

HERITAGE FOODS LTD
UNIT: BANGALORE



TEAM:

G.HARI BABU – Sr.DGM-Opr

C.KARTHIK –A.M(Maintenance)

G.NANDA KUMAR-DM(Production)





- **VISION:** Delighting Every Home with Fresh and Healthy Products and Empowering the Farmer.

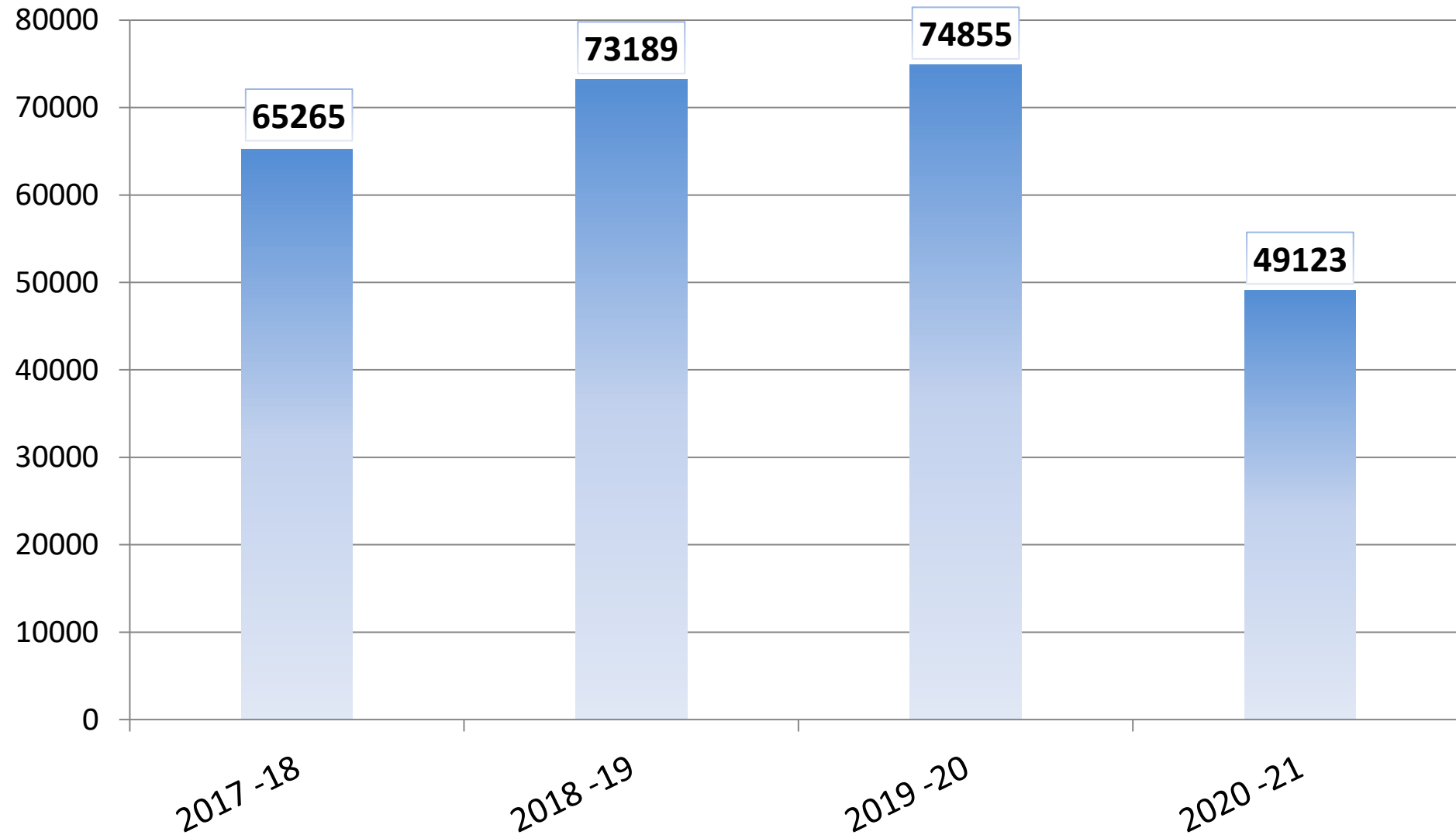
- **FOOD SAFETY POLICY:** We are committed to Procure, Process & Supply Safe and Wholesome Milk & Milk Products to Our Valued Customers.

- **Plant Capacity** : 2,00,000 Liters/Day
- **Product wise Capacities** : Milk 1,50,000 Ltrs/day,
: Curd 50,000 Ltrs /day
- **Peak Handling**
Quantities – Avg. / LPD : 2,10,000 (March 2019)

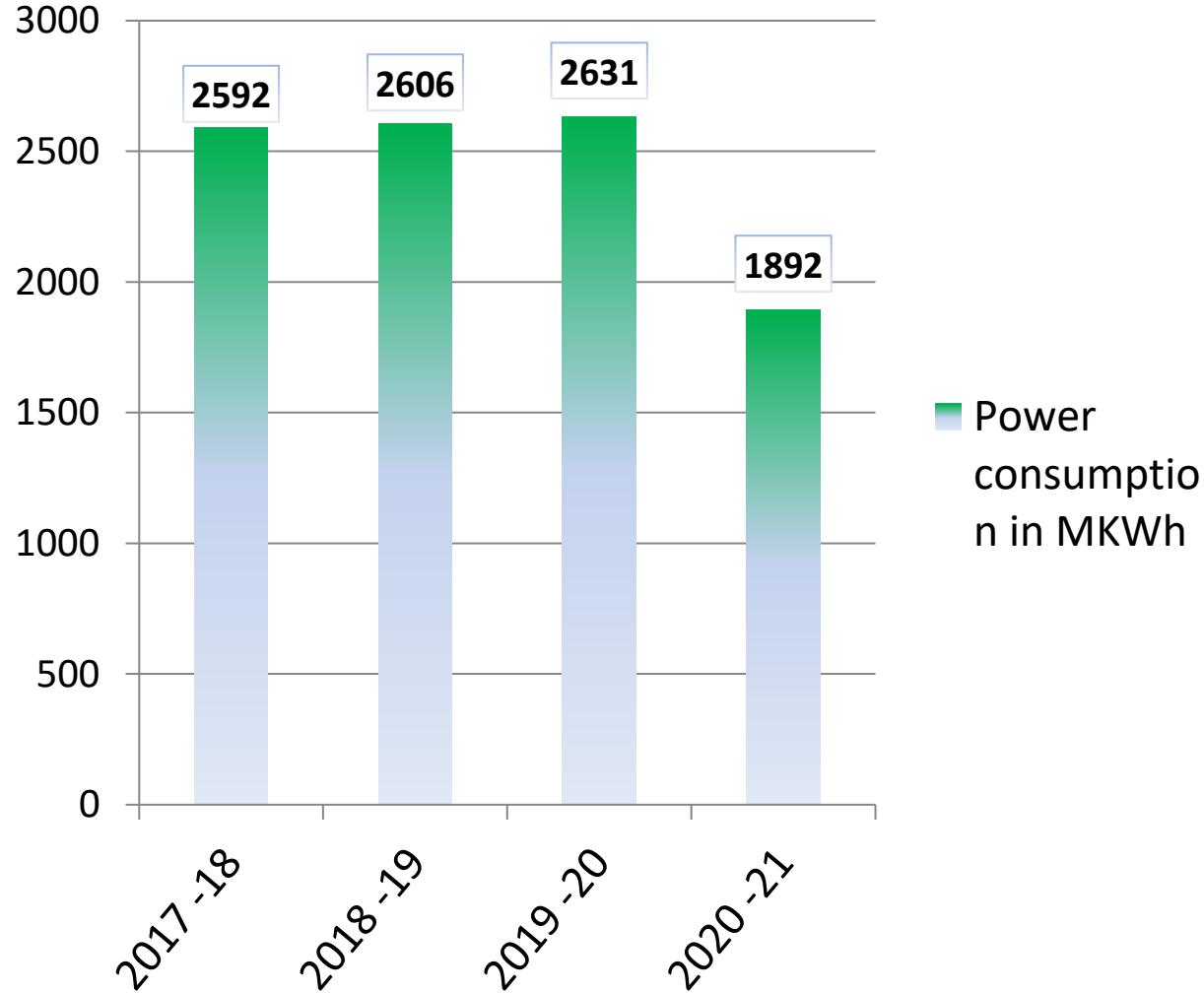
- **Direct Employees : 93 Nos.**
- **Indirect Employees: 94 Nos.**



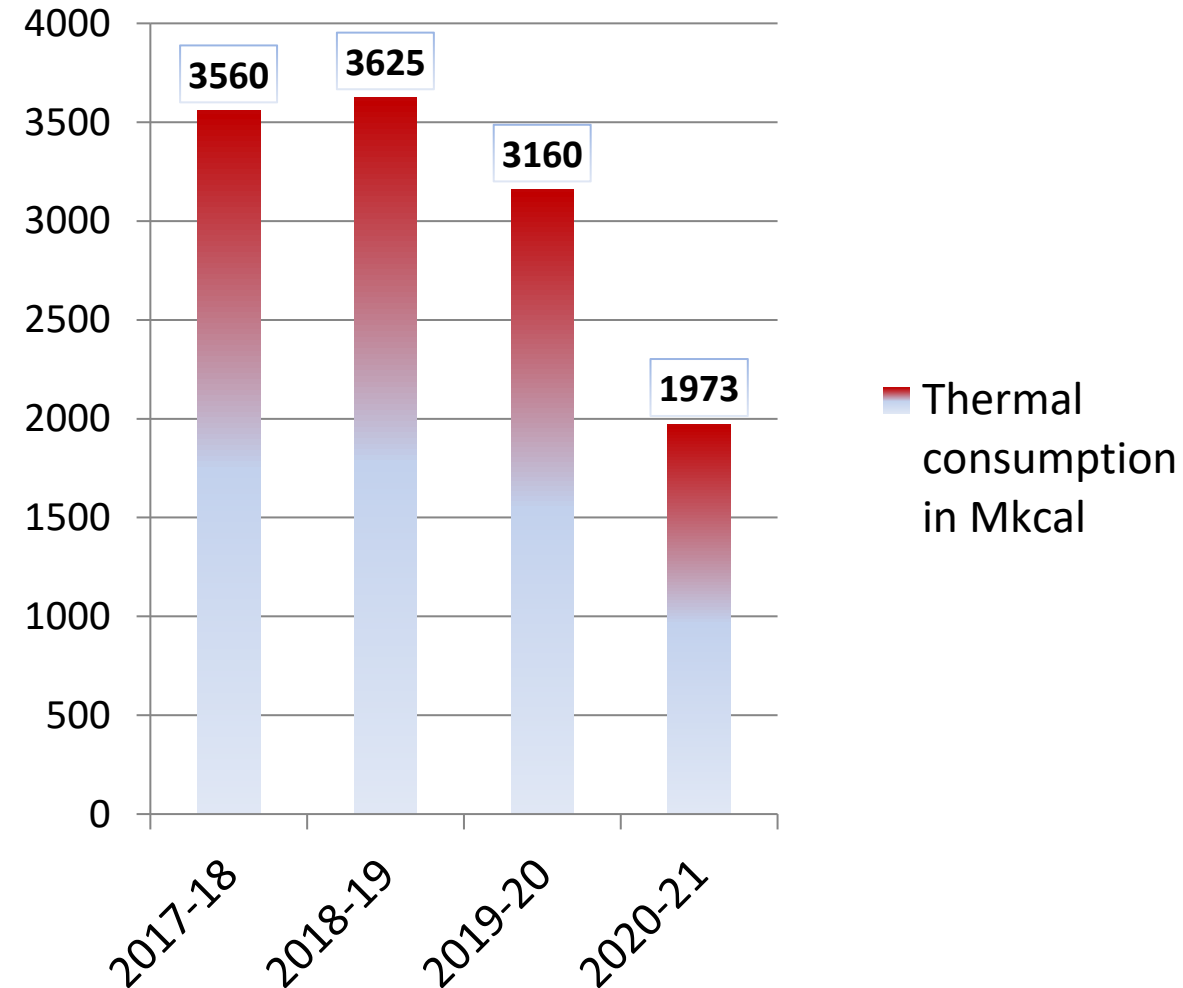
MILK HANDLED in '000 litres

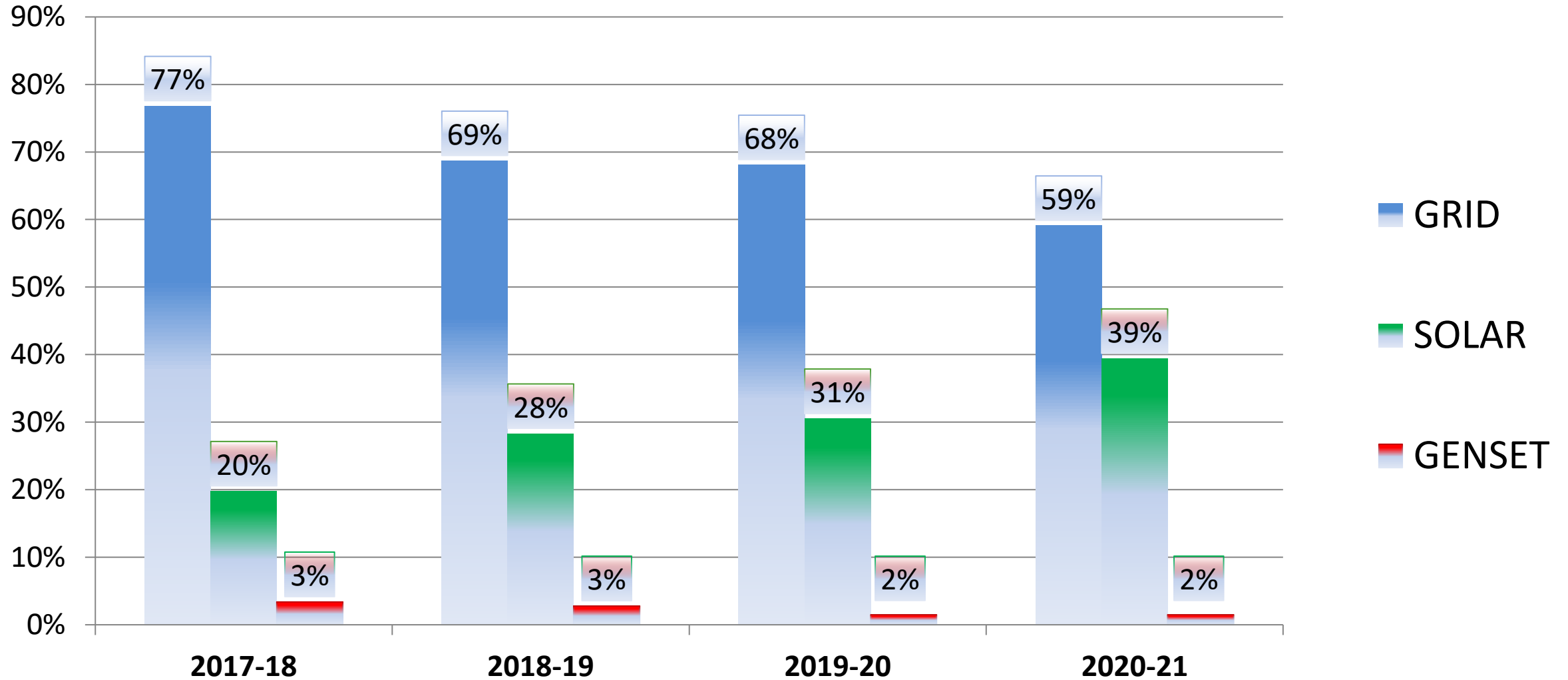


Electricity consumption in MKWh



Thermal consumption in MKcal





PARTICULARS	UOM	FY17-18	FY18-19	FY19-20	FY20-21
MILK HANDLED	Tons	65265	73189	74855	49123
ELECTRICAL POWER CONSUMED	MKWh	2592	2606	2631	1892
Specific Energy Consumption	Tons/ MKWh	25.2	28.1	28.5	26.0
Thermal Energy Consumption	MKcal	3560	3625	3160	1973
Specific Thermal Energy	Tons/ MKcal	18.3	20.2	23.7	24.9

PROJECTS IMPLEMENTED



- We had provided VFD to all higher capacity motors (above 20 HP motors).
- Hence we have surrendered 150KVA to BESCOM (Previous CMD was 750KVA, Now it is reduced to 600KVA) Monthly savings of Rs.30833/-

Before CMD 750 KVA (Billing CMD 85%)	After CMD 600 KVA (Billing CMD 85%)	Annual Savings in lakh (Cost per KVA Rs.240)	Investment made in Lakh	Payback in Months
638	510	3.7	3.6	12



- We have installed Evaporative condenser to refrigeration for improving system efficiency and reducing the electrical power.
- Now we have reduced compressor discharge pressure from 13 Kg to 11.5 Kg.

Before KWh per day	After KWh per day	Annual Saving (kWh)	Annual Electrical Cost Saving in Lakhs	Investment Made in Lakhs	Payback in Months
1800	1728	26280	2.4	8.0	40



➤ Our Solar plant is synchronized with DG (380kVA) and we get solar power even during EB power failure. So, we are not running other smaller DG sets when EB power goes off. we get sufficient units from solar unit as it is synchronized with DG operation.

So, DG will be running with partial load and hence fuel consumption per hour is reduced by 30%. Also, there are other advantages as below.

➤1) As we don't need to run smaller DG sets when EB power goes off, hence total fuel savings will be there.

➤2) Per hour diesel consumption for this DG was 60 litres earlier whereas now it is reduced to 40 litres per hour. So, per hour savings in fuel is around 20 litres in this DG set alone & additionally total diesel savings in smaller DG sets.

Diesel consumption		Annual diesel Savings	Annual cost savings in lakh	Investment Made in Lakhs	Payback in Months
Before 20 hrs/month avg.	After 20 hrs/month avg.				
1200	800	4800	4.46	6	16



- In old type CIP system, higher steam loss due to conventional type heating i.e. direct injection.
- Present system provided with auto controls to avoid manual errors leads to unwarranted incidents.
- Now after installation of Auto CIP; steam consumption was reduced up to 3000Kg /day avg.
- Also, We are able to recover 90% condensate with 75°C temperature.
- Advantages: 1) Less water wastage 2) Less steam consumption 3) Efficient cleaning

Before steam consumption in kg per day	After steam consumption in kg per day	Annual steam Savings in tons	Annual Steam savings cost in lakh	Investment made in Lakh	Payback in Months
5100	2100	1095	12	46	46



➤ Curd pasteurizer capacity expanded 5KL to 7.5KL. So now we can able to complete production 2 hours before and man hours also saved.

Before KWh / day	After KWh / day	Annual Saving (kWh)	Annual Electrical Cost Saving (in Lakhs)	Investment Made (in Lakhs)	Payback in Months
312	249	22758	2.0	2.0	12



- All crate- conveyors are provided with VFDs.
- So based on total no. of packing machines in operation, we can control the conveyors speed and save the power during non-peak hours of packing.

Energy Consumption- Before (kWh/day)	Energy Consumption- After (kWh/ day)	Expected Electrical Energy Savings (kWh/annum)	Cost savings per annum in lakh	Investment (in lakh)	Payback in Months
62	46	5840	0.53	0.6	13



- We have installed solar water heater to canteen requirement of hot water. We are getting temperature around 65°C
- This water is used for cooking as well as hot water sterilization of dining plates.
- Stopped usage of Electric geysers.

Annual Power Savings in KWh	Annual Cost Savings (in lakh)	Investment made (in lakh)	Payback in Months
7300	0.66	0.5	9



Pasteurizer outlet milk temperature was 18°C. then this milk temperature should increase to 42° by using hot water PHE with boiler steam.

So here we have installed one PHE and hot water taken from refricon (Ammonia hot gas FOC). Now we increased the pasteurizer incoming milk temperature 4 to 18°C. then this milk will go to pasteurizer. Hence we got outlet pasteurizer milk 32°C now.

Before steam consumption in Kg per day	After steam consumption in Kg per day	Annual steam Savings in tons	Annual Cost savings (in lakh)	Investment made (in Lakh)	Payback in Months
1108	462	236	2.5	0.3	1.5



- IBT return water temperature was 6°C So we couldn't maintain IBT temperature below 1°C. and reduce the IBT temperature we were run the compressor 24x7.
- After installed return water chiller, we have reduced 3 hours minimum per day

Before KWh / day	After KWh / day	Annual Saving (kWh)	Annual Electrical Cost Saving in Lakhs	Investment Made in Lakhs	Payback in Months
1344	1232	40880	3.7	9	29

Sl. No	Projects Details	Electrical Power savings KWh / annum	Diesel savings / annum	Annual Cost Savings (in Lakh)	Investment made (in Lakh)	Payback (Months)
01	<p>Electrical _ Contract Maximum Demand reduction:</p> <ul style="list-style-type: none"> ➤ We had provided VFD to all higher capacity motors (above 20 HP motors). ➤ Hence we have surrendered 150KVA to BESCO (before CMD was 750KVA, Now it is 600KVA) 	40960	-	3.7	3.6	12
02	<p>Ammonia Evaporative Condenser:</p> <ul style="list-style-type: none"> ➤ We have installed Evaporative condenser to refrigeration for improving system efficiency and reducing the electrical power. ➤ Now we have reduced compressor discharge pressure 13 Kg to 11.5 Kg. 	26280	-	2.4	8.0	40
03	<p>Solar Plant Synchronized with DG set:</p> <ul style="list-style-type: none"> ➤ Our Solar plant is synchronized with DG (380kVA) and we get solar power even during EB power failure. So, we are not running other smaller DG sets when EB power goes off. we get sufficient units from solar synchronized with DG operation. So, DG will be running with partial load and hence fuel consumption per hour is reduced by 30%. Also, there are other advantages as below. ➤ 1) As we don't need to run smaller DG sets when EB power goes off, hence total fuel savings will be there. ➤ 2) Per hour diesel consumption for this DG was 60 litres earlier whereas now it is reduced to 40 litres per hour. So, per hour savings in fuel is around 20 litres in this DG set alone & additionally total diesel savings in smaller DG sets. 	-	4800	4.5	6.0	16
	Total	67240	4800	10.6	17.6	20

Sl. No	Projects Details	Electrical savings KWh / annum	Thermal savings in Tons	Total Annual Savings (in Lakh)	Investment made (in Lakh)	Payback (Months)
01	Automatic CIP System: Auto CIP system implemented. Before we had direct steam injection for all CIP tanks i.e Caustic, Acid and Hot water. Now tubular heater provided with PLC based automatic CIP system. Advantages: 1) Less water wastage 2) Less steam consumption 3) Efficient cleaning	-	1095	12	46	46
02	Curd Pasteurizer capacity expansion: Curd pasteurizer capacity expanded 5KL to 7.5KL. So now we are complete production 2 hours before and man hours also saved.	22758	-	2	2	12
03	Crate conveyor Speed control: All crate- conveyors are provided with VFDs. So based on total no. of packing machines in operation, we can control the conveyors speed and save the power during non-peak hours of packing.	5840	-	0.5	0.6	13
04	Solar water heater: We have installed solar water heater to canteen vessels hot water cleaning & dipping purpose. We are getting temperature around 60°C	7300	-	0.7	0.5	9
	Total	35898	1095	15.2	49.1	39

Sl. No	Projects Details	Electrical power savings in KWh	Thermal savings in Tons	Total Annual Savings (in lakh)	Investment made (in lakh)	Payback (Months)
01	<p>Curd milk pre heater: Pasteurizer outlet milk temperature was 18°C. then this milk temperature should increase to 42° by using hot water PHE with steam. So here we have installed one PHE and hot water taken from refricon (Ammonia hot gas FOC). Now we increased the pasteurizer incoming milk temperature 4 to 18°C. then this milk will go to pasteurizer. Hence we get outlet pasteurizer milk 32°C now before entry to preheater. The net result increase of pasteurized milk before entry to Preheater ΔT 32-18= 14°C</p>	-	236	2.5	0.3	1.5
02	<p>IBT Return water chiller: Temperature of Chilled water return to IBT was 6°C. So we couldn't maintain IBT temperature below 1°C continuously for 24 hrs operation. So, to bring down the IBT temperature we were running ammonia compressors 24x7. After installation of Ammonia chiller to return chilled water, we have reduced minimum 3 hours of compressor operation per day. Also, this has facilitated continuous process of milk without deviating temperatures of milk</p>	65700	-	5.9	6.0	12
	Total	65700	236	8.4	6.3	9

7.5KL HOMOGENISER Oil Cooling system

BEFORE



AFTER



Root cause of Problem:

When we have run this homogenizer, oil temperature will goes to 55°C. Hence condensate water developed and oil quality spoil and it leads to reduce bearings lift also. So we were replaced this homogenizer in 250 hrs

Action taken:

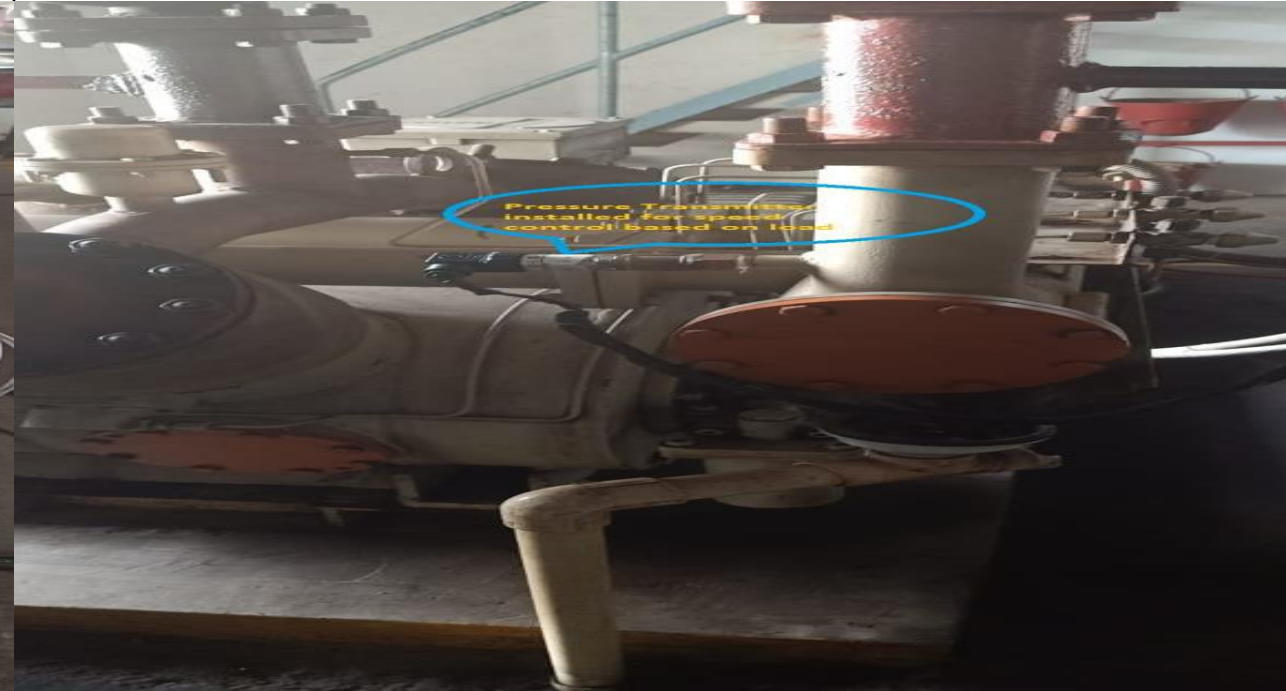
Oil cooling system provided, So oil temperature not increase more than 40°C . So oil quality is good and now we are replace the oil once in a 500 hrs

KCX4 Ammonia Compressor Load Based Speed Control

Before



After



Root Cause of Problem:

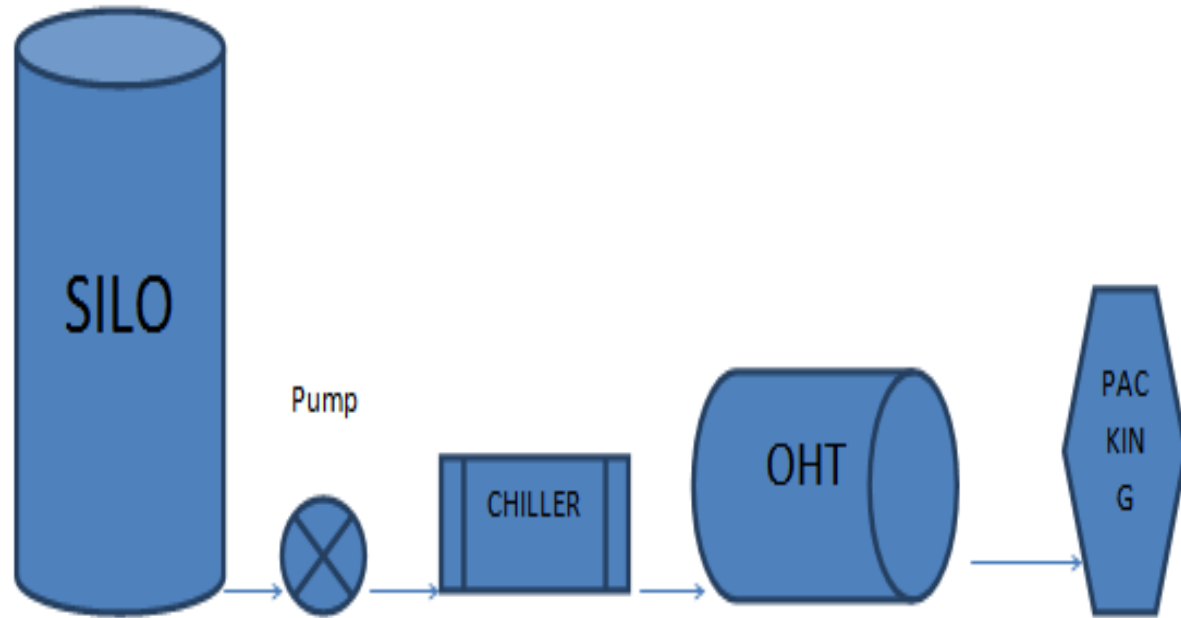
Compressor is running constant speed even though less suction pressure. So power consumption was high.

Action taken:

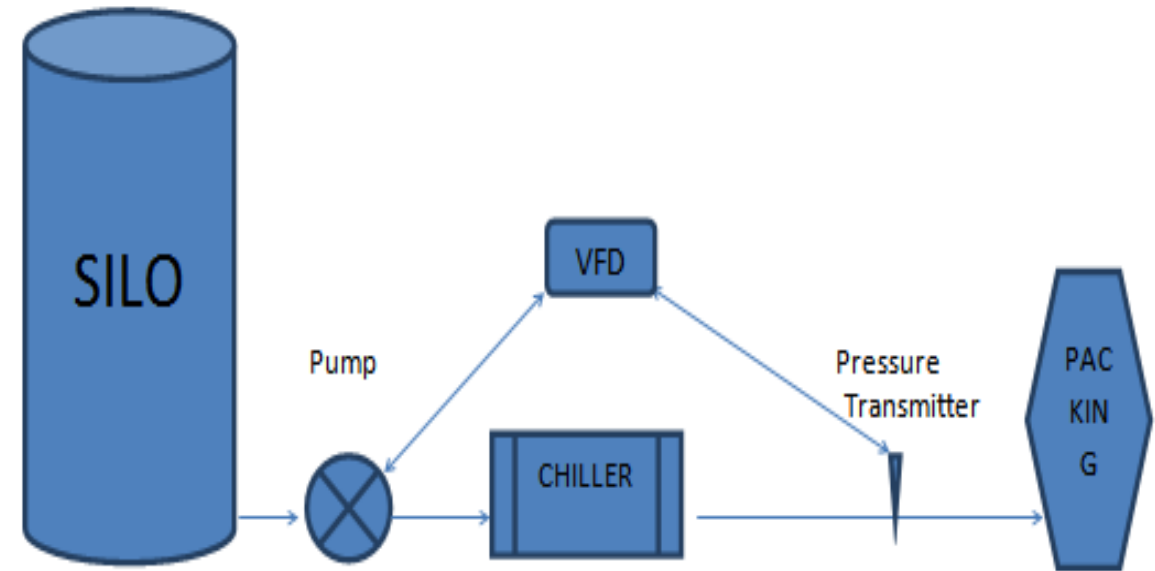
We have installed pressure transmitter in compressor suction line and pressure transmitter output connected with VFD. If the suction pressure drops / increases accordingly the rpm will be adjusted.

Milk Packing Line Low Pressure Alert

Before



After



Root cause of Problem:

Pouch milk weight variation happening due to following reason: Milk packing balance tank low level or empty, Milk pump air-lock, Milk pump tripped.

Action Taken:

- We have installed pressure transmitter with buzzer to milk supply line. If there is any pressure drop in packing pipeline due to Pump failure, we get alarm. No intermediary balance tank. Reduces cleaning time due to complete removal of balance tank.
- We have avoided under-weight issue. Power savings due to RPM control. Packing material wastage reduced drastically.

Via Cisco Webex

30th NATIONAL ENERGY CONSERVATION AWARDS 2020

R. K. SINGH

CERTIFICATE OF MERIT

HERITAGE FOODS LIMITED BENGALURU (KARNATAKA)

28.1 TOE 15 Million Units

3:34:18

WEBEX

Shri Narendra Modi
14th Prime Minister of India

“India's energy future has four pillars -
Energy access, energy efficiency,
energy sustainability & energy security.”

Rewarding the Exemplary Efforts on Energy
Conservation in India

30th NATIONAL ENERGY CONSERVATION AWARDS (NECA) 2020

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श्री नरेंद्र मोदी
14वाँ प्रधानमंत्री, भारत सरकार

“भारत की ऊर्जा भविष्य को 4 स्तंभ हैं -
ऊर्जा पहुँच, ऊर्जा दक्षता, ऊर्जा सुरक्षा
और ऊर्जा स्थिरता।”

भारत में ऊर्जा संरक्षण के
अनुकरणीय प्रयासों को सम्मान

विशिष्ट उपलब्धियों के लिए
30वें नेशनल एनर्जी कंजर्वेशन
अवॉर्ड (नेका) 2020 के लिए

SECTORS UNDER NECA 2020

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भारत सरकार
Ministry of Power
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विद्युत

संयोजित

विद्युत

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विद्युत

संयोजित

THANK YOU



HEALTH AND HAPPINESS