

CONCEPT NOTE: BIOFUEL AND BIOMASS CERTIFICATION SCHEME

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NETWORK FOR CERTIFICATION AND CONSERVATION OF FORESTS



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ABBREVIATIONS

2BSVs: Biomass Biofuel, Sustainability Voluntary Schemes

BioFM: Biofuel and Biomass

BPCL: Bharat Petroleum Corporation Limited

CBG: Compressed Biogas

CNG: Compressed Natural Gas

CORSIA: Carbon Offsetting and Reduction Scheme for International Aviation

CO₂eq: Carbon Dioxide Equivalent

DGCA: Directorate General of Civil Aviation

EBP: Ethanol Blending Programme

EU: European Union

FAO: Food and Agriculture Organisation

FQD: Fuel Quality Directive

GCF: Green Climate Fund

GDP: Gross Domestic Product

GHG: Greenhouse Gases

GST: Goods and Services Tax

GW: Giga Watt

HPCL: Hindustan Petroleum Corporation Limited

ICAO: International Civil Aviation Organisation

IOC: Indian Oil Corporation

IPCC: Intergovernmental Panel on Climate Change

ISCC: International Sustainability and Carbon Certification

LPG: Liquefied Petroleum Gas

M&M: Mahindra and Mahindra

MNRE: Ministry of New and Renewable Energy

MoPNG: Ministry of Petroleum and Natural Gas

MSW: Municipal Solid Waste

MW: Mega Watt

NCCF: Network for Certification and Conservation of Forests

NDC: Nationally Determined Contributions

NOVOD: National Oilseeds and Vegetable Oils Development

NRL: Numaligarh Refinery Limited

RED: Renewable Energy Directive

RPO: Renewable Purchase Obligation

RSB: Roundtable on Sustainable Biomaterials

RSPO: The Roundtable on Sustainable Palm Oil

RTRS: Roundtable on Responsible Soy

SAF: Sustainable Aviation Fuel

SDG: Sustainable Development Group

SSP: Standard Setting Process

SuTRA: Sustainable Transformation of Rural Areas

SVOs: Straight Vegetable Oil

TPES: Total Primary Energy Supply

TWG: Technical Working Group

UNFCCC: United Nations Framework Convention on Climate Change

1. BACKGROUND- What are Biofuel and Biomass?

1.1. Biomass

Biomass is defined as mass of living or dead organic matter (FAO,2009). It comprises of all the organic material both aboveground and belowground, both living and dead, e.g., trees, crops, grasses, tree litter, roots etc. (IPCC Good Practice Guidance for LULUCF,2003).

1.2. Bioenergy/Biomass Energy

Biomass energy, refers to crops, residues, and other biological materials that can be used as a substitute for fossil fuels for production of energy and other products. Living biomass creates a carbon-neutral cycle that does not increase the atmospheric concentration of Greenhouse Gases (GHG).

Biomass is a primary source of food, fodder and fibre and as a renewable energy source provided about 10.2% of global Total Primary Energy Supply (TPES) in 2008 (IPCC, Renewable energy sources and Climate Change mitigation,2018). Biomass can be used to produce electricity, thermal energy, or can be used as transportation fuel. It is renewable and a carbon neutral source of energy.

Some of the most common (and/or most promising) biomass feedstock is:

- Grains and starch crops – sugar cane, corn, wheat, sugar beets, industrial sweet potatoes, *etc.*
- Agricultural residues – corn stover, wheat straw, rice straw, orchard pruning, *etc.*
- Food waste – waste produce, food processing waste, *etc.*
- Forestry materials – logging residues, forest thinning, *etc.*
- Animal by-products – tallow, fish oil, manure, *etc.*
- Energy crops – switch grass, miscanthus, hybrid poplar, willow, algae, *etc.*
- Urban and suburban wastes – Municipal Solid Wastes (MSW), lawn wastes, wastewater treatment sludge, urban wood wastes, disaster debris, trap grease, yellow grease, waste cooking oil, *etc.*

1.3. Biofuels

Biofuels are energy carriers that store the energy derived from biomass. They are the widely available source of clean, renewable transportation energy and can produce bioenergy in a variety of form. For example, food, fibre and wood

process residues, energy crops, agricultural wastes and residues from the forestry sector can all be used to generate electricity, heat, combined heat and power, and other forms of bioenergy (FAO,2008).

A number of transportation fuels can be produced from biomass, helping to alleviate demand for petroleum products and improve the greenhouse gas emissions profile of the transportation sector. Ethanol from corn and sugarcane, and biodiesel from soy, rapeseed and oil palm dominates the current market for biofuels. Advanced second-generation biofuels are also developed from non-food feedstock, such as municipal waste, algae, perennial grasses, and wood chips. These fuels include cellulosic ethanol, bio-butanol, methanol and a number of synthetic gasoline/diesel equivalents.

The two biofuels which have been primary focus of attention are (i) bioethanol and (ii) biodiesel.

1.4. Generations of Biofuels

Based on the source of biomass, biofuels are classified into four major categories (NCBI,2015)

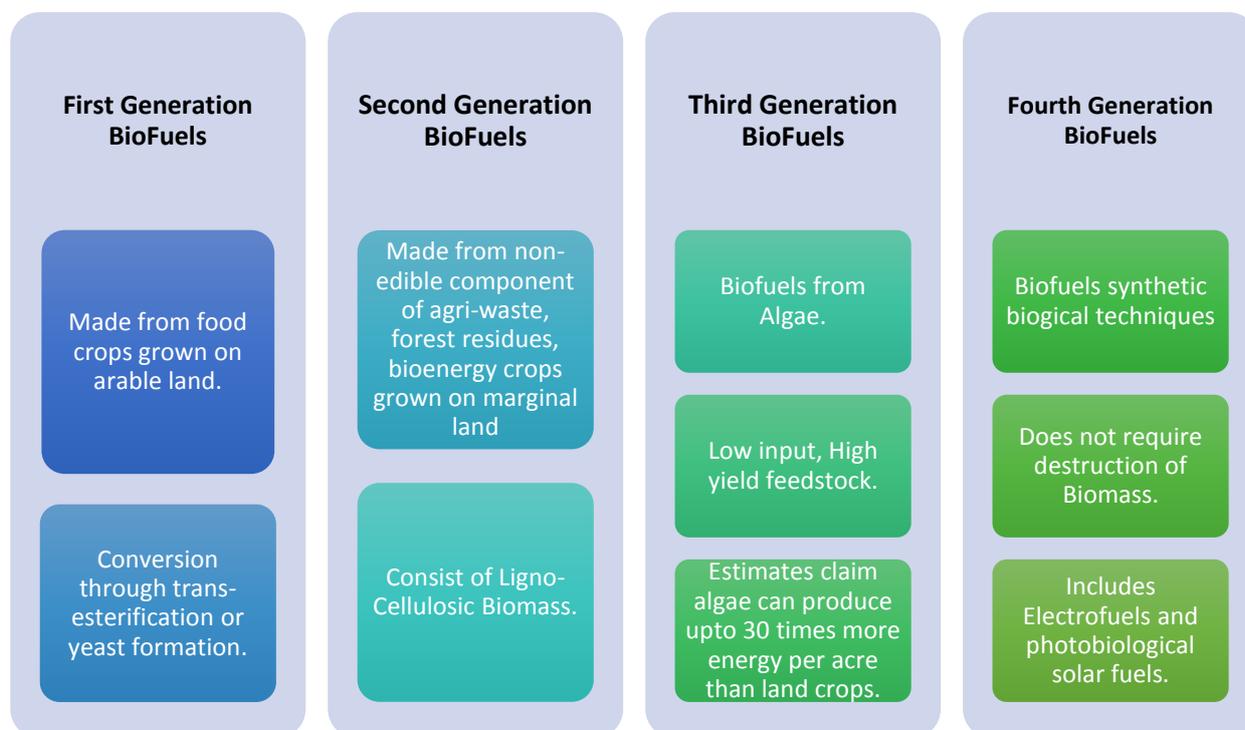


Fig 1: Four Generation of Biofuels

2. INTRODUCTION TO BIOMASS AND BIOFUEL CERTIFICATION SCHEMES

Increased visibility and usage of certification schemes for biofuels originating from sustainably sourced biomass can be attributed to EU's Renewable Energy Directive (RED): 2009/28/EC and Fuel Quality Directive (FQD):2009/30/EC, which not only provided targets to be fulfilled but certain set of criteria to be fulfilled by the biofuels to be used for compliance in EU and voluntary schemes certifying such biofuels. Since then, biomass and biofuel certifications scheme have expanded beyond EU region. Certain certification schemes such as ISCC, RSPO, *etc.*, have valid certificates in India as well.

Biomass and Biofuel certification schemes ensure that environmental and social integrity is maintained during sourcing of biomass and throughout its supply chain by demonstrating compliance with their set of requirements.

2.1. International Standards and Schemes for Biomass and Biofuel Certification

2.1.1. Roundtable on Sustainable Palm Oil (RSPO)

RSPO is a multi-stakeholder initiative that was founded in 2004, which focuses on sustainability of palm oil. RSPO certification is an assurance to the customer that the sourced palm oil production is sustainable. All organisations in the supply chain that use RSPO certified sustainable oil products are subject to regular audits to prevent overselling beyond sustainable volumes, and mixing of palm oil with non-sustainable conventional, or oil palm products.

2.1.2. Roundtable on Responsible Soy Association (RTRS)

The Roundtable on Responsible Soy Association (RTRS) is an international multi-stakeholder initiative that was established in 2006. Its main objective is to promote sustainable soy production, processing, trade and use through the development, implementation and verification of a global standard. It aims to facilitate a global dialogue on soy that is economically viable, socially equitable and environmentally sound.

2.1.3. Roundtable on Sustainable Biomaterials (RSB)

The RSB was initiated in 2007. Initially started as Roundtable on Sustainable Biofuels but the name was changed in 2013 to accommodate bio-based products and fuels other than biofuels. The Roundtable on Sustainable Biomaterials (RSB)

is a global, multi-stakeholder independent organisation that drives the development of a new world bio-economy through sustainability solutions, certification, and collaborative partnerships.

It provides tools and solutions that mitigate business risk and contribute to achieving the UN Sustainable Development Goals and has the world's most trusted, peer-reviewed, global certification standard for sustainable biomaterials, biofuels and biomass production.

2.1.4. Bonsucro

Bonsucro is a multi-stakeholder roundtable initiative whose standard is designed specifically for sugarcane production. The first scheme was initiated in 2005 and the certification system is applicable without geographical limitations. It provides a comprehensive metric tool for sustainable farming and milling of sugarcane. The Production Standard and Chain of Custody Standard is designed in line with the ISEAL Code of Good Practice for Setting Social and Environmental Standards.

2.1.5. International Sustainability and Carbon Certification (ISCC)

The certification scheme covers all types of biomass and is globally applicable. It contributes to the implementation of environmentally, socially and economically sustainable production and use of all kinds of biomass in global supply chains. Considered as one of the largest certification schemes for biomass and biofuels with over 25000 valid certificates.

2.1.6. Biomass Biofuel Sustainability Voluntary Scheme (2BSvs)

The voluntary scheme was developed in 2010 by French economic operators involved in grain production and biofuel supply chain and is managed by referent body (Bureau Veritas). The objective is to demonstrate, through independent verification, compliance with the sustainability criteria set out in European Directive 2009/28 / EC for biomass used as raw material and biofuels, biogas and bioliquids processed from sustainably sourced biomass. The end point of certified supply chain is biofuel and warehouse under customs.

2.1.7. REDcert

REDcert was founded in 2010 by German agricultural and biofuel sectors. The scheme encouraged a joint responsibility among the economic operators to promote certified sustainable biofuels and liquid biomass. REDcert comprises for three certification schemes, REDcert -EU, REDcert -DE and REDcert². While REDcert – EU and REDcert – DE focus on certification of sustainable biomass,

biofuels and bioliquids, REDcert² provides requirements for sustainable biomass to be used in food/animal industry and chemical industry.

2.2. Status of Biomass and Biofuel Standards and Schemes Operating in India

Status of Biomass and Biofuel Certification Schemes operating in India as of October 2020.

- (i) ISCC: Total three certificates are valid, which involves certification of biodiesel, collection point and traders. There is no valid certificate for gathering entity and/or producers.
- (ii) RSPO: Fifty-three supply chain certificate holders are currently active in India. The main scope of certification is sustainable purchase of Palm Oil, coordination of implementation, production, distribution and sales to local companies of food, home and personal care products for final customers. However, there no certified producer/grower of palm in India.
- (iii) Bonsucro: Total 9 valid certificates are under Bonsucro for the Indian territory. It involves Mills, Farmers, smallholder farmers and processor/traders who are certified against Bonsucro Mass Balance Chain of Custody Standard only.
- (iv) RTRS: Two valid certificate producers of Soy are currently active in India out of which is one is for non-GMO production.

3. POLICY & INSTITUTIONAL SUPPORT

3.1. National Biofuel Policy

3.1.1. To promote biofuels in India, the revised National Policy on Biofuels was published by Ministry of Petroleum and Natural Gas (MoPNG) in 2018. India's new biofuel policy seeks to achieve a national average of 20% blending of ethanol with gasoline and 5% blending of biodiesel with conventional diesel by 2030. It is envisioned that the targets will be met through growth in domestic biofuel production (including first, second and third generation of biofuel) and use of multiple feedstock.

3.1.2. Subsection 5.25 of the policy mandates introduction of standards and certification for different biofuels and end use applications. Though Bureau of Indian Standards (BIS) is involved in quality specification standards, NCCF BioFM certification scheme can fulfil the mandate of having a certification scheme for biofuels ensuring its environmental, social and economic sustainability.

3.2. Other policy and institutional support

- 3.2.1. National Renewable Energy target: Government of India has a target to install 175 GW of power generated from renewable sources by the year 2022 out of which 10GW is reserved for bioenergy *i.e.*, power generation from biofuel, waste to energy plants, and other equivalent sources.
- 3.2.2. Renewal Purchase Obligation: State electricity Regulatory commissions have imposed certain percentage to purchase energy from renewable sources known as Renewable Purchase Obligations (RPOs). Renewable Energy Certificates and RPO compliance cell is also launched by the government so as to coordinate with the states to achieve its RPO targets. A certain percentage is mandated for Non-solar renewable energy, which can be fulfilled using biofuel, biogas and bioliquids.
- 3.2.3. Civil Aviation: Directorate General of Civil Aviation (DGCA) issued draft guidelines in 2019 in response to Carbon Offsetting and Reduction Scheme for International Aviation (CORSIA), where from the second phase (2027 – 2029) civil aviation operators in each country shall be required to reduce carbon emissions as per the set target. Biofuels can prove instrumental in reduction GHG emissions from combustion. The support for bio jet fuels was also expressed in the White Paper on National Green Aviation Policy published by Ministry of Civil Aviation in 2019.
- 3.2.4. Tax Incentives: In 2019, Government of India has reduced GST on ethanol for blending in fuel from 18% to 5%. Further, the price of C-heavy molasses-based ethanol has been increased to Rs. 43.70 from Rs. 40.85 thereby, giving a boost to production of ethanol and consequently to the Ethanol Blending Programme.
- 3.2.5. Transportation fuel Guidelines: New transportation fuel guidelines 2019 promote the use of biofuels. Oil marketing companies have floated an expression of Interest for the procurement of biodiesel made from used cooking oil.
- 3.2.6. Marketing of Biofuels: The Ministry of Petroleum & Natural Gas along with other authorised entities proposed to install facilities for the marketing of at least one new generation alternate fuel, like CNG, LNG, biofuels, electric charging at their proposed retail outlets within three years of operationalization of the outlet.
- 3.2.7. State specific polices: States such as Odisha promotes 30% of states wastelands to be used for cultivating biofuel crops. Similarly, governments of Andhra Pradesh, Haryana and Rajasthan through biodiesel policy facilitates farmers and investors in oil bearing trees, Jatropha, Pongamia, *etc.*

4. CONTRIBUTION TO INDIA'S NDC

- 4.1. Increase the Share of Non-Fossil Fuel Based Electricity: With targets of generating electricity through non-fossil fuel-based sources, biofuel, biogas and bioliquids can be instrumental in not only fulfil the goal but also increase it. As of now, power generation from biomass combustion, biomass gasification and bagasse co-generation reached upwards of 9.3 GW (9131.5 MW from Biomass power/cogeneration + 138.3 MW from waste to energy) installed capacity as of April 30, 2019. Biomass power generation may surpass the target of 10 GW by 2022.
- 4.2. Decrease in Emission Intensity across GDP: India has committed to reduce its GHG emission intensity by 33-35% by 2030. Energy from biomass, biofuels, biogas, *etc.*, could prove beneficial. With use of biofuels, biogas and other forms of fuels derived from sustainable biomass across the sectors such as transportation, industries, electricity, *etc.*, would help in reduction of GHG emissions, hence the emission intensity across GDP.
- 4.3. Additional 2.5 – 3 billion tonnes of CO₂eq: Though the use of sustainably sourced biomass and its derived fuels will not directly assist generation of carbon stock, however, sustainability requirements for sourcing of biomass shall ensure that there is no net harm to the existing carbon stock, especially in areas such as forests with high carbon stock value. Thus, help in maintaining the added carbon stock.

5. MAJOR SCHEMES INITIATIVES IN INDIA

5.1. Biofuel, Biogas, Bioliquids Schemes in India

- 5.1.1. Compressed Biogas (CBG): In support of CBG, The Minister of Petroleum and Natural Gas & Steel in June 2020, has announced financial packages for Micro, Small and Medium Enterprises to develop Compressed Biogas (CBG) plants across India under the priority lending scheme. The Oil marketing companies have also agreed to launch long-term agreements on CBG. Also, under the Sustainable Alternative Towards Affordable Transportable scheme, it is envisioned to produce 15 Million Metric Tonne CBG through 5000 plants by 2023.

- 5.1.2. Sustainable Transformation of Rural Areas (SuTRA) and Samagra Vikas have operated small stationary diesel engines (5 to 125 hp) on Pongamia oil for power generation and water pumping in 2003.
- 5.1.3. National Oilseeds and Vegetable Oils Development (NOVOD) Board has implemented a back ended credit linked subsidy programme for promotion of tree borne oilseeds. Under this scheme 30% subsidy is provided for establishment of seed procurement centre, installation of an oil expeller, multipurpose pre-processing and processing facility, nursery raising and commercial plantation.
- 5.1.4. Pradhan Mantri JIVAN (Jaiv Indhan- Vatavaran Anukool fasal awashesh Nivaran) Yojana" is a tool to create 2G Ethanol capacity in the country and attract investments in this sector.

5.2. Organisations and Initiatives

- 5.2.1. Biorefinery: In the past few years, biorefineries have been set up or are in the process of setting up. These include refinery by Numaligarh Refinery Limited (NRL) who in joint venture with Chempolis Ltd. and Fortum 3 B.V. established India's first biorefinery to produce fuel grade ethanol using feedstock such as bamboo. Coming up are other biorefineries such as in Bhatinda by HPCL and in Bhandara by BPCL which will also boost the biofuel production. IOCL has also initiated to produce 2G ethanol by utilising crop residues especially rice straw as a feedstock which would also contribute in reducing the air pollution menace in winters.
- 5.2.2. Transportation Sector:
- (i) Indian Railways: Indian Railways was first to host trials for biodiesel. Indian Railways Organisation for Alternate Fuels (ICOAF) has been given the task to find alternative sources of energy for use in Railways, including biofuel and biogas. In 2017, Indian railways commissioned two biodiesel plants with a target in hindsight of 10% biodiesel blending.
 - (ii) Biodiesel and Biofuel Buses: In 2015, TATA Motors in collaboration with Indian Oil Corporation rolled out 43 busses in Pimpri, near Pune to run on 10% biodiesel blended fuel. Similarly, in 2016, Karnataka State Road Transport Corporation decided to convert its fleet of 8300 buses from diesel to biodiesel. In 2017, TATA motors also unveiled India's first bio-methane bus during bioenergy programme 'Urja Utsav'.
 - (iii) Mahindra and Mahindra: M&M have previously experimented with the idea of cars compatible to run with 100% biodiesel such as its Mahindra

Scorpio Sports Utility Vehicle (SUV). In 2013, M&M also unveiled their biodiesel compatible tractor.

- 5.2.3. Civil Aviation: In August 2018, SpiceJet completed trial of India's first flight powered by biofuel. Similar idea was also explored by Indigo in 2012 but got shelved. Incoming CORSIA regulations can kick-start the use of biofuels in civil aviation.

6. NEED AND BENEFIT OF NCCF BIOFM CERTIFICATION SCHEME

6.1. Need for BioFM Certification Scheme

- (i) Fluctuating fuel cost: Cost fossil fuel such as petroleum for transportation and kerosene has been dwindling which causes unrest and economic instability, especially among the lower income groups.
- (ii) Natural Resource Protection and Management: Production of biomass for commercial purposes without regards to environmental and social safeguards can have detrimental impact over the already stressed natural resources and ecosystem.
- (iii) Food Security: Production of biomass for the purpose of biofuel, biogas and bioliquids generation without regards to sustainability, especially on arable lands and using food crops may negatively impact food security.
- (iv) Contribution to NDC: With India's NDC goals of reducing emission intensity by 33-35% across GDP and generation of 40% cumulative electricity power from non-fossil fuel-based sources, BioFM certification scheme would not only help in fulfilling the goals but also in increasing the target in the coming future.
- (v) Compliance: Biofuels, bioliquids, biogas, etc., certified under the Scheme shall assist the organisations and sectors in complying with national and international regulations aimed at sustainable development of all nations and people.

In respect of Aviation Sector, containing international aviation emissions at 2020 level is slated to become mandatory in 2027 and onwards. India also will be obligated to comply with the mandatory international emissions containment. A corollary of this will be mandatory use of certified Sustainable Aviation Fuel (SAF) by Indian international aviators also. SAF certification will be permissible under a CORSIA approved certification scheme. In this context, NCCF BioFM Certification Scheme has the potential to become India's indigenous answer suited to the Indian situation compared to the foreign based biofuel certification schemes.

6.2. Benefits of BioFM Certification Scheme

- (i) Promoting Greenhouse Gas reduction: Certified biofuels, biogas, bioliquids, *etc.*, would ensure net GHG emissions reductions as compared conventional fossil fuels.
- (ii) Traceability, Transparency and Legality: The scheme shall establish traceability and legal sourcing of certified material from its production till its end use and shall ensure transparency in monitoring and reporting.
- (iii) Improved and sustained quality and quantity: The scheme shall promote improved quality and quantity of biofuels, biogas, bioliquids and other sustainably sourced bioproducts. Availability of details of valid certificate holders shall increase market access of such economic operators.
- (iv) Contribution to Sustainable Development Goals: Production, processing, trade and use shall contribute towards Sustainable Development Goals as adopted by United Nations. Example: use of non-arable land to grow energy crops such as *Jatropha* may have contribution on Goal 15: Life on Land, Goal 7: Affordable and Clean Energy, Goal 8: Decent Work and Economic Growth. Contribution towards Sustainable Development Goals may vary on case to case and certificate to certificate basis.

7. OBJECTIVES

- (i) To ensure environment, social and economic Sustainability: BioFM certification scheme shall ensure environment, social and economic sustainability through its robust requirements.
- (ii) To promote climate change mitigation: BioFM certification scheme shall ensure net GHG emissions reduction as compared to biofuel process on a lifecycle basis. This may include reduction GHG emissions from use of biofuels, biogas and bioliquids, reduced emissions from land, reduced emissions from sourcing of biomass, among others
- (iii) To ensure energy security: Through sustainability requirements, BioFM certification scheme shall promote production of biofuels, biogas and bioliquids. Thus, reducing dependency on crude oil imports.
- (iv) To promote Circular Economy: Inclusion of waste and residues from multiple sectors such as agriculture, aquaculture, industries, *etc.*, in the supply chain would not only reduce the waste going to landfill but would also result

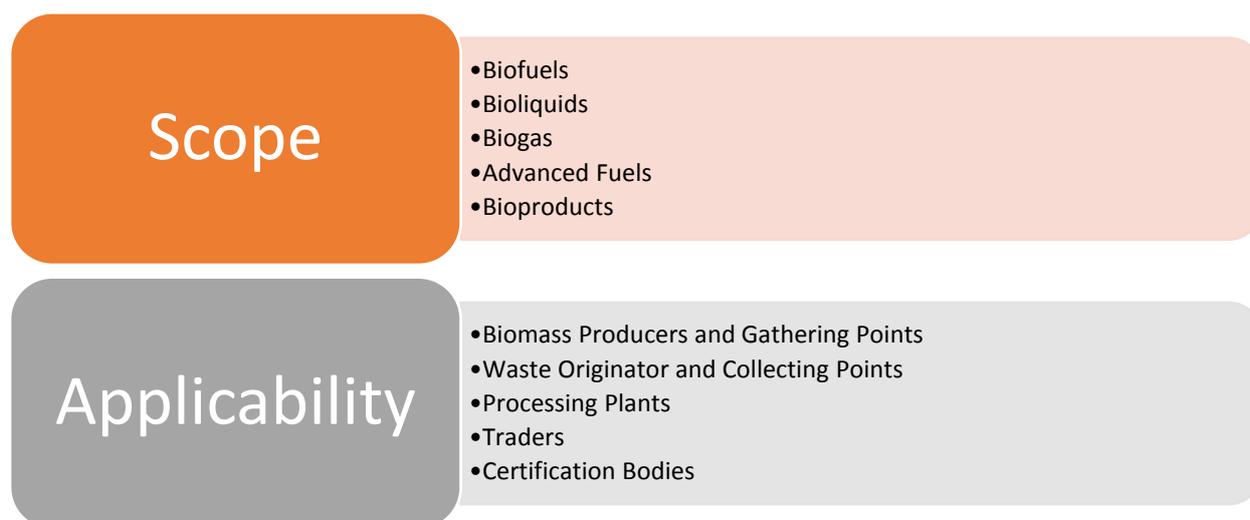
increased value of the wastes and residues through processing and production of various products.

- (v) To increase awareness and usage of biofuels and bioproducts: Presence of a national certification scheme shall increase awareness about biofuels, bioliquids, biogas and bioproducts, this leading to increase utilisation and possible substitution to conventional fossil fuel and non-renewable fuels and products.

8. SCOPE & APPLICABILITY

8.1. General Scope

The Biofuel and Biomass Certification Scheme, hereafter referred to as ‘the scheme’, incorporates certification of biofuels, bioliquids, biogas and other related products whose origin can be traced to sustainably produced biomass and/or waste and residues.



8.2. Scope of NCCF BioFM Certification Scheme

The Scheme shall include rules, requirements, procedures for certification of the following:

- (i) Biofuels: Liquid and gaseous fuels produced from sustainably sourced biomass for the purpose of use in transportation. Example Ethanol produced from sugarcane, Biodiesel.
- (ii) Bio liquids: Liquid fuels produced from sustainably sourced biomass for the purpose of energy other than transport. They are usually made from used or

untouched vegetable and seed oils. These oils undergo combustion in a power station to create heat, which can be used to warm homes or boil water to make steam.

- (iii) Biogas: Gaseous fuels produced from sustainably sourced biomass for the purpose of energy other than transport. Example biogas produced from food waste to be used in thermal power plant as a substitute of natural gas.
- (iv) Advanced fuels: Liquid and gaseous fuels produced for the purpose of energy (including transport) from processing of sustainability sourced materials other than biomass. Such materials may include plastic waste, industrial waste, among others. Example, In 2014, Dehradun based Indian Institute of Petroleum (IIP), a constituent laboratory of the Council of Scientific and Industrial Research (CSIR) developed a unique process of converting plastic waste like polyethylene and polypropylene, both together accounting for 60 per cent of plastic waste, can be converted to either gasoline or diesel
- (v) Bioproducts: Solid, liquid or gaseous products produced for the purpose other than energy from sustainably sourced biomass (or waste and/or residues) for industrial, commercial or domestic purpose. They may act as a substitute for products conventionally derived from fossil fuel or other non-renewable sources. Example, Bioplastics from plant oils and sugars, Biofoams and bio-rubber from plant oils and latex, Bio-composites manufactured from agricultural and forestry biofibres.

8.3. Applicability

The Scheme shall be applicable to the following:

- (i) Economic Operators part of the supply chain. The economic operators can be further classified as the following:
 - Producers: Economic operators responsible for sustainable production of biomass.
 - Waste Originators: Economic operators responsible for production of waste and residues due to processes in the corresponding facilities.
 - First Gathering Points/Collection Points: Economic operators acting as first collection and storage points of sustainably produced biomass and, waste and residue respectively.
 - Processing Plants: Economic operators producing biofuels and other related products using sustainably sourced biomass and/or waste and residues.
 - Traders: Economic operator legally and physically possessing biomass and/or biofuels for the sole purpose of trade.
- (ii) Bulk Users: End users such as railways, aviation industry, transport companies, industrial units, factories, among others procuring and utilising material such as biofuels, bioliquids, bioproducts, etc, in large quantities, would be the group of important stakeholders with sizable need for BioFM certification.
- (iii) Certification Bodies (CBs) conducting independent and impartial audit of the economic operators against the rules, requirements and procedures of the scheme.

9. STAKEHOLDERS INVOLVED IN THE DEVELOPMENT PROCESS

9.1. Categories of Stakeholders involved in Development Process

Stakeholder can simply be defined as an individual, group of individual or organisation which are directly/indirectly affected and/or have interest in an activity or decision of an organisation (Adapted from ISO 26000). NCCF, for purpose of development of BioFM certification scheme, shall at least include categories of stakeholders as defined by UN Agenda 21. The categories of stakeholders aimed to be included are:



Fig.2. Categories of Stakeholders to be involved in development of BioFM Certification Scheme

9.2. Constitution of Standard Development Group and Technical Working Group

To make the standard development process transparent and inclusive and the scheme requirements developed and prescribed through its documents more credible and robust, NCCF, based on the NCCF - Standard Setting Process (SSP), shall involve stakeholders in the development process.

9.2.1. Standard Development Group

NCCF shall identify and invite relevant organisations and individuals as per the categories of stakeholders mentioned in Sub-section 9.1 to formulate Standard Development Group (SDG). All the stakeholder shall represent the different aspects of sustainable Biomass and Biofuel at international, national or sub-national/regional level covering the social, economic, environmental interest groups and the relevant institutions and government agencies. NCCF shall be represented in SDG through its member(s) from the secretariat who would be responsible for overall coordination and management of SDG.

9.2.2. Technical Working Group

SDG shall also constitute a sub-group within the SDG, known as Technical Working Group (TWG), which will comprise of the organisation and/or individuals who can devote greater amount of time for drafting of the scheme related requirements and documents.

9.2.3. Utility of SDG and TWG

- (i) Both SDG and TWG shall meet at regular intervals for the purpose of development of Principles, Criteria and Indicators for the standards of the scheme and other related documents, as applicable.
- (ii) Working drafts of the standards and associated documents shall be made available to all the members of SDG, TWG and other stakeholders deemed relevant by NCCF or SDG and TWG itself for their comments, suggestions and feedback.
- (iii) SDG and TWG members shall provide comments and suggestions on the drafted requirements. NCCF shall make amendments to the draft documents based on provided comments and suggestions.
- (iv) Only after consensus is received from both TWG and SDG, the scheme related documents shall be considered final.

10. DEVELOPMENT PROCESS

10.1. Total time required for standard development

NCCF aims to complete the development, including public consultation and pilot testing in 24 months or 2 years beginning October 2020, *i.e.*, the scheme is envisioned to be operational by October 2022.

10.2. Phases of Development



Fig 3: Development Process of NCCF BioFM Certification Scheme

10.2.1. Phase I – Preparatory Phase

Preparatory phase corresponds to research and analysis page. The following are the steps of the preparatory phase. It comprises of steps 1-3.

- (i) Step 1 - Understanding Basic Concept: Phase 1 begins with the secondary research on the concept of biomass, biofuels and other such derivatives, including its uses. It also includes research on certification schemes including but not limited to RSB, ISCC, RSPO and 2Bvs
- (ii) Step 2 - Preparation of Concept Note: A concept note shall be prepared taking into account the Indian context and its requirements and conditions.
- (iii) Step 3 – Research and Analysis: The step shall begin simultaneously with step 1 and step 2, where thorough research on the Indian requirements, international regulations and commitments and its analysis will take place to give the scheme a strong foundational setup.

10.2.2. Phase II – Development Phase

Development Phase corresponds to developing the rules, requirements and procedures in the form of Principle, Criteria and Indicators of the scheme through a multi-stakeholder procedure. It comprises of steps 4-6.

- (i) Step 4 - Constitution of Standard Development Group and Technical Working Group: It involves mapping relevant stakeholders (individuals and as organisation) and constituting a group, namely Standard Development Group (SDG) of people guiding the process of scheme development. A sub-group within the larger SDG shall be formed, namely Technical Working Group (TWG) to fast track the development of rules, requirements and procedures. Refer Section 9.
- (ii) Step 5 – Conceptualisation of Framework: Along with the SDG and TWG, NCCF shall create the framework and structure of BioFM Certification Scheme, *i.e.*, the scope, required documents, principles, among others.
- (iii) Step 6 – Development of Documents: Principles and their corresponding criteria and indicators and other requirements shall be developed following multiple rounds of consultation both physical and online with the stakeholders. Throughout the development process, NCCF shall be guided by the SDG and TWG and will incorporate comments in the documents, as applicable.

10.2.3. Phase III – Finalisation Phase:

Finalisation Phase corresponds to finalisation of the rules, requirements and procedures of the scheme in the form of Principles, Criteria and Indicators. It shall also include pilot testing, accreditation of CBs, and other associated activities required to commence operationalisation of the scheme. It comprises of steps 7-11.

- (i) Step 7 - Finalisation of Documents: NCCF shall hold a dedicated 60-day public consultation period, followed by incorporation of relevant comments and consensus building exercise with both TWG and SDG to finalise the documents of the scheme.
- (ii) Step 8 – Pilot Testing: To check the feasibility compliance of scheme related rules, requirements and procedures, NCCF along with its stakeholders shall conduct pilot testing of the scheme.
- (iii) Step 9 – Accreditation and Notification of Certification Bodies: Based on the requirements finalised through stakeholder consultation process for the Certification Bodies (CBs), NCCF along with Accreditation Bodies (a body who is member of International Accreditation Forum), shall commence the accreditation process and notification process of CBs.
- (iv) Step 10 - Operationalisation Phase: Following steps 7-9, NCCF shall launch the scheme and declare it ready to be used by the relevant entities.
- (v) Step 11 - Outreach and Advocacy: Through mechanisms including that of social media (NCCF's website, LinkedIn, Twitter, Facebook and other similar networking websites) NCCF shall engage a varied range of stakeholders by sharing BioFM certification scheme documents, policy papers, position papers, research articles, among others. This outreach to stakeholders is intended to promote awareness, acceptability and marketability of the certification scheme. It will also facilitate in securing appropriate support of various government and non-government institution including relevant ministries, research institutions, processing units, end users and civil society at large.

10.3. Timeline for development phases of NCCF BioFM Certification Scheme



Fig 4: BioFM Certification Scheme Development Timelines

11. FRAMEWORK AND CERTIFICATION PROCESS OF NCCF BIOFM CERTIFICATION SCHEME

11.1. Documentary Framework

The scheme shall be guided by the main document providing rules, requirements and procedures in the form of Principles, Criteria and Indicators (PCIs) for certification of economic operators and bulk users by the accredited certification bodies. Wherever required, explanatory notes will be appended to respective PCIs.

11.2. Roles and Responsibilities of Entities Involved

- (i) NCCF: NCCF as a scheme owner, shall be responsible for development, operation and management, of BioFM Certification scheme. NCCF shall also revise the documents as deemed appropriate. However, NCCF at any stage would not be involved in decision on issuance of certificate.

- (ii) **Economic Operators**: Economic Operators are a part of the supply chain and includes biomass producers, waste originators, gathering and collecting points, processing plants as well as traders. They are responsible for sustainable production, collection, processing and trade of biomass as well as waste and residues. They shall be responsible for demonstrating compliance with rules, requirements and procedures of the scheme.
- (iii) **Bulk Users**: End users in supply chains such as railways, aviation industry, transport companies, industrial units, factories, among others procuring and utilising biofuels, bioliquids, bioproducts, etc, in large quantities, would form a sizable clientele for BioFM certification.
- (iv) **Certification Bodies**: Certification Body is a third-party auditing entity that is independent, impartial, unbiased and competent to perform auditing activities of an economic operator against BioFM rules, requirements and procedures.
- (v) **Accreditation Body**: Accreditation Body shall assess the applicant Certification Body against requirements prescribed by NCCF for the certification body to be notified under BioFM Certification Scheme to perform the auditing activities.
- (vi) **Stakeholders**: Stakeholders shall provide their comments and suggestions through various means on the development of BioFM Certification Scheme.

11.3. Certification Process

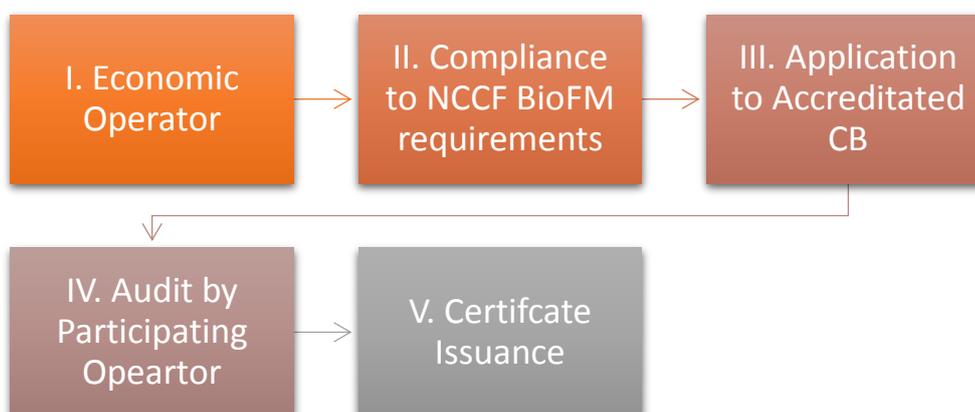


Fig. 5: Certification Process

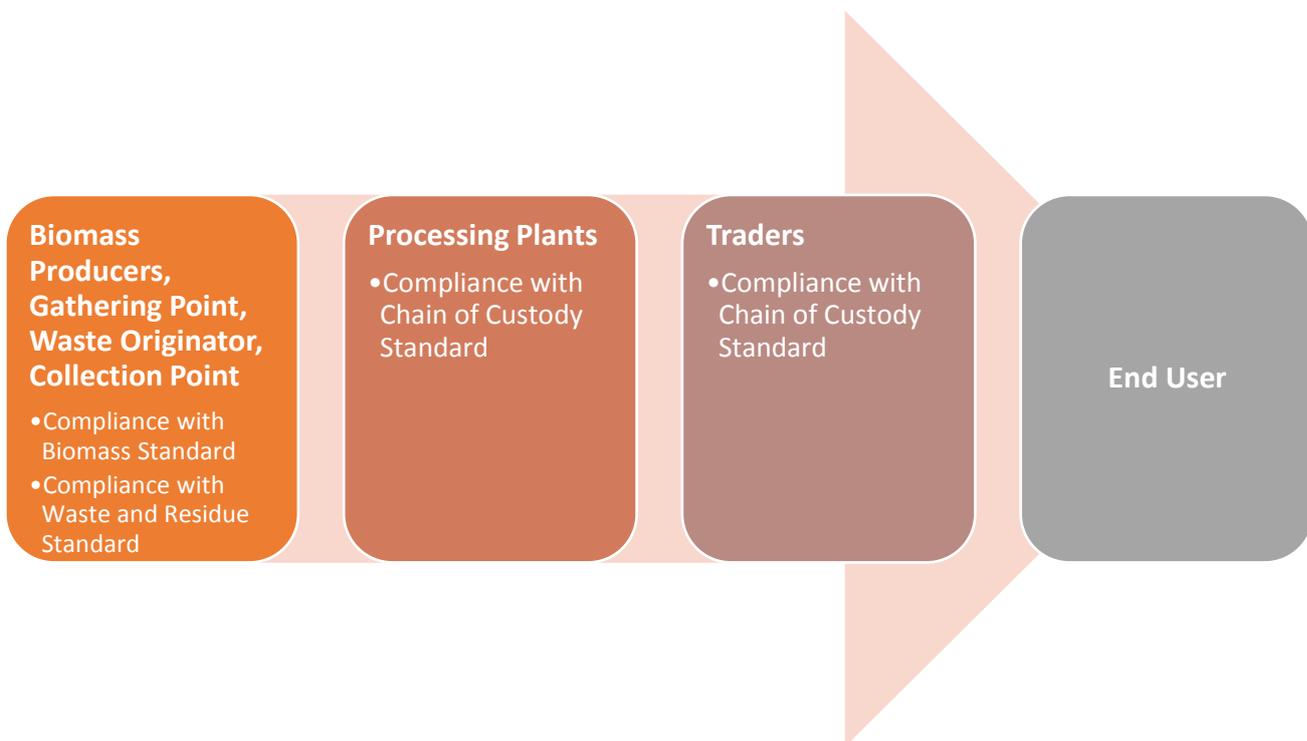


Fig. 6. Complete Supply Chain of BioFM Certified Material

ABOUT THE ORGANISATION

Network for Certification and Conservation of Forests (NCCF) is a non-profit organisation registered as a Society under the Societies Registration Act, 1860 with the broad objective of promoting sustainable management of natural resources through multi-stakeholder engagement process by developing and establishing certification schemes for different commodities and management systems. It is also involved conservation activities and policy advocacy. NCCF has developed or is developing a country specific, globally aligned and internationally benchmarked certification programme for in the domain of forest, natural resources, climate change, ecotourism, etc.