एम.पी. स्टेट को-ऑपरेटिव डेयरी फेडरेशन लिमिटेड
दुग्ध भवन, दुग्ध मार्ग, हबीबगंज, भोपाल -462024
(मध्य प्रदेश सहकारी सोसायटी अधिनियम 1960 के अधीन पंजीकृत)

सन्दर्भ/Ref. 1990 /एमपीसीडीएफ/क्षे.सं./22

Date ..... दिनांक– 20 /06/2022

प्रति,

मुख्य कार्यपालन अधिकारी,
सहकारी दुग्ध संघ मर्यादित,
भोपाल/इन्दौर/उज्जैन/ग्वालियर/जबलपुर/बुन्देलखण्ड ।

—

विषय– बायोगैस संयंत्र की स्थापना हेतु विस्तृत परियोजना प्रतिवेदन बाबत्।

—

विषयान्तर्गत दुग्ध संघों/पशु आहार संयंत्रों में 10 टन क्षमता के बायोगैस संयंत्र की स्थापना हेतु विस्तृत परियोजना प्रतिवेदन का प्रारूप संलग्न है।

उक्त परिप्रेक्ष्य में निर्देशित किया जाता है कि परियोजना प्रतिवेदन प्रारूप का गुण–दोष के आधार पर परीक्षण कर अंतिम विस्तृत परियोजना प्रतिवेदन अभिमत/अनुशंसाओं सहित दिनांक 30/06/2022 तक प्रेषित करें।

संलग्न– यथोपरि।

प्रबंध संचालक

MP State Co-Operative Dairy Federation Ltd. Dugdha Bhawan, Dugdha Marg. Habibganj, Bhopal-46 20 24
Tel : 0755-2602145, 2601517 E-mail : hompodf@nic.in
www.sanchidairy.com
GST No. 23AAAAM0306Q2ZR

1. Project Background

Milk production is a major pillar of rural economy of India. The cattle and buffaloes not only produce milk but also produce dung on a daily basis. For a milk producer, there are several avenues to sell the milk such as to dairy cooperatives or in informal market. However, the avenues to sell and earn from the dung is limited. Cattle and buffalo dung has several well-known usage such as in cooking and as fertilizer. But the dung has never been treated as a commodity to be sold for regular income.

Propagation of biogas plants across the country had the potential to make efficient use of dung to convert it in to a clean cooking fuel and produce nutrient rich bio slurry for usage in Agriculture fields. But due to limitations of technology, challenges in implementation, the initiative still has not been taken off as expected. Farmers also do not opt for biogas much as they generally value monetary earnings more than the non-monetary savings.

Jabalpur milk union along with the collaboration with Municipal Corporation Jabalpur under the smart city program is installing a bio CNG plant with cow dung handling capacity is 150 MT per day. Bio CNG plant with Jabalpur is listed under Smart City Project, as a part of clean city initiative, the Jabalpur Municipal *Corporation* plans to procure the dung from large dairy farms by Jabalpur Milk Union to produce Bio-CNG. The Bio-CNG generated is proposed to be primarily supplied to the vehicles of Jabalpur Municipal Corporation. In case of any surplus, the surplus Bio-CNG is planned to be sold in the open market.

2. Scope of work

Based on the availability of the cow dung a 10 MT per day cow dung handling capacity bio gas plant can be set up at Cattle feed plant of MPCDF affiliated Milk union. A biogas plant of 500 cubic meter capacity is proposed to be setup. This biogas will be purified and to produce purified Bio- Gas . At full capacity, it will generate about 180-200 kg (280 cubic meter) purified Bio-Gas per day.

The proposed plant will use about 10 MT of dung per day which shall be aggregated from minimum 2.5 -3.5 thousand dairy animals *(at about 4-5 kg per animal)* within radius of about 10-15 Km of the cattle feed plant. The purified bio gas can be used as fuel for boilers in cattle feed pant, if compressed these gas can be used as fuel in vehicles, can be sold, or can be given in dairy chilling centers where hot water generators can be used for cleaning etc. The bio slurry produced from the biogas plant shall be separated in to solid and liquid parts through a screw press. The liquid portion shall primarily be recycled in Biogas plant and some portion shall be given away as liquid organic fertilizer to farmer as per demand.

About 2 tons of (organic manure) OM is expected to be produced on daily basis which shall be sold at very reasonable rates covering cost of operations and ensuring long term viability. Large scale propagation of organic fertilizers is expected to reduce dependency on chemical fertilizers and improve soil health in the region.

Approximately 18 MT of liquid fertilizer will be produced per day which can be sold out to the farmers @ of 0.5 Rs /liters these liquid

fertilizer which will defiantly improve the health of the soil.

3. Project implementation

The plant will be owned by the Cattle feed plant of milk Union .....

The milk union shall arrange the funds to implement the project from ..... A tentative financial outlay of the project is provided at **Annexure-I.**

It is expected that the project running at full capacity can lead to net savings of about Rs 5.9 lakh per year . The tentative cost benefit details are attached at **Annexure-I.**

4. Project benefits fulfilling multiple objectives

Milk unions along with the dairy activities such as milk collection will give additional income to milk producers by collecting their cow dung. Based on the cow dung provided payment to the farmers will be done as per the current model. This will substantially increase the farmer's income with many other benefits as below

a. Smart City Project and Swacch Bharat Mission

The project shall help achieve the objectives of Smart City Project on the aspects of cleaner and greener city and also indirectly contribute to the objectives of Swacch Bharat Mission (Rural area).

b. Doubling of farmer income

Farmers shall be able to avail dung based organic fertilizer at reasonable costs leading to savings on their input costs for agriculture and also improvement in soil health.

c. India's commitment towards environmental protection

Methane, a Green House Gas, is naturally released from dung in the environment. However, the methane gas would be captured for energy generation under the proposed project and hence its release into the environment would be reduced and in turn, would contribute to India's commitment towards environmental protection.

d. Make in India initiative through energy security and fertilizer use

This project would lead to not only the generation of power and steam for captive usage but also large scale production of organic fertilizers. Therefore, this project has the potential to help reduce the dependency on fossil fuels and chemical fertilizers. This project would be a step forward towards self- reliance in the field of energy and fertilizers.

In all, to assess the viability of the project, all above benefits are also to be taken into account along-with economic viability.

5. Cost analysis of the project with CAPEX & OPEX

Annexure I

CAPEX 10 MT PER DAY BIO GAS PLANT	
Work	**Rupees**
Civil Work	15,000,000.00
Mechanical work	19,500,000.00
Total	34,500,000.00

Input cost

Particulars	Quantity (Rs)	Unit Rate (Rs)	Daily in Rs	Month (30 days) in Rs
Cow-dung (Raw material)	10,000	0.5	5,000	150000
Transportation	5 trips	1500	7500	225000
Electricity	600	8.5	5100	153000
Man-Power (5 S + 10 US)			10,000	336400
Interest and depreciation		9 % each	8,625	258,750
Total			36,225	1,123,150

Revenue Generation

Particulars	Yield in (KG/liter)	Per unit price Rs	Daily Revenue Rs	Yearly (365 days) (Rs)
BioCNG	180	50	9000	3285000
Solid fertilizer	2000	10	20000	7300000
Liquid fertilizer	17500	0.5	8750	3193750
Total (Rs)				13778750
Total Revenue/Yr	13778750			
Operating Cost/Yr	13179000			
Net Profit/Yr	599750			