ASSOCIATED CEMENT COMPANIES LIMITED

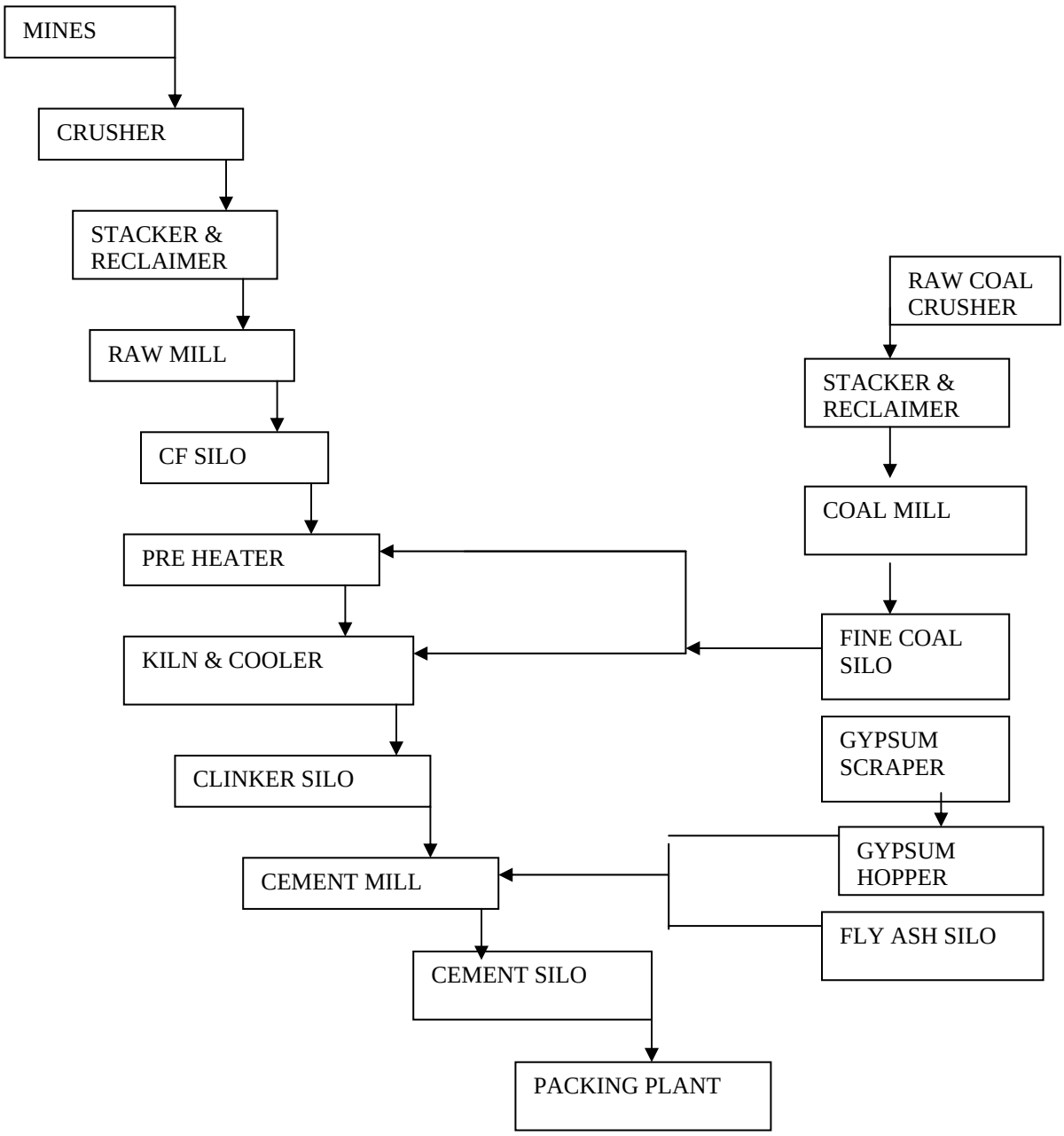
New Wadi Plant – Wadi, Dist: - Gulbarga (Karnataka)

➢ Unit Profile

ACC, New Wadi Plant with a capacity of 2.6 mtpa Cement production is located at Wadi, Dist – Gulbarga Karnataka. This plant is ACC's latest, which was commissioned in the month of April 2001.The plant is producing only blended cement under the name of ACC, Suraksha.

ACC New wadi Plant has received QS (Quality –system) 9000 Certificate in the year 2003. It is ISO 14001 Certified by the BIS in the year 2003.

➢ Process Flow Sheet

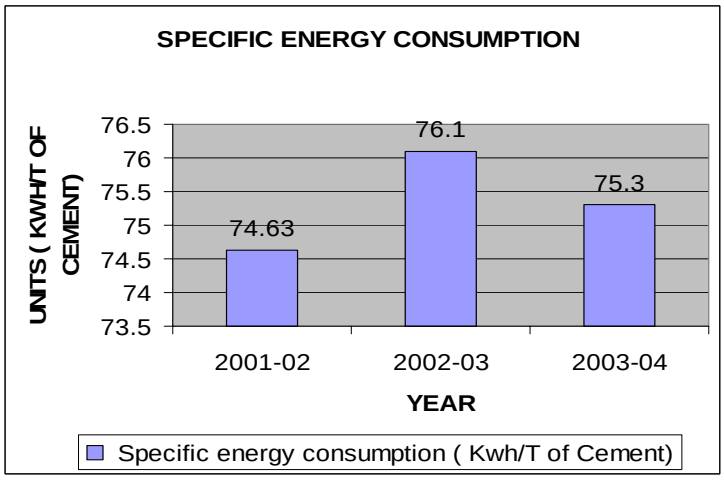


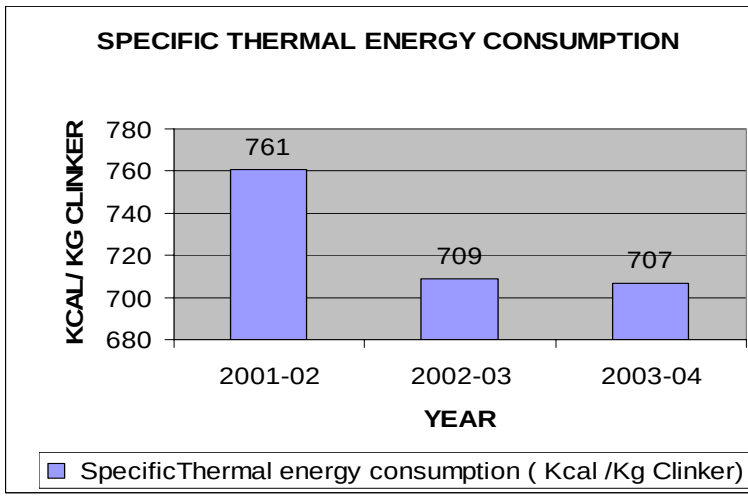
Energy Consumption

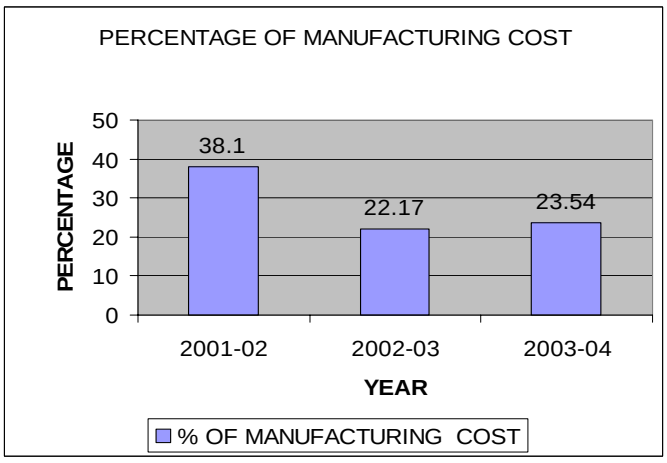
The energy consumption details are given below

DESCRIPTION	UNIT	2001-2002	2002-2003	2003-2004
Annual production	Million Tons	0.85	2.08	2.59
Total electrical energy consumption / annum	Lakhs Kwh	72.8	176.9	207.9
Specific energy consumption - Electrical	Kwh/tons of cement	74.63	76.1	75.3
Total Thermal (Fuel) consumption / annum	Million kcal	661928	1402530	1570906

YEAR	ELECTRICITY		THERMAL	
	Consumption Kwh/T of cement	% Reduction over 2001-2002	Consumption Kcal/Kg clinker	% Reduction over 2001-2002
2001-02	74.63		761	
2002-03	76.1	-1.97	709	6.83
2003-04	75.3	-0.90	707	7.10

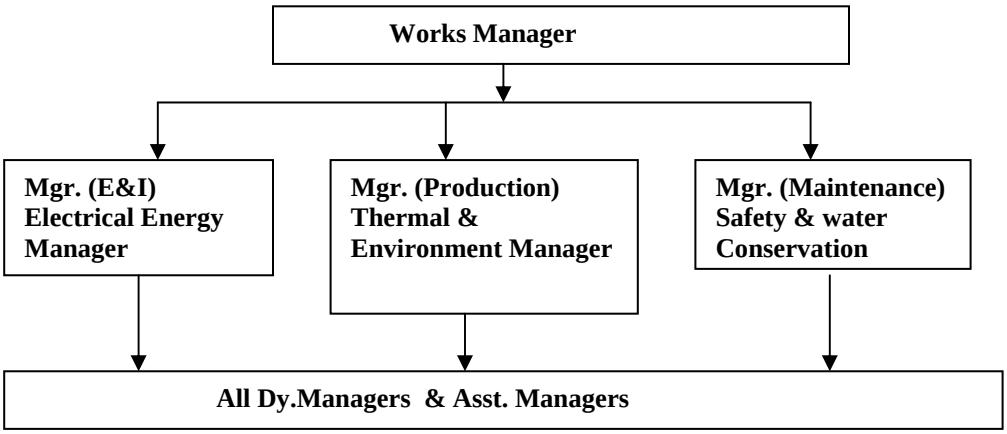






Energy Management

Our Organization has an energy conservation cell. The organization set up is given below



Head of Energy conservation cell – Manager (E& I) and energy conservation is his additional responsibility. He is reporting to Works Manager.

The Salient features of Energy Conservation Cell are as-

- Initiate activities to improve energy monitoring process & control.
- Review of the schemes & proposals from the employee's suggestion scheme.
- Prepare an target & action plan for the energy conservation proposals
- To get approval from top management.
- Coordination & Implementation of the Proposals
- Reviewing of energy savings after implementation

Energy consumption monitoring is done daily. Energy conservation is reviewed monthly.

We have process history data (PHD) system to monitor process data. We have power report for monitoring power consumption of different section. Power report is reviewed daily in the meeting.

E&I dept. is responsible for maintaining the data for the energy accounting & monitoring.

Manager (E&I) is declared as an Energy manager. The address details of the energy manager is given below –

Mr. R. Srinivasan (MANAGER E&I)
NWP Wadi Cement Works, Wadi
Gulbarga -585225 (Karnataka)
Mob. No. –9845606536
Fax No- 08476-202023

Energy Conservation Achievements

During the period 2001-2003, ACC, New Wadi Plant has implemented around 36 energy saving proposals through energy initiatives, workers suggestion scheme, energy auditors suggestion & TPM.This has resulted in the total savings 189.5 Lakhs with an investment of Rs. 177.46 Lakhs.This has resulted in increase of 0.90% in specific electrical energy consumption and 7.1% specific thermal energy consumption.

Energy Conservation Projects

1. Increase in Kiln String cyclone Diameter from 5.4 Mts to 6.6Mts (fig.1)

Before modification

Present Cyclone Diameter	5.4 Mts
Present Pressure Drop Across Cyclone	115 MMwg
Present Power Consumption of Kiln string Fan	750 Kwh

After Modification

Proposed Cyclone Diameter	6.6 Mts
Pressure Drop Across Cyclone after modification	86 MM wg
Power Consumption of Kiln string Fan after modification	722 Kwh

Savings **4.40 Lakh/Annum**

Investment **22.0 Lakhs**

*Additional benefit:- Overall Increase in Kiln output from 6281 TPD to 6597 TPD

2. Increase in Calciner String-1 cyclone Riser Duct Height By 2.0Mts (fig .2)

Before Modification

Present Pressure Drop Across Cyclone	122 MMwg
Present Power Consumption of Calciner string Fan	1600 Kwh

After Modification

Pressure Drop Across Cyclone after modification	80 MMwg
Power Consumption of calciner string Fan after modification	1530 Kwh

Savings	11.0 Lakh/Annum
Investment	12.0 Lakh

* Additional benefit:- Overall Increase in Kiln output from 6281 TPD to 6597 TPD

3. Increase in Height of calciner by 2.0 Mts (fig.3)

Before modification

Residence time of material in calciner	3.0 Sec
Thermal Energy Consumption	709 Kcal/ Kg clinker

After Modification

Residence time of material in calciner	3.5 Sec
Thermal Energy Consumption	708 Kcal/ Kg clinker

Savings	**7.77 Lakh/Annum**
Investment	**5.0 Lakh**

4. Installation of SPRS in the Calciner String Fan

Before Modification

Present Power Consumption of Calciner string Fan 1600 Kwh

After Modification

Power Consumption of calciner string Fan after modification 1465 Kwh

Savings **22.4 Lakh/Annum**
Investment **40.0 Lakhs**

The Projects Implemented during 2003-04

With the implementation of the above energy conservation measures plant has achieved the saving of 131.33 lakhs in year 2003-04 which is about 27.0 % of the total energy cost 485.34 Lakhs with an investment of 112 lakhs.

Sr.No	Description
1	Increase of kiln string 1st cyclone dia from 5.4 to 6.6 mts
2	Increase of the riser duct height by 2 mts of 2nd to 1 cyclone
3	Increase in Height of Calciner By 2.0 mts
4	Increase In TA duct dia From 2.8 to 3.25 Mts
5	Photcells for Lightening Purpose
6	Delta to Star for for packing house belt drives
7	Street lighting through Timers
8	Optimal loading of Transformers
9	Reducing voltage of lighting transformers
10	Replacement of 160 KW motor with 90 KW motor for 241 BC 03
11	SPRS for Calciner String fan
12	RPM reduction of side cooling blowers for the followin DC drives 1. Bag house fan 2.Kiln String fan 3. Cooler ID fan 4. Kiln main Drives 5. All Seperators 6. Apron feeder
13	Operation of cooling tower based on water tempratures
14	Combination of pumps in water sump
15	High efficiency pump for cooling water
16	Providing high eff. Submersible pump in sump no 4
17	Replacement of three reciprocating compressors with screw compressor
18	Repl of crusher DC fan pulley
19	GRR in 2 RFT fans
20	GRR for Raw mill fan
21	Inlet cone modification of cooler fans
24	Soft starter for elevator in PH
25	Reduction in RPM of Coal Transport compressor
26	Switching of Two ESP Chambers
27	Stopping of the Reverse Air bag house fan
28	Motorised Divertor removal In PH

Energy Conservation Plans & Targets

All the projects will be carried out under the TPM, suggestion schemes, Unit head Adhoc scheme & capital projects. With the above energy conserving measures ACC,New wadi plant will be able to achieve the set target of 67 Kwh/T of cement & 702 Kcal/Kg clinker.

Sr.No	Energy Conservation Measures (Planned)	Anticipated Savings	Aprrox. Investment	Project Commencement & Completion year
1	Bag House fan Inlet Duct Modification	7.45	2.85	Jul-04
2	Kiln string Isolating Damper	4.97	9.26	Jul-04
3	GRR in RFT fans (1 No)	8.28	2.50	Jul-04
4	Evase modificationof . cooler fan	0.99	0.00	Jul-04
5	Coal mill fan Inlet duct Modification	1.66	0.97	Jul-04
6	Choke feeding of Primary Crusher	0.78	0.00	Jul-04
7	Hurrivane in R/M cyclones	13.25	5.00	Jul-04
8	Dip tube in calciner 6th Cyclone	14.64	27.95	Jul-04
9	Modification of KS 5th cyclone	6.62	12.60	Jul-04
10	Soft starter for Blower in PH	0.69	2.00	Jul-04
11	Stopping 271 CP 03 and keeping one reciprocating compressor as hot standby	1.24	0.00	Jul-04
12	Seal air fan replacement	4.14	3.50	Oct-04
13	Reject Silo Dust collector fan Replacement	2.32	3.50	Sep-04
14	Clinker Silo Dust collector fan replacement	4.14	3.50	Sep-04
15	Pan Conveyor Dust Collector Fan replacement	1.66	3.00	Nov-04
16	Shell cooling fans- FRP blade replacement	2.65	1.00	Dec-04
17	Raw Mill Fan inlet BoxModification	13.41	3.20	Jul-05
18	Installation of shutgate in Rawmill Fan string fan	13.25	13.00	Jul-05
19	Calciner string Inlet Box Modification	8.61	3.15	Jul-05
20	Installation of shutgate in calciner string fan	7.12	13.00	Jul-05
21	Modification of KS 2th cyclone	6.13	12.50	Jul-05
22	Modification of CS 2th cyclone	7.12	12.70	Jul-05
23	Insatallation of vortex vinder in KS 1st cyclone	3.15	6.30	Jul-05
24	Insatallation of vortex vinder in KS 1st cyclone	4.31	7.00	Jul-05
	TOTAL	**138.6**	**148.48**	

Environment & Safety

Acc, Wadi Cement works is commited to protect the environment. The company has successfully installed environment management system and got IS0 14001 certificate in 2003 by BIS. The points of the environment policy are

- Prevent pollution & minimize the fugitive emissions from various places
- Comply with all relevant legal & regulatory requirement
- Conserve water , energy & natural resources
- Minimize waste generation & resutlisation of the same
- Ensure continual improvement in environment performance through establishment & achievement of the environmental objectives.
- Create Environmental awareness & provide clean environment to employees & community at large,

ACC, wadi has Safety & health policy. Company is committed to: -

- Provide safe working conditions & educate workers on unsafe practices and effects to injury
- Provide information on the effect of damages / injury that would result to the individual a management due to accident.
- Provide information on the aspects of the property damages and result out of accidents
- Arrange adequate training and interaction, instructions in the safe working practices
- Make adequate arrangements to assess the risks involved in the work practice & conditions
- Provide systems to monitor the performance & practices.
- Arrange for recording of accident investigation so as to monitor and take suitable control measures
- Make adequate personal protective equipment available.

THE ASSOCIATED CEMENT COMPANIES LTD.

WADI CEMENT WORKS

NEW WADI PLANT

ENERGY CONSUMPTION DETAILS

YEAR	ELECTRICITY		THERMAL	
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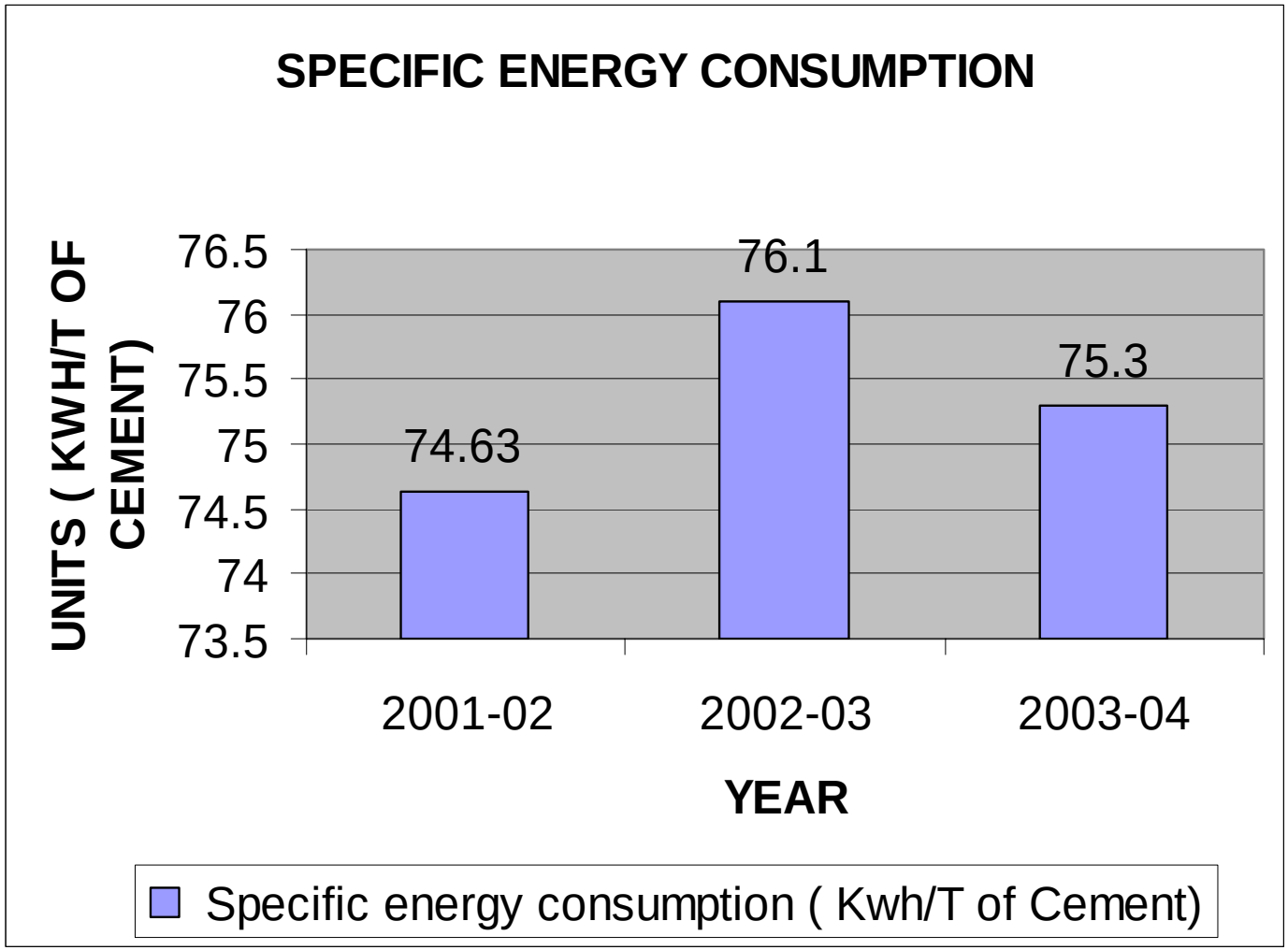
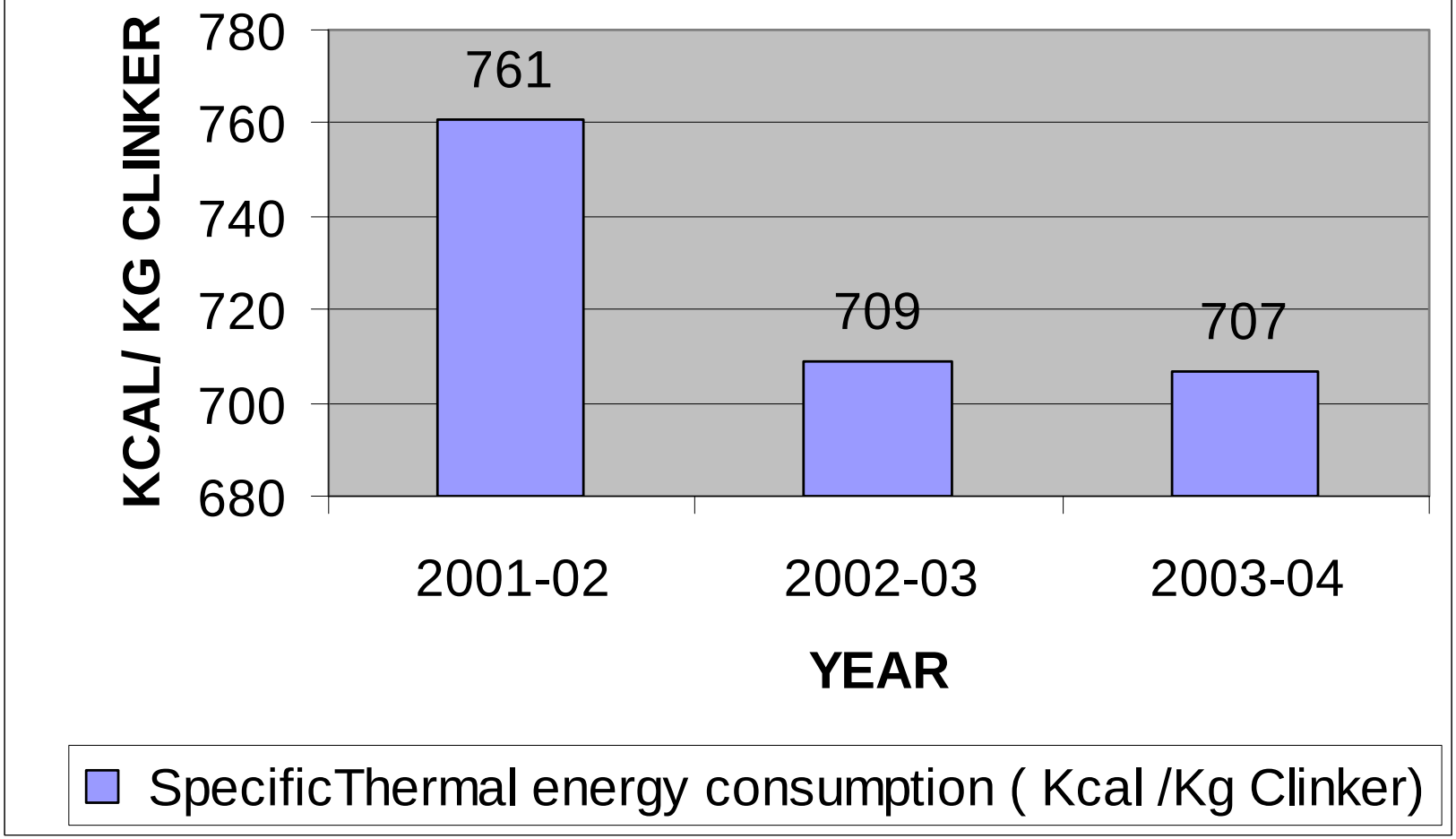
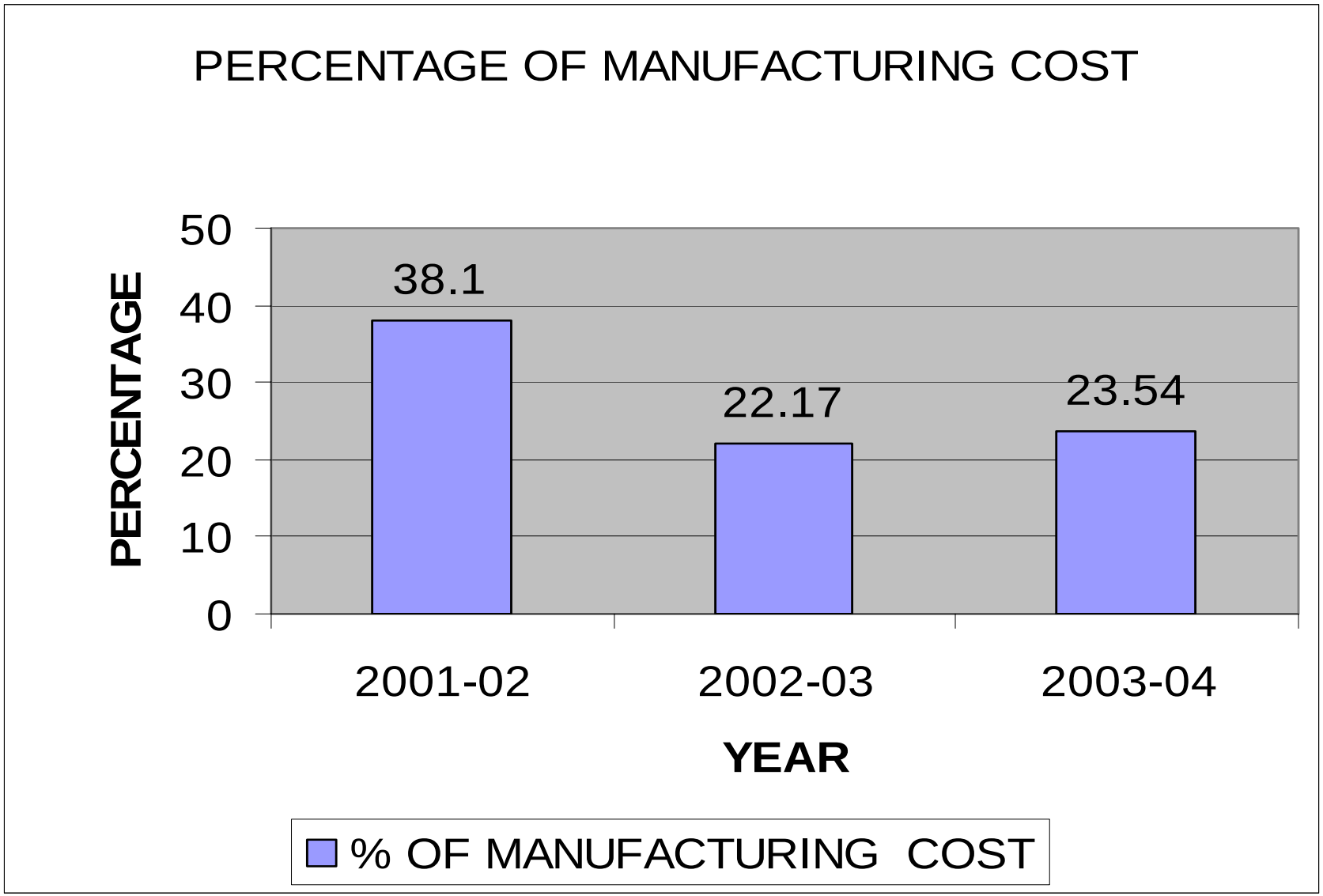
Specific energy consumption - Electrical	Kwh/tons of cement	73.76	75.16	74.37
Total Thermal (Fuel) consumption / annum	Million kcal	661928	1402530	1570906
Specific energy consumption - Thermal (Fuel)	kcal/kg cement	575.3	534.6	521.7


SPECIFIC ENERGY CONSUMPTION
UNITS (KWH/T OF CEMENT)
76.5
76
75.5
75
74.5
74
73.5
74.63
76.1
75.3
2001-02
2002-03
2003-04
YEAR
Specific energy consumption (Kwh/T of Cement)

SPECIFIC THERMAL ENERGY CONSUMPTION




PERCENTAGE OF MANUFACTURING COST
PERCENTAGE
50
40
30
20
10
0
38.1
22.17
23.54
2001-02
2002-03
2003-04
YEAR
% OF MANUFACTURING COST

ENERGY CONSERVATION ACHIEVEMENTS

During the period 2001-2003, ACC,New Wadi Plant has implemented around 36 energy saving proposals through energy initiatives, workers suggestion scheme, energy auditors suggestion & TPM.This has resulted in the total savings 189.5 Lakhs with an investment of Rs. 177.46 Lakhs.This has resulted in increase of 0.9% in specific electrical energy consumption and 7.1% specific thermal energy consumption.

MODIFICATION PHOTOGRAPHS OF ENERGY CONSERVATIONS DURING 2003-04

Calciner 1 Riser Duct Modification

Calciner Modification

Tertiary Air Duct Modification

Increase in Diameter of duct from 2.8 Mts. to 3.25 mts

Cooler Fans Inlet Cone Modification

Increase in the inlet suction area of cooler fan

Kiln String 1st Cyclone Modification

Increase in Diameter of cyclone from 5.4 Mts to 6.6 Mts