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DGM (FAA)

MNES
Guidelines

3/95/2002-CPG
Government of India
Ministry of Non-Conventional Energy Sources
(Power Group)

Block No. 14, C.G.O. Complex,
Lodi Road, New Delhi-110 003.

Dated : October 22, 2002

To

Heads of State Government/Union Territory,
Nodal Agencies/Departments

Subject : Biomass Energy and Co-generation Programmes during the Tenth Plan-Sanction for the year 2002-03 - regarding.

Sir,

I am directed to convey the sanction of the Government of India to the implementation of Biomass Energy and Co-generation Programmes during the year 2002-03 incorporating the following Programmes:

- I. Biomass Power/Co-generation Programme.
- II. Biomass Gasifier Programme.

2. The details of the Biomass Power/Co-generation Programme and Biomass Gasifier Programme entailing the objectives, the eligibility criteria, pattern of financial assistance / incentives for eligible projects and other promotional activities, including the procedure for availing the said financial assistance / incentives, are given in Annexures A & B respectively to this sanction. The General Terms & Conditions for both the Programmes are given in Annexure C.

3. Target for 2002-03 :

A physical target of 100 MW has been set and a total outlay of Rs. 19.28 Crore has been provided for the Biomass Power/Co-generation Programme including past liabilities. A target of 10MW biomass gasifier capacity has been envisaged, and a total outlay of Rs.5.00 Crore has been provided for the year 2002-03 including past liabilities.

4. Implementation :

The Programmes will be implemented through the State Governments, State Nodal Agencies, and Financial Institutions involving Intermediaries, Industries, NGOs, Panchayats, Co-operatives, ESCOs etc.

5. Pattern of Release of Central Financial Assistance (CFA):

a) For Biomass Power / Cogeneration Projects :

- i) Release of Capital Subsidy for ABG, MW-scale 100% producer gas engines project.

Capital subsidy, towards the Capital cost of Plant & Machinery, where eligible, will be released on reimbursement basis after satisfactory completion of the projects and receipt of necessary financial documents, as under:-
i) In the case of Advanced Biomass Gasification (ABG) projects, on receipt of a project completion report on realizing the power generation and linking it to the grid in a standard manner practiced for power projects,

- ii) **Release of Interest Subsidy:** Release of Interest Subsidy to the Financial Institutions will be made, on pro-rata basis, linked with sum total of disbursement of loans by the FI(s), as certified by the FI(s), unless stipulated otherwise in specific sanction(s). In case of more than one Financial Institution providing term loan to a project, the application shall preferably be made by the Lead Financial Institution.
- iii) **Release for Biomass Resource Assessment Studies & Other Promotional Activities:** An advance payment of upto 50% of the eligible incentive / financial assistance shall be released; the balance shall be released, unless otherwise stipulated in specific sanction(s), in installments, linked with progress / stages, subject to adjustment of the advance payments, if any, as may be certified by the Grantee, duly supported by a Statement of Expenditure.

b) **For Biomass Gasifier Projects:**

i) **CFA for Thermal Applications and Electrical Applications:**

Capital subsidy shall be provided on satisfactory completion of project on reimbursement basis through State Nodal Agencies for projects up to 1Mwe equivalent with individual Gasifier Unit of maximum size upto 500 KWe equivalent; no releases to be made alongwith sanction letter and upto completion of the project. Certification of completion of the project to be provided through a Joint Commissioning Report (JCR) by the State Nodal Agency, Manufacturer and user beneficiaries /Organization alongwith documents providing necessary technical and financial audited documents.

ii) **Biomass Gasifier based Village Electrification:**

The implementation will be done by / through SNA with the involvement of ESCOs, Co-operatives, Panchayats, NGOs, Manufacturers or Entrepreneurs. The CFA for the sanctioned projects will be released to the State Nodal Depts. / SNAs in the following manner :

- Initial release of 20% of the total MNES cost share would be made alongwith the sanction letter of the project.
- Second instalment of 50% of MNES cost share would be released on supply of equipment at site.
- Third instalment of 20% of MNES cost share on erection and commissioning.
- Final instalment of 10% on MNES cost share would be released after three months of trouble-free operation of the whole system and submission of Audited SOE & UC by the implementing agency.

iii) **Demonstration Programme for 100% Producer Gas Engines:**

The Scheme will be implemented through State Nodal Agencies, with 100 projects to be taken up in first two years starting from 2002-03, followed by a Review. The terms of release of CFA shall be on the same pattern as per (b) (ii) above.

iv) **Conversion of existing diesel power plants in North-Eastern Region to Biomass Gasifier based Power Stations:**

The Scheme will be implemented through State Power Departments / State Nodal Agencies. The terms of release of CFA shall be on the same pattern as per (b) (ii) above.

v) **Financial Assistance for Promotional Activities:**

The pattern of releases for promotional activities and for applied R&D Projects would be determined on case-to-case basis, on merit.

6. The expenditure on the schemes will be met from the provisions under Demand No. 61 as noted here under.

a) **For Biomass Power / Cogeneration Projects :**

| Head of the Account | Description |
|---------------------|--|
| 2810 (Major head) | Non-Conventional Sources of Energy |
| 05 | Biomass Co-generation & Combustion |
| 05.01 | Demonstration and Technology Utilisation |
| 05.01.31 | Grants in aid during the year 2002-03 (plan) |
| 05.01.33 | Subsidies |
| 05.02 | Grid Connected Gasifier |
| 05.02.31 | Grants-in-aid |
| 05.02.50 | Other Charges |

b) **For Biomass Gasifier Projects:**

| Head of the Account | Description |
|---------------------|---|
| 2810 (Major head) | Non-Conventional Sources of Energy |
| 02 | Assistance to Biomass Programme |
| 02.00.31 | Grant-in-aid (R&D) which include Support for R&D sanctioned projects on Production, Conversion and Utilization and the existing five GARP's at IIT, Delhi, Mumbai, IISc., Bangalore, MKU, Madurai and SPRERI, V.V. Nagar, Gujarat whose term expires on 30.06.2002 and in addition the projects that would be taken up during the year. |
| 03 | Biomass Gasifier for Standalone Applications |
| 03.00.33 | Subsidy |
| 16 | Lump Sum Provision for North-Eastern States including Sikkim. |
| 16.00.33 | Subsidy |

7. **Monitoring:**

- i) The State Nodal Agencies / implementing agencies will set up effective monitoring mechanism / Committee(s), associating the Regional Officers of MNES and other State agencies to closely review the implementation of the projects under the programme. Monitoring through an independent agency, as and when required by MNES, is also proposed under the programme.
- ii) The State Deptts./ Agencies will send progress reports in respect of completed projects and also under construction, on a quarterly basis.
- iii) The implementing agencies will closely monitor the performance of each project and will submit reports on a half-yearly basis at least for 3 years after commissioning of each system to the respective State Govt. Dept./Agency, who will forward a consolidated Summary Report to the Ministry.

8. The aforesaid Biomass Energy and Co-generation Programmes are subject to such change(s) and modification(s) as may be decided by the MNES, Government 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 announcements made by the Ministry. In case of any dispute on interpretation of any provision under the Schemes, the decision of the Ministry shall be final and binding.

9. All the State Government Agencies/Departments are requested to initiate the action for implementation of Bio-mass Energy & Co-generation Programmes during the year 2002-2003 as per the Scheme. Firmed up project proposals under both the programmes may be formulated alongwith DPR, as stipulated in the Scheme, and as per prescribed format contained in the Scheme Circular, wherever necessary.

10. This issues under the delegated powers of the Ministry and with the concurrence of IFD, MNES vide their Sanction No. IFD/SAN/104/296/2002-03 dated 12/9/2002.

Yours faithfully,


(G. UPADHYAY)

SENIOR SCIENTIFIC OFFICER - I

Encl : As above

Copy to:

1. Chief Secretaries of State Governments.
2. Heads of Financial Institutions.
3. All State Electricity Boards /State Electricity Regulatory Commissions.
4. Sr. Adviser/All Advisers/JS (M)/ JS& FA/ Directors/ PSO's/All R.O.'s MNES/SEC.
5. Accountant General (All States/UTs)
6. Director of A/c's (All States/UTs).
7. The Director of Audit, Commerce, Works and Miscellaneous (Science Audit-II) AGCR Building, IP Estate, New Delhi-110002.
8. IFD / PAO / Cash Section, MNES, New Delhi-110003.
9. Sanction folder.

ANNEXURE - A

BIOMASS POWER / CO-GENERATION PROGRAMME

1. ELIGIBILITY CRITERIA FOR ADMISSIBLE PROJECTS WITH RESPECT TO

(a) Types of Biomass Resources :

• **For Biomass Power projects**

Forestry based & Agro-based Industrial Residues;
Energy Plantations, Forestry and Agro Residues.

• **For Bagasse / Biomass Cogeneration Projects :**

Bagasse; Forestry & Agro-based Industrial Residues.

Mix of conventional and / or Non-conventional fuel, upto 30% of total yearly energy usages, only allowed in both cases as support fuel to achieve extended operating days in a year.

(b) Technologies

Any technology package such as Combustion/Pyrolysis / Gasification/Pelletisation / Briquetting, through gas/steam-turbine, dual fuel engine/gas engine route or a combination thereof, appropriate and efficient for power generation / co-generation as per the above biomass resources.

(c) Capacity

The minimum eligible capacity shall be 1.0 MW; grid interfaced and/or captive power projects (with or without surplus power to grid).

(d) Financing Institutions

All Registered Financial/Industrial Development / Investment Corporations; All Nationalised Banks and State/Public Sector Leasing & Financing Corporations; severally or in consortia.

The Interest Subsidy shall be channelised through one of the FI's and/or IREDA.

A suitable undertaking on Stamp paper with the following clause "The borrower agrees and undertakes that in case project is not completed as per time schedule/or during the currency of loan, or project is abandoned for any reason whatsoever and/or the borrower commits default of the terms and conditions of the loan of FI including payment of dues on due dates and FI enforces security and file the application with Tribunal or with Courts for recovery of its dues in that event, the subsidy amount already disbursed to the Borrower shall be refunded by the borrower as if loan was sanctioned without interest subsidy and the Borrower shall pay the amount so required to FI for being refunded to MNES on demand and until refund/full payment, the said subsidy amount shall carry interest, liquidated damages and other charges as mentioned in the Loan Agreement between the Borrower and FI and it will be treated as if no subsidy was required to be disbursed to the borrower and the loan attracts the rate of interest as mentioned in the documents (without subsidy)".

This will also be applicable to all on-going cases.

(e) Promoters (Project Ownership)

Eligibility of promoters (Project Ownership) includes individual / independent Registered companies, Cooperative Sector/Joint Sector/Public Sector Companies/~~Institutions; industry associations; State Agencies (including SNAs severally, or in consortia with other eligible promoters) and private and public sector investors~~

having technical and managerial capabilities for implementing Biomass Power/Cogeneration projects on BOOT, BOT, BOLT, BOOM / or IPP basis.

(f) **Application for claiming/availing the Financial assistance/Incentives**

For Biomass Power/Co-generation projects

- Within one year of the date of achieving financial closure for full term loan by FIs (date of approval or date of loan agreement, whichever is later, for the last component of the Term Loan by the FI to be taken for eligibility, if more than one FI lends the Term Loan).
- Projects which were recommended by Programme Advisory Committee before 31st March, 2002, as per provisions of the Scheme for 2001-02, shall be considered for approval during 2002-03 on merit only with respect to eligibility criteria under the relevant Scheme and the application has been received in MNES in time as per terms and conditions of the aforesaid scheme.

For other Promotional Activities

- As per specific approval / sanction of the promotional activity.
- Proposals for promotional incentives for the projects which had achieved financial closure in the financial year 2001-02 and received later but could not be processed during the same year, will be considered during 2002-03 on merit only with respect to eligibility criteria under the relevant Scheme and the application has been received in MNES in time as per terms and conditions of the aforesaid scheme.

2. **PATTERN OF FINANCIAL ASSISTANCE/INCENTIVES FOR SETTING UP OF BIOMASS POWER / COGENERATION PROJECTS**

2.1 **Interest Subsidy for Bagasse / Biomass Cogeneration Projects (Commercial Projects)**

| Bagasse Co-generation (Commercial Projects) | | | |
|---|---|-------------------------------|-------------------------|
| | Schemes | Pressure Configuration | Interest Subsidy |
| 1. | Projects by Cooperative/Public/ Joint Sector Sugar Mills | 40 bar & above | 3% |
| | | 60 bar & above | 4% |
| | | 80 bar & above | 5% |
| 2. | Projects in IPP Mode in Cooperative/Public Sector Sugar Mills | 60 bar & above | 2% |
| | | 80 bar & above | 3% |
| 3. | Projects by Private Sector Sugar Mills | 60 bar & above | 2% |
| | | 80 bar & above | 3% |
| Biomass Co-generation | | | |
| 4. | Commercial Projects | 60 bar & above | 2% |
| | | 80 bar & above | 3% |
| For Bagasse Cogeneration by Cooperative/Public Sector Sugar mills, the floor rates of interest shall not be lower than 8%, otherwise 10% for general category of projects | | | |

| S. No | District | Type of biomass | Total biomass generation | Consumption | Estimated Total Surplus | (Tons/Year) | |
|-------|----------------|--|--------------------------|-------------|-------------------------|-------------|---|
| | | | | | | Scenario-I | Estimated Total Surplus without paddy straw Scenario-II |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| 11. | Vizia-nagaram | Paddy, groundnut, sugarcane, cotton, jute | 9,11,512 | 7,40,786 | 170726 | 91710 | 57741 |
| | | Rice husk | 65,874 | 43,600 | 22274 | 22274 | 22274 |
| | | Forest & un-cultivable lands | 98,454 | 98,454 | - | - | - |
| | | Horticulture & social forestry | 82,167 | 82,167 | - | - | - |
| | | | | | 193000* | 113984 | 80015 |
| 12. | Visakha-patnam | Paddy, bajra, chillies, groundnut, sugarcane | 7,45,017 | 6,69,615 | 75402 | 75402 | 6697 |
| | | Rice husk | 41,742 | 41,742 | - | - | - |
| | | Forest and un-cultivable lands | 3,74,272 | 3,74,272 | - | - | - |
| | | Horticulture | 96,847 | 96,847 | - | - | - |
| | | Social forestry | 10,300 | 10,300 | - | - | - |
| | | | | | 75402 | 75402 | 6697 |
| 13. | East Godavari | Paddy, maize, sugarcane | 25,10,781 | 22,66,852 | 243929 | 73674 | 36937 |
| | | Rice husk | 3,37,125 | 2,18,566 | 118559 | 118559 | 118559 |
| | | Forest & un-cultivable lands | 2,71,690 | 2,71,690 | - | - | - |
| | | Horticulture & social forestry | 3,98,489 | 3,98,489 | - | - | - |
| | | | | | 362488 | 192233 | 155496 |
| 14. | West Godavari | Paddy, maize, sugarcane | 26,46,478 | 23,66,959 | 279519 | 107902 | - |
| | | Rice husk | 3,21,524 | 2,36,050 | 85474 | 85474 | 85475 |
| | | Forest & un-cultivable lands | 90,924 | 90,924 | - | - | - |
| | | Horticulture | 2,73,586 | 2,73,586 | - | - | - |
| | | | | | 364993* | 193376 | 85475 |

| S. No | District | Type of biomass | Total biomass generation | Consumption | Estimated Total Surplus | (Tons/Year) | |
|-------|----------|--|--------------------------|-------------|-------------------------|---|--|
| | | | | | | Estimated Total Surplus without paddy straw Scenario-II | Estimated Total Surplus without paddy straw & sugarcane trash Scenario-III |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| 15. | Krishna | Paddy, maize, cotton, sugarcane, chilies | 22,17,147 | 19,06,308 | 310839 | 66946 | - |
| | | Rice husk | 2,98,862 | 2,77,654 | 21208 | 21208 | 21208 |
| | | Forest & un-cultivable lands | 1,08,976 | 1,08,976 | - | - | - |
| | | Horticulture & social forestry | 1,10,478 | 70,478 | 40000 | 40000 | 40000 |
| | | | | | 372047* | 128154 | 61208 |
| 16. | Guntur | Paddy, cotton, Chilli | 35,79,980 | 30,49,138 | 530842 | 264352 | 250065 |
| | | Rice husk | 1,96,125 | 1,62,901 | 33224 | 33224 | 33224 |
| | | Forest & un-cultivable lands | 1,23,976 | 1,23,976 | - | - | - |
| | | Horticulture | 17,829 | 17,829 | - | - | - |
| | | | | | 564066* | 297576 | 283289 |
| 17. | Prakasam | Paddy, maize, chilies, cotton, groundnut | 19,56,394 | 17,12,111 | 244283 | 166787 | 166787 |
| | | Rice husk | 64,869 | 27,389 | 37480 | 37480 | 37480 |
| | | Forest & waste lands | 3,55,390 | 3,55,390 | - | - | - |
| | | Social forestry & horticulture | 10,35,945 | 8,67,522 | 168423 | 168423 | 168423 |
| | | | | | 450186* | 372690 | 372690 |

| Traditional users of Biomass as Fuelwood | | | | | | | | | |
|--|----------------------|---|----------|-------------------|-------------------|--|--------------------------|--------------------------------------|--------------|
| S.N. No. | Name of the district | Name of the Plant | Capacity | Commissioned date | Village name | Was firewood /agr/waste used earlier for cooking | Was it freely available? | present position if buying what rate | Extra time |
| 1 | East Godavari | Varrothi power plant | 4 MW | Apr-01 | Vemutapally | Yes | Yes | Free of Cost | No |
| | | | | | Keranakor | Yes | Yes | Free of Cost | No |
| | | | | | Alamur | Yes | Yes | Free of Cost | Half an hour |
| | | | | | Eelakolanu | Yes | Yes | Free of Cost | No |
| | | | | | Khanavaram | Yes | Yes | Free of Cost | No |
| 2 | East Godavari | Sudha Agro Oils & Chemical Industries Ltd | 4 MW | Dec-00 | | | | | |
| 3 | | Shree Paper's | 4 MW | Mar, 2003 | Surampalayam | Yes | Yes | Free of Cost | No |
| | | | | | Peddapuram | Yes | Yes | Free of Cost | No |
| | | | | | Vadlamanu | Yes | Yes | Free of Cost | No |
| 4 | | Adi Laxmi Industries | 150 KW | Apr-03 | | | | | |
| 5 | West Godavari | Gouthami Solvents Oils Pvt Ltd | 2.75 MW | Mar, 1996 | Paidipuram | Yes | Yes | Free of Cost | No |
| 6 | | Sri Kalyani Agro Products & Ind | 4 MW | Dec,02 | Opacherla | Yes | Yes | Free of Cost | No |
| | | | | | Kunchnapalli | Yes | Yes | Free of Cost | No |
| 7 | Krishna | Bairaji Agro Oils Ltd | 4.5 MW | Jun-03 | | | | | |
| 8 | | Vajra Agro Products Pvt. Ltd | 4 MW | Jan, 2002 | Enamandala | Yes | Yes | Free of Cost | No |
| | | | | | Nekkalam | Yes | Yes | Free of Cost | No |
| 9 | Krishna | Roshini Power Tech Ltd. | 6 MW | Aug, 2001 | Agripalli | Yes | Yes | Free of Cost | No |
| | | | | | Kothapalli | Yes | Yes | Free of Cost | 2 hour |
| | | | | | Edara | Yes | Yes | Free of Cost | 1 Hour |
| | | | | | Kotha edara | Yes | Yes | Free of Cost | No |
| | | | | | Ayyanki | Yes | Yes | Free of Cost | No |
| 10 | | Venuriah Non-Conventional Power Projects Ltd. | 4 MW | Oct, 2002 | Nidamole | Yes | Yes | Free of Cost | No |
| 11 | | HCL Agro Power Ltd | 6 MW | Oct, 2000 | Kurameddalli | Yes | Yes | Free of Cost | No |
| 12 | Guntur | Saryakala Power Projects Pvt L | 4 MW | Oct, 2002 | Ganguru | Yes | Yes | Free of Cost | No |
| | | | | | Eedara | Yes | Yes | Free of Cost | No |
| | | | | | Vadlamanu | Yes | Yes | Free of Cost | No |
| 13 | Guntur | Jocil Limited | 6 MW | Mar, 2001 | Rajapeta | Yes | Yes | Free of Cost | No |
| | | | | | Lingaraopalem | Yes | Yes | Free of cost | No |
| | | | | | Dokkiparu | Yes | Yes | Free of cost | No |
| 14 | Guntur | KAIS Power Pvt. Ltd. | 6 MW | July, 2002 | Yedlapadu | Yes | Yes | Free of Cost | No |
| 15 | | Matrix Power(P) Ltd | 4.5 MW | Aug, 2001 | Oppicherla | Yes | Yes | Free of Cost | No |
| | | | | | Jangamshesh puram | Yes | Yes | Free of Cost | No |
| 16 | Prakasam | Auri Gold Projects Ltd | 6 MW | July, 2003 | Dargi | Yes | Yes | Free of Cost | No |
| | | | | | Dayada | Yes | Yes | Free of Cost | No |
| | | | | | Kammampadu | Yes | Yes | Free of Cost | No |
| 17 | Prakasam | Jyothi Bio-Energy Ltd. | 4.5 MW | Nov, 2000 | Hasanapuram | Yes | Yes | Free of Cost | No |
| | | | | | Basireddypalli | Yes | Yes | Free of Cost | No |
| | | | | | Vumanapalli | Yes | Yes | Free of Cost | No |
| | | | | | Nandanavenam | Yes | Yes | Free of Cost | No |
| | | | | | Darsi | Yes | Yes | Free of Cost | No |
| | | | | | Yedugundlapadu | Yes | Yes | Free of Cost | No |
| 18 | | | | | Vemulappadu | Yes | Yes | Free of Cost | No |
| | | | | | Eethamokhata | Yes | Yes | Rs.20/ per 10 kgs | No |
| | | | | | Velluru | Yes | Yes | Yes | No |

Question: How much does a head load weigh?

Answer: Man : may be 40-50 kilos.

Question: Any increase in price after the power plant has come up ?

Answer: Man: I do not think there was an increase – there are a number of young men who do this work as they have little or no land or jobs in town.

Field investigators: Thank you and sorry for disturbing your work.

Response: Namasthe – please write about us

All the four women were labourers . one of the men owned that land of 3 acres but he also works in others field. The second man is bullock cart owner and only does transporting , tilling/puddling besides cultivating paddy in one acre of land. Thus essentially there were 4 labourers and one small farmer and one small farmer/transporter