



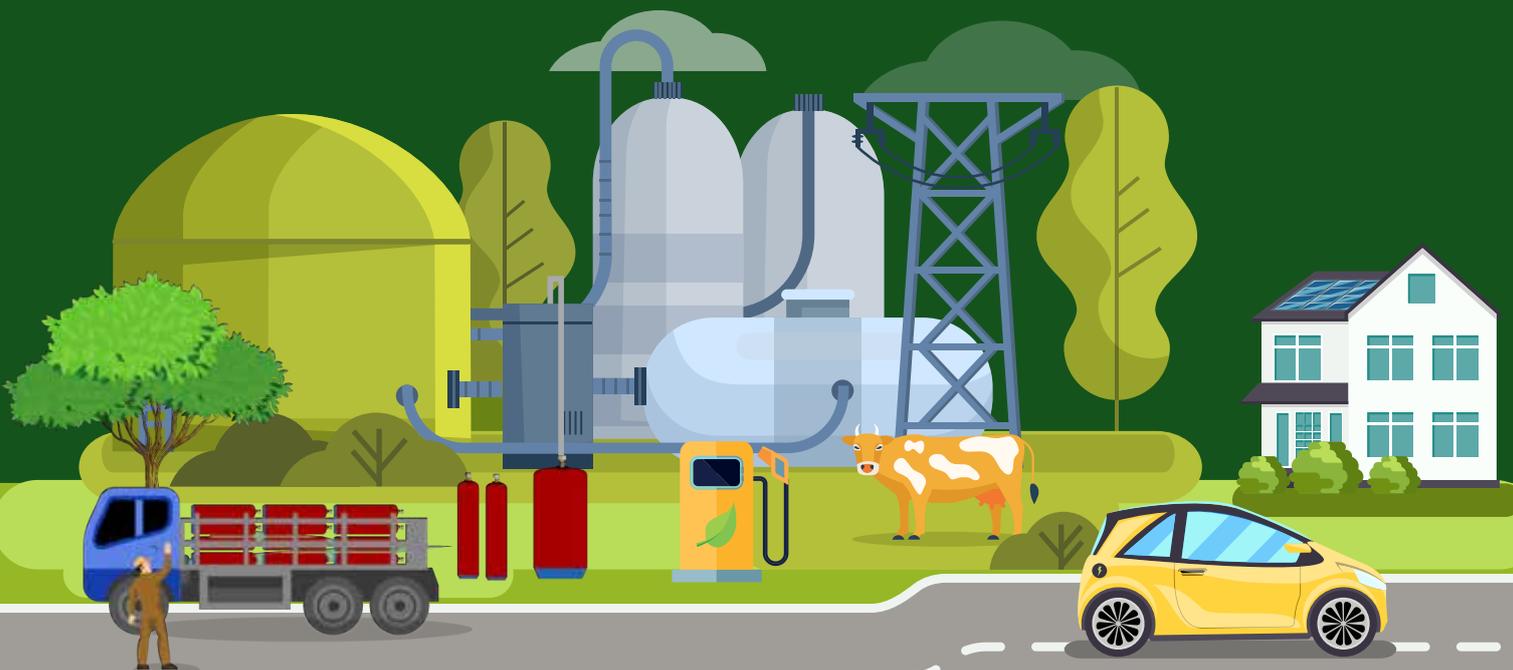
सत्यमेव जयते

Ministry of New and Renewable Energy  
Government of India

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Amrit Mahotsav

# NATIONAL BIOENERGY PROGRAMME

Renewable Energy is Clean, Green and Sustainable





GOVERNMENT OF INDIA  
**MINISTRY OF NEW  
AND RENEWABLE ENERGY**



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***For Annexures mentioned in this booklet, please refer detailed Programme guidelines uploaded at MNRE website (<https://mnre.gov.in>)***



# Background

India has embarked upon an ambitious energy transition journey with a target of fifty percent cumulative electric power installed electricity capacity from non-fossil fuel-based energy resources by 2030 and achieving net zero by 2070. To attain the ambitious Renewable Energy targets and to achieve self-reliance in the energy sector it is imperative that domestically available Renewable Energy alternatives are optimally utilised.

One such alternative is modern bioenergy. With a large surplus of biomass and other waste available in the country, energy recovery from these resources is a viable solution. Modern bioenergy is unique as it provides several social and environmental benefits apart from providing clean fuels. For example, bioenergy applications can help mitigate air, water, and land pollution. It can also create local jobs, and business opportunities, and reduce energy import bills. It can help develop decentralised and independent communities. There are benefits to the private sector, as well, in the form of opportunities to decarbonise their industries. Other benefits include savings on fertiliser subsidies and a reduction in waste management costs.

Promotion, deployment and sustained operations of efficient bioenergy technologies build robust supply chains and attract entrepreneurs and investor interest in the sector.

Therefore the Ministry of New and Renewable Energy (MNRE) has notified the National Bioenergy Programme for a period 01.04.2021 to 31.03.2026 with an outlay of Rs.858 crore under Phase-I. The National Bioenergy Programme will comprise the following sub-schemes:

- i. **Waste to Energy Programme** (*Programme on Energy from Urban, Industrial and Agricultural Wastes / Residues*)
- ii. **Biomass Programme** (*Scheme to Support Manufacturing of Briquettes & Pellets and Promotion of Biomass (non-bagasse) based cogeneration in Industries*)
- iii. **Biogas Programme**

While the guidelines for the sub-schemes are given in succeeding chapters, the salient features are given below:

## 1. Biomass Programme:

- i) MNRE has been implementing the programme to promote Biomass Power and Bagasse Cogeneration in the country since the 1990s. The Biomass-based Cogeneration Programme (launched in May 2018) was under implementation with the main objective of promoting cogeneration for optimum use of the country's biomass resources through cogeneration technology in sugar mills and other industries (rice, paper mills, etc).
- ii) The Programme which earlier focused on cogeneration will now support the manufacturing of pellets and briquettes for use in power generation. The scheme will support the implementation of the National Mission on Co-firing of Biomass in Thermal Power Plants. This will enable a reduction in the practice of stubble burning particularly in the northern states of the country.
- iii) Under new guidelines of the programme for the period of 2021-22 to 2025-26, Central Financial Assistance shall be made available to projects for setting up of pellets and briquettes for use in power generation and non-bagasse based power generation projects.
- iv) **Physical Achievements:** More than 800 Biomass based Power plants (IPPs, Bagasse/Non-Bagasse Cogeneration) of a cumulative capacity of 10205.6 MW have been installed in the country as on 30.09.2022.

**Grid Connected:** 9433.6 MW (Grid connected plants include Independent Biomass Power Producers (IPPs) and Bagasse Cogeneration Power Plants)

**Off-Grid:** 772 MW (Off-grid plants include Non-Bagasse Cogeneration Power Plants)

## 2. Waste to Energy Programme:

- i) MNRE has been implementing a **Programme on Energy from Urban, Industrial, Agricultural Wastes/ Residues and Municipal Solid Waste** since 2018 for recovery of energy in the form of Biogas/BioCNG/Power from urban, industrial, agricultural wastes and municipal solid waste.
- ii) Under new guidelines of the programme for the period of 2021-22 to 2025-26, Central Financial Assistance shall be made available to projects for setting up of large Biogas, BioCNG and Power plants (excluding MSW to Power projects).
- iii) There exists tremendous scope for generating bio-CNG (Compressed Biogas-CBG) in the Country for meeting various applications such as vehicles, industries for captive energy needs, cooking etc besides generating bio-fertilizers and India through **SATAT' (Sustainable Alternative Towards Affordable Transportation)** scheme of Ministry of Petroleum and Natural Gas on CBG envisages to target production of 15 MMT of CBG from 5000 plants by 2023. Oil Marketing Companies have offered long-term pricing on CBG to make projects bankable and have agreed to execute long term agreements on CBG. The BioCNG component of the programme supports the SATAT initiatives of MoPNG.
- iv) **Achievement under Waste to Energy Scheme:** As of **30.09.2022**, a total of **258** Waste to Energy projects with a cumulative capacity of **477** MWeq including **223** MW of Grid capacity and **254** MWeq of Off-Grid capacity for generation of Biogas, BioCNG and grid/off-grid Power have been added in the Country.

## 3. Biogas Programme:

- i) MNRE has been promoting the installation of small biogas plants since the year 1981-82 under *New National Biogas and Organic Manure Programme (NNBOMP)* to provide clean gaseous fuel mainly for cooking and lighting purposes in rural areas. Since the inception of the Biogas Programme, a cumulative total of about 50.8 lakh family type biogas plants have been installed in rural areas of the country as of 31st March 2021.
- ii) Similarly, the *Biogas Power Generation (Off-grid) and Thermal energy application Programme (BPGTP)* for medium size biogas plants in the capacity range of 25 m<sup>3</sup> to 2500 m<sup>3</sup> per day biogas generation for decentralized power generation in the range of 3-250 kW was launched in the year 2005-06. BPGTP covers the generation of electrical and thermal power from biogas (100 per cent biogas engines). Since the inception of the BPGTP, the cumulative power generation capacity of about 7.8 MW (328 nos) has been installed up to 31.03.2021.
- iii) Under the new scheme for the period of 2021-22 to 2025-26, the aforementioned schemes have been merged into a single scheme as the "Biogas Programme" expanding the scope of the scheme and revising financial assistance provided to set up biogas plants.

**Guidelines for implementation of**

# **Waste to Energy Programme**

**“Programme on Energy from Urban, Industrial and  
Agricultural Wastes/Residues”**



# 1. Introduction

- 1.1. Name of the Programme:** “Programme on Energy from Urban, Industrial and Agricultural Wastes/Residues”. It may also be referred as “Waste to Energy Programme”.
- 1.2. Objective:** The objective of the programme is to support the setting up of Waste to Energy projects for generation of Biogas/ BioCNG/ Power/ producer or syngas from urban, industrial and agricultural wastes/residues.
- 1.3. Scope:** The programme provides Central Financial Assistance (CFA) to project developers and service charges to implementing/inspection agencies in respect of successful commissioning of Waste to Energy plants for generation of Biogas, Bio-CNG/enriched Biogas/Compressed Biogas, Power/ generation of producer or syngas.

# 2. Funding Pattern

- 2.1.** Standard CFA pattern: Standard pattern of CFA for grant of ‘In-principal Approval’ to Waste to Energy projects under the programme is as follows:

S. No.	Type of project	Standard CFA rate @ installed capacity of the plant
1	Biogas	Rs 0.25 Cr per 12000cum/day (maximum CFA of Rs. 5.0 Cr/project)
2	BioCNG / Enriched Biogas/ Compressed Bio Gas	<ul style="list-style-type: none"> <li>- Rs 4.0 Cr per 4800 kg/day (for BioCNG generation from new biogas plant)</li> <li>- Rs 3.0 Cr per 4800 kg/day (for BioCNG generation from existing Biogas plant#)</li> <li>- Maximum CFA of Rs. 10.0 Cr/project for both cases.</li> </ul>
3	Power ( <i>based on Biogas</i> )	<ul style="list-style-type: none"> <li>- Rs 0.75 Cr/MW (for power generation from new biogas plant)</li> <li>- Rs 0.5 Cr /MW (for power generation from existing Biogas plant#)</li> <li>- Maximum CFA of Rs. 5.0 Cr/project for both cases.</li> </ul>
4	Power based on bio & agro-industrial waste (other than MSW through incineration process).	Rs 0.4 Cr/MW (maximum CFA of Rs. 5.0 Cr/project)
5	Biomass Gasifier for electricity/thermal applications	<ul style="list-style-type: none"> <li>o Rs. 2,500 per kW<sub>e</sub> with dual fuel engines for electrical application</li> <li>o Rs. 15,000 per kW<sub>e</sub> with 100% gas engines for electrical application</li> <li>o Rs. 2 lakh per 300 kW<sub>th</sub> for thermal applications.</li> </ul>

*#Note: In case Developer is setting up a new BioCNG/ Power plant based on Biogas already available or generated from already commissioned/operational/existing biogas plant or have already availed financial assistance from Government of India for Biogas plant, then CFA will be provided only for conversion of biogas to BioCNG (@Rs 3.0 Cr per 4800 kg/day) or biogas to power (Rs 0.5 Cr /MW), as mentioned in the table above.*

## 2.2. Special CFA pattern

- i) **Special Category States:** In case the Waste to Energy plants are set up in Special Category States (NE Region, Sikkim, Himachal Pradesh and Uttarakhand), Jammu & Kashmir, Ladakh, Lakshadweep and Andaman & Nicobar Islands, the eligible CFA would be 20% higher than Standard CFA pattern given in [para 2.1](#) above.
- ii) **Biomethanation plants set up in registered Gaushala/Shelter:** Biogas/BioCNG/Power (biogas based) generation plants based on cattle dung as main feedstock set up by Gaushalas independently or through joint ventures/partnerships will be eligible for 20% higher CFA than Standard CFA pattern given in [para 2.1](#) above. These Gaushalas (Shelters) should be registered with the respective State Government.

## 2.3. Service Charge to Implementing Agency and Inspection Agency

- i) Implementing agency (IA) shall be provided a service charge @1% of total CFA (minimum of Rs 50,000/-) for receiving and processing the applications. Indian Renewable Energy Development Agency Limited (IREDA) shall be the implementing agency. However the Ministry of New and Renewable Energy (MNRE) may change the IA by way of a suitable notification.
- ii) Inspection Agency would be provided service charge @ Rs 1% of the eligible CFA (minimum of Rs 50,000/-) towards monitoring of implementation progress, performance inspection and verification of generation record, and post installation monitoring of the plants.

## 3. Terms & Conditions

- I) Developers shall share plant generation data with MNRE or any other agency designated by MNRE, except in the case of Biomass Gasifiers, through installation of SCADA System/remote monitoring system. (This is applicable for project proposals submitted after notification of this guideline).
- ii) **Expansion of Plants:** Grant of CFA to plants which intend to add capacity to the existing plants shall also be considered. CFA for such plants will be considered only for the enhanced capacity by way of installation of new plant and machinery. Applications received for expansion projects will be processed as per guidelines existing at the time of submission of the application for expansion.
- iii) Central financial assistance from any other Central Govt. Ministry should not be claimed for proposed plant for which application has been submitted to this Ministry.
- iv) Waste to Energy (WtE) plants based on waste heat, waste plastics, waste tires or such other polymer waste shall not be eligible for CFA.
- v) Biogas plants of size upto 250 kW capacity for power generation and upto 2500 m<sup>3</sup>/day for Biogas generation capacity are covered under Biogas Programme and shall not be eligible under this programme.
- vi) Plants installed with new equipment/machinery only shall be eligible for CFA under this programme.
- vii) Municipal Solid Waste (MSW)/Refused Derived Fuel (RDF) to power projects based thermal technologies (Incineration, Gasification, Pyrolysis etc.) are not supported under the Waste to Energy programme.

## 4. Procedure for Availing CFA

### 4.1. Submission of proposal:

- i) The proposal for grant of “In-Principle” approval of CFA will be accepted through BioURJA Portal (<https://biourja.mnre.gov.in>) before commissioning of the proposed plant [except for the projects mentioned in clause 4.1(iii)]. **The last date for submitting the applications under these guidelines shall be 31.12.2025.** List of documents to be submitted is placed at **Annexure-I (Stage-I)**.
- ii) *Proposals submitted to the Ministry on or before 31.03.2021 under Waste to Energy Programme (notified vide letter no. 22/222/2016-17-WTE dated 30.07.2018 & 28.02.2020) but ‘In-principle’ approvals could not be accorded thereafter as the programme was continued only for clearing committed liabilities: ‘In-principle’ approvals and subsequent release of CFA to such proposals, except Municipal Solid Waste (MSW)/Refused Derived Fuel (RDF) to power projects based thermal technologies, shall be governed by the relevant guidelines prevailing at the time of the receipt of the concerned proposals.*
- iii) *Proposals received in the Ministry from 01.04.2021 till the issuance of these guidelines for Waste to Energy Programme: Eligible proposals falling under this category shall be governed by these guidelines. Waste to Energy projects which have been commissioned during aforementioned period, shall also be considered as eligible for grant of CFA under this programme. The applications of such projects should be submitted within three months of date of notification of these guidelines.*
- iv) Incomplete proposal in any form and without requisite approvals/documents will be rejected. The rejection of the proposal will be intimated preferably within 60 days of submission of the proposal in the BioURJA Portal. However, fresh proposal doing away with all shortcomings may be resubmitted before commissioning of the plant or 31.12.2025 whichever is earlier.

### 4.2. “IN-PRINCIPLE” Approval:

- i) **For projects with debt/loans from FIs/Banks:** In case loan drawn by the developer of Waste to Energy plant is equal or more than from eligible CFA, the Implementation Agency shall receive the applications through BioURJA portal, examine the applications and shall forward the consolidated proposal to Ministry on bimonthly basis. The Ministry shall issue an “In-Principle” approval with the concurrence of IFD and approval of Secretary, MNRE. For projects with loan, Ministry/ implementing agency will go by the appraisal of the project by the lending bank/FI.
- ii) **For projects without debt/loan or projects wherein loan drawn by the developer of Waste to Energy plant is less than the eligible CFA,** the Implementation Agency shall receive the applications through BioURJA portal, examine the applications and thereafter the applications will be put up to Project Appraisal Committee (PAC). Only PAC recommended applications will be forwarded to Ministry in a consolidated manner on bimonthly basis. The Ministry shall issue an “In-Principle” approval with the concurrence of IFD and approval of Secretary, MNRE.
- iii) The “In-Principle” approval will preferably be accorded to the proposals forwarded by IREDA preferably within 40 days of forwarding the proposal to Ministry.

### 4.3. Commissioning of the plant:

- i) The time period for commissioning is 24 months for WTE plants and 12 months for Biomass Gasifiers from the date of “In-Principle” approval.

- ii) After submission of application in the BioURJA portal, if developers intend to commission the plant before “In-Principle” approval of CFA is accorded, prior intimation of commissioning the plant to IA is mandatory. However, accord of “In-Principle” approval for grant of CFA shall be subject to fulfillment of the eligibility conditions as mentioned in these guidelines.
- iii) In case of delay for reasons not attributable to the developer, a suitable extension of time over the original period of commissioning may be granted by Secretary, MNRE provided an application is made by the developer, with supporting documents, 30 days before the original date of commissioning. If no such application is received by Implementing Agency and commissioning does not happen within the stipulated period (including the extended period), the “In-Principle” approval of CFA shall be treated as cancelled and no CFA shall be released.

#### 4.4. Plant performance:

- i) Inspection team will visit the plant for performance inspection based on request from the developer. The performance inspection of the plant will have to be carried out within 18 months from the date of commissioning beyond which “In-Principle” approval will be cancelled except in those cases where reason(s) of delay in inspection is (are) beyond the control of Developer. For such cases, an extension of suitable period over the original performance inspection period can be granted by Secretary, MNRE provided an application is made by the developer, with supporting documents, before the completion of original inspection period of 18 months as given above.
- ii) The developer may choose any one of the following agencies for inspection of the plant:-
  - (a) Concerned State Nodal Agencies for Renewable Energy (SNAs); **or**
  - (b) Sardar Swaran Singh National Institute of Bio-Energy (SSS-NIBE); **or**
  - (c) Biogas Technology Development Centre (BTDC) (*List at Annexure-VIII*).
- iii) Performance testing of the plant would inter-alia imply the following:-
  - a) **Waste to Energy Plants:** The condition of successful commissioning of the Waste to Energy plants would imply operation of the plants for atleast 3 consecutive months, including continuous operation for at least 72 hours at an average of 80% of the rated capacity of the plant.

In case of biomethanation plants (Biogas, BioCNG, Power based on biogas), continuous operation of the plant implies continuous operation of digester (raw biogas generation) for 72 hours.

Based on the performance of the project for at least three consecutive months, following graded structure for release of CFA based on average PLF over a period of atleast three months shall be applicable: -

Average PLF achieved during minimum 3 consecutive months	% of eligible CFA
≥80%	100%
≥ 60% and < 80%	80%
≥ 50% and < 60%	60%
<50%	0%

- b) **Biomass Gasifiers:** The condition of successful commissioning for Biomass gasifier would imply operation of the Gasifier for atleast 3 consecutive months, including continuous operation for at least 3 consecutive days at an average PLF of 60% of rated capacity (taking 12 Hrs per day as standard operating hours).

In case of Biomass Gasifier, data of consumption/saving of conventional fuel can also be accepted for release of CFA.

#### 4.5. Submission of documents for release of CFA:

- i) Claim for release of CFA by developer should be made in the BioURJA portal within 3 months of the inspection of the plant by Inspection Team. List of documents to be submitted is placed at **Annexure-I (Stage-II)**.
- ii) The implementing agency shall then examine the proposals for release of funds and shall forward the consolidated demand, in respect of all projects eligible for release of CFA as per scheme guidelines, to MNRE on monthly basis.

#### 4.6. Disbursement of CFA

- i) **Disbursement after plant commissioning (Standard process):** Applicable for all types of projects except BioCNG plants under SATAT Initiative.
- a) **In case of Self-financed Projects** or projects wherein loan drawn by the developer of Waste to Energy plant is less than the eligible CFA, the CFA shall be disbursed to developer's bank account.
- b) **Bank financed:** In case loan drawn by the developer of Waste to Energy plant is equal or more than from eligible CFA, CFA shall be disbursed to developer's loan account maintained in the lending FI/bank.
- ii) **Advance disbursement during Construction Phase:** BioCNG plants which have signed BioCNG (CBG) purchase agreement with Government Oil Marketing Companies (OMCs) under SATAT Programme of Ministry of Petroleum & Natural Gas and have also availed project loan of atleast 50% of the total project cost from FI(s)/Bank(s) shall be eligible for advance disbursement of CFA during construction phase. The CFA will be released by the Ministry in two installments as below:
- a) **First installment** of upto 50% of "In-Principle" approved CFA may be released during the construction phase to the lending FI(s)/Bank(s) subject to disbursement of at least 50% of loan amount by the FI/Bank. This may be treated as interest free loan until the release of second instalment of CFA. Documents required for availing advance disbursement of CFA during construction phase is given as below:
- 1) MNRE's "In-Principle" Approval letter.
  - 2) Request letter for advance disbursement of CFA from lending Bank/FI.#
  - 3) Loan disbursement letter indicating loan amount disbursed by lending bank/FI.
  - 4) Furnishing of Bank Guarantee to the IA for an amount equal to the advance CFA for which the project is eligible. The bank guarantee should initially be valid for a period of four years from the date issue. Thereafter the project developer will have to extend the validity of the bank guarantee as required by the IA so as to cover the period permissible for successful performance testing, commissioning and release of CFA. The bank guarantee will be

encashed if the project developer fails to adhere to the permissible timelines for successful commissioning & performance testing or submission of documents for release of CFA. The bank guarantee will be released along with the disbursement of CFA. #

- 5) Mandate form for payment transfer duly certified by FI/Bank for loan account.#
- 6) High resolution Photographs of the plant site showing progress of installation.
- 7) Consent to Establish (CTE) from State Pollution Control Board for the plant.
- 8) EIA clearance, if applicable.
- 9) Approval for storage & filling of Bio-CNG Plant from Petroleum and Explosives Safety Organization (PESO), Nagpur, if applicable.
- 10) Non-NPA certificate from the lending banks/FIs if loan availed.#

# Documents (marked with #) are also required to be submitted in original to Implementing Agency.

- (b) **Second instalment of balance CFA** shall be released after commissioning of the plant and submission of documents as per **Annexure-I (Stage-II)**. Second installment will be settled as per standard process described under clause 4.3 to 4.6(i). The amount disbursed during construction phase will be adjusted during disbursement of second installment and any surplus amount in lieu of under performance of the projects that could have been disbursed to developer shall be recovered from the Bank/FI.

- (iii) The service charge to implementing agencies and inspection agencies shall be released at the time of release of CFA after commissioning and performance testing of the plant.
- (iv) The above disbursements of CFA to eligible projects will be done by MNRE/Implementing Agency in accordance with procedure specified for release of funds by Ministry of Finance.

## 5. Project Monitoring Mechanism

Developers shall share plant generation data with MNRE or any other designated agency, except in the case of Biomass Gasifiers, through installation of SCADA System/remote monitoring system.

*The aforesaid programme is subject to change(s) and modification(s) as may be decided by the MNRE, Govt. of India from time to time, and subject to availability of funds. The Ministry shall in no way be liable for expenditure incurred by promoters for pre-project preparation or other activities, merely on the basis of this circular and / or related announcement by the Ministry. In case of any ambiguity on interpretation of any provisions of the programme, the decision of the Ministry shall be final and binding. It is clarified that mere submission of the proposal should not be construed as "In-Principle" approval of the project for grant of CFA.*

**For Annexures mentioned in this booklet, please refer detailed Programme guidelines uploaded at MNRE website (<https://mnre.gov.in>)**

**Guidelines for implementation of**

# **Biomass Programme**

**“Scheme to Support Promotion of Manufacturing of Briquettes  
& Pellets and Biomass (Non-Bagasse) Based Cogeneration in  
Industries in the Country”**

**for the period of FY 2021-22 to 2025-26**



# 1. Introduction

- 1.1 Name of the Programme:** “Scheme to Support Promotion of Manufacturing of Briquettes & Pellets and Biomass (Non-Bagasse) Based Cogeneration in Industries in the Country (Up to March 2026)”. It may also be referred as “Biomass Programme”.
- 1.2 Objective:** The objective of the Biomass Programme is to support setting up of Biomass Briquette/Pellet manufacturing plants and to support Biomass (non-bagasse) based cogeneration projects in Industries in the country. The broader objectives of the scheme are to reduce stubble burning by utilizing surplus agricultural residue, to provide additional source of income to farmers through sale of surplus agro residue and to enable better environmental practices and reduce pollution.
- 1.3 Scope:** The programme provides Central Financial Assistance (CFA to project developers and service charges to implementing agency and inspection agencies in respect of setting up of Briquette / Pellet manufacturing plants and Biomass (non- bagasse) cogeneration projects in industries.

## 2. Funding Pattern:

**2.1 Standard CFA pattern:** CFA available under the programme is as follows:

Sr No	Project Type	CFA
1	Briquette / Pellet Manufacturing plants	Rs. 9 Lakh per MTPH (metric ton/hour) manufacturing capacity (maximum CFA of Rs 45 Lakhs per plant)
2	Biomass (Non-bagasse) cogeneration projects	Rs. 40 Lakhs/MW (on Installed Capacity) (maximum CFA of Rs. 5 Crores per project)

**2.2 Service charges to Implementing/ inspection agencies:**

- i) Implementing agency (IA) shall be provided a service charge @1% of total CFA for examining and processing the CFA applications received in BioURJA portal and forwarding suitable applications to Ministry. Indian Renewable Energy Development Agency Limited (IREDA) shall be the implementing agency. However the Ministry of New and Renewable Energy (MNRE) may change the IA by way of a suitable notification.
- ii) Performance Inspection Agency shall be provided service charge of:
  - (a) Rs. 25,000 per metric ton per hour (maximum Rs. 1 Lakh per project) towards monitoring of implementation progress, performance inspection and verification of production record and post installation monitoring of Briquette/Pellet manufacturing plants, and
  - (b) Rs.1 Lakh/MW (Maximum Rs.5 Lakh per project) as incentive or service charge towards implementation progress, performance inspection and verification of generation record and post installation monitoring of Biomass (non-bagasse) cogeneration projects.

### 3. Terms & Conditions:

- 3.1 The programme shall provide CFA for projects utilizing biomass such as but not limited to:
  - i) Crop residues such as paddy straw, wheat straw, mustard stalks, cotton stalks etc.
  - ii) Wood produced through energy plantations such as prosopis juliflora etc.
  - iii) Weeds, palm leaves, coconut shells & husk etc.
  - iv) Wood waste produced in industrial operations such as saw dust, off cuts, bark etc.
  - v) Agro-based industrial residue such as rice husk, barley husk, etc.
  - vi) Forest residues such as pine needles, branches & stems of trees etc.
- 3.2 The proposals for setting up of Briquette / Pellet Manufacturing plants and Biomass (non-bagasse) cogeneration projects shall only be considered under this scheme. The bagasse based cogeneration projects shall not be eligible under this scheme.
- 3.3 Biomass (non-bagasse) cogeneration projects which intend to add capacity to the existing plants, shall also be considered for grant of CFA only for enhanced capacity attained by way of utilizing new plant and machinery.
- 3.4 Projects using municipal solid waste, black liquor, slop, press mud and other processed industrial waste shall not be considered under this scheme.
- 3.5 Companies registered under the Companies Act, Partnership Firms, Proprietorship Firms, Cooperatives, Public Sector Companies, Government owned Firms are eligible for financial support under the scheme.
- 3.6 Minimum project/ plant size requirement for grant of CFA under this scheme (a) For Briquette/ Pellet Manufacturing Plant: 1 MTPH (metric tons per hour), (b) For Biomass (non- bagasse) Cogeneration Power Plant: - 0.5 MW.
- 3.7 Proposals for availing CFA should be submitted so as to reach the Implementing Agency before the commissioning of the projects except for the projects mentioned in clause 4.1 (ii) and clause 4.2 (iv).
- 3.8 The CFA shall be released after successful commissioning and performance inspection of the plant as specified under Clause 4.
- 3.9 Central financial assistance from any other Ministry or department of the Central Govt. should not be claimed for proposed plant for which application has been submitted to this Ministry.
- 3.10 Only those projects, including capacity enhancement projects, which install new machinery e.g. Briquette/Pellet making machinery, boiler, turbine, are eligible under the scheme for grant of CFA.

### 4. Procedure for availing Central Financial Assistance (CFA)

#### 4.1 Submission of proposal:

- i) The proposal for availing CFA should be submitted through BioURJA Portal ([www.biourja.mnre.gov.in](http://www.biourja.mnre.gov.in)) before commissioning of the plant [except the projects mentioned in clause 4.1(ii) and clause 4.1 (iii)]. The applications are invited from the date of

notification of the guidelines. The last date for submitting the applications under these guidelines shall be 31.12.2025. List of documents to be submitted is placed at **Annexure-I (Part-A)**.

- ii) Biomass (non-bagasse) cogeneration projects which have been commissioned on or after 1.4.2021 till the date of notification of these guidelines, shall also be considered as eligible for grant of CFA under this the Biomass Programme. The application for such project should be submitted in the BioURJA portal within three months of date of notification of these guidelines.
- iii) Proposals for CFA to Biomass (non-bagasse) cogeneration projects, received by the Ministry on or before 31.3.2021 (under the 'Scheme to support promotion of Biomass based cogeneration in Sugar mills and other Industries in the country' circulated vide letter dated 11 May 2018 and corrigendum dated 04 Dec 2018) and wherein "*In-Principle*" Approval could not be issued: Such proposals shall be processed as per guidelines prevailing at the time of submission of the proposal in the Ministry.
- iv) Incomplete proposals in any form and without requisite approvals/documents shall not be considered for grant of CFA. The rejection of such proposals shall be intimated to the project developers preferably within 60 days of submission of the proposal in the BioUrja Portal. However, fresh proposals doing away with all shortcomings may be resubmitted before commissioning of the plant or 31.12.2025 whichever is earlier.

#### **4.2 "IN-PRINCIPLE" Approval of proposal:**

- i) For projects with debt/loans from FIs/Banks: In case loan drawn by the developer for the project is equal or more than from eligible CFA, the Implementation Agency shall receive the applications through BioURJA portal, examine the applications and shall forward the consolidated proposal to Ministry on bimonthly basis. The Ministry shall issue an "In-Principle" approval with the concurrence of IFD and approval of Secretary, MNRE. For projects with loan, Ministry/ implementing agency shall go by the appraisal of the project by the lending bank/FI.
- ii) For projects without debt/loan or projects wherein loan drawn by the developer for the project is less than the eligible CFA, the Implementation Agency shall receive the applications through BioURJA portal, examine the applications and thereafter the applications will be put up to Project Appraisal Committee (PAC). Only PAC recommended applications will be forwarded to Ministry in a consolidated manner on bimonthly basis. The Ministry shall issue an "In-Principle" approval with the concurrence of IFD and approval of Secretary, MNRE.
- iii) The Ministry shall issue an "In-Principle" approval to the proposals forwarded by implementing agency with the concurrence of IFD and approval of Secretary, MNRE. The in-principle approval shall be accorded by MNRE preferably within 40 days of receipt of the consolidated proposal from IREDA.

#### **4.3 Commissioning of the plant:**

- i) The time period for commissioning shall be 12 months for Briquette / Pellet Manufacturing plants and 24 months for Biomass (non-bagasse) cogeneration plants from the date of "In-Principle" approval.
- ii) After submission of application in the BioURJA portal, if a developer intends to commission the plant before in-principle approval to the proposal is accorded by MNRE, a prior intimation of commissioning of the project to the Implementing Agency is mandatory. However, in-principle approval of the project shall be subject to fulfilment of the eligibility conditions mentioned in this scheme guideline.
- iii) In case of delay in commissioning for reasons not attributable to the developer, an extension of period upto one year over the original period of completion may

be granted by Secretary, MNRE provided an application is made by the developer, with supporting documents, atleast 30 days before the original date of completion. If no such application is received by MNRE/Implementing Agency and commissioning does not happen within the stipulated period (including the extended period), the in-principle approval shall be treated as cancelled and no CFA shall be released.

#### 4.4 Performance Inspection:

- i) On successful commissioning of the project, inspection team is required to visit the plant for performance inspection. The performance inspection of the plant shall have to be carried out within 18 months from the date of commissioning, beyond which the “In-Principle” approval shall be cancelled except in those cases where reason(s) of delay in inspection is (are) beyond the control of developer. For such cases, an extension of suitable period over the original performance inspection period can be granted by Secretary, MNRE provided an application is made by the developer, with supporting documents, before the completion of original inspection period of 18 months as given above.
- ii) Inspection agency for performance inspection:
  - (a) For Briquette/Pellet Manufacturing Plants: -The developer may choose any one of the following agencies:
    - Concerned State Nodal Agency (SNA), or
    - Sardar Swaran Singh National Institute of Bio-Energy (SSS-NIBE).
  - (b) For Biomass (non-bagasse) cogeneration projects: - Concerned State Nodal Agency (SNA) and Sardar Swaran Singh National Institute of Bio-Energy (SSS-NIBE). The service charges towards inspection shall be shared equally between SNA & SSS-NIBE.
- iii) The Performance testing of Briquette/Pellet Manufacturing Plants would inter-alia imply the following:-
  - (a) Operation of the plant at an average of 80% of rated capacity measured over a period of three consecutive days (taking average 16 Hrs per day as standard operating hours), **and**
  - (b) Operation of the plant at an average of 70% of rated capacity measured over a period of three consecutive months (taking average 16 Hrs per day as standard operating hours).

#### Illustration 1:

Assuming Capacity of Briquette/Pellet Manufacturing plant = 3 metric tons per hour & Hours of operation per day= 16 Hrs

(Sample calculation for three days’ operation)

Days	Hours of operation	Daily Production of Briquettes/ Pellets at rated capacity (in metric tons)	Total Production of Briquettes/Pellets over three days at rated capacity (in metric tons)	Minimum required Production of Briquettes/Pellets over three days to fulfil the clause 4.2(iii)(a) (in metric tons)
Day 1	16	48	144	115.2
Day 2	16	48		
Day 3	16	48		

(Sample calculation for three months' operation)

Months	Hours of operation	Monthly Production of Briquettes/ Pellets at rated capacity (in metric tons)	Total Production of Briquettes/ Pellets over three months at rated capacity (in metric tons)	Minimum required Production of Briquettes/Pellets over three months to fulfil the clause 4.2(iii)(b) (in metric tons)
Month 1 (say July)	31*16=496	3*496=1488	4416	3091.2
Month 2 (Say August)	31*16=496	3*496=1488		
Month 3 (Say September)	30*16=480	3*480=1440		

Actual no. of days in a month should be taken into consideration for purpose of calculation.

- (iv) The Performance testing of Biomass (non-bagasse) based Cogeneration Projects would inter-alia imply the following:
- Continuous operation of the power plant for 72 hours at an average of 80% of rated capacity, **and**
  - Operation of the power plant at an average 80% of rated capacity measured over a period of three consecutive months.

#### Illustration 2:

Assuming Capacity of Biomass (non-bagasse) based Cogeneration Plant= 3 MW & Hours of operation per day= 24 Hrs

(Sample calculation for three days' operation)

Days	Hours of operation	Daily Electricity Generation at rated capacity (in kWh)	Total generation over three days at rated capacity (in kWh)	Minimum required generation over three days to fulfil the clause 4.2(iv)(a) (in kWh)
Day 1	24	3000*24=72000	2,16,000	1,72,800
Day 2	24	3000*24=72000		
Day 3	24	3000*24=72000		

(Sample calculation for three months' operation)

Months	Hours of operation	Monthly electricity generation (in kWh)	Total electricity generation over three months (in kWh)	Minimum required electricity generation over three months to fulfil the clause 4.2(iv) (b) (in kWh)
Month 1 (Say July)	31*24=744	3000*744=22,32,000	66,24,000	52,99,200
Month 2 (Say August)	31*24=744	3000*744=22,32,000		
Month 3 (Say September)	30*24=720	3000*720=21,60,000		

Actual no. of days in a month should be taken into consideration for purpose of calculation.

- (v) The Briquette/pellet manufacturing plant should fulfil the conditions mentioned in clause 4.4 (iii) (a) and clause 4.4 (iii)(b) above to become eligible for full release of CFA. In case of any variation in fulfilment of the conditions of clause 4.4 (iii) (b), following graded structure based on average capacity utilisation factor over a period of three months shall be used, for release of CFA: -

Average Capacity Utilization Factor (CUF)* over three months	% of eligible CFA
CUF $\geq$ 70%	100%
60% $\leq$ CUF < 70%	80%
50% $\leq$ CUF < 60%	60%
CUF < 50%	0%

\*Capacity Utilization Factor over three months= Total Briquette/pellet generation in three months (in metric tons)/[Capacity of plant (in metric tons per hour)\*16 Hrs per day\* total no. of days in three months]

- (vi) Biomass (non-bagasse) cogeneration projects should fulfil the conditions mentioned in clause 4.4 (iv) (a) and 4.4 (iv)(b) to become eligible for full release of CFA. In case of any variation in fulfilment of the conditions of clause 4.4 (iv) (b), following graded structure based on average capacity utilisation factor over a period of three months shall be used, for release of CFA

Average Plant Load Factor (PLF)**over three months	% of eligible CFA
PLF $\geq$ 80%	100%
60% $\leq$ PLF < 80%	80%
50% $\leq$ PLF < 60%	60%
PLF < 50%	0%

\*\*Plant Load Factor over 3 months= Total electricity generation in three months (in kWh)/[Capacity of plant (in kW)\*24 Hrs per day\* total no. of days in three months]

#### 4.5 Submission of documents for release of CFA:

- (i) Claim for release of CFA by developer should be made in the BioURJA portal within 3 months of the inspection of the plant by inspection team. List of documents to be submitted is placed at **Annexure-I (Part-B)**.
- (ii) The implementing agency shall examine the release request and shall forward the consolidated demand, in respect of all project eligible for release of CFA as per scheme guidelines, to MNRE on monthly basis.

#### 4.6 Disbursement of CFA

- (i) For Self-financed projects or projects wherein loan drawn by the developer for the project is less than the eligible CFA, the CFA shall be released to developer's account.
- (ii) For FI/Bank financed projects: In case loan drawn by the developer is equal to or more than from eligible CFA, CFA shall be released to the developer's term loan account maintained in the lending FIs/banks to off-set/reduce the loan by an equivalent amount. In case of complete repayment of loan by the developer before release of CFA, the CFA may be released to developer's account, which may be other than the term loan account, on recommendation from FI/Bank.
- (iii) The service charge to inspection agencies and implementing agency shall be released in the bank account of the agency.

- (iv) The above disbursements of CFA to eligible projects shall be done by MNRE/ Implementing Agency in accordance with procedure specified for release of funds by Ministry of Finance.

## 5. Project Monitoring Mechanism

Developers shall share plant generation data to MNRE or any other designated agency, through installation of SCADA System/remote monitoring system.

The aforesaid programme is subject to change(s) and modification(s) as may be decided by the MNRE, Govt. of India from time to time, and subject to availability of funds. The Ministry shall in no way be liable for expenditure incurred by promoters/developers for pre-project preparation or other activities, merely on the basis of this circular and / or related announcement by the Ministry. In case of any ambiguity on interpretation of any provisions of the programme, the decision of the Ministry shall be final and binding.

It is clarified that mere submission of the proposal should not be construed as sanction / approval of the project for grant of CFA.

***For Annexures mentioned in this booklet, please refer detailed Programme guidelines uploaded at MNRE website (<https://mnre.gov.in>)***



**CENTRAL SECTOR SCHEME**

# **BIOGAS PROGRAMME**

**(Detailed Implementation Guidelines)**



लाभार्थी - बनवारी S/o पुराराम - लामिया  
**बायो गैस संयंत्र (6 घ.मी.)**

BDTC/2014-15/788

संयुक्त सहयोग

जमनालाल कनौराम बजाज ट्रस्ट - सीकर

क्षेत्रीय बायो गैस प्रशिक्षण केन्द्र - उदयपुर

नवीन एवं नवीकरणीय उर्जा मंत्रालय - भारत सरकार

## 1. Introduction:

India is endowed with abundant renewable energy resources and their use should be encouraged in every possible way. Rural India generates enormous quantities of bio-waste including animal waste, kitchen leftovers, crop residue, market waste and faecal sludge. Biogas is an environment friendly fuel and its utilization contributes to reduction of carbon emissions and pollution. Over a period of time, MNRE has fine-tuned the Biogas programme and rationalized the subsidy scheme, strengthened the institutional framework at state and district level, supported new & innovative biogas plant models, supported women empowerment through usage of biogas plants & organic farming and created employment opportunities.

## 2. Objectives:

The objectives of the Biogas Programme are as follows:

- i. Setting up of biogas plants for clean cooking fuel, lighting, meeting thermal and small power needs of users which results in GHG reduction, improved sanitation, women empowerment and creation of rural employment.
- ii. Organic enriched Bio-manure: The digested slurry from biogas plants, a rich source of manure, shall benefit farmers in supplementing / reducing of use of chemical fertilizers.

## 3. Scope of Biogas Programme:

To attain the above mentioned objectives and for popularization of biogas sector, this scheme covers setting up of small and medium biogas plants ranging from 1 M<sup>3</sup> to 2500 M<sup>3</sup> biogas generation per day for individual user, farmers, poultry, goshalas, slaughter house, dairies/ co-operatives, industries/ organizations and others.

## 4. Implementation Mechanism:

The following two implementation models under the Biogas Programme shall be eligible for CFA/ Incentive.

- (i) **Implementation through State PIAs:** The biogas programme will be implemented by the designated Programme Implementing Agency (PIA) of the State/ Union Territory / Khadi Village and Industry Commission (KVIC), Mumbai, National Dairy Development Board (NDDB) Anand/ Biogas Development and Training Centres(BDTC).
- (ii) **Implementation through Financial Institutions:** Financing Organizations/ Institutions / Banks/ Indian Renewable Energy Development Agency (IREDA), NABARD/ RBI approved Financial Institutions may also implement the Biogas Programme in consultation with PIAs.

## 5. The Programme Implementing Agency shall implement the biogas (1 M<sup>3</sup> to 25 M<sup>3</sup>) programme through the following mechanisms: -

- (i) Installation of biogas through biogas turnkey workers / renewable energy technicians registered with respective PIA of the State/ UT.
- (ii) Installation of biogas through MNRE approved Original Equipment Manufacturers(OEMs) and their certified service providers.

## 6. Central Financial Assistance:

- (i) **CFA for Biogas Plants 1 M<sup>3</sup> to 25 M<sup>3</sup> Biogas generation per day:** The Central Financial Assistance (CFA) for different approved components under the Biogas Programme for Biogas plants of size ranging from 1 M<sup>3</sup> to 25 M<sup>3</sup> of biogas generation per day are as given below in the Table-I.

**Table-I**

Sr. No	Particulars of Central Financial Assistance (CFA) and States / UTs, regions & categories of beneficiaries	Biogas Plants under Biogas Programme ranging from size 1 to 25 cubic Metre biogas per day (In ₹per plant )					
		1 M <sup>3</sup>	2-4 M <sup>3</sup>	6 M <sup>3</sup>	8-10 M <sup>3</sup>	15 M <sup>3</sup>	20-25 M <sup>3</sup>
A	CFA Applicable	1 M <sup>3</sup>	2-4 M <sup>3</sup>	6 M <sup>3</sup>	8-10 M <sup>3</sup>	15 M <sup>3</sup>	20-25 M <sup>3</sup>
	(i) Hilly/NER States (Arunachal Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Ladakh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura and Uttarakhand)	17,000	22,000	29,250	34,500	63,250	70,400
	(ii) Island; and (iii) Scheduled Castes (SC)/ Scheduled Tribes(ST).						
	(iv) All other States and Categories	9,800	14,350	22,750	23,000	37,950	52,800
B	<b>Additional fixed Subsidy for</b>	1,600	1,600	1,600	1,600	NA	NA
	(i) Biogas plant if linked with sanitary toilet	1600	1600	1600	1600	1600	1600
	(ii) Biogas plant if linked with MNRE approved Biogas slurry filter Unit.						

C	<b>Turn-Key Job Fee</b> for construction, supervision, commissioning, and free O&M warranty for 5 years trouble free operations.	₹ 3,000/- per biogas plant for size ranging from 1 to 10 M <sup>3</sup> and ₹ 5,000/- per plant for size ranging from 15 to 25 M <sup>3</sup> . This turn key job fee is applicable only for plants involving onsite construction such as fixed dome design Deenbandhu Model, floating gasholder KVIC Model. Turnkey job fee will not be eligible for pre-fabricated/ manufactured biogas plants.
D.	<b>Administrative Charges payable to PIA for physical target achievement range of biogas plants (Amount in ₹ )</b>	
	100 - 1,999 nos. of Biogas Plants.	₹ 1,00,000 <sup>^</sup>
	2,000 - 5,000 nos. of Biogas plants	₹ 10,50,000 <sup>^^</sup>
	Above 5,000 nos. of Biogas plants	₹ 24,50,000 *
E	<b>Support for Training courses (Amount in ₹ per course)</b>	
	(i) Users Course	₹ 4,000
	(ii) Staff Course	₹ 10,000
	(iii) Construction-cum Maintenance / Refresher Course	₹ 50,000
	(iv) Turn-key Workers Course / Skill Development Course	₹ 75,000
F	<b>Support for BDTCs.</b>	Financial support for set functions and roles of BDTCs would be provided towards staff, conducting training courses, skill development courses, pilot plant demonstration, TA/DA, consumables and contingency as per allocated targets.
G	<b>Incentive for saving fossil fuels &amp; electricity.</b>	An additional incentive of ₹10,000/- per Biogas based Generator set / Biogas engine water Pumping System (BPS) for meeting small farm power needs and water pumping from the biogas plant of 10 to 25 M <sup>3</sup> . CFA will be eligible only if the Generator set / BPS will run on 100% Biogas.
Additional incentive to PIAs for implementation of Biogas Program for biogas plants ranging from 1 to 25 M <sup>3</sup> (under the component A above)		
<sup>^</sup> Extra Rs. 500 per plant in excess of 100 biogas plants installed.		
<sup>^^</sup> Extra Rs. 450 per plant in excess of 2000 biogas plants.		
* Extra Rs. 400 per plant in excess of 5,000 biogas plants subject to maximum of Rs. 60.00 lakh.		

- (ii) **CFA for Medium size biogas plants:** The CFA for biogas plants of size above 25 M<sup>3</sup> to 2500 M<sup>3</sup> biogas generation per day are as given below in the Table-II.

**Table-II**

Power generating Capacity (kW)	Requirement of DPR	CFA** limited to the following ceiling limit		Administrative Charges for PIA*	
		Power Generation	Thermal Application	Power Generation	Thermal application
3 kW – 50 kW	No	₹ 45,000 per kW	₹ 22,500 per kWeq thermal/cooling	10% of the CFA	5% of the CFA

>50 kW – 200 kW	Yes	₹ 40,000 per kW	₹ 20,000/- per kWeq thermal/cooling	₹2,00,000/- (fixed)	₹1,00,000/- (fixed)
>200 kW – 250 kW	Yes	₹ 35,000 per kW	₹ 17,500/- per kWeq thermal/cooling	₹2,50,000/- (fixed)	₹1,00,000/- (fixed)

**\*Administrative Charges for PIA** shall be provided for technical supervision, submission of project completion & commissioning reports and monitoring of projects.

**\*\* Special Incentives for NER, Island, Registered Gaushalas; and SC/ST:** An incentive of 20% over and above the CFA mentioned in Table-II.

## 7. Proposal Submission under Biogas Programme:

- (i) **For Small Biogas Plants (1 M<sup>3</sup> to 25 M<sup>3</sup>):** The individual beneficiary can submit their application with requisite details for installation of biogas plants through MNRE biogas web portal/android mobile app. The PIA will process such applications only after allocation of targets and then take action for the installation of biogas plants at the beneficiary site. The PIAs shall raise the consolidated annual demand of biogas plants at the beginning of the financial year by 15<sup>th</sup> April. The annual physical targets of a particular financial year may be revised to make the programme more effective after conducting a midterm review of the physical achievements. The targets to BDTCs for conducting various types of training courses and new pilot demonstration projects shall be fixed on annual basis; and
- (ii) **For Medium Size Biogas Plants (above 25 M<sup>3</sup> to 2500 M<sup>3</sup>):** The proposals for such projects shall be submitted by the PIAs to MNRE round the year through MNRE Biogas web-portal.

## 8. Project Approval Mechanism:

- (i) MNRE will allocate the annual physical targets for setting up of biogas plants (size ranging from 1 M<sup>3</sup> to 25 M<sup>3</sup>) to the designated PIAs; and
- (ii) Each biogas plant (above 25 M<sup>3</sup> to 2500 M<sup>3</sup> biogas) proposal will be examined by the MNRE on case-to-case basis and an Administrative Sanction / in-principle approval shall be issued.

## 9. Project Completion and Commissioning:

- (i) **For small biogas plants (1 M<sup>3</sup> to 25 M<sup>3</sup>)** the installation work of the biogas plants should be started immediately after allocation of annual targets. The scheduled deadline for the completion of the work will be the end of the particular financial year unless prior approval for extension of the completion period is approved by the competent authority of MNRE; and
- (ii) **For medium size biogas plants (above 25 M<sup>3</sup> to 2500 M<sup>3</sup>)** the completion and commissioning of projects in all respects should be completed within 12 months from the date of Sanction of project and in any case not more than 24 months from the date of the issue of MNRE's Administrative Sanction/ in-principle approval of the project.

## 10. Release of Funds:

- i. **For Small Biogas Plants (1 M<sup>3</sup> to 25 M<sup>3</sup>):** The CFA for approved components as mentioned under Table-I under Para 6 (i) will be released quarterly to PIAs on reimbursement basis corresponding to actual achievements reported against the allocated annual targets; and
- ii. **For medium size biogas plants (above 25 M<sup>3</sup> to 2500 M<sup>3</sup>):** The CFA as given in Table-II under 6 (ii) would be released on re-imburement basis after successful commissioning of the biogas plant directly to the beneficiaries account. The eligible administrative charges of the PIA will be disbursed separately.

## 11. Roles and Responsibilities of Implementation Agency:

The Programme Implementing Agencies will be responsible for the following activities:

- i. Demand aggregation and submission of proposals on the Biogas web portal of MNRE.
- ii. Assessing the Biogas user's application and take action for installation of biogas plants at the beneficiary site.
- iii. Mandatory submission of monthly progress reports and updating all the information of the installed biogas plants on MNRE Biogas Portal
- iv. Review of installation, inspection and monitoring of installed biogas plants.
- v. Ensure project completion within the given timelines and compliance of MNRE Guidelines and Standards.
- vi. Submission of financial documents of expenditure and disbursement of CFA to the end users.
- vii. Ensure compliance of Annual Maintenance Contract and training of biogas users / technicians by the BDTCs; and
- viii. Any other activity to ensure successful implementation of the programme.

## 12. Biogas Development and Training Centres:

MNRE has designated eight (8) centres at technical institutions/IIT/universities in different states for providing technical support to different stake holders towards promotion of bioenergy in the country. The list of BDTC's is as follows:

S.N.	Address of BDTC
1.	Department of Mechanical Engineering, Indian Institute of Technology, Guwahati, North Guwahati, Guwahati (Assam)
2.	Department of Agricultural Engineering, University of Agricultural Sciences, GKVK, Bangalore Karnataka
3.	Centre of Energy Studies and Research (CESR), Devi Ahilya Vishwavidyalaya, Khandwa Road, Indore, Madhya Pradesh
4.	Department of Civil Engg. Punjab Agricultural University, Ludhiana, Punjab
5.	Department of Renewable Energy Engineering College of Technology & Agricultural Engineering, Maharana Pratap University of Agriculture & Technology, Udaipur (Rajasthan)

6.	School of Biotechnology, Kalinga Institute of Industrial Technology (KIIT), Bhubaneswar, Odisha
7.	Agricultural Engineering and Research Institute, Tamilnadu Agricultural University, Coimbatore, Tamil Nadu.
8.	Centre for Rural Development & Technology, (CRDT), IIT Delhi, Hauz Khas, New Delhi

Role and Functions:

- i. To provide technical assistance and conduct trainings as per MNRE approved courses for effective implementation of Biogas Programme in the country;
- ii. Preparation of technical booklets / guidelines / training & publicity material, conduct field seminars/webinars
- iii. Research & Development in the field of biogas technology and its application, setting up pilot demonstrations of new design and models of the Biogas Plants, Testing & performance evaluation of biogas plants, Field Inspection of Biogas plants

The targets of conducting various types of activities by the eight BDTCs as mentioned above shall be fixed on annual basis and each BDTC would be supported for engaging contractual manpower for same. The funds for BDTCs shall be released at the beginning of each financial year for taking up all activities under the Biogas Programme.

### **13. Monitoring and Review of Biogas Programme:**

The PIAs will set up an arrangement to closely monitor the implementation of their projects covered under this scheme. The PIA would be responsible for monitoring of installation work being carried out by the corporates entities and parameters such as end-use verification and compilation of statistical information and reporting to MNRE. MNRE will review the progress of implementation under the biogas programme on half yearly basis.

### **14. Award Scheme under Biogas Programme:**

Under the Biogas Programme, MNRE would award three Certificates of merit by appreciating the best i.e. 1<sup>st</sup>, 2<sup>nd</sup> & 3<sup>rd</sup> to the PIAs for overall performance and achieving highest annual targets allocated under the Scheme. This is for motivating all the PIAs to achieve their physical targets under the Biogas Programme. MNRE will not provide any financial support for this purpose.

The aforesaid Biogas programme is subject to change(s) and modification(s) as may be decided by the MNRE, Govt. of India from time to time, and subject to availability of funds. The Ministry shall in no way be liable for expenditure incurred by users/promoters for pre-project preparation or other activities, merely on the basis of this circular and / or related announcement by the Ministry. In case of any ambiguity on interpretation of any provisions of the scheme, the decision of the Ministry shall be final and binding.

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## A. OPERATIONAL GUIDELINES FOR IMPLEMENTATION OF BIOGAS PROGRAMME

### (I) Guidelines for Submission of Application by Biogas beneficiary:

The individual beneficiary / user shall register their application / interest for installation of biogas plant for through MNRE's biogas portal ( available at <https://biogas.mnre.gov.in>). The beneficiary shall be available for verification with details/ documents as registered at the time of application for faster installation.

### (II) **Guidelines for Payment of Subsidy for Biogas Plants (1 to 25 M<sup>3</sup>):**

- (a) The CFA / subsidy will be disbursed to the beneficiaries of biogas plants by crediting to their Bank Accounts after **completion and commissioning of biogas plants**.
- (b) Commissioning of Biogas plant includes laying of quality biogas pipeline, water remover, installation of standard biogas stoves/burner, and generation of biogas from the biogas plants for its use by the beneficiary concerned and duly issuing the Completion Certificate (CC) of the Biogas Plant.
- (c) The applicable CFA amount would be disbursed to the beneficiaries of biogas plants in the following manner-
  - i. In case, a biogas plant beneficiary has taken loan for setting up of biogas plant from Banks /Financial Institutions, the CFA/subsidy amount would be disbursed directly to his Biogas Loan Account of the beneficiaries by following DBT route, after commissioning of Biogas plant.
  - ii. In case the entire expenditure of construction and commissioning of a biogas plant is borne by the beneficiary himself, the payment of eligible Subsidy/ CFA amount will be paid directly through DBT mode by crediting to the beneficiary's bank account by following DBT route so that this would help him in recouping funds spent by him.
  - iii. Other than MNRE's CFA, the rest expenditure on account of installation of biogas plants under this programme may be borne by beneficiary/ State/ Bank loan etc.
- (d) **Priorities of coverage of areas and communities:** The designated PIAs/BDTC should cover maximum number of users including the beneficiaries under Scheduled Castes, Scheduled Tribes, Forest Areas and forest fringe villages and left wing affected areas.

### (III) **Guidelines for Biogas Plant (above 25 M<sup>3</sup> to 2500 M<sup>3</sup>)**

- (a) The PIAs should ensure that sufficient feed stock/ organic biodegradable materials/ wastes for proposed biogas plants size and power generation capacity are available on sustainable basis at least for 10 years.
- (b) Biogas Plant shall be operated for a period of consecutive 8 days. The daily performance of the biogas plant over an operation of 10 hours shall be recorded. The Biogas plant needs to operate at an average (taking average 10 hrs per day as standard operating hours) of 80% of its rated capacity measured over a period of 8 days.
- (c) The performance of the Biogas plant shall also be recorded for a period of three consecutive months. During this period the biogas plant has to operate with an average 70 % of its rated power generation capacity (kWh)/ Biogas generation (M<sup>3</sup>) measured over a period of three months.
- (d) On completion of the project, the PIA will submit the project completion and commissioning report for seeking MNRE CFA on re-imbusement basis.

- (e) A third party inspection report by the agency/organization selected by MNRE.
- (f) Photographs of the project site including biogas digester, generator, slurry pit, other accessories along with name of beneficiary, site address, date of commissioning, PIA details, project cost along with the MNRE CFA to be written on the display board.

(IV) Guidelines for Selection of Models of Biogas Plants and Appliances

- (a) **Approved Models of Small Biogas Plants:** Appropriate size and models of biogas plants would be selected on the basis of preference / choice of the beneficiaries and shall be installed keeping in view the technical requirements such as location, distance between kitchen and cattle-shed, availability of water and feed-stock (cattle dung, biodegradable organic wastes) and sanitary toilets. The following MNRE approved models of biogas plants are available for 1 M<sup>3</sup> to 25 M<sup>3</sup> per day capacities given as under:

S N	Biogas Plant Models*	Specifications/ Ministry's letter Nos .and date and date of approval.
1	<p><b>Fixed Dome / Gasholder Biogas Plants:</b></p> <p>Deenbandhu fixed dome model with brick masonry construction.</p> <p>Deenbandhu ferro-cement model with in-situ technique.</p> <p>Prefabricated RCC fixed dome model.</p> <p>Solid-state Deenbandhu Fixed Dome</p>	<ul style="list-style-type: none"> <li>- Ministry's letter No.13-10/96-BG dated 10-1-2002.</li> <li>- Code of Practices (Second Revision), IS 9478:1989 of the BIS, New Delhi.</li> <li>- Ministry's letter No.13-11/99-BG dated 5-3-1999</li> <li>- Ministry's O.M.No.13-5/2016-BG(NBMMP), Dated 07.11.2016</li> </ul>
2	<p><b>Floating Dome Design Biogas Plants:</b></p> <p>KVIC floating steel metal Gasholder with brick masonry digester.</p> <p>KVIC floating Gasholder type plant with Ferro- Cement digester.</p> <p>KVIC design Biogas Plant with Fibre Glass Reinforced Plastic (FRP) and Digester.</p> <p>Pragati Model Biogas Plants.</p> <p>KVIC design type digester with floating Gasholder, made up of HDPE/PVC/ FRP/RCC etc. material plant</p>	<ul style="list-style-type: none"> <li>- Code of Practices (Second Revision), IS 9478:1989 of the BIS, New Delhi.</li> <li>- Code of practice IS-12986:1990 of BIS, New Delhi. Specifications of FRP Gasholder should be as per IS-12986:1990</li> <li>- Code of Practices (Second Revision), IS 9478:1989 of the BIS, New Delhi.</li> <li>- MNRE O.M.No.18-1/2014-BE(NBMMP) Dated 26.11.2014</li> </ul>
	<p><b>Prefabricated model Biogas Plants:</b></p> <p>(i) Prefabricated Reinforced Cement Concrete (RCC) digester with KVIC floating drum/ gasholder.</p>	<ul style="list-style-type: none"> <li>- Ministry's O.M.No.18-1/2014 BE (NBMMP), Dated 26.11.2014</li> </ul>
	Bag Type Biogas Plants (Flexi model)	Ministry's letter No.7-39/89-BG dated 14.7.95
	2 M <sup>3</sup> Flexi Domestic PVC coated Biogas Plant	Ministry's O.M. No. No.344/2/2017-BIOGAS dated 21.12.2020.

- (b) **Biogas Plant (1 M<sup>3</sup> to 25 M<sup>3</sup>) Appliances:** In order to provide safe, efficient and economic utilization of the biogas obtained from the Biogas Plants the specifications given in the **IS - 8749: 2002**, Indian Standard Biogas Stove- Specifications (second revision) shall be followed for manufacturing techniques, materials, design, maintenance and finish. The thermal efficiency shall not be below 55% for each burner of the Biogas Stove. Only ISI Marked, double burner biogas stoves / chulhas should be provided under the BIOGAS irrespective of the size of Biogas Plant.
- (c) The Biogas Turn Key Workers/ RETs/ BMs working for PIA/NDDDB/KVIC should ensure availability of spare parts of the biogas stoves/burners and other appliances for providing trouble free and continuous long period operations of biogas plants.
- (d) Innovative, cost effective and high efficiency new designs models of biogas plants will continue to be added following MNRE approval procedure/ policy for approval of new design / material based biogas plants. The approval of such new designs of biogas plants would be based on the specific feedstock(s) and combinations of organic wastes/ feed-stocks, the innovations, technology development, their field evaluations and worthiness brought out through laboratory / pilot field trials/ demonstrations & verifications as well as satisfaction and acceptance of the same by the potential beneficiaries of biogas plants in the country.
- (e) **Biogas plant (above 25 M<sup>3</sup> to 2500 M<sup>3</sup>) Machinery and Equipment:** The equipment for the projects should conform to the existing Standards applicable for biogas plants, biogas engines, generator sets, gas scrubbers, energy meters, biogas flow meters including biogas plants as per BIS/ISO etc. and shall be compliant to meet the requirements of pollution control boards and other applicable rules & regulations.
- (i) **Biogas flow meter:** All biogas plants for thermal applications will necessarily deploy a biogas flow meter for measuring biogas generated from the biogas plants and log daily biogas generation and corresponding quantity of feedstock.
- (ii) All biogas power generating projects above 12 kW (Biogas plant with capacity of above 100 M<sup>3</sup>) capacity power generation shall be equipped necessarily with energy meters and biogas flowmeter for logging of daily performance data.
- (V) **Guidelines for Turn-Key Job Fee (TKJF) for Biogas Plant (1 M<sup>3</sup> to 25 M<sup>3</sup>) Installation**
- (a) **Turn-Key Job Fee:** The Turn-key Job Fee would be linked with five years' free warranty for trouble-free functioning of biogas plants setup on **Turn-Key Work Contract basis**. Under this scheme the approved and applicable rate of Turn-Key Job Fee per biogas plant according to the size(s) of biogas plants as given in **Table-1** under para 6 of the scheme guidelines.
- i. the registered Biogas Turn Key Workers (BTKWs) / Biogas Rural Energy Technicians (BRETs)/ Biogas Mitras /MSMEs as identified by the PIA following the transparent procedure of "Award of Work";
  - ii. Registered Societies, registered corporate organizations/bodies identified by the State Governments Departments / PIA; following the transparent procedure of "Award of Work";
  - iii. Registered trained entrepreneurs BTKW/RETs /SHGs/ Biogas Small & Medium Enterprises (BSMEs); and
  - iv. Recognized categories of A&B class contractors of PWD in the field of Biogas Plants construction, commission and supervision & maintenance as found to be successful for implementation of the scheme and their subsequent recognition and registration under the designated State PIA.

- (b) **Procedure for release of payment:** The PIA should disburse the payment of the Turn-Key Job Fee to their approved Turnkey Worker/ Agencies/ Biogas Mitra/ RETS/ Energy technicians in two instalments for biogas plants up to 10 M<sup>3</sup> capacity. The total Turnkey Job fee of Rs. 3000/- per plant is to be paid in two instalments. The **1<sup>st</sup> instalment of Rs. 1500/-** is to be released after proper construction, completion and successful commissioning date and after issue of Completion Certificate of the biogas plant by the concerned authorities; and The **2<sup>nd</sup> instalment of Rs. 1500/-** is to be paid to the respective TKW/RET at the end of fifth year from the date of commissioning of the biogas plant on satisfactorily compliance to the service warranty based on the physical inspection of the biogas plant.
- (c) For biogas plants of size more than 10 Cubic meter and up to 25 Cubic meter the 1<sup>st</sup> instalment of Rs. **2500/-** per plant is to be released after proper construction, completion and successful commissioning of the biogas plant and on getting beneficiary's consent and issue of completion certificate and the 2<sup>nd</sup> instalment of ₹ **2500/-** would be paid after verification/inspection of Biogas Plant by the Officers of PIA and upon meeting the functional/operational requirements of Biogas Plants in their optimal usage shall be payable after five years and following the checks and documents as mentioned above for smaller plants.
- (d) Each beneficiary of a Biogas Plant will be provided a Biogas User's Service-cum-Warranty Card for compliance/adhering and providing Five Year's Free Warranty Services to the beneficiaries of Biogas plants. The complaints lodged by the beneficiaries are to be attended within the specified time period of within a week. MNRE will not provide any financial assistance for repair for non-functional Biogas. Alternately, the beneficiary can report their complaint on the Biogas web-portal.
- (e) **Warranty:** The manufacturers / biogas developers of pre-fabricated/ manufactured biogas plants shall provide a free warranty including O&M Services for **five years** to the beneficiaries. In case the RET/TKW defaults on the warranty before the period of 5 years, the State PIA/ BDTC may decide to blacklist the concerned agencies, entrepreneurs/ Turn Key Worker /RET.
- (VI) Guidelines for selection of approved OEMs and their authorized service providers for setting up of biogas plants (1 M<sup>3</sup> to 25 M<sup>3</sup>):
- (a) Keeping in view of interest of beneficiary and emerging cost effective designs of biogas plants, the PIA may devise a suitable mechanism for selection and registration of OEMs/ **and their authorized service providers** for installation of biogas plants under the Biogas Programme.
- (b) Only MNRE approved models of prefabricated biogas plants shall be eligible for the selection.
- (c) The manufacturers / developers of pre-fabricated/ manufactured biogas plants shall provide a free warranty and O&M services of five years' period to the biogas beneficiaries.
- (d) The manufacturers shall ensure the useful life of the biogas plants should not less than 10 years.
- (VII) Guidelines for Record Management of Biogas Plants by PIAs:
- (a) The Detailed Information/ Database of Beneficiaries of Biogas Plants (1 M<sup>3</sup> to 2500 M<sup>3</sup>): should mandatorily be uploaded on PIA's websites. This detailed information should be readily available for post verifications / inspection of the Officers of MNRE / State Govt. Officials / Independent Evaluators and also for post Audit Verification purposes by the Statutory Auditors and by the Audit from the Offices of the Accountant General of the respective State.

- (b) **Geo-tagging and Identification Mark on the Biogas Plants:** Each Biogas plant should be assigned a unique GPS Coordinates (latitude and longitudes). In order to avoid duplication / wrong reporting and false / fake claims, the unique ID of each biogas plant should be recorded with following details:

- (i) Unique Biogas ID as per PIA's record:  
(ii) Date, month and year of commissioning:  
(iii) Name of Biogas Beneficiary Village, Block / Taluka & District:  
(iv) Name of Installer /PIA :

All these details should also match correspondingly with the Office records/documents of biogas plants.

- (c) On prefabricated biogas plants the make/ model and serial number along with year of manufacturing are to be mentioned.
- (d) Besides information uploading on the PIA's website, all the multiple PIAs of the state/ UT should share the lists of the beneficiaries of biogas plants with each other before sending the final reports of the year to MNRE.
- (e) The details of TKJF payments should be maintained by the PIA for post verification purpose.
- (f) The dates of visits made by the TKWs/RETs/Biogas Mitras under the warranty period of 5 years, for providing post installation services should be maintained by the PIAs.

**(VIII) Guidelines for Biogas Development Training Centres (BDTC):**

- (a) **BDTC Manpower:** The details of manpower to be engaged on contract basis for the year at 8 BDTC under biogas programme is as under: -

Sl. No.	Name of the post	No. of post	Qualification	Emoluments per month
1	Project Coordinator / Investigator (PC / PI)	1	Regular Faculty of Universities/ IITs / Institutes having vast experience in the field of Biogas Technology, working experience in BDTCs / as per university norms in the field of Biogas Technology to be designated as PC of BDTC	Rs. 5000/- fixed
2	Project Officer/ Project Manager	1	M.Tech in Agricultural Engineering / Renewable Energy Engineering with minimum CGPA of 6.50/10.00 or 65% or equivalent Master's Degree with first class division. Should have Metric level certificate of Local/ Regional Language from any recognized Board of Education.	Rs. 42000/- +HRA (as per Govt. norms)

Sl. No.	Name of the post	No. of post	Qualification	Emoluments per month
3	Senior Technical Assistant (STA)	1	M. Tech. in Agricultural Engineering / Renewable Energy Engineering/ M.Sc in Natural Sciences or equivalent Master's degree with minimum OGPA of 6.50/10.00 or At least 2 <sup>nd</sup> class Bachelor's degree in Agricultural engineering or equivalent degree with three year's experience in biogas technology sector  Should have Metric level certificate of Local/ Regional Language from any recognized Board of Education.	Rs. 35400/- +HRA (as per Govt. norms)
4	Master Mason	1	Middle class passed or experienced Skilled Biogas Technician / Biogas mason having experience of Biogas plant construction, commissioning and O & M work. Should have completed construction cum maintenance training course on biogas from BDTC's.	Rs. 20000/- +HRA (as per Govt. norms)
5	Plumber/ Biogas Technician/ Junior Project Assistant /	1	Middle class passed or experienced Skilled Biogas Technician or Turnkey Training Certificate or Biogas Mason Training Certificate issued by the BDTCs having experience of Biogas plant construction, commissioning and Operation and Maintenance work.	Rs. 20000/- +HRA (as per Govt. norms)
6	Multi-Tasking Assistant (MTA)	1	Any Degree in relevant subject at least in Second Division with experience of 3 years in handling multiple tasks including office and accounts related work and skilful in computer operations. Knowledge of English and Hindi / Local language.	Rs. 20000/- +HRA (as per Govt. norms)

**Training & publicity:** The trainings will be conducted in consultation with the PIAs /related stakeholders implementing the biogas programme. The BDTCs will also bring out technical booklets on Biogas Plants and success stories and work actively for effective promotion of biogas including technology development by way of increasing efficiency improvements, cost reduction by development of new designs of biogas plant being disseminated under Biogas Programme or to be inducted in future implementation and maintain optimal level of functionality of biogas plants. The BDTCs will submit progress reports with complete details of all activities as assigned by MNRE. Any BDTC may be consulted by the PI of State/ UT for their

services. BDTC's assistance for the State/UT's will be on *first-come, first-serve*" basis for achieving maximum number of trainings targets of the particular FY.

- (b) **Field Inspections by BDTCs:** BDTCs will also conduct random inspections of the biogas plants as per their assigned targets. PIAs should extend full help and co-operation to BDTC's Staff in carrying out the above inspections on a regular basis. The manpower engaged PIAs and BDTCs or Banks for that matter or by any other Programme Implementing Agencies will not be deemed to be employees of MNRE, Government of India.

(IX) **Guidelines for Monitoring and Physical Inspections**

- (a) In order to ensure that incomplete, un-commissioned, bogus/false reporting of biogas plants are not included for reporting and for claiming CFA, it is mandatory that All the newly completed and commissioned biogas plants would be inspected/ verified physically on 100% basis by the PIA's Officials.
- (b) The Administrative Charges given to PIA may be utilized for the purpose of monitoring, strengthening outreach of the Scheme and extension of the Biogas Programme
- (c) Monitoring of the Biogas plants (above 25 to 2500 M<sup>3</sup>) would be done by the respective PIA. After receiving the project completion and commissioning report from the designated PIA, the MNRE will assign the work of monitoring and inspection to a third party.

(X) **Guidelines for Submission of Progress Reports and Settlement of Claims and Accounts**

- (a) A monthly progress report (MPR) should be sent to MNRE by the 5<sup>th</sup> of the following month.
- (b) The flow of funds for the scheme will be through PFMS only. Timely settlement of accounts is a must for smooth flow of further funds under the Biogas scheme. The CFA (Beneficiary's subsidy and Turnkey fee) will be released corresponding to the reported achievements on quarterly basis to the PIAs on production of Claim in prescribed format, list of beneficiaries, UC and SoE.
- (c) The administrative charges and support for trainings to PIA will be reimbursed at the end of FY corresponding to the final achievements reported against the allocated annual targets upon receipt of the Utilization Certificate (UC); and ASoE in respect of the previous funds released.
- (d) The PIAs and BDTC should submit audited statement of expenditure as early as possible after the close of the financial year, latest by 30th September of the year, following the closure of the implementation year (Financial Year).
- (e) The firm figures of physical achievements of a year with complete details of all the biogas plants shall be reported to MNRE by 30<sup>th</sup> June of the year following the closing of the Financial Year.
- (f) Completion Certificates (CCs) in respect of all the commissioned biogas plants and reported as achievements of the year to the MNRE will be maintained and kept safe in the records/plant documentation for Post – Audit verifications and plant inspection purposes.
- (g) Similarly, the monitoring of the biogas plants (above 25 to 2500 M<sup>3</sup>) shall be done by the respective PIA. After receiving the project completion and commissioning report from the designated PIA, the MNRE will assign the work of monitoring and inspection to a third party. The following documents shall be submitted before CFA release by the MNRE for biogas plants (above **25 M<sup>3</sup>** to – 2500 M<sup>3</sup>) :

- (i) Joint Project Commissioning report of the Project;
- (ii) Performance data as per clause III;
- (iii) Photographs with Name, Address & Display Board;
- (iv) Inspection report by Third Party/ BDTC;
- (v) Audited statement of expenditure; and
- (vi) Bank mandate form

(h) In case if any irregularity is brought to the notice of Government of India and including fraudulent claim(s) is detected subsequently at any point of time even after the final settlement of the accounts the CFA / Subsidy paid will be recovered in full along with penal interest and the decision of Secretary, MNRE, Government of India, in such matters would be final and binding on the PIAs.

**(XI) Annual targets for installation of small biogas plants under Biogas Programme for FY 2022-23.**

Sr. No.	State	State PIA	Nos. of Biogas Plants Target for 2022-23 (Category - wise)				Target for sanitary Toilet's linked Biogas Plant	Nos. of Biogas Training Courses			
			General	SC	ST	Total		CCMs	TKWT	STC	Users
1	Andhra Pradesh	NREDCAP	1500	400	100	<b>2000</b>	400	4	1	1	20
2	Arunachal Pradesh	APEDA	30	10	10	<b>50</b>	10	2	1	1	10
3	Assam	FDA	700	300	200	<b>1200</b>	300	2	2	1	30
4	Bihar	RDD	75	50	25	<b>150</b>	50	1	1	1	10
5	Chhattisgarh	CREDA	500	200	100	<b>800</b>	200	2	2	1	25
6	Goa	Agri. Dept.	30	10	10	<b>50</b>	10	1	1	0	5
7	Gujarat	RDD	200	75	25	<b>300</b>	150	2	1	1	15
8	Haryana	RDD,	70	20	10	<b>100</b>	50	1	0	1	10
9	Haryana	Agri Deptt.	300	80	20	<b>400</b>	120	1	1	1	10
10	Himachal Pradesh	RDD	30	10	10	<b>50</b>	10	1	1	1	5
11	Jammu & Kashmir	RDD	30	10	10	<b>50</b>	10	2	1	1	5
12	Jharkhand	RDD	20	15	15	<b>50</b>	10	2	2	1	5
13	Karnataka	RDPRD	1000	400	200	<b>1600</b>	800	2	2	2	20
14	Kerala	Agri Deptt.	250	100	50	<b>400</b>	200	1	1	1	10
15	Kerala	RDD	150	25	25	<b>200</b>	50	2	1	1	15
16	Madhya Pradesh	MPSAIDC	2000	500	400	<b>2900</b>	400	4	1	1	30
17	Maharashtra	RDD	4500	1000	500	<b>6000</b>	2500	4	2	1	20
18	Manipur	RDD	20	20	10	<b>50</b>	10	1	1	1	10
19	Meghalaya	MNREDA	20	20	10	<b>50</b>	10	1	1	1	5
20	Mizoram	DA&V	20	15	15	<b>50</b>	10	2	1	1	5
21	Nagaland	RDD	20	15	15	<b>50</b>	10	2	1	1	5
22	Odisha	OREDA	80	50	20	<b>150</b>	50	3	1	1	20
23	Punjab	PEDA	700	250	50	<b>1000</b>	400	4	2	1	25

24	Puducherry	RDD	30	10	10	<b>50</b>	10	1	1	-	5
25	Rajasthan	RDD, BFA	150	100	50	<b>300</b>	150	2	1	1	10
26	Sikkim	SREDA	30	10	10	<b>50</b>	10	1	0	-	5
27	Tamil Nadu	RDPRD	120	50	30	<b>200</b>	70	1	1	1	5
28	Telangana	RDD	50	30	20	<b>100</b>	50	1	1	-	10
29	Tripura	TREDA	60	25	15	<b>100</b>	20	1	1	1	10
30	Uttar Pradesh	UPNEDA	175	50	25	<b>250</b>	80	2	1	1	15
31	Uttarakhand	UREDA	50	30	20	<b>100</b>	30	1	1	-	10
32	Uttarakhand	RDD, Pauri	60	30	10	<b>100</b>	30	1	1	1	10
33	West Bengal	RDD	70	20	10	<b>100</b>	20	2	0	-	10
34	A&N Islands	RDPRD	30	10	10	<b>50</b>	10	-	-	-	5
35	D & N Haveli	RDPRD	30	10	10	<b>50</b>	10	1	0	-	5
36	KVIC, Mumbai	KVIC*#	1500	700	300	<b>2500</b>	700	10	6	2	30
37	NDDB, Anand	NDDB#	700	150	50	<b>900</b>	250	2	2	2	15
<b>Total</b>			<b>15300</b>	<b>4800</b>	<b>2400</b>	<b>22500</b>	<b>7200</b>	<b>73</b>	<b>44</b>	<b>32</b>	<b>460</b>

\* Including 250 Plants for NER states. # All India basis for KVIC and NDDB.

Note: Overall achievements (General+ SC+ ST) for each PIA are allowed to exceed by 10% of the total annual allocated targets.

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## B. Model Syllabus for Trainings Under MNRE Biogas Programme

### (I) Users' One Day Training Courses on Biogas

1. **Objective:** To raise awareness and publicity about the benefits of biogas, operation and maintenance of plants amongst the potential biogas users
2. **Venue/ Nos. of Participants:** Villages having biogas plants in operation condition or newly commissioned biogas plants will be selected as venue and 50-60 households of the selected village(s) will be contacted and invited for participating in the User's Course.
3. Topics to be covered:
  - i. Benefits, operational and Maintenance activities including use of Biogas Plants
  - ii. Financial and Other Assistance and cost-economics of Biogas Plants of various sizes and Models.
  - iii. How to access biogas web portal and application for Biogas Plants and loan applications.
  - iv. Field visits and practical demonstrations on how to connect biogas pipe line to biogas burner/Biogas engines for operating Biogas Water Pump Sets/ Biogas Electricity Generators.

### (II) Staff Training Course (for PIA/ Bank Officers / Field Officers / Field Functionaries etc.)

1. **Purpose To** give exposure to Officials of Rural Development Departments and KVIC and other stakeholders such as Supervisors / Functionaries of Panchayati Raj Institutions / Bank Officials & Staff to various aspects of biogas technology and to familiarize them with the importance of Biogas Technology and biogas as a fuel for many applications and present status of biogas programme, inter-alia details about how Biogas Plants are constructed and operated.
2. **Participants The course is intended for field supervisory functionaries involved in the implementation of biogas extension programme. Persons of following categories may be selected / nominated for such training courses-**
  - i. Block and District level Supervisory Functionaries involved in the promotion and execution of New National Biogas and Organic Manure Programme (NNBOMP). These functionaries include Block Development Officers, Agriculture Development Officers, Agriculture Extension Officers, Assistant Engineers, Junior Engineers, Assistant Agricultural Engineers, Agricultural Inspectors / Assistant Directors and Development Officers of Khadi and Village Industries Commission and Khadi and Village Industries Board, Field Supervisors and Staff of Agro Industries Corporation Ltd., Dairy Development Board / Corporations, Entrepreneurs of Agro-services Centres, Field Supervisory Staff of recognized Voluntary Organizations / Self Help Groups / Registered Societies. Women-functionaries of all above mentioned organizations should be also nominated.
  - ii. Instructors / Teachers from ITIs, selected Farmers Training Centres / Extension Centres / Gram Sevaks Training Centres etc. Such Training Centres should be selected as the venue for organization of subsequent Training Courses for local masons in the construction of biogas plants.

<b>Medium of Instruction</b>	Hindi/ English / Regional Language
<b>Duration</b>	Four Days
<b>Numbers of Participants</b>	10
Syllabus / Curriculum	
<b>Day</b>	<b>SUBJECT</b>
1 <sup>st</sup>	Introduction to the Biogas Technology & Introduction to National Biogas and Organic Manure Programme (NNBOMP)
2 <sup>nd</sup>	<ul style="list-style-type: none"> <li>i. Design of different approved models of biogas plants, capacity determination, selection of building materials and accessories. Type of different approved models of Biogas plants based on material and accessories, appliances etc.</li> <li>ii. Motivation / selection of biogas models and selection of biogas potential beneficiaries, Socio-Economic Aspects, Environmental Aspects of having biogas plants installed in houses</li> <li>iii. Rates of Financial Assistance / disbursement of subsidy /utilization of funds, maintenance of Accounts</li> <li>iv. Institutional support for implementation of the NNBOMP Programme</li> </ul>
3 <sup>rd</sup>	<ul style="list-style-type: none"> <li>i. Construction methodologies for biogas models popular in the region.</li> <li>ii. Details of biogas stoves / burners / appliances and spares for O &amp;M of biogas plant</li> <li>iii. Identification of faults and their rectifications.</li> <li>iv. Connecting a cattle dung based biogas plant with sanitary toilet and its operation</li> <li>v. Installation and Commissioning of prefabricated approved Biogas Plants</li> </ul>
4 <sup>th</sup>	<ul style="list-style-type: none"> <li>i. Field / Site Visit to:</li> <li>ii. Operational Biogas Plants, Biogas plants under construction, Biogas plants under commissioning for biogas generation, Connection of biogas plant to biogas burner for use of Gas by the new user, Handling and application of biogas plant effluent</li> <li>iii. Operation and Maintenance of biogas plant and; Valedictory and concluding</li> </ul>

### (III) 10 Days Construction-Cum-Maintenance Course (CMC) / Refresher Course

1. **Purpose:** To create a cadre of biogas masons and technicians skilled in the construction, installation commissioning and maintenance of approved models of biogas plants i.e. Deenbandhu fixed dome model, KVIC floating metal Gas holder with brick masonry digester models, digester made of ferro-cement, gas holder model of FRP and Pragati models as approved models by MNRE. Also imparting training for new and innovative models of plants as and when approved by MNRE for inclusion in the NNBOMP.
2. **Selection of Trainees:** Construction-cum-maintenance training course are intended for professional masons having experience of working independently on civil construction works and fabricators/technicians having the facilities of workshop, welding lit, etc. The trainees should have knowledge to understand construction and fabrication, methodology of approved design and specifications of Biogas Plants.
3. **Number of Participants:** At least ten trainees can be recruited for each course

4. **Medium of Instruction** : Hindi or Regional Language
5. **Duration of Training** : 10 Days
6. **Syllabus:** The training is of practical in nature. However, a few classroom lectures should be arranged completely tied up with the construction of approved Biogas plants in the field. The suggested curriculum and schedule is given below: -

1. **Theory**

- i. Importance & benefits of biogas programme.
- ii. Appropriate site selection for installation of BGP and Pre-requisite for setting up of a biogas plant such as availability of cattle dung and verify for water need and end usage of biogas.
- iii. Description of different approved models of biogas plants,
- iv. Selection of beneficiaries and selection of site.
- v. Material requirements for biogas plants of different capacities/models.
- vi. Quality of construction materials.
- vii. Construction methodologies for various approved models and designs of plants.
- viii. Plumbing aids and fitting of pipeline, water removal device, gas appliances.
- ix. Installation of system for testing for gas and water leakages.
- x. Commissioning and operational procedure
- xi. The importance of required quantity and quality of materials for construction, commissioning of Biogas Plants.

2. **Practical:** A minimum of two biogas plant needs to be constructed and installed during the training course by the trainees under the full supervision and guidance of experts from the BDTCs. Emphasis should be mainly on proper practical training and not on construction of a large number of biogas plants to achieve targets. The practical training may be also arranged wherever possible for standard MNRE approved prefabricated design biogas plants.

**Work may be organized as follows:**

Approximate value of days	Field work
1	selection of site , marking of layout, Digging of pit
1	Laying of foundation
4	Digester construction; Construction of outlet chamber in Deenbandhu Model Fixation of guide frame in case of floating drum KVIC or Pragati model
2	Plastering
5	Curing of civil work
	Laying of gas distribution pipeline, fixing accessories etc.
2	Slurry making filling of digester
1	Testing for gas leakages

4. **Financial Provisions:** Estimated cost per course is as under:-

Sl. No.	Item of Expenditure	Estimated cost
1.	Stipend up to a maximum of Rs. 450/- trainees/day or 10 trainees for a maximum period of 10 days (pro-rata basis) to meet boarding and lodging expenditure	45,000
2.	To and fro transport charges to 10 trainees as per actual but no exceeding of Rs. 300/- per trainee on pro-rata basis.	3000
3.	Contingency for transportation/POL, Stationery, books, honorarium to guest speakers etc.	2000
	Total	50,000/-

PLANNING The State/Agency should fix location, tentative date for organizing course in the beginning of the year as per the target allocated to them.

1. The faculty for training should include a master mason trained in one of the Regional Biogas Development & Training Centre and who have constructed plants no less than ten.
2. The Nodal Officer at Block level should ensure the quality of training for the purpose of monitoring the district nodal officer should ensure participation in the course. The State level officials should also visit at least 10% of the course organized.
3. Preference should be given for organizing course in such areas where less number of persons have been trained so far and also construction of biogas plants has yet to pick up.
4. At the closing of the course a test has to be conducted for ensuring the skill of trainees Certificates may be issued to qualified trainees and a notification should be issued containing there in their names & address.
5. **A user training course should be also organized, the day following the closing of course**

**(IV) Turn-Key Workers Training (TKWT)**

**Objective:** To create a cadre of Biogas Turn-Key Workers / Biogas entrepreneurs in rural areas for setting up of biogas plants on Turn-Key basis and providing post-installation servicing of plants as a self-employed vocation.

**Participants:** The programme is meant for unemployed rural youths having inclination to take up biogas as a self-vocation. He/She may be functionary in voluntary organization. A minimum educational qualification may be kept as 12th Standard pass **or 10<sup>th</sup> pass with ITI certificate**. If they have already some relevant experience certificate in biogas work, they should also be given chance.

<b>Numbers of participants</b>	10 (Ten)
<b>Medium of instruction</b>	Hindi/ English/ Regional language [depending upon the facility available at the Biogas Development and Training
<b>Centre</b>	BDTC
<b>Duration of training</b>	15 Days
<b>Venue</b>	Biogas Development & Training Centre

**Syllabus:** The programme should cover the following: -

- I. **Technical Aspects:** Importance and benefits of biogas programme, Economic viability of biogas plants, an over-view of Indian Biogas Programme, present level of achievement and estimated potential for future exploitation; and Technological advances in biogas technology and barriers removal.
- B Management aspects:
  - i. **Marketing Management:** Technique of motivation, project formulation, filling up and process of applications for arrangements of subsidy.
  - ii. **Personal Management:** Training of masons, placement of masons in different village to be covered, identification of plumber and his training liaison with beneficiary, masons and plumbers, supervision of the persons engaged in plants construction
  - iii. **Material Management:** Types of the material required for biogas plant construction, testing of quality of material, procurement of the materials.
  - iv. **Financial Management:** Estimation of Unit cost of biogas plants arrangement of bank loans and subsidy special motivation support from social organizations, principle of accounting.
  - v. **Office Management:** Record keeping of individual beneficiaries and other records on financial and physical programmes, methods of maintaining the accounts, payment made to the beneficiary and masons etc.
  - vi. **Break-down Management:** Feed-back, monitoring and evaluation of plants repair and maintenance of sick plant.
- C. **Project Reports:** A project for turn-key operation for their respective areas may be prepared by the trainees during the duration of the training.
- D. **Field Visit:** Field visits should be organized to banks, to villages having large number of Biogas plants and interactions with the Biogas plant beneficiaries.
- E. **Financial Provision Turn-key Workers Training Course:** Estimated cost per course is as under: -

SN	Item of Expenditure	cost (in Rs.)
1.	Stipend up to a maximum of Rs.300/- trainees/day or 10 trainees	45,000/-
2.	To and fro fare charges/ cost up to a maximum of Rs.700/- per trainee, subject to actual.	7,000/-
3.	Contingency, POL for field visit, honorarium to guest speakers @ Rs.300/- per lecture, project reports, books, stationery, blue prints, technical literature, manuals, etc.	23,000/-
Total		75,000/-

- F. **Suggested Planning:** (i) The programme high lights should be widely circulated; (ii) Nomination may be asked from State Nodal Departments/ Agencies, Voluntary Organizations in advance; and (iii) The faculty for training should include technical and management experts.

**(V) Biogas Skill Development Training Programme (BSDTP)**

**Objective:** The core objective of the Biogas Skill Development Training Programme Training is to empower the individuals, by enabling them to realize their full potential through a process of Skill Development and Entrepreneurship for the purpose of developing competencies/skills in the domain of Biogas Technology sector of Renewable Energy.

1. Make quality vocational training for Biogas sector aspiration for productivity linked to skilled workforce to supplement Skill India Mission. Focus on an outcome-based approach towards quality skilling that on one hand it results in increased biogas production and development and dissemination of Biogas as Renewable Energy source for individuals/societies/communities and on the other increase the capacity and quality of biogas based training infrastructures and trainers to ensure easy access to the potential targeted potential beneficiaries and stakeholders.
2. Promote national standards in the biogas skilling space through active involvement of the Biogas Development and Training Centres/ Institutions and industry in setting occupational standards, helping develop curriculum, providing apprenticeship opportunities, participating in assessments, and create opportunities for gainful employment/ Self Employment to skilled workforce.

**Biogas Skill and entrepreneurship development course will cover:**

- a) Educate and equip potential and skilful entrepreneurs for BIOGAS across India.

The existing 8 Biogas Development and Training Centres would get their affiliations and empanelment as Skill development Centres for Biogas with the Skill Council for Green Jobs under the Ministry of Skill Development & Entrepreneurs , GoI, for the development of standards qualification pack for Biogas Plants and Biogas Plant produced slurry for Level 4/5. This curriculum will be delivered at no cost or as per the guidelines of SCGI.

- b) Promoting Biogas Entrepreneurship amongst Women and Farmers Producers Group:

Focus will also be placed on encouraging women entrepreneurs and Farmers Groups through appropriate incentives for women owned Biogas businesses. Priority will be given for mentorship, support system for women entrepreneurs and farmers/farmers recognized groups in existing Biogas Development and Training Centres. This would hold in developing Entrepreneurship specially supporting Biogas Sector.

<b>Numbers of participants</b>	<b>Twenty five per course</b>
Medium of instruction	Hindi/ English/ Regional language
Duration of training	10 Days
Venue	Biogas Development & Training Centre of MNRE as empaneled for by SCGJ

**Financial Provision for Biogas Skill Development Training Programme:** Estimated cost per course is as under: -

Sl. No.	Item of Expenditure	Estimated cost (in Rs.)
1.	Stipend up to a maximum of Rs.250/- Per trainee/day for 25 trainees	62,500/-
2.	Contingency, POL for field visit, honorarium to guest speakers project reports, books, stationery, blue prints, technical literature, manuals, etc.	12,500/-
Total		75,000/-

The course curriculum and inter-component expenditure may be adjusted finally in line with the Surya Mitra Scheme of MNRE including total numbers of training hours to 200 hours and limiting the expenditure per course to a maximum of Rs.75,000/- per course.

***For Annexures mentioned in this booklet, please refer detailed Programme guidelines uploaded at MNRE website (<https://mnre.gov.in>)***

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