

Solar Bulk Milk Chiller											
Output											
	Discount Rate (NPV)	7%									
Sr. No.	Key Financial Data and Analysis				Capital Costs	Amount (₹)		Loan Financing			
1	System design (Liters/day)		1,000.0		Machine + Solar	₹16,23,000		Loan Amount Taken		₹12,98,400	
2	Utilization		80%		Other costs	₹0		Down Payment		₹3,24,600	
3	ROI per annum		-686.05%		Total Capital Cos	₹16,23,000		Interest Rate		12%	
4	NPV		-₹ 4,67,51,573					No. of Installments (months)		60	
5	IRR		#NUM!					EMI (per month/installment)		₹ 28,882	
6	Benefit-Cost Ratio (BCR)		0.00x					Loan Repayment (incl. interest)		₹ 17,32,931	
								Payback Period (months)		0.00	
Sr. No.	Particulars	Year 1	Year 2	Year 3	Year 4	Year 5					
1	Revenue										
a	Quantity (Liters)	0	0	0	0	0					
b	Selling Price (₹/L)	₹ 50	₹ 50	₹ 50	₹ 50	₹ 50					
	Total Revenue	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0					
2	Expenses										
	Human Resource	₹ 3,00,000	₹ 3,00,000	₹ 3,00,000	₹ 3,00,000	₹ 3,00,000					
	Rent and Maintenance	₹ 1,20,000	₹ 1,20,000	₹ 1,20,000	₹ 1,20,000	₹ 1,20,000					
	Raw Material (Cow Milk)	₹ 1,03,68,000	₹ 1,03,68,000	₹ 1,03,68,000	₹ 1,03,68,000	₹ 1,03,68,000					
	Electricity	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0					
	Transport	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0					
	Packaging	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0					
	Other Expenses	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0					
	Total Expenses	₹ 1,07,88,000	₹ 1,07,88,000	₹ 1,07,88,000	₹ 1,07,88,000	₹ 1,07,88,000					
3	Operating Profit/ (Loss) - Before EMI	-₹ 1,07,88,000	-₹ 1,07,88,000	-₹ 1,07,88,000	-₹ 1,07,88,000	-₹ 1,07,88,000					
4	EMI	₹ 3,46,586	₹ 3,46,586	₹ 3,46,586	₹ 3,46,586	₹ 3,46,586					
5	Net Profit / (Loss)	-₹ 1,11,34,586	-₹ 1,11,34,586	-₹ 1,11,34,586	-₹ 1,11,34,586	-₹ 1,11,34,586					
6	Debt Service Coverage Ratio (DSCR)	-31.13x	-31.13x	-31.13x	-31.13x	-31.13x					

Solar Bulk Milk Chiller							
Output							
Sr. No.	Particulars	Monthly	Yearly		Capital Costs	Amount (₹)	
1	Revenue				Machine + Solar Cost	₹16,23,000	
a	Quantity (Liters)	0.0	0.0		Other Costs (Installation cost including GST)	₹0	
b	Selling Price (₹/L)	₹ 50			Total Capital Cost	₹16,23,000	
	Total Revenue	₹ 0	₹ 0				
2	Expenses						
	Human Resource	₹ 25,000			Loan Financing		
	Rent and Maintenance	₹ 10,000			Loan Amount Taken	₹12,98,400	
	Raw Material (Cow Milk)	₹ 8,64,000			Down Payment	₹3,24,600	
	Electricity	₹ 0			Interest Rate	12%	
	Transport	₹ 0			No. of Installments (months)	60	
	Packaging	₹ 0			EMI (per month/installment)	₹ 28,882	
	Other Expenses	₹ 0			Loan Repayment	₹ 17,32,931	
	Total Expenses	₹ 8,99,000	₹ 1,07,88,000		Payback Period (months)	0.00	
3	Operating Profit/ (Loss) - Before EMI	-₹ 8,99,000	-₹ 1,07,88,000				
4	EMI	₹ 28,882	₹ 3,46,586				
5	Net Profit / (Loss)	-₹ 9,27,882	-₹ 1,11,34,586				
Sr. No.	Breakeven Analysis	Output (Liters)	Revenue (₹)				
1	At max production (per month)	30,000.0	₹ 15,00,000				
2	At breakeven	#DIV/0!	#DIV/0!				

### Frequency of raw material costs

12 time(s) every year

Sr. No.	Particulars	Monthly	Yearly
1	Raw Material	₹8,64,000	
2	Other Expenses (including EMI)	₹63,882	
	<b>Total Expenses</b>	<b>₹9,27,882</b>	<b>₹1,11,34,586</b>
	<b>Working Capital</b>	<b>₹9,27,882</b>	<b>₹1,11,34,586</b>

Note: This is only taking year 1 numbers

### Frequency

Daily 365

Fortnightly 24

Monthly	12
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Quarterly	4
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Semi-annually	2
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Yearly	1
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## Instructions

Sr. No.	Color	Meaning
1		Only edits cells that have this background color (Input cells)
2		Should not contain any values (Not Applicable - NA)
3		Values that an user would focus on (adds emphasis)
4	Blue	Values hardcoded (input cells)
5	Black	Values calculated in the cell
6	Green	Values that have been pulled from another cell where data has been inputted or calculated
7	Red	Comments in specific areas to help users use this model or get additional context on the business
8	Pink	Value assumed to be the same as the previous period



Solar Bulk Milk Chiller

Inputs

**NOTE:** Only fill cells that have this color in the cell and where the text color is blue

Sr. No.	Utilization and Revenue	Y1	Y2	Y3	Y4	Y5
1	System design (Liters/day)	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0
2	Utilization	80.0%	80.0%	80.0%	80.0%	80.0%
3	Working Days per Month	30.0	30.0	30.0	30.0	30.0
4	Working Months per Year (Cyclicality)	12.0	12.0	12.0	12.0	12.0

Case	Average
Utilization	
Best	100%
Average	80%
Worst	60%

Sr. No.	Outputs	Liters/month	Incremental rate in price	Selling Price per Liter	Monthly inflows (Y1)	%age increase in output (YoY)
1	Milk Sold		2.0%	₹50.0	₹0.0	2.0%
		0.0	2.0%	₹50.0	₹0.0	2.0%

<<< 2% wastage in milk

Sr. No.	Particulars	Cost per month	Type	Growth rate or %age of x	Total Cost per annum
1	Human Resource	₹ 25,000	Fixed Cost	0%	₹ 3,00,000
2	Rent and Maintenance	₹ 10,000	Fixed Cost	0%	₹ 1,20,000
3	Raw Material (Cow Milk)	₹ 8,64,000	Variable Cost	0%	₹ 1,03,68,000
4	Electricity	₹ 0	Fixed Cost	0%	₹ 0
5	Transport	₹ 0	Variable Cost	0%	₹ 0
6	Packaging	₹ 0	Variable Cost	0%	₹ 0
7	Other Expenses	₹ 0	Variable Cost	0%	₹ 0

Sr. No.	Capital Costs	Total Cost (₹)
1	Machine + Solar Cost	₹ 16,23,000
2	Other Costs (Installation cost including GST)	₹ 0
3	Furniture and fixtures	₹ 0

Sr. No.	Other Inputs	Total Cost (₹)
1	Desired Profit (for breakeven analysis)	₹ 0
2	Desired EMI	-₹ 89,900
3	NPV Discount Rate	7.0%

Solar Bulk Milk Chiller

Sources of Funds and Viable Financial Products

NOTE: Only fill cells that have this color in the cell and where the text color is blue

Capital Costs	Amount (₹)
Machine cost	₹16,23,000
Other costs	₹0
Total Cost	₹16,23,000
Loan Amount	₹12,98,400

Particulars	Amount (₹)
Total Capital Cost	16,23,000
Loan Amount	12,98,400
Desired EMI	-89,900

Source of Fund	AMOUNT	Percentage
End User Contribution	₹3,24,600	20.00%
Gap finance	₹0	0.00%
Loan	₹12,98,400	80.00%
Total	₹16,23,000	100.00%

Interest Rate	No of instalments	Down payment	EMI	Loan repayment	Interest amt	Capital Cost including finance costs	PV based on desired EMI	Gap Finance Amount
12%	60	3,24,600	₹ 28,882	₹ 17,32,931	₹ 4,34,531	₹ 20,57,531	₹ -40,41,458	₹ 57,74,389

<<< Selected the financial model you wish to go ahead with; only fill cells B13 and C13

Financing Table							
Tenure	Outstanding loan at the beginning	Interest	EMI	Outstanding loan at the end	NPV	Cumulative Cash Flows	Payback
0	-	-	-	-	-₹16,23,000	-₹16,23,000	-
1	₹12,98,400	₹12,984	₹ 28,882	₹12,82,502	-₹8,99,000	-₹25,22,000	-
2	₹12,82,502	₹12,825	₹ 28,882	₹12,66,445	-₹8,99,000	-₹34,21,000	-
3	₹12,66,445	₹12,664	₹ 28,882	₹12,50,227	-₹8,99,000	-₹43,20,000	-
4	₹12,50,227	₹12,502	₹ 28,882	₹12,33,847	-₹8,99,000	-₹52,19,000	-
5	₹12,33,847	₹12,338	₹ 28,882	₹12,17,303	-₹8,99,000	-₹61,18,000	-
6	₹12,17,303	₹12,173	₹ 28,882	₹12,00,594	-₹8,99,000	-₹70,17,000	-
7	₹12,00,594	₹12,006	₹ 28,882	₹11,83,718	-₹8,99,000	-₹79,16,000	-
8	₹11,83,718	₹11,837	₹ 28,882	₹11,66,673	-₹8,99,000	-₹88,15,000	-
9	₹11,66,673	₹11,667	₹ 28,882	₹11,49,457	-₹8,99,000	-₹97,14,000	-
10	₹11,49,457	₹11,495	₹ 28,882	₹11,32,070	-₹8,99,000	-₹1,06,13,000	-
11	₹11,32,070	₹11,321	₹ 28,882	₹11,14,508	-₹8,99,000	-₹1,15,12,000	-
12	₹11,14,508	₹11,145	₹ 28,882	₹10,96,771	₹ -8,99,000	-₹1,24,11,000	-
13	₹10,96,771	₹10,968	₹ 28,882	₹10,78,857	₹ -8,99,000	-₹1,33,10,000	-
14	₹10,78,857	₹10,789	₹ 28,882	₹10,60,763	₹ -8,99,000	-₹1,42,09,000	-
15	₹10,60,763	₹10,608	₹ 28,882	₹10,42,488	₹ -8,99,000	-₹1,51,08,000	-
16	₹10,42,488	₹10,425	₹ 28,882	₹10,24,031	₹ -8,99,000	-₹1,60,07,000	-
17	₹10,24,031	₹10,240	₹ 28,882	₹10,05,389	₹ -8,99,000	-₹1,69,06,000	-
18	₹10,05,389	₹10,054	₹ 28,882	₹9,86,561	₹ -8,99,000	-₹1,78,05,000	-
19	₹9,86,561	₹9,866	₹ 28,882	₹9,67,544	₹ -8,99,000	-₹1,87,04,000	-

20	₹9,67,544	₹9,675	₹ 28,882	₹9,48,338	₹ -8,99,000	-₹1,96,03,000	-
21	₹9,48,338	₹9,483	₹ 28,882	₹9,28,939	₹ -8,99,000	-₹2,05,02,000	-
22	₹9,28,939	₹9,289	₹ 28,882	₹9,09,346	₹ -8,99,000	-₹2,14,01,000	-
23	₹9,09,346	₹9,093	₹ 28,882	₹8,89,557	₹ -8,99,000	-₹2,23,00,000	-
24	₹8,89,557	₹8,896	₹ 28,882	₹8,69,571	₹ -8,99,000	-₹2,31,99,000	-
25	₹8,69,571	₹8,696	₹ 28,882	₹8,49,384	-₹8,99,000	-₹2,40,98,000	-
26	₹8,49,384	₹8,494	₹ 28,882	₹8,28,996	-₹8,99,000	-₹2,49,97,000	-
27	₹8,28,996	₹8,290	₹ 28,882	₹8,08,404	-₹8,99,000	-₹2,58,96,000	-
28	₹8,08,404	₹8,084	₹ 28,882	₹7,87,605	-₹8,99,000	-₹2,67,95,000	-
29	₹7,87,605	₹7,876	₹ 28,882	₹7,66,599	-₹8,99,000	-₹2,76,94,000	-
30	₹7,66,599	₹7,666	₹ 28,882	₹7,45,383	-₹8,99,000	-₹2,85,93,000	-
31	₹7,45,383	₹7,454	₹ 28,882	₹7,23,955	-₹8,99,000	-₹2,94,92,000	-
32	₹7,23,955	₹7,240	₹ 28,882	₹7,02,312	-₹8,99,000	-₹3,03,91,000	-
33	₹7,02,312	₹7,023	₹ 28,882	₹6,80,453	-₹8,99,000	-₹3,12,90,000	-
34	₹6,80,453	₹6,805	₹ 28,882	₹6,58,375	-₹8,99,000	-₹3,21,89,000	-
35	₹6,58,375	₹6,584	₹ 28,882	₹6,36,077	-₹8,99,000	-₹3,30,88,000	-
36	₹6,36,077	₹6,361	₹ 28,882	₹6,13,556	₹ -8,99,000	-₹3,39,87,000	-
37	₹6,13,556	₹6,136	₹ 28,882	₹5,90,809	₹ -8,99,000	-₹3,48,86,000	-
38	₹5,90,809	₹5,908	₹ 28,882	₹5,67,835	₹ -8,99,000	-₹3,57,85,000	-
39	₹5,67,835	₹5,678	₹ 28,882	₹5,44,631	₹ -8,99,000	-₹3,66,84,000	-
40	₹5,44,631	₹5,446	₹ 28,882	₹5,21,195	₹ -8,99,000	-₹3,75,83,000	-
41	₹5,21,195	₹5,212	₹ 28,882	₹4,97,525	₹ -8,99,000	-₹3,84,82,000	-
42	₹4,97,525	₹4,975	₹ 28,882	₹4,73,618	₹ -8,99,000	-₹3,93,81,000	-
43	₹4,73,618	₹4,736	₹ 28,882	₹4,49,472	₹ -8,99,000	-₹4,02,80,000	-
44	₹4,49,472	₹4,495	₹ 28,882	₹4,25,084	₹ -8,99,000	-₹4,11,79,000	-
45	₹4,25,084	₹4,251	₹ 28,882	₹4,00,453	₹ -8,99,000	-₹4,20,78,000	-
46	₹4,00,453	₹4,005	₹ 28,882	₹3,75,575	₹ -8,99,000	-₹4,29,77,000	-
47	₹3,75,575	₹3,756	₹ 28,882	₹3,50,449	₹ -8,99,000	-₹4,38,76,000	-
48	₹3,50,449	₹3,504	₹ 28,882	₹3,25,071	₹ -8,99,000	-₹4,47,75,000	-
49	₹3,25,071	₹3,251	₹ 28,882	₹2,99,440	-₹8,99,000	-₹4,56,74,000	-
50	₹2,99,440	₹2,994	₹ 28,882	₹2,73,552	-₹8,99,000	-₹4,65,73,000	-
51	₹2,73,552	₹2,736	₹ 28,882	₹2,47,405	-₹8,99,000	-₹4,74,72,000	-
52	₹2,47,405	₹2,474	₹ 28,882	₹2,20,997	-₹8,99,000	-₹4,83,71,000	-
53	₹2,20,997	₹2,210	₹ 28,882	₹1,94,325	-₹8,99,000	-₹4,92,70,000	-
54	₹1,94,325	₹1,943	₹ 28,882	₹1,67,386	-₹8,99,000	-₹5,01,69,000	-
55	₹1,67,386	₹1,674	₹ 28,882	₹1,40,178	-₹8,99,000	-₹5,10,68,000	-
56	₹1,40,178	₹1,402	₹ 28,882	₹1,12,697	-₹8,99,000	-₹5,19,67,000	-
57	₹1,12,697	₹1,127	₹ 28,882	₹84,942	-₹8,99,000	-₹5,28,66,000	-
58	₹84,942	₹849	₹ 28,882	₹56,909	-₹8,99,000	-₹5,37,65,000	-



59	₹56,909	₹569	₹ 28,882	₹28,596	-₹8,99,000	-₹5,46,64,000	-
60	₹28,596	₹286	₹ 28,882	₹0	₹ -8,99,000	-₹5,55,63,000	-

Solar Bulk Milk Chiller

Assumptions

Machinery Utilization						
Sr. No.	Utilization and Revenue	Y1	Y2	Y3	Y4	Y5
1	System design (Liters/day)	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0
2	Utilization	80.0%	80.0%	80.0%	80.0%	80.0%
3	Working Days per Month	30.0	30.0	30.0	30.0	30.0
3	Working Months per Year (Cyclicity)	12.0	12.0	12.0	12.0	12.0

Revenue Drivers						
Sr. No.	Particulars	Liters/month	Incremental rate in price	Selling Price per Liter	Monthly inflows (Y1)	%age increase in output (YoY)
1	Milk Sold	0.0	2.0%	₹ 50	₹ 0	2.0%
Total		0.0		₹ 50	₹ 0	

Revenue											
Sr. No.	Particulars	Y1		Y2		Y3		Y4		Y5	
		Per Month	Annual	Per Month	Annual	Per Month	Annual	Per Month	Annual	Per Month	Annual
1	Quantity (Liters)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	Revenue	₹0	₹0	₹0	₹0	₹0	₹0	₹0	₹0	₹0	₹0
	Selling Price (₹/L)	₹50	₹50	₹51	₹51	₹52	₹52	₹53	₹53	₹54	₹54

Cost Drivers					
Sr. No.	Particulars	Type	Total Cost/ Cost per month	Growth rate or %age of x	Total Cost per annum
1	Human Resource	Fixed Cost	₹ 25,000	0%	₹ 3,00,000
2	Rent and Maintenance	Fixed Cost	₹ 10,000	0%	₹ 1,20,000
3	Raw Material (Cow Milk)	Variable Cost	₹ 8,64,000	0%	₹ 1,03,68,000
4	Electricity	Fixed Cost	₹ 0	0%	₹ 0
5	Transport	Variable Cost	₹ 0	0%	₹ 0
6	Packaging	Variable Cost	₹ 0	0%	₹ 0
7	Other Expenses	Variable Cost	₹ 0	0%	₹ 0
TOTAL			₹ 8,99,000		₹ 1,07,88,000

Costs											
Sr. No.	Particulars	Y1		Y2		Y3		Y4		Y5	
		Per Month	Annual	Per Month	Annual	Per Month	Annual	Per Month	Annual	Per Month	Annual
1	Human Resource	₹ 25,000	₹ 3,00,000	₹ 25,000	₹ 3,00,000	₹ 25,000	₹ 3,00,000	₹ 25,000	₹ 3,00,000	₹ 25,000	₹ 3,00,000
2	Rent and Maintenance	₹ 10,000	₹ 1,20,000	₹ 10,000	₹ 1,20,000	₹ 10,000	₹ 1,20,000	₹ 10,000	₹ 1,20,000	₹ 10,000	₹ 1,20,000
3	Raw Material (Cow Milk)	₹ 8,64,000	₹ 1,03,68,000	₹ 8,64,000	₹ 1,03,68,000	₹ 8,64,000	₹ 1,03,68,000	₹ 8,64,000	₹ 1,03,68,000	₹ 8,64,000	₹ 1,03,68,000
4	Electricity	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0
5	Transport	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0
6	Packaging	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0
7	Other Expenses	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0	₹ 0
TOTAL		₹ 8,99,000	₹ 1,07,88,000	₹ 8,99,000	₹ 1,07,88,000	₹ 8,99,000	₹ 1,07,88,000	₹ 8,99,000	₹ 1,07,88,000	₹ 8,99,000	₹ 1,07,88,000

Solar Bulk Milk Chiller

Financial Overview

Sr. No.	Particulars	Y1		Y2		Y3		Y4		Y5	
		Per Month	Annual	Per Month	Annual	Per Month	Annual	Per Month	Annual	Per Month	Annual
1	Revenue	₹0	₹0	₹0	₹0	₹0	₹0	₹0	₹0	₹0	₹0
2	Costs	₹ 8,99,000	₹ 1,07,88,000	₹ 8,99,000	₹ 1,07,88,000	₹ 8,99,000	₹ 1,07,88,000	₹ 8,99,000	₹ 1,07,88,000	₹ 8,99,000	₹ 1,07,88,000
3	Operating Profit / (Loss) - Before EMI	-₹8,99,000	-₹1,07,88,000	-₹8,99,000	-₹1,07,88,000	-₹8,99,000	-₹1,07,88,000	-₹8,99,000	-₹1,07,88,000	-₹8,99,000	-₹1,07,88,000
4	EMI	₹ 28,882	₹ 3,46,586	₹ 28,882	₹ 3,46,586	₹ 28,882	₹ 3,46,586	₹ 28,882	₹ 3,46,586	₹ 28,882	₹ 3,46,586
5	Net Profit / (Loss)	-₹9,27,882	-₹1,11,34,586	-₹9,27,882	-₹1,11,34,586	-₹9,27,882	-₹1,11,34,586	-₹9,27,882	-₹1,11,34,586	-₹9,27,882	-₹1,11,34,586
6	ROI per annum		-686.05%		-686.05%		-686.05%		-686.05%		-686.05%
7	Debt Service Coverage Ratio (DSCR)	-31.13x		-31.13x		-31.13x		-31.13x		-31.13x	

Discount Rate	7%
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Sr. No.	Key Financial Data and Analysis	
1	End User Contribution (Downpayment)	₹3,24,600
2	Initial Loan (Loan Taken)	₹12,98,400
3	Average Quantity Sold per Year	0
4	EMI	₹ 28,882
5	Loan Repayment	₹ 17,32,931
6	Total Interest on Loan	₹ 4,34,531
7	No. of Installments (months)	60
8	Payback Period (months)	0.0
9	ROI per annum	-686.05%
10	NPV	-₹4,67,51,573
11	IRR	#NUM!
12	Average annual profit for entrepreneur	-₹1,11,34,586
13	Benefit-Cost Ratio (BCR)	0.00x

## Tailoring - Industrial Solar Bulk Milk Chiller

### Breakeven Analysis

Sr. No.	Particulars	Type	₹ per month
1	Human Resource	Fixed Cost	₹ 25,000
2	Rent and Maintenance	Fixed Cost	₹ 10,000
3	Raw Material (Cow Milk)	Variable Cost	₹ 8,64,000
4	Electricity	Fixed Cost	₹ 0
5	Transport	Variable Cost	₹ 0
6	Packaging	Variable Cost	₹ 0
7	Other Expenses	Variable Cost	₹ 0
8	EMI	Fixed Cost	₹ 28,882
9	<b>Total Cash Costs</b>		<b>₹ 9,27,882</b>
10	Revenue		₹0
11	Variable Cost		₹8,64,000
12	Balance (Revenue - Variable Cost)		-₹8,64,000
13	Margin (%)		#DIV/0!
14	Fixed Cost		₹63,882
15	Desired Profit		₹0
16	Total Contribution		₹63,882
17	Breakeven Cash Revenue		#DIV/0!
18	Price per unit		₹ 50
19	<b>Breakeven Output</b>		<b>#DIV/0!</b>

	Bookends	Output (Liters)	Revenue (₹)
1	At max production (per month)	30,000.0	₹15,00,000
2	At breakeven	#DIV/0!	#DIV/0!

