial units in the State for processing and manufacturing bio-fuel within the State. Sufficient incentives will be given to these entrepreneurs, in addition to the concessions already available in the industrial policy of the State.
- 5.3. Based on the land availability and the industrial location, contract farming to be encouraged and facilitated by taking tie-up with industry and the farmers or with the Government department (if it is Government land), which are being used to cultivate non-edible oil seed plants.
- 5.4. Growers will be organized on contract farming basis, as in the case of wine production, Cherkins etc., Community mobilization, trading and capacity building activities will be undertaken simultaneously.
- 5.5. Raising of nursery and seedlings of the seed bearing plants will be taken up by Agriculture and Forest Departments or private entrepreneur as the case may be.
- 5.6. Collection and processing points will be set up at Hobli level in the concerned areas for collection of the seeds, quality check, dissemination of technical know-how and payment to the farmers.
- 5.7. Convergence of various segments at local, nation, international collaboration and harnessing its potential will be explored and convergence of the various State and Central Governments schemes like NREGA, Watershed Development Department, National Afforestation Programme etc., would be synergised in to the programme.
- 5.8. In case it is found necessary, amendment of land Revenue Act would be taken up as has been done in the State of Rajasthan, (namely, allotment of waste land for bio-fuel based industry and processing unit). Land can be allotted to the industry on lease basis. The allotment of Government land on lease will be processed by inviting tenders from entrepreneurs.

- 5.9. The Bio-fuel Park set up in Hassan will be strengthened and if found necessary more such parks, one per division, will be established, where the Agriculture/Horticulture Universities would be involved in maintaining different plant species and various models of transesterification/processing units. These units could be utilized for a fee by the small and marginal/small scale industries in case they set up such processing units at the taluk level.
- 5.10. Agricultural Insurance Company will be advised to extend suitable insurance coverage for non-edible oil sees plantation.
- 5.11. The State budget under RDPR shall have a separate allocation for KSBDB Programme encompassing all activities of the Board for the support for administration, management and maintenance, incentives, research and development programmes quality control programmes etc., Budgetary provisions will be made in the budget of RDPR Department.
- 5.12. Incentives and tax concessions for feed stock, machinery, products, raw materials etc., would be proposed separately by the State Government, also to be in tune with the Central Government Policy. To ensure remunerative prices to the farmer for the seeds and as incentives to the industry for setting up of processing units, incentives in the price of the oil also would be considered. To promote use by the transport companies, adequate incentives will be provided.

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