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## National Policy on Biofuels, 2018

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# **MINISTRY OF PETROLEUM AND NATURAL GAS**

## **NOTIFICATION**

New Delhi, the 4th June, 2018

**F. No.P-13032(16)/18/2017-CC.**—In exercise of the powers conferred under Government of India (Allocation of Business) Three Hundred and Thirty Fifth Amendment Rules, 2017 published in the Gazette of India vide S.O. No.2492 (E) dated the 4th August, 2017, the Central Government, through Ministry of Petroleum & Natural Gas, in supersession of National Policy on Biofuels, promulgated through the Ministry of New & Renewable Energy, in 2009, hereby makes a revised policy on biofuels, namely: —

1.      (1)      This policy may be called National Policy on Biofuels,- 2018.
- (2)      This policy shall be effective from the date of approval by the Cabinet i.e. 16-05-2018.
2.      The Text of the policy is annexed.

## **National Policy on Biofuels - 2018**

### **1.0 PREAMBLE**

1.1 India is one of the fastest growing economies in the world and will continue to enjoy the demographic dividend for few decades. The Development Objectives focus on Samavesh – Inclusion, shared vision of National development, technology upgradation & capacity building, economic growth, equity and human well-being. Energy is a critical input towards raising the standard of living of citizens. The energy strategy of country aims to chart the way forward to meet the Government's recent ambitious announcements in the energy domain such as electrification of all census villages by 2019, 24x7 electricity & 175 GW of renewable energy capacity by 2022, reduction in energy emissions intensity by 33%-35% by 2030 and share of non-fossil fuel based capacity in the electricity mix is aimed at above 40% by 2030. Even if there is likely expansion in the energy contribution of oil, gas, coal, renewable resources, nuclear and hydro in the coming decade, fossil fuels will continue to occupy a significant share in the energy basket. However, conventional or fossil fuel resources are limited, non-renewable, polluting and, therefore, need to be used prudently. On the other hand, renewable energy resources are indigenous, non-polluting and virtually inexhaustible. India is endowed with abundant renewable energy resources. Therefore, their use should be encouraged in every possible way. This National Policy on Biofuels - 2018 builds on the achievements of the earlier National Policy on Biofuels and sets the new agenda consistent with the redefined role of emerging developments in the Renewable Sector.

1.2 The crude oil price has been fluctuating in the world market. Such fluctuations are straining various economies the world over, particularly those of the developing countries. Road transport sector accounts for 6.7% of India's Gross Domestic Product (GDP). Currently, diesel alone meets an estimated 72% of transportation fuel demand followed by petrol at 23% and balance by other fuels such as CNG, LPG etc. for which the demand has been steadily rising. Provisional estimates have indicated that crude oil required for indigenous consumption of petroleum products in FY 2017-18 is about 210 MMT. The domestic crude oil production is able to meet only about 17.9% of the demand, while the rest is met from imported crude. India's energy security will remain vulnerable until alternative fuels to substitute/supplement petro-based fuels are developed based on indigenously produced renewable feedstock. To address these concerns, Government has set a target to reduce the import dependency by 10 per cent by 2022."

1.3 Government has prepared a road map to reduce the import dependency in Oil & Gas sector by adopting a five pronged strategy which includes, Increasing Domestic Production, Adopting biofuels & Renewables, Energy Efficiency Norms, Improvement in Refinery Processes and Demand Substitution. This envisages a strategic role for biofuels in the Indian Energy basket.

1.4 Biofuels are derived from renewable biomass resources and wastes such as Plastic, Municipal Solid Waste (MSW), waste gases etc. and therefore seek to provide a higher degree of national energy security in an environmentally friendly and sustainable manner by supplementing conventional energy resources, reducing dependence on imported fossil fuels and meeting the energy needs of India's urban and vast rural population.

1.5 Globally, biofuels assume importance due to growing energy security and environmental concerns. To encourage use of biofuels several countries have put forth different mechanisms, incentives and subsidies suiting to their domestic requirements. As an effective tool for rural development and generating employment, the primary approach for biofuels in India is to promote indigenous feedstock production.

1.6 Over the last decade, Government has undertaken multiple interventions to promote biofuels in the Country through structured programmes like Ethanol Blended Petrol Programme, National Biodiesel Mission, Biodiesel Blending Programme. Learning from the past experiences and demand supply status, Government has revamped these programmes by taking steps on pricing, incentives, opening alternate route for ethanol production, sale of biodiesel to bulk and retail customers, focus on R&D etc. These steps have impacted the biofuels programme in the Country positively.

1.7 Biofuels in India is of strategic importance as it augers well with the ongoing initiatives of the Government such as Make in India & Swachh Bharat Abhiyan and offers great opportunity to integrate with the ambitious targets of doubling of Farmers Income, Import Reduction, Employment Generation, Waste to Wealth Creation. Simultaneously, the existing biodiversity of the Country can be put to optimum use by utilizing drylands for generating wealth for the local populous and in turn contribute to the sustainable development.

1.8 Globally, biofuels have caught the attention in last decade and it is imperative to keep up with the pace of developments in the field of biofuels. This policy aims to bring in renewed focus taking into context the international perspectives and National scenario primarily by utilization of indigenous feedstocks for production of biofuels. The

Policy also dwells on the development of the next generation biofuel conversion technologies based on new feedstocks and promote domestically available feedstock exploring, utilizing the Country's biodiversity. Vision, Goals, Strategy and Approach to the development of biofuels in India is set out through technological framework, financial, institutional interventions and enabling mechanisms.

## 2.0 THE VISION AND GOALS

2.1 The Policy aims to increase usage of biofuels in the energy and transportation sectors of the country during the coming decade. The Policy aims to utilize, develop and promote domestic feedstock and its utilization for production of biofuels thereby increasingly substitute fossil fuels while contributing to National Energy Security, Climate Change mitigation, apart from creating new employment opportunities in a sustainable way. Simultaneously, the policy will also encourage the application of advance technologies for generation of biofuels.

2.2 The Goal of the Policy is to enable availability of biofuels in the market thereby increasing its blending percentage. Currently the ethanol blending percentage in petrol is around 2.0% and biodiesel blending percentage in diesel is less than 0.1%. An indicative target of 20% blending of ethanol in petrol and 5% blending of biodiesel in diesel is proposed by 2030. This goal is to be achieved by

- (a) reinforcing ongoing ethanol/biodiesel supplies through increasing domestic production
- (b) setting up Second Generation (2G) bio refineries
- (c) development of new feedstock for biofuels
- (d) development of new technologies for conversion to biofuels.
- (e) creating suitable environment for biofuels and its integration with the main fuels.

## 3.0 DEFINITIONS AND SCOPE

3.1 The following definitions of biofuels shall apply for the purpose of this Policy:

- i. 'Biofuels' are fuels produced from renewable resources and used in place of or in blend with, diesel, petrol or other fossil fuels for transport, stationary, portable and other applications;
- ii. Renewable resources are the biodegradable fraction of products, wastes and residues from agriculture, forestry, tree based oil other non-edible oils and related industries as well as the biodegradable fraction of industrial and municipal wastes.

3.2 The scope of the Policy encompasses following categories of fuels as "Biofuels" which can be used as transportation fuel or in stationery applications:—

- i. 'bioethanol': ethanol produced from biomass such as sugar containing materials, like sugar cane, sugar beet, sweet sorghum etc.; starch containing materials such as corn, cassava, rotten potatoes, algae etc.; and, cellulosic materials such as bagasse, wood waste, agricultural and forestry residues or other renewable resources like industrial waste;
- ii. 'biodiesel': a methyl or ethyl ester of fatty acids produced from non-edible vegetable oils, acid oil, used cooking oil or animal fat and bio-oil;
- iii. 'Advanced biofuels': Fuels which are (1) produced from lignocellulosic feedstocks (i.e. agricultural and forestry residues, e.g. rice & wheat straw/corn cobs & stover/bagasse, woody biomass), non-food crops (i.e. grasses, algae), or industrial waste and residue streams, (2) having low CO<sub>2</sub> emission or high GHG reduction and do not compete with food crops for land use. Fuels such as Second Generation (2G) Ethanol, Drop-in fuels, algae based 3G biofuels, bio-CNG, bio-methanol, Di Methyl Ether (DME) derived from bio-methanol, bio-hydrogen, drop in fuels with MSW as the source / feedstock material will qualify as "Advanced Biofuels".
- iv. 'drop-in fuels': Any liquid fuel produced from Biomass, agri-residues, wastes such as Municipal Solid Wastes (MSW), Plastic wastes, Industrial wastes etc. which meets the Indian standards for MS, HSD and Jet fuel, in pure or blended form, for its subsequent utilization in vehicles without any modifications in the engine systems and can utilize existing petroleum distribution system.
- v. 'bio-CNG': Purified form of bio-Gas whose composition & energy potential is similar to that of fossil based natural gas and is produced from agricultural residues, animal dung, food waste, MSW and Sewage water.

#### 4.0 STRATEGY AND APPROACH

- 4.1 Government is adopting a multi-pronged approach to promote and encourage use of biofuels by
- o Blending ethanol in petrol through Ethanol Blended Petrol (EBP) Programme using ethanol derived from multiple feedstocks
  - o Development of Second Generation (2G) ethanol technologies and its commercialization
  - o Blending biodiesel in diesel through Biodiesel Blending Programme exploring multiple feedstocks including straight vegetable oil in stationery, low RPM engines
  - o Focus on drop-in fuels produced from MSW, industrial wastes, biomass etc.
  - o Focus on advanced biofuels including bio-CNG, bio-methanol, DME, bio-hydrogen, bio-jet fuel etc.
- 4.2 The major thrust of this policy is to ensure availability of biofuels from indigenous feedstock. As a step in this direction, a National Biomass Repository will be created by conducting appraisal of biomass across the Country.
- 4.3 While attempt will be made to rebalance the biofuel demand and supply side, Government aims to undertake necessary interventions as and when required with respect to domestic production, storage and distribution of biofuels adopting a consultative approach by involving all stakeholders.
- 4.4 Strategy will include adopting appropriate financial and fiscal measures periodically to support development and promotion of biofuels thereby enlarging their utilization in different sectors.
- 4.5 Research, development and demonstration will be supported to cover all aspects from feedstock production and biofuels processing for various end-use applications. Thrust will also be given to development of advanced biofuels and other new feedstocks.

#### 5.0 INTERVENTIONS AND ENABLING MECHANISMS

##### A. Feedstock Availability & its Development

5.1 In India, Bioethanol can be produced from multiple sources like sugar containing materials, starch containing materials, celluloses and lignocelluloses material including petrochemical route. However, the present policy of Ethanol Blended Petrol (EBP) Programme allows bioethanol to be procured from non-food feed stock like molasses, celluloses and lignocelluloses material including petrochemical route. Similarly, biodiesel can be produced from any edible/non edible oil. However, biodiesel coming for the blending programme is presently being manufactured from imported sources like palm stearin.

5.2 Potential domestic raw materials for production of biofuels in the Country are,

For Ethanol Production :	B-Molasses, Sugarcane juice, biomass in form of grasses, agriculture residues (Rice straw, cotton stalk, corn cobs, saw dust, bagasse etc.) , sugar containing materials like sugar beet, sweet sorghum, etc. and starch containing materials such as corn, cassava, rotten potatoes etc., Damaged food grains like wheat, broken rice etc. which are unfit for human consumption, Food grains during surplus phase. Algal feedstock and cultivation of sea weeds can also be a potential feedstock for ethanol production
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For Biodiesel Production :	Non- edible Oilseeds, Used Cooking Oil (UCO), Animal tallow, Acid Oil, Algal feedstock etc.
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For Advanced Biofuels :	Biomass, MSW, Industrial waste, Plastic waste etc.
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5.3 The scope of raw material for procurement of ethanol under EBP Programme will be increased. The policy will allow production of ethanol from B Molasses as well as directly from sugarcane juice. The policy will also allow production of ethanol from damaged food grains like wheat, broken rice etc. which are unfit for human consumption. During an agriculture crop year when there is projected over supply of food grains as anticipated by the Ministry of Agriculture & Farmers Welfare, the policy will allow conversion of these surplus quantities of food grains to ethanol, based on the approval of National Biofuel Coordination Committee proposed under this Policy. Opening of this route for ethanol production will not only help in utilizing the installed capacities of grain based distilleries but also cover all the

raw materials from which ethanol can be produced harnessing fully developed 1G technologies with minimum investment.

5.4 Identification of locations with surplus available biomass and generation of feedstock such as energy grasses and short gestation crops by utilizing wastelands will be pivotal for promoting Industrial set up. Focus shall be laid on identifying surplus biomass pockets in the country.

5.5 Village Panchayat and communities will play crucial role in augmenting indigenous feedstock supplies for biofuel production. In cases relating to usage of wastelands for feedstock generation, local communities from Gram Panchayats/ talukas will be encouraged for plantations non-edible oil seeds bearing trees/ crops such as Pongamia pinnata (Karanja), Melia azadirachta (Neem), castor, Jatropa Carcus, Callophylum Innophylum, Simarouba glauca, Hibiscus cannabbinus etc. Short Rotation Crops such as sweet sorghum and energy grasses e.g. *Miscanthus giganteum*, switchgrass (*Panicum virgatum*), giant reed (*Arundo donax*) etc. will also be planted in wastelands for generating additional feedstock for bioethanol production across country.

5.6 Farmers will be encouraged to grow variety of different biomass as well as oil seeds on their marginal lands, as inter crop and as second crop wherever only one crop is raised by them under rain fed conditions.

5.7 Suitable supply chain mechanisms, feedstock collection centres and fair price mechanisms for the engaged community will be developed in coordination with Local Bodies, States and concerned stakeholders.

5.8 Ample quantity of wastes such as MSW, Industrial waste, Plastic waste etc. is available across country with established collection mechanism. This will serve as a feedstock for generating biofuels such as bio-CNG, drop-in fuels, bio-methanol, DME, bio-hydrogen etc.

## **B. Blending & Bio-refinery Programme**

### **5.9. Ethanol Blended Petrol Programme**

5.9.1 Currently, ethanol for EBP programme is coming from molasses route as a by-product of sugar Industry. At the present levels of cane and sugar production (about 350 MMT & 26-28 MMT per annum respectively), the maximum quantity of molasses available is about 13 MMT, which is sufficient to produce about 300 crore litres of alcohol/ethanol. Currently, C- Heavy Molasses is being used to produce alcohol/ethanol.

5.9.2 Adoption of B- heavy Molasses route for ethanol production will be encouraged as per availability of sugar. One MMT of Sugar sacrificed can produce 60 crore litres of ethanol. By utilizing this option participation by distilleries for ethanol production would improve. Ethanol will also be allowed to be produced directly from sugarcane juice to increase blending percentage.

5.9.3 Other alternate raw materials for production of ethanol such as sugar containing materials like sugar beet, sweet sorghum, etc. and starch containing materials such as corn, cassava, rotten potatoes etc. using first generation fully developed technologies will be promoted. During surplus availability of foodgrains, ethanol will also be allowed to be produced from foodgrains like corn etc, as per decision of National Bio Fuel Coordination Committee.

### **5.10 Second Generation (2G) Ethanol**

5.10.1 Ethanol production through Molasses route has limitations and its competitive usage in Potable liquor & Chemical industries leaves little scope to enhance its availability for EBP Programme in a big way. This warrants exploring other sources of ethanol, apart from conventional molasses and sugarcane juice route.

5.10.2 Few studies undertaken in India have indicated a surplus biomass availability to the tune of 120 -160 MMT annually which, if converted, has the potential to yield 3000 crore litres of ethanol annually. Surplus biomass / agricultural waste which has cellulosic and lignocellulosic content, can be converted to ethanol using second generation (2G) technologies. Government of India recognized the role of biomass in taking the rural economy & EBP programme forward and has allowed procurement of ethanol produced from other non-food feedstock besides molasses, like cellulosic and lignocelluloses materials including petrochemical route, subject to meeting the relevant BIS standards. Following areas for action have been envisaged under the policy:

5.10.3 Incentives: Globally, 2G ethanol industry is driven by incentives as the technology is yet to be proven at commercial scale and the ethanol so produced is more environment friendly. This will be a major instrument in driving the infrastructural growth of 2G Ethanol Bio refineries.

5.10.4 Offtake Assurance: Public Sector Oil Marketing Companies have agreed to sign Ethanol Purchase Agreements (EPAs) with 2G Ethanol suppliers for period of 15 years to provide assured market to Private stakeholders and support 2G Ethanol initiatives. Bio-CNG, being one of the major by-product in 2G Ethanol Biorefineries and transport fuel, will be brought under offtake assurance by the Public sector Gas marketing companies.

#### **5.11. Biodiesel Blending Programme**

5.11.1 The overall blending percentage of biodiesel in diesel has been less than 0.5 percent in the country due to constraints pertaining to feedstock availability. Moreover, whatever biodiesel is coming for the blending programme is manufactured from imported sources. Thus ensuring domestic raw material for biodiesel production is integral for long term success of this programme.

5.11.2 In-house produced Used/Waste cooking oil (UCO/WCO) offers potential to be a source of biodiesel production. However, the same is marred by diversion of UCO to edible stream through various small eateries/vendors & traders. Focus will be laid upon laying down the stringent norms for avoiding the entry of UCO in food stream and developing a suitable collection mechanism to augment its supply for biodiesel production.

#### **5.12 Other Biofuels (Drop-in-fuels, Bio-CNG, Bio-Hydrogen, Bio-methanol, DME, etc.)**

5.12.1 Task force on Waste to Energy created by NITI Aayog has estimated generation of 62 MMT of Municipal Solid Waste (MSW) annually in India. This waste has a huge potential of producing drop-in fuels and generate power including Refused Derived fuel, biogas/electricity and compost to support agriculture.

5.12.2 World over, technologies available for converting wastes into Biofuels such as drop-in fuels, bio-CNG, bio-Hydrogen etc. are in nascent stage and need to be proven on commercial scale. Conversion of such wastes into bio-CNG is a model which will be promoted for meeting the energy demand in rural areas and address the environmental issues. Technologies providing higher yield of bio-CNG per unit of waste processed will be promoted in line with the policy. Setting up of such plants for production of advanced fuels will also be promoted through various incentives and offtake assurance. Similarly, Hydrogen, one of the costliest fuel, has found its use in many industries including Refineries. bio-hydrogen, produced from biomass and wastes, will be interesting proposition to explore.

5.12.3 World over, methanol has found its use as transport fuel in blended form with motor spirit. The same can be produced from various sources including agriculture residues, natural gas, high ash coal etc. Presently, India is a net importer of methanol. Surplus biomass availability offers potential for production of bio-methanol & bio-butanol and their application in Indian transport system will be explored.

5.12.4 Di-Methyl Ether (DME) is obtained by removing 1 molecule of water from 2 molecules of methanol, which is a chemical process, usually aided by catalyst. Use of (DME) in domestic LPG as a substitute of Propane is being explored by the R& D institutions. DME can also be a substitute for diesel in slow RPM diesel engines and hence promotion of industrial production of methanol is pertinent for widespread usage, industrial application & acceptance of DME as potential fuel.

5.12.5 Production of biofuels from Algae (3G) has promising potential in terms of high oil content, limited waste streams and minimal land requirements (compared to biomass), depending on the production pathway. Presently, the production of such fuels is at its nascent stage and need further examination with respect to commercial viability. Algae based biofuels & requisite R&D on the subject will also be promoted to attain techno-commercial viability.

#### **C. Financing**

5.13 Government will consider declaring oil expelling/extraction and processing units for production of biodiesel and storage and distribution infrastructure for biofuels as a priority sector for the purpose of lending by financial institutions.

5.14 Sourcing of multi-lateral and bi-lateral funding would be encouraged for biofuel development including carbon financing opportunities.

5.15 Joint ventures and investments in the biofuel sector would be encouraged. 100% Foreign Direct Investment (FDI) in biofuel technologies would be encouraged through automatic approval route provided biofuel so produced is for domestic use only.

**D. Financial and Fiscal Incentives**

5.16 Government will consider extending financial incentives including viability gap funding, subsidies and grant for biofuels. Government will classify Second Generation (2G) Ethanol, drop-in fuels, bio-CNG, algae based 3G biofuels, bio-methanol, DME, bio-hydrogen etc.” as “Advanced Biofuels”. A National Biofuel Fund may be considered for providing financial incentives.

5.17 The policy envisages incentivizing the nascent “Advanced Biofuel” industry with fiscal incentives in the form of tax credits, advance depreciation on plant expenditure, differential pricing vis-à-vis 1G Ethanol, Viability Gap Funding (VGF) etc. for encouraging stakeholders to set up 2G Ethanol Bio refineries. Schemes will be launched to take the “Advanced Biofuel” programme forward.

5.18 Opportunities of generating carbon credits for the savings on CO<sub>2</sub> emissions on the account of biofuel feedstock generation and use of biofuels, in pure or blended form, will be explored.

5.19 NABARD and other Public Sector Banks will be encouraged to provide funding, financial assistance through soft loans etc.

**E. Research & Development and Demonstration**

5.20 Strong technology focus is imperative for the development of second generation and advanced biofuels utilizing domestic feedstock. The Policy would encourage Innovation and provide thrust to Research & Development (R&D) and Demonstration in the field of biofuels by utilizing developed / emerging technologies while undertaking R&D activities. The R&D activities will be in the areas of developing new raw material for biofuel production, plantations, processing and conversion technologies. Efficiency Improvement and Innovation for maximizing efficiencies of different end-use applications and utilization of by-products will be encouraged. High priority will be accorded to indigenous R&D and technology development based on local feedstocks. Patents would be registered wherever possible. Research programme in the field of biofuels involving multiple institutions with clearly defined goals and milestones would be supported.

5.21 Identified areas of intensive R&D work include

- (a): Biofuel feedstock production
- (b): Advanced conversion technologies from identified feedstock
- (c): Technologies for end use applications including modifications for biofuels
- (d): Utilization of bi-products of biofuels

5.22 Pilot/ Demonstration projects will be set up for biofuel production. Grants would be provided to Research Organizations, Institutions for undertaking R&D and setting up demonstration projects, specialized centers in high technology areas. Existing R&D centres would be strengthened and linkages would be established between the research organization, institutions and industry for wider usage/application. Government will encourage participation of the Industry in R&D and technology development including transfer of know-how would be facilitated to the Industry.

5.23 Life Cycle Analysis (LCA) of emerging Technologies in biofuel sector is crucial keeping in view our commitments at international forums for reduced GHG emissions. Technologies at pilot stage with encouraging performance, promising LCA reports and in accordance to our commitments on Climate change, will be promoted as Clean Technology for subsequent deployment at demonstration / commercial scale.

5.24 A focused group may be constituted to promote Research and Development in the areas of biofuels having representatives of academic and industry besides relevant Ministries to provide knowledge connect through national, bilateral and multilateral research programmes.

**F. Quality Standards**

5.25 Development of test methods, procedures and protocols would be taken up on priority along with introduction of standards and certification for different biofuels and end use applications. The Bureau of Indian Standards (BIS) has already evolved standards for bioethanol, biodiesel for standalone and blended form applications. Development of specifications for higher blending levels are underway.

5.26 The Bureau of Indian Standards (BIS) would review and update the existing standards, as well as develop new standards for devices and systems for various end-use applications. Guidelines for product performance and reliability would also be developed and institutionalized in consultation with all relevant stakeholders.



5.27 The policy will encourage development of required skill sets so that trained and skilled manpower is available for adapting to the new demands of the biofuel industry.

#### **G. Distribution & Marketing of Biofuels**

5.28 Oil Marketing Companies will continue to store, distribute and market biofuels. They will be primarily responsible for maintaining and improving the storage, distribution and marketing infrastructure to meet the requirements of biofuels. Government may also consider to allow other players to distribute and market biofuels depending upon factors like ensuring quality standards, consumer awareness about blending percentages, warranty requirements etc.

#### **H. Pricing of Biofuels**

5.29 At present, the price of first generation molasses based ethanol for EBP Programme is being determined by the Government based on the recommendation of a Committee constituted for this purpose. For procurement of biodiesel for blending in diesel, the price is being determined by OMCs. The Government will continue to incentivise first generation biofuels by administered prices or market determined prices depending upon various factors including market conditions, availability of biofuels in domestic market, import substitution requirement, etc. The advanced biofuels will be given a differential pricing to further incentivise them. The mechanism for differential pricing for advanced biofuels will be decided by the National Biofuel Coordination Committee.

### **6.0 IMPORT & EXPORT OF BIOFUELS**

6.1 Indigenous production of biofuels would be encouraged by a set of practical and judicious incentives. The Policy emphasizes development of domestic Biofuel Industry and Feedstock. Allowing import will adversely affect domestic biofuels and hence import of biofuels will not be allowed.

6.2 The policy encourages augmenting indigenous feedstock supplies for biofuel production utilizing the wastelands for feedstock generation. However, depending upon availability of domestic feedstock and blending requirement, import of feedstock for production of bio diesel would be permitted to the extent necessary. Feedstock import requirements will be decided by the National Biofuel Coordination Committee proposed under this Policy.

6.3 As the domestic biofuels availability is much lower than the Country's requirement, export of biofuels will not be allowed.

### **7.0 ROLE OF STAKE HOLDERS**

7.1 Active participation of all stakeholders viz. Ministries/Departments, the State Governments Farmers, Business & Industry and Professionals will be ensured in following areas:

- (i) Generation of feedstock in sustainable manner on wastelands.
- (ii) Encourage farmers to grow varieties of feed stock on their marginal lands
- (iii) Establishment of suitable supply chain for feedstock.
- (iv) Feedstock storage infrastructure.
- (v) Single window clearances & expeditious approvals.
- (vi) Incentives such as tax incentives, subsidized power, water supply, access roads etc. to biofuel Plants

#### **A Role of States**

7.2 The successful implementation of biofuel programme largely depends on the active participation of the States. The learning experiences of the States who have set up Biofuel Development Boards will be utilized for setting up Biofuel Boards in other States and the State Governments would be encouraged to suitably empower these agencies/boards for development and promotion of biofuels in their respective States. Other Stake holders will also be enrolled for the programme.

7.3 State Governments would also be required to decide on land use for plantation of non-edible oilseed bearing plants or other feedstocks of biofuels and on allotment of Government wasteland, degraded land for raising such plantations. Creation of necessary infrastructure would also have to be facilitated to support biofuel projects across the entire value chain.

7.4 States will also be encouraged for granting single window clearances in setting up biofuel plants. State Governments will also be pursued for supporting initial few Biofuel plants with fiscal incentives, tax rebates, supply of subsidized power, land allocation on priority at subsidized rates.

#### **B. Role of Ministries/Departments**

7.5 The role of different Ministries and Departments for effective implementation of biofuels programme in the Country is tabulated below:

<b>Ministry/Department</b>	<b>Role</b>
Ministry of Petroleum & Natural Gas	<ul style="list-style-type: none"> <li>• Overall Coordinating Ministry for development of biofuels</li> <li>• National Biofuel policy &amp; its implementation</li> <li>• Research, Development &amp; Demonstration on applications of biofuels</li> <li>• Marketing and Distribution of biofuels</li> <li>• Blending levels of biofuels</li> <li>• Development &amp; Implementation of Pricing &amp; Procurement Policy</li> <li>• Dispute redressal</li> <li>• Foster international collaboration for advance Biofuel research and Capacity Building</li> <li>• MSW to transportation fuels</li> </ul>
Ministry of Rural Development	<ul style="list-style-type: none"> <li>• Plantation, Supply Chain activities along with Rural livelihood programmes, MGNREGA etc.</li> </ul>
Department of Agriculture & Cooperation (Ministry of Agriculture & FW)	<ul style="list-style-type: none"> <li>• Production of plant materials through Nurseries and plantations for biofuels in coordination with other Ministries</li> </ul>
Ministry of Environment, forest and Climate Change (MoEF&CC)	<ul style="list-style-type: none"> <li>• Biofuel plantations in forest lands and environmental issues concerning biofuels</li> <li>• Involvement of communities in maintenance of plantations and supply chain</li> </ul>
Ministry of Science and Technology (Department of Biotechnology and Department of Science & Technology)	<ul style="list-style-type: none"> <li>• R&amp;D&amp;D on various feedstocks and improvement of technologies for Biofuel development.</li> <li>• Promote innovation and cutting edge research in Biofuel area.</li> <li>• Development of technologies for bio-refinery and value added products.</li> </ul>
Ministry of Road Transport and Highways	<ul style="list-style-type: none"> <li>• Encourage consumption/usage of Biofuels in transport sector</li> </ul>
Ministry of Railways	<ul style="list-style-type: none"> <li>• Encourage consumption/usage of Biofuels</li> </ul>
Department of Consumer Affairs (Ministry of CA, F&PD)	<ul style="list-style-type: none"> <li>• Laying down specifications, standards and codes for ensuring quality control of biofuels for end uses</li> </ul>
Ministry of Heavy Industries and Public Enterprises	<ul style="list-style-type: none"> <li>• To advise Manufacturers of Equipment for making them compatible with biofuels available in the market</li> </ul>
Ministry of New & Renewable	<ul style="list-style-type: none"> <li>• To generate/produce energy through biogas including enriched biogas,</li> </ul>

Energy	bio-CNG and bio-power etc. from biomass/urban, industrial and agricultural waste.
Ministry of Housing & Urban Poverty Alleviation	<ul style="list-style-type: none"> <li>To coordinate with States and ULBs for the availability of MSW as an important feed stock for biofuels including municipal solid waste in urban areas for which the policies are being enunciated by this Ministry</li> </ul>
Ministry of Consumer Affairs, Food & Public Distribution, Department of Food & Public Distribution	<ul style="list-style-type: none"> <li>DFPD to provide suitable financial incentives to the sugar sector for setting up of ethanol distilleries</li> </ul>

## 8.0 INTERNATIONAL COOPERATION

8.1 Owing to renewed focus in the field of biofuels, scientific and technical cooperation will be established internationally in accordance with national priorities. This will include cooperation in joint research and technology development, field studies, pilot scale plants and demonstration projects involving R&D institutes and industry. Appropriate bilateral and multi-lateral cooperation programmes for sharing of technologies and funding would be developed.

## 9.0 INSTITUTIONAL MECHANISMS

### A. Biofuel Policy Institutional Mechanism at the Centre

9.1 Under the Allocation of Business Rules, responsibilities have also been allocated to various Ministries to deal with different aspects of biofuel development and promotion in the country. Synergy is required between various departments and agencies due to the broader outlook/scope of work involved. This calls for an empowered Committee for policy guidance and early review on different aspects of biofuel development, promotion and utilization.

9.2 It is envisaged to set up a National Biofuel Coordination Committee (NBCC) headed by the Minister, Petroleum and Natural Gas and representatives of concerned Ministries would be the Members of this Committee. The Committee would meet periodically to provide overall coordination, effective end-to-end implementation and monitoring of biofuel programmes. The National Biofuel Coordination Committee will have the following composition:

Chairman: Minister of Petroleum & Natural Gas

Members:

- i. Secretary, Ministry of Petroleum & Natural Gas
- ii. Secretary, Department of Rural Development, Ministry of Rural Development
- iii. Secretary, Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture & Farmers Welfare
- iv. Secretary, Ministry of Environment, Forest & Climate Change
- v. Secretary, Department of Science & Technology, Ministry of Science & Technology
- vi. Secretary, Department of Expenditure, Ministry of Finance
- vii. Secretary, Ministry of Road Transport and Highways
- viii. Chairman Railway Board
- ix. Secretary, Department of Food & Public Distribution, Ministry of Consumer Affairs, Food & Public Distribution
- x. Secretary, Department of Heavy Industry, Ministry of Heavy Industries and Public Enterprises
- xi. Secretary, Department of Bio-Technology, Ministry of Science & Technology
- xii. Secretary, Ministry of New & Renewable Energy
- xiii. Secretary, Ministry of Housing & Urban Poverty Alleviation

xiv. CEO, NITI Aayog

xv. Joint Secretary (Refinery), Ministry of Petroleum & Natural Gas – Member Secretary

9.3 Working Group on Biofuels - In order to monitor the implementation of biofuel programme, a Working Group will be setup. This Working Group will have the following composition:—

Chairman: Joint Secretary (Refinery), Ministry of Petroleum & Natural Gas

Members:

- (i) Eminent experts in the field of biofuels nominated by MoP&NG
- (ii) Technical experts from research and academic institutions in the field of biofuels
- (iii) Representatives from relevant Ministries/Departments as mentioned in 9.2 above
- (iv) Representatives of OMCs
- (v) Representative of PCRA
- (vi) Representatives/ Experts from the Industry, CSIR Lab, National Sugar Institute & Biofuel Associations

#### **B. Biofuel Institutional Mechanism at the States Level**

9.4 The policy encourages setting up of State Level Biofuel Development Boards in line with the broad contours and provisions of this National Policy on Biofuels. Five such Boards are functional in the States of Chattisgarh, Uttar Pradesh, Karnataka, Rajasthan and Uttarakhand. The State Governments aid these Boards and are entirely responsible for their functioning. Other States will be encouraged to set up similar boards to promote biofuels in their respective States in line with the broader objectives of this National Policy on Biofuels. The existing boards will be encouraged to undertake handholding activities so that more and more States participate in the biofuel programme.

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