PROJECT PROPOSAL FOR BANK LOAN

OF

SOLAR POWERED BULK MILK CHILLER

1. BACKGROUND OF THE APPLICANT

_____ is from _____. With good market linkage, they are looking to start the **Bulk Milk Chiller** business. Requesting a loan of **Rs. 16,23,000/- for 5 years.**

2. BACKGROUND OF THE SOLUTION

A significant number of households rely on dairy farming as a supplementary source of income. However, challenges arise in maintaining milk quality due to lack of proper chilling facilities. Traditional methods often lead to spoilage and reduced shelf life, impacting the income of dairy farmers. Bulk milk chillers are used for collecting milk at community level. With bulk milk chiller, milk cools from 35 C to 4 C. It also ensures that the milk remains within the desired temperature (4degC) till the milk tank arrives for bulk collection. Traditional chilling methods are inefficient and unreliable, resulting in compromised milk quality and financial losses for farmers. By utilizing solar-powered bulk milk chillers, dairy farmers can rapidly cool large quantities of milk to optimal storage temperatures, preserving freshness and extending shelf life. As a result, the adoption of bulk milk chillers not only enhances milk quality but also contributes to increased income and sustainability for rural dairy farming communities.

3. OPPORTUNITIES

- Innovative cooling technologies can offer quick milk chilling, improving milk quality and safety standards in remote areas.
- By developing efficient cooling solutions, milk preservation can be optimized, reducing operational costs.
- Shifting to renewable energy sources can lower cooling costs and promote sustainability in milk chilling processes, benefiting both producers and consumers.
- Exploring alternatives to diesel generators can pave the way for cleaner and more cost-effective milk chilling methods, driving positive change in dairy operations.

4. SOLUTIONS (SOLAR + TECH)

The solution has a 1.7kW DRE-led Bulk Milk Chiller with a storage capacity of 1000 liters per day. The solutions can be customized and applicable to fixed sellers.

4.1 Solar Technical Design

Load details:

S.no	Description	Load	Nos	Hours
1	Bulk Milk Chiller	1.7kW	1	6
2	LED Light	10W	2	3

Solar System Bill of Materials:

Sl No.	Material	Capacity	Quantity
1	Solar Module	250 Wp, 24 V	1
2	Solar battery	180 Ah, 12 V	1
3	Bulk Milk Chiller	1.7kW	1
4	LED Light	10 W, 230 Vac.	2

5. Business Model

The Bulk Milk Chiller business model aims to address challenges related to inconsistent cooling, ensuring optimal milk preservation and quality. By adopting solar-powered cooling solution, it not only enhances milk quality but also creates economic opportunities for underserved populations.

5.1 Customer Details

Sl. No	Name of the customer	Contact Number	Location	Roti variety purchased	Order Volume

5.2 Revenue Model

Particulars	Details
Customer Segment	• Dairy Farmers • Agricultural Cooperatives • Rural Milk Collection Centres • Dairy Processing Units
Products Sold	• Milk
Selling Price	• ₹ 50 per Liter

5.3 Vendor Details

Sl. No	Name of the vendor	Contact Number	Location (Address/Region)	Distance from the unit (in KMs)	Receipts

5. FINANCIAL DETAILS OF THE PROJECT

Table 6.1: Project Cost

Capital Costs	Amount (₹)
Machine + Solar Cost	₹1,623,000
Other Costs	₹0
Total Capital Cost	**₹1,623,000**

Table 6.2 Contribution Margin

Source of Fund	Amount	Percentage
End User Contribution	₹0	0.00%

Gap finance	₹0	0.00%
Loan	₹1,623,000	100.00%
Total	**₹1,623,000**	**100.00%**

Table 6.3: Forecasted Revenue, Expenses, and Profit during a year:

Sr. No.	Particulars	Year 1	Year 2	Year 3	Year 4	Year 5
1	**Revenue**					
a	Quantity (Liters)	282,240	287,885	293,642	299,515	305,506
b	Selling Price (₹/L)	₹ 50	₹ 50	₹ 50	₹ 50	₹ 50
	Total Revenue	**₹ 14,112,000**	**₹ 14,394,240**	**₹ 14,682,125**	**₹ 14,975,767**	**₹ 15,275,283**
2	**Expenses**					
	Human Resource	₹ 300,000	₹ 300,000	₹ 300,000	₹ 300,000	₹ 300,000
	Rent and Maintenance	₹ 120,000	₹ 120,000	₹ 120,000	₹ 120,000	₹ 120,000
	Raw Material (Cow Milk)	₹ 10,368,000	₹ 10,368,000	₹ 10,368,000	₹ 10,368,000	₹ 10,368,000
	Electricity	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0
	Transport	₹ 1,411,200	₹ 1,411,200	₹ 1,411,200	₹ 1,411,200	₹ 1,411,200
	Packaging	₹ 508,032	₹ 508,032	₹ 508,032	₹ 508,032	₹ 508,032
	Other Expenses	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0
	Total Expenses	**₹ 12,707,232**	**₹ 12,707,232**	**₹ 12,707,232**	**₹ 12,707,232**	**₹ 12,707,232**
3	**Operating Profit/ (Loss) - Before EMI**	**₹ 1,404,768**	**₹ 1,687,008**	**₹ 1,974,893**	**₹ 2,268,535**	**₹ 2,568,051**
4	EMI	₹ 433,233	₹ 433,233	₹ 433,233	₹ 433,233	₹ 433,233
5	**Net Profit / (Loss)**	**₹ 971,535**	**₹ 1,253,775**	**₹ 1,541,660**	**₹ 1,835,302**	**₹ 2,134,818**

Table 6.4: Breakeven Analysis

Sr. No.	Breakeven Analysis	Output (Litres)	Revenue (₹)

1	At max production (per month)	30,000.0	₹ 1,500,000
2	At breakeven	10,997.6	₹ 549,879

Table 6.5: Loan Details

Loan Financing	
Loan Amount Taken	₹1,623,000
Down Payment	₹0
Interest Rate	12%
No. of Instalments (months)	60
EMI (per month/instalment)	₹ 36,103
Loan Repayment	₹ 2,166,164
Payback Period (months)	13.33

Table 6.6: Financial Ratios

Key Financial Data and Analysis	
ROI per annum	133.01%
NPV	₹ 7,027,204
IRR	8.54%
Benefit-Cost Ratio (BCR)	1.16x