KCMMF Ltd.
CENTRAL PRODUCTS DAIRY
ALLEPPEY
WELCOME TO THE PRESENTATION OF TOTAL ENERGY MANAGEMENT
GENERAL INFORMATION

- Started in 1974, Capacity: 2000 LPD
- Expanded to: 60,000 LPD on Dec 1987
- Aseptic Packing station commissioned on Dec 1988
- Milk Powder Factory commissioned on Sep 1996
- Capacity enhanced to 1,00,000 LPD in 2005
PRODUCTS HANDLED

- TONED MILK
- DOUBLE TONED MILK
- CURD
- GHEE in 2 Brands
- PEDA
- STERILIZED FLAVOURED MILK
- MANGO DRINK in Tetra packs & Pet Bottles.
- DAIRY WHITENER
AVERAGE MILK HANDLED
2009

Av. Milk Handled (Lts per day)
PRODUCTION DETAILS
MILMA PLUS 2009

![Bar Chart]

- **JAN**
- **MAR**
- **MAY**
- **JUL**
- **SEP**
- **NOV**

**BOTTLES**
PRODUCTION DETAILS
MILMA MANGO 2009

<table>
<thead>
<tr>
<th>Month</th>
<th>TRAYS</th>
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<tbody>
<tr>
<td>APR</td>
<td>5000</td>
</tr>
<tr>
<td>MAY</td>
<td>5000</td>
</tr>
<tr>
<td>JUN</td>
<td>1000</td>
</tr>
<tr>
<td>JUL</td>
<td>1500</td>
</tr>
<tr>
<td>AUG</td>
<td>3000</td>
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<td>SEP</td>
<td>2500</td>
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ENERGY CONSUMPTION DETAILS FURNACE OIL (2009)
ENERGY CONSUMPTION DETAILS POWER (2009)
ENERGY EXPENSE DETAILS
POWER (2009)

- JAN
- MAR
- MAY
- JUL
- SEP
- NOV

Rs

[Bar chart showing energy expenses for different months in 2009]
UNIT COST-, FURNACE OIL, ELC

FURNACE OIL (Rs)
ELC (Rs)
3-D Column 3

JAN. MAR. MAY. JULY. SEP. NOV.
PRODUCTION COMPARISON MILK
PRODUCTION COMPARISON

GHEE

<table>
<thead>
<tr>
<th>Year</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
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<tbody>
<tr>
<td>KGS</td>
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</table>
PRODUCTION COMPARISON CURD

![Bar chart showing production comparison for CURD from 2007 to 2009. The chart displays the number of packets produced each year, with a significant increase from 2008 to 2009.](chart)

- 2007: [Number of packets]
- 2008: [Number of packets]
- 2009: [Number of packets]
PRODUCTION COMPARISON
MILMA PLUS

BOTTLES

2007 - 2008 - 2009
ENERGY CONSUMPTION

ELECTRICITY
ENERGY EXPENSE DETAILS

ELECTRICITY

- 2007: 4500000
- 2008: 4200000
- 2009: 4800000

Y-axis: 0, 500000, 1000000, 1500000, 2000000, 2500000, 3000000, 3500000, 4000000, 4500000, 5000000

ENERGY EXPENSE DETAILS

FURNACE OIL

- 2007
- 2008
- 2009

- 0
- 50000
- 100000
- 150000
- 200000
- 250000

2007 2008 2009
Energy Saving activities undertaken

- We have replaced 4 sachet filling machines with mechanical filling machines.
- Only one Ammonia Compressor is being used in dairy
- The Head cooling water from Air Compressor diverted to Boiler feed & sump of Ammonia Condenser
30 T capacity refrigeration plant of MPF is not being operated in this flush season due to sufficient ice obtained from our Dairy refrigeration plant for MPF use also. This was achieved by maintaining 100% efficiency in the Dairy refrigeration plant after some modification.
SAVINGS

- The temperature of Pasteurization was reduced from 79°C to 78°C.
- It will be further reduced to 77°C in the next phase.
- Installation of 4 mechanical filling machines has saved Rs. 2000 per day in power cost.
- Due to non-operation of 2nd Compressor, the energy cost saved Rs. 40,000/month & non-operation of MPF refrigeration plant during flush season 15 KWH energy saved every operational day.
(A) Boiler

1. Installation of new Water Pump and Furnace oil Pump
2. Replacing the insulations of Boiler and Connected steam line
3. Installation of flow meter for oil and feed water
(B) STEAM LINES
1. providing Insulations on identified Area
2. Replace Steam traps with Good quality Steam traps.

(C) GHEE Vat.
Replace Thermo dynamic steam trap with Ball float steam trap.

(D) REFRIGERATION
Providing separate Energy meter to the Ref: plant to monitor the Power consumption
ENERGY SAVING OPPORTUNITIES

WITHOUT INVESTMENT

(A) BOILER

Utilization of head cooling water from Air compressor in feed water (48 °C)
Energy Mngmt Committee

- K P Rajan – Manager & Chairman
- V Unnikrishnan – A.M(P&M) & Energy Manager
- V.S. Murukan- QCO
- Rajive Zachariah – Asst. Manager
- K Raveendran – Refgn Mechanic
- C S Chandralal – Boiler Operator
Energy Mngmt Committee

- V Unnikrishnan – Electrician
- Satheesan – Fitter
- K C Joseph – Plant Operator
- V K Manoharan – Plant attender
Proposed Investments

- Lightings to be changed to CFL.
- Continuous ghee packing machine to be purchased saving up to 80 labour hours daily
- Pasteurizer plant to be replaced with a higher Capacity including Homogenizer.
THANKS