Dalmia Cement (Bharat) Limited, Kadapa

22nd National Award for Excellence in Energy Management - 2021

Date : 25.08.2021

Presentation Team

Mentor : Mr. K Karunakara Rao
Unit Head

Leader : Mr. Srinivasa Reddy
Technical Head

Presenting Team Members

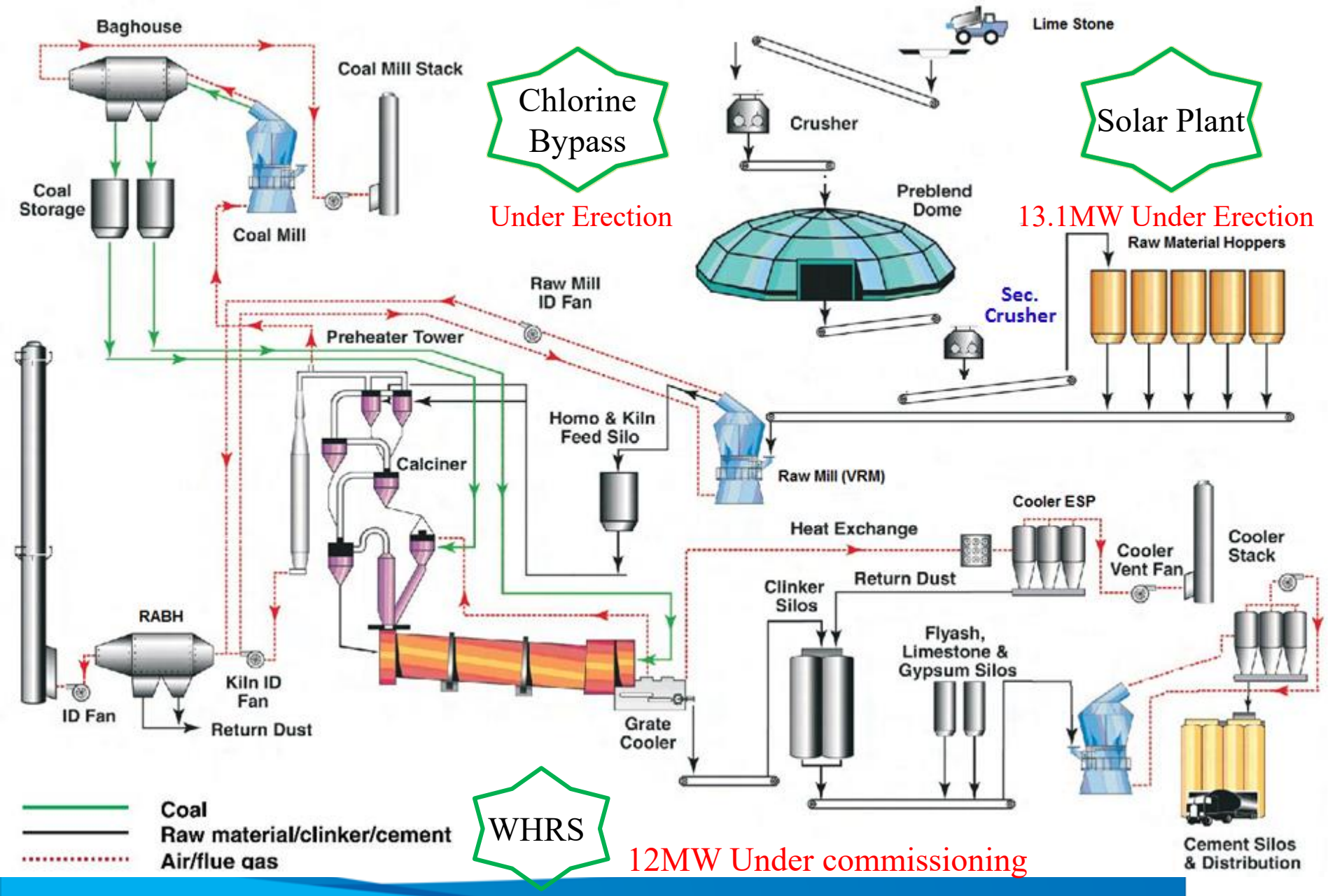
Mr. Mohanraj	-	Process
Mr. Santhosh Kumar	-	E&I
Mr. Muthamilselvan	-	Process

Save Energy - Save Money - Save the Planet.

Company Profile

- **Founded in 1935 by Shri Jaidayal Dalmia.**
- **The Group interests includes Cement, Sugar, Power and Refractory with Pan India Presence.**
- **The Group established India's first Cement Plant with 250 TPD in 1939.**
- **Overall Cement Manufacturing Capacity 30 MTPA**
- **Kadapa Unit Commissioned in Dec 2008 with a Capacity of 2.5MTPA Cement and Standing 4th Largest Cement Manufacturing Capacity in the Country**

Cement Manufacturing Process



Impact of COVID-19

- **Dispatch had got affected in the month of April'20 and May'20 due to Covid – 19 Lockdown.**
- **50 % Employee worked in the plant during pandemic period in order to avoid the spread of virus.**
- **Employee and workmen had instructed to follow the Covid – 19 safety guidelines which implemented by Government of India.**

Encon Journey

FY 21-22 Current Plan & Actions

Waste Heat Recovery System
Use of pond ash in Cement Grinding
13.1 MW Solar Plant
Chlorine bypass System to increase AFR

MILESTONE

Current Plans

FY 2021

FY 2021 – Installation of Shredder, optimization of cement mill

FY 2020

FY 2020-CMBH Fan Impeller, 4 Point Feeding of Flyash, Cooler Optimisation

FY 2019

FY 2019 – Secondary Crusher
Cement Mill HAG, Flyash LP Compressor

FY 2018

FY 2018 – Liquid Al. Fuel, RM Cyclone CFD & Modified, Clinker Cooler Modified

FY 2017

FY 2017 – Raw Mill Fan Impeller Replaced.
Kiln Burner & Pipe Modified

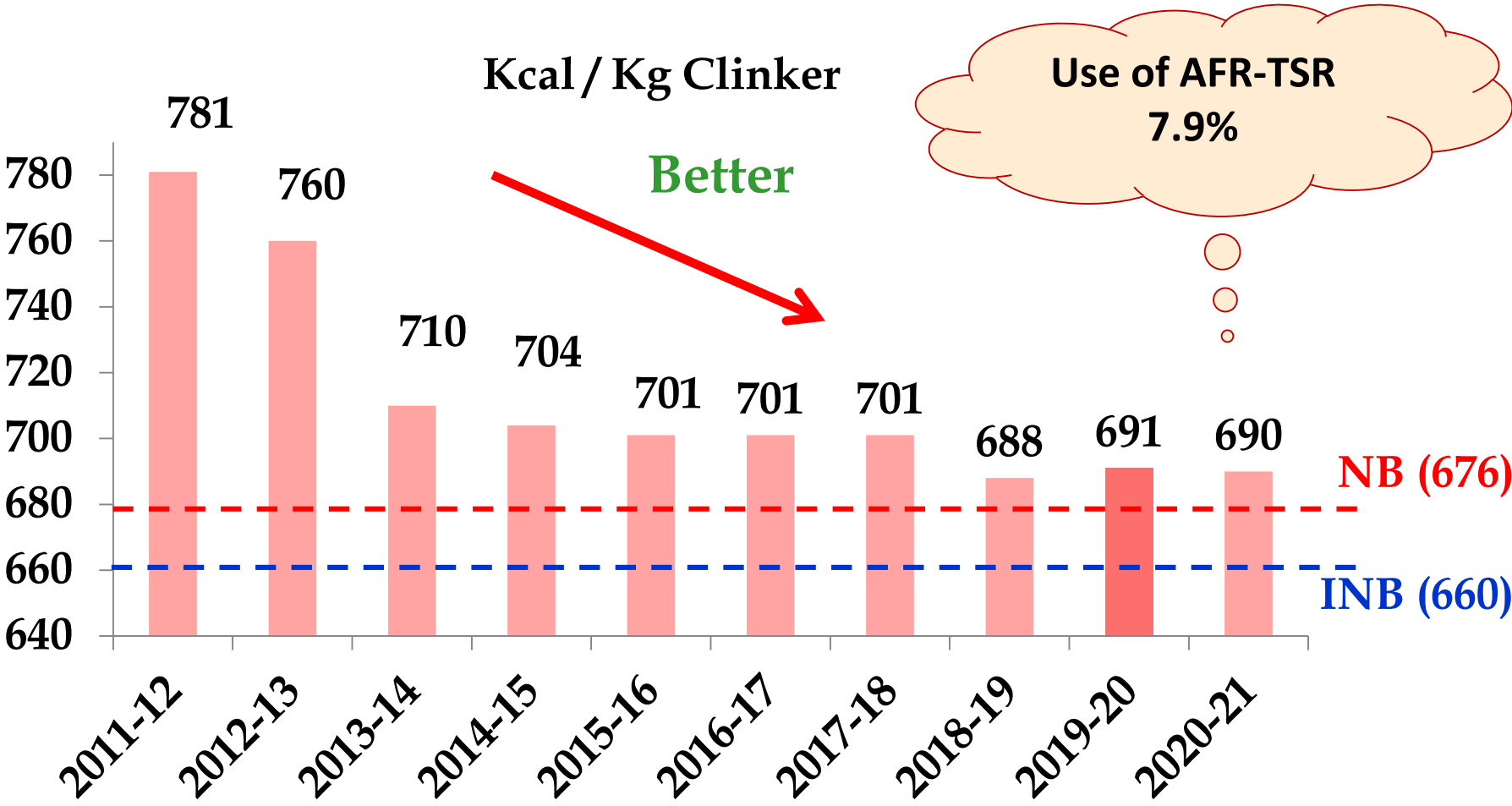
FY 2016

FY 2016 – Liquid & Solid AFR
RABH & CM Fan Impeller Replaced

Commissioning

1. **All Motors are Energy Efficient Series**
2. **More than 60% Motors are with VFD**
3. **All Process Fans with VFD and w/o Damper**

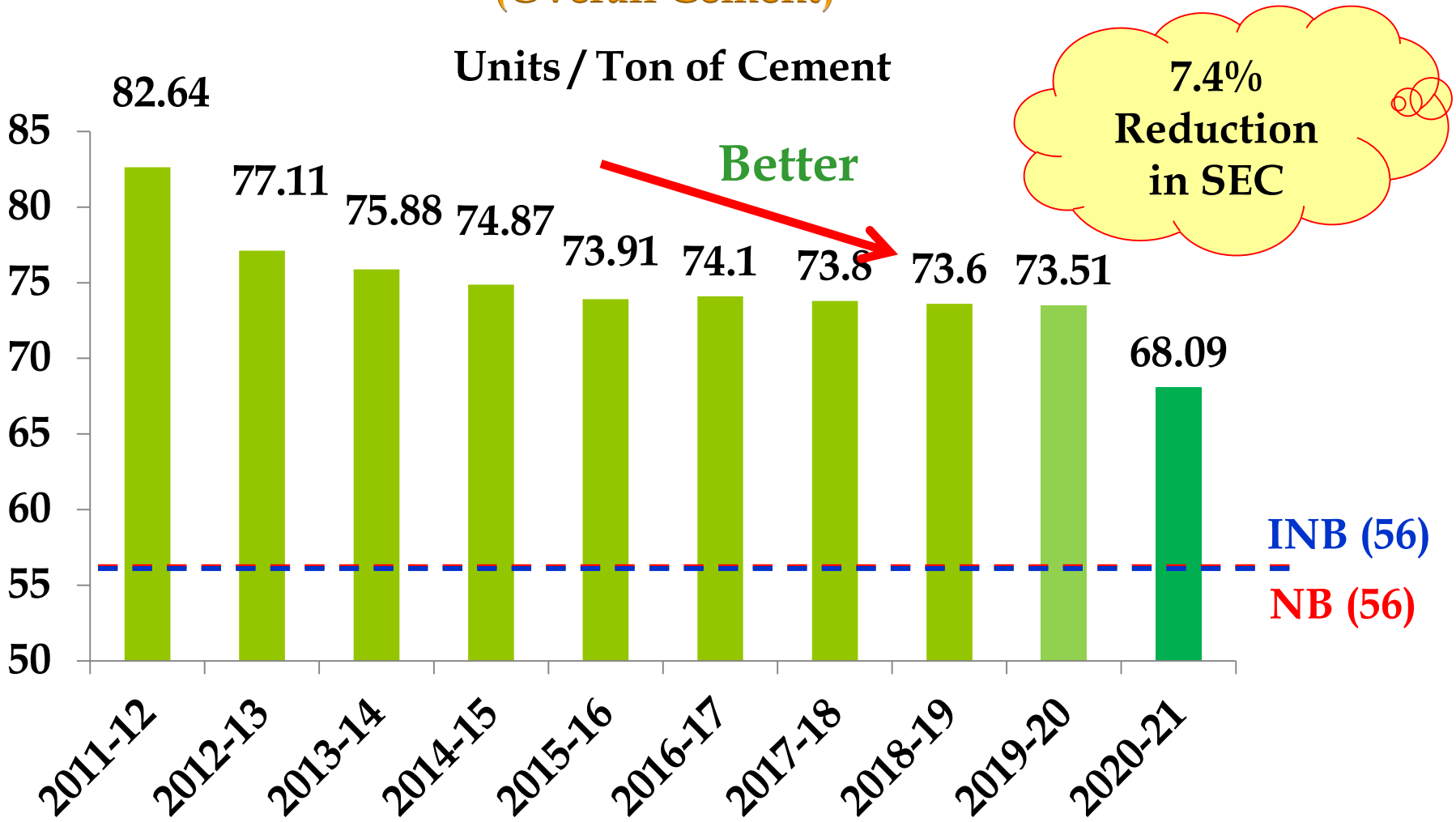
Sp. Thermal Energy Consumption Trend & Global Comparison



Thermal SEC without Kiln Start Stop : 686 Kcal / Kg Clinker (Benchmarking Thermal SEC)

NB – National Benchmark INB – International Benchmark

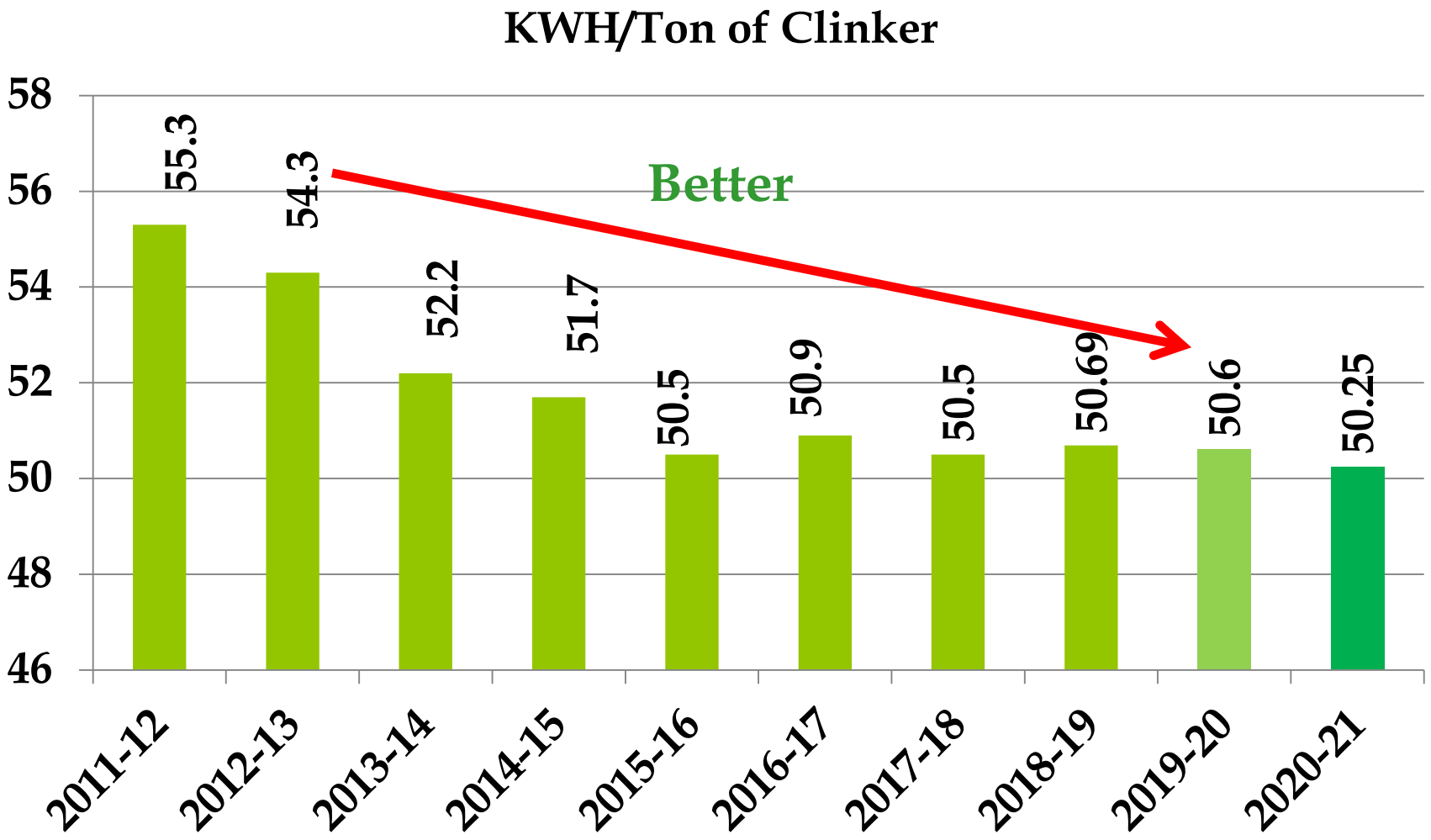
Sp. Electrical Energy Consumption Trend & Global Comparison
(Overall Cement)



NB – National Benchmark

INB – International Benchmark

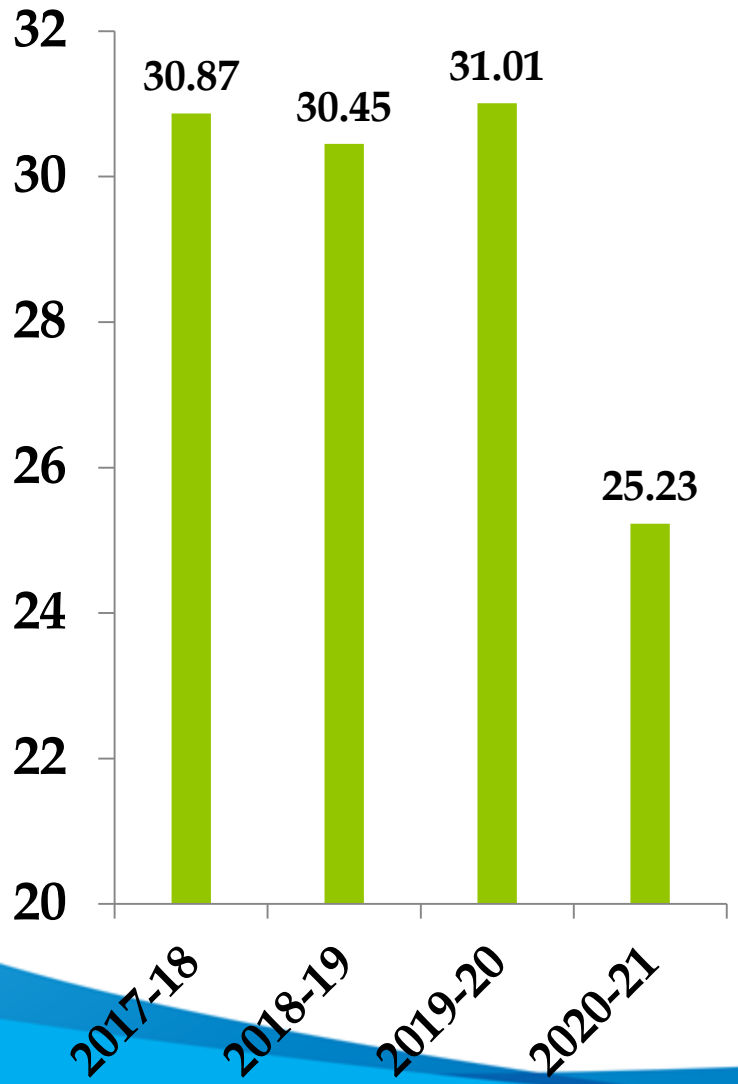
Sp. Electrical Energy Consumption Trend
(Upto Clinkerization)

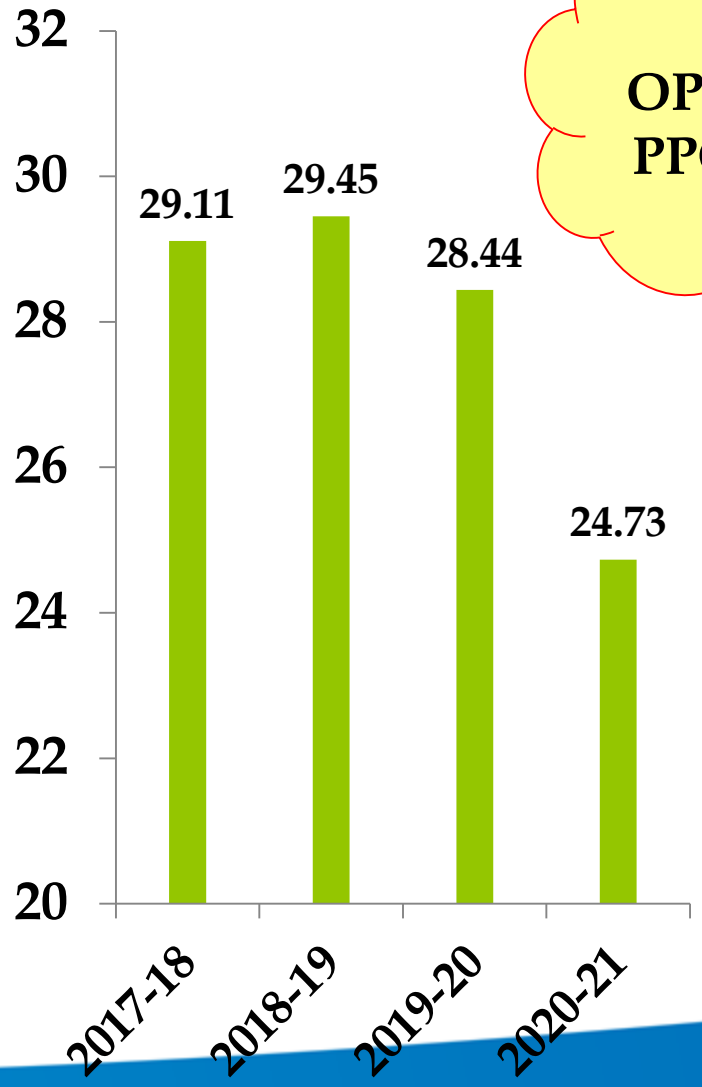


Electrical SEC without Kiln Start Stop : 49.5 U/TClinker

Sp. Electrical Energy Consumption

Cement Grinding - Variety wise (kWh/Ton)



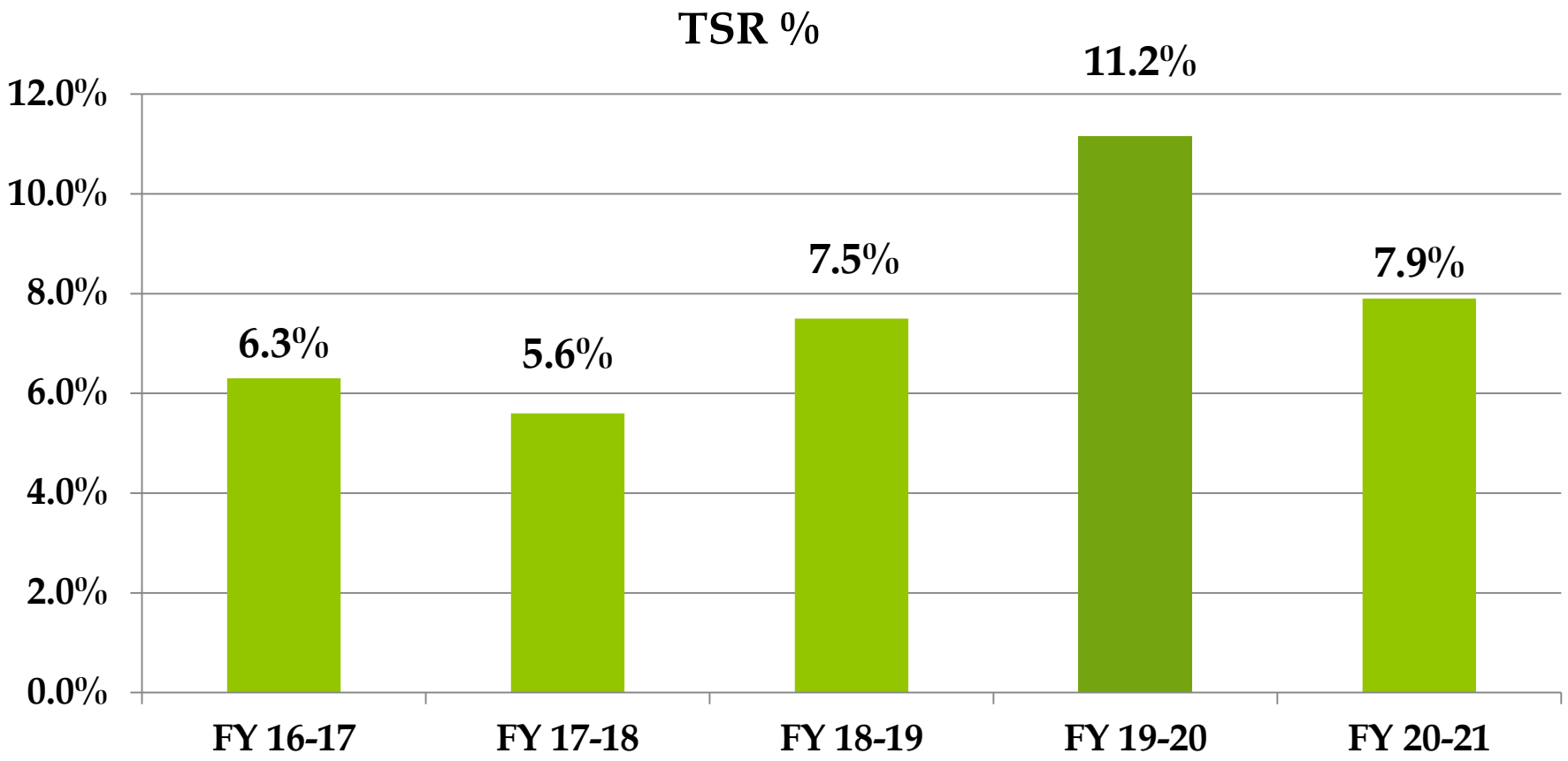


Reduction in SEC
OPC: 17.98%
PPC: 13.05%

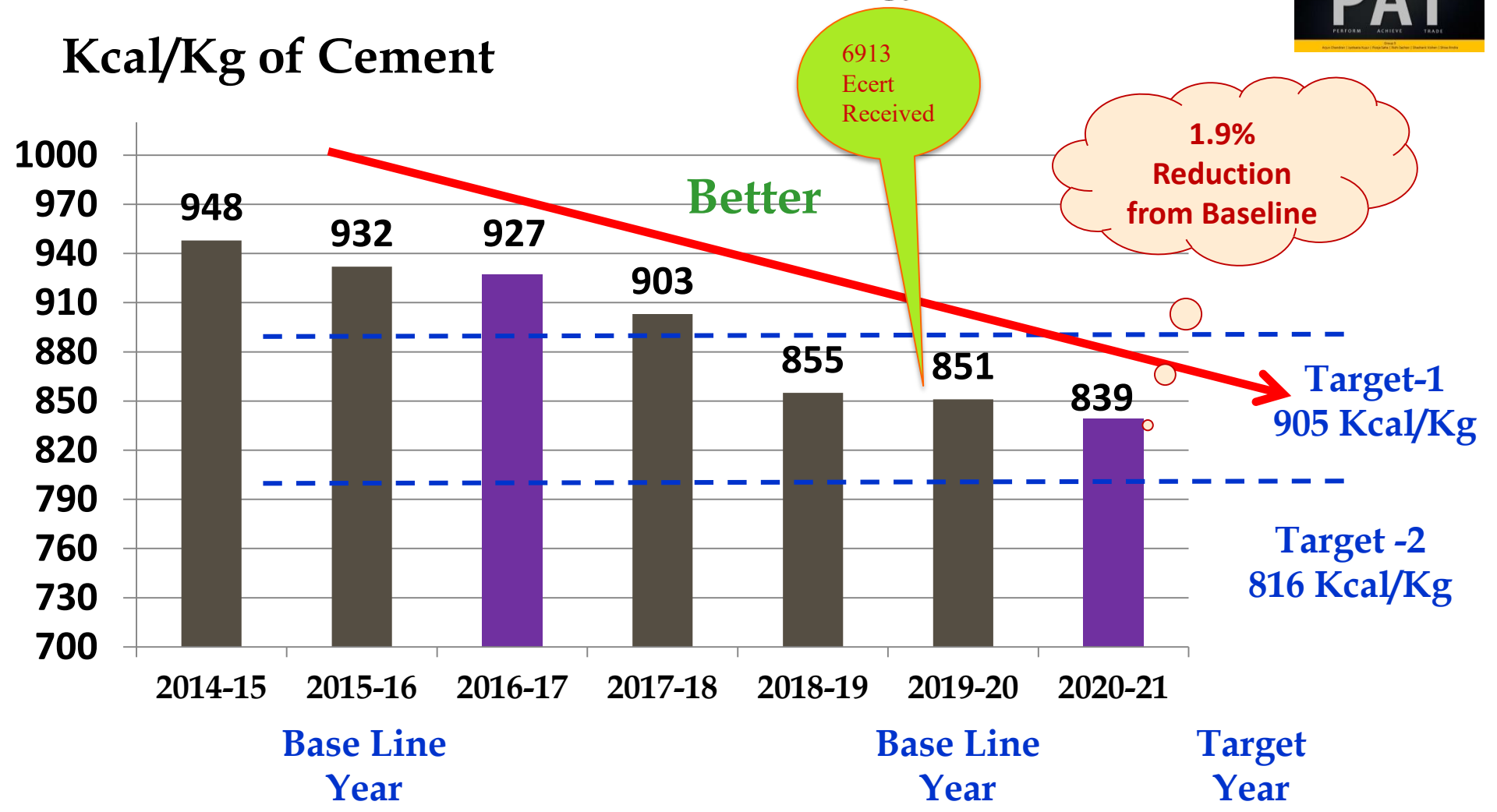
Comparison with Global Norms / Benchmark Data

Sp. Energy Consumption	DCBL Actual (FY 2020-21)	National Benchmark ***	International Benchmark ***
Specific Energy Consumption – Thermal (KCal/Kg of Clinker)	690	676	660 (Japan)
Upto Clinker SEC – Electrical (KWh/T of Clinker)	50.25	42.59	42.59 (India)
Overall Cement SEC – Electrical (KWh/T of Cement)	68.09	56.14	56.14 (India)
*** Source of Information : CII			

Thermal substitution rate,%



Overall Sp. Energy Consumption Trend
(Gate to Gate Energy)

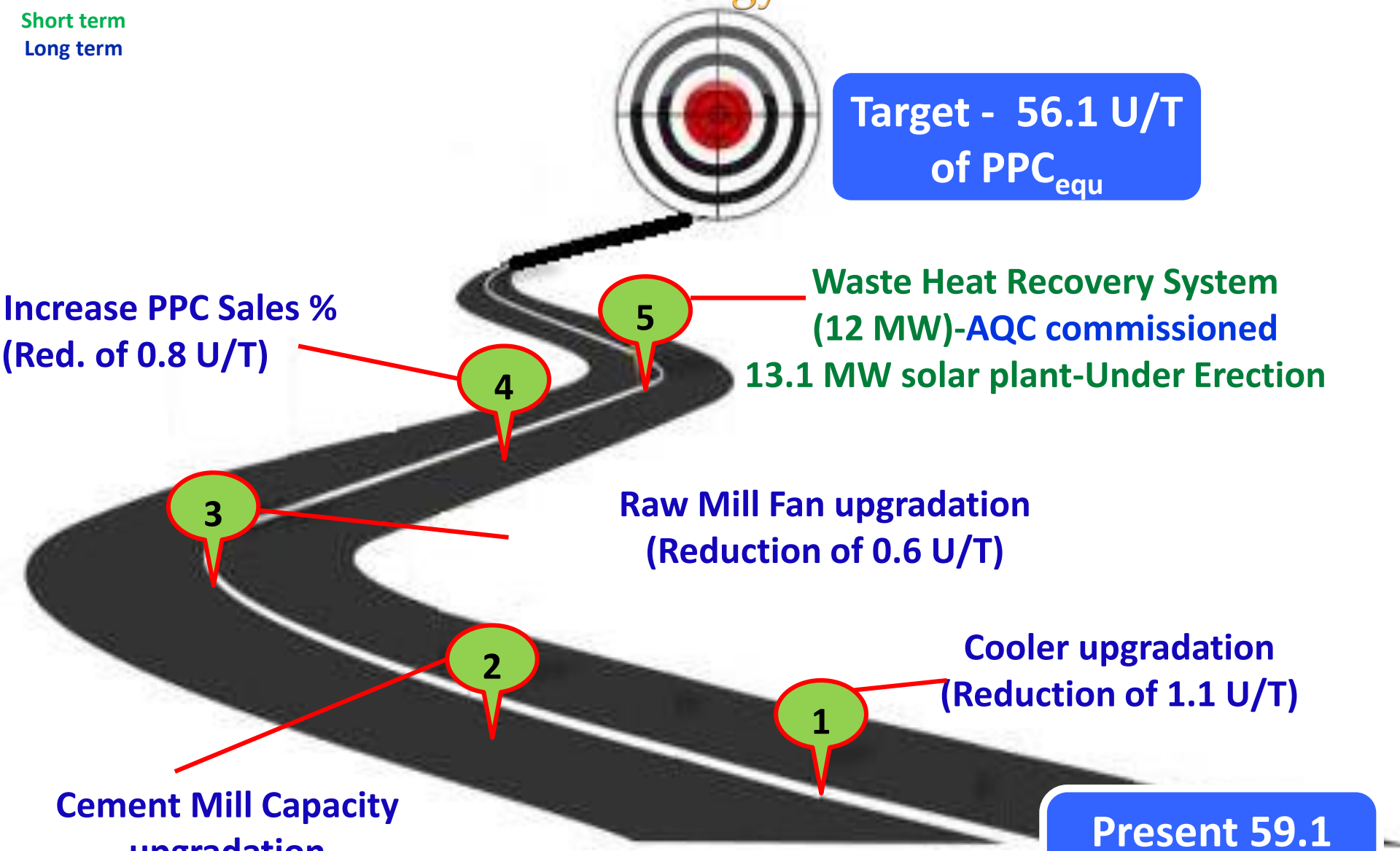


Country 3rd Lowest G to G Sp. Power Under OPC Major Production

(Ref. BEE Gazette Notification S.O. 1264 (E) 31st Mar 2016)

Road Map for Achieving Benchmark / Global Best – Electrical Energy

Short term
Long term



Road Map for Achieving Benchmark / Global Best – Thermal Energy

Short term
Long term

Target - 676 Kcal/Kg of Clinker

4 — Use of AFR (Increase 7% on TSR from Current Rate)

3 — Raw mix Optimization(2Kcal/Kg)

2 — Pyro up gradation(6 Kcal/Kg)

1 — Cooler efficiency improvement & Up gradation (Red. of 6 Kcal/Kg)

Present 690 Kcal/Kg of Clinker

Major Encon Projects
(FY 2021 to 2022)

Dalmia BHARAT GROUP

Sl.No.	Name of the Energy Saving Project	Investment (INR Million)	Annual Electrical Saving (Million kWh)	Annual Thermal Saving (Kcal)
1	Waste Heat recovery system design capacity of 12.1 MW and operating capacity of 9.6MW.	1490	64.80	-
2	13.1 MW Solar Power Plant	634	14.4	-
3	Installation of Chlorine Bypass system to Increase the AFR %	340.1	-	33326

Encon Projects

AQC Boiler – WHRS

Shredder - AFR

Summary of Energy Saving Projects in the Last 3 Years.

Year	No. of Energy saving projects	Investments (INR Million)	Electrical savings (Million kWh)	Thermal savings (Million INR)	Savings (INR Million)	Impact on SEC (kWh/MT of Cement)
2018-19	29	98.06	1.67	2.1	80.1	0.18
2019-20	21	13.7	2.23	0.23	14.61	0.09
2020-21	21	177	6.41	6.5	134	3.69

Highlighted Encon Projects

No Investment (FY 2018 to 2021)

Title of Project	Annual Electrical Saving (kWh)	Annual Elect. Cost Saving (Rs Lakhs)
Packing Plant Bag Filter Fans Auto Speed Reduction with Packer Rotation and Spout	109500	0.66
Interlocking of Cement Silo Top Bag Filters Operation as per Mill Operation Grade.	72000	4.32
Operation-logic modification in Hydraulic system (Coal Mill, & Cement Mill)	9500	6
Rawmill Nozzle ring blind plate modification to increase the production	359877	2.16
During every mill Start/stop,Idle running of grinding equipments was 1100 kWh.All the existing interlock reviewed and reduced the timer sequence thereby reduced the idle units to 700 kWh in cement mill	39900	0.24

Energy Conservation Projects

With Investment (FY 2018 to 2021)

Dalmia BHARAT GROUP

Title of Project	Annual Elect. Saving (kWh)	Annual Electrical Cost Saving (Rs Lakhs)	Invest. (Rs Lakhs)
Cement Mill Bag House RAL with VFD & Reduced False Air	90000	5.40	8.80
Man Cleaning Blowers Installed	24000	1.44	1.40
Installed Secondary Crusher for Raw Mill	2074600	124.48	110.00
Use of polymer liners in pondash hopper to improve the material flowability	42500	2.6	1.1

Energy Conservation Projects

With Investment – Thermal (FY 2018-21)

Title of Project	Year	Annual Thermal Saving (Ton/Year)	Annual Thermal Saving (Rs Lakhs)	Invest.(Rs Lakhs)
Thermal Insulation Lithopone Paint at PH 6th Cyclone	FY 2018-19	263	2.10	10
Liquid AFR Feeding Arrangement to Kiln Burner	FY 2018-19	1000	8	80
Solid AFR Feeding Arrangement to Precalciner	FY 2018-19	7200	57.60	810
AFR Handling & Re-circulation for Consistency in AFR Firing	FY 2018-19	24	0.19	28

IP - 1

Innovative Project - 1

Dalmia BHARAT GROUP

Optimisation of Classifier speed :

Observation :

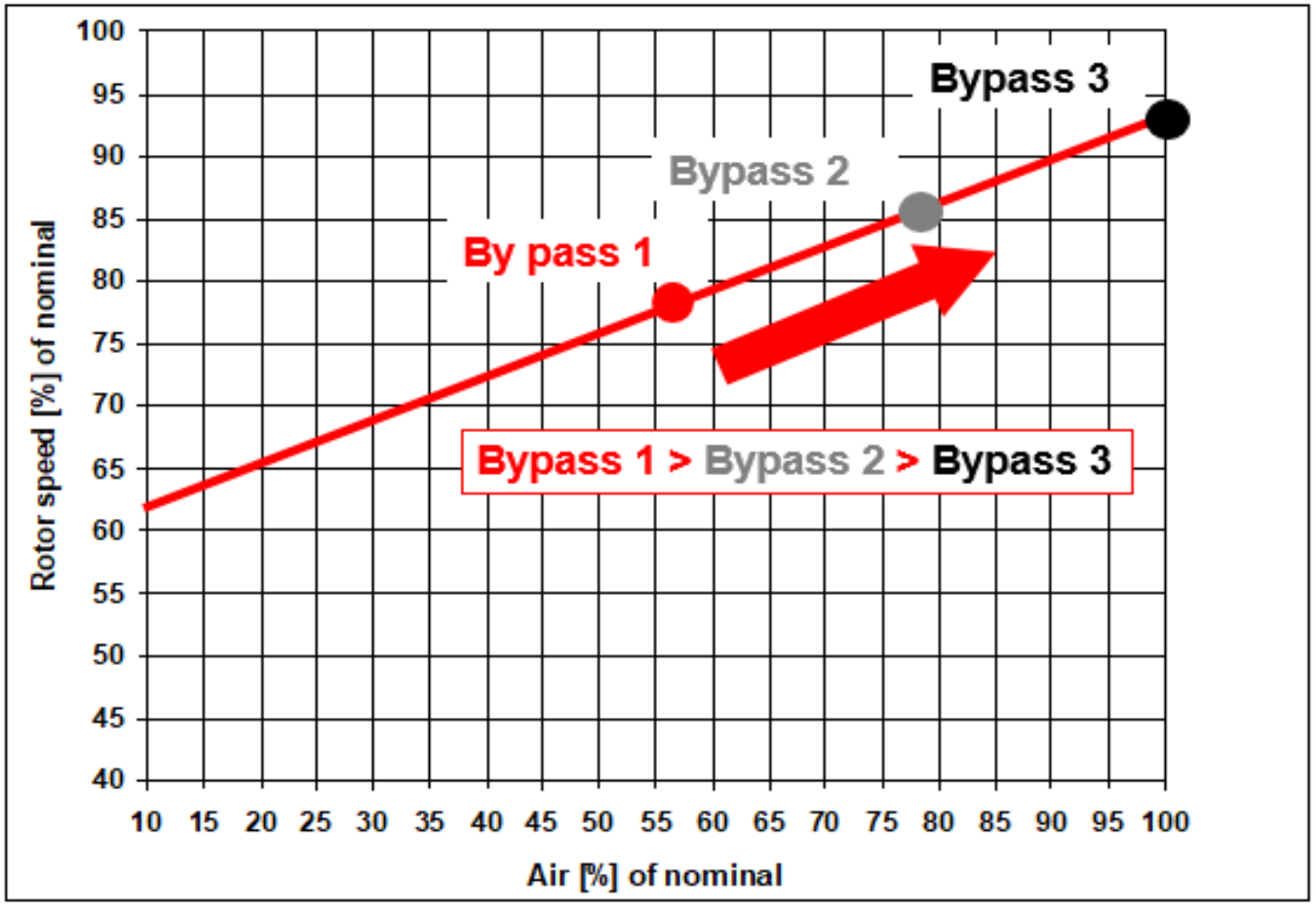
- ✓ The separator speed was operating with higher speed with maximum air flow
- ✓ Mill was unstable due to higher internal airflow
- ✓ Low separator dust load(380 g/m3)
- ✓ High dam ring height due to high dust recirculation

IP - 1

Innovative Project - 1

Dalmia BHARAT GROUP

Optimisation of Classifier speed :

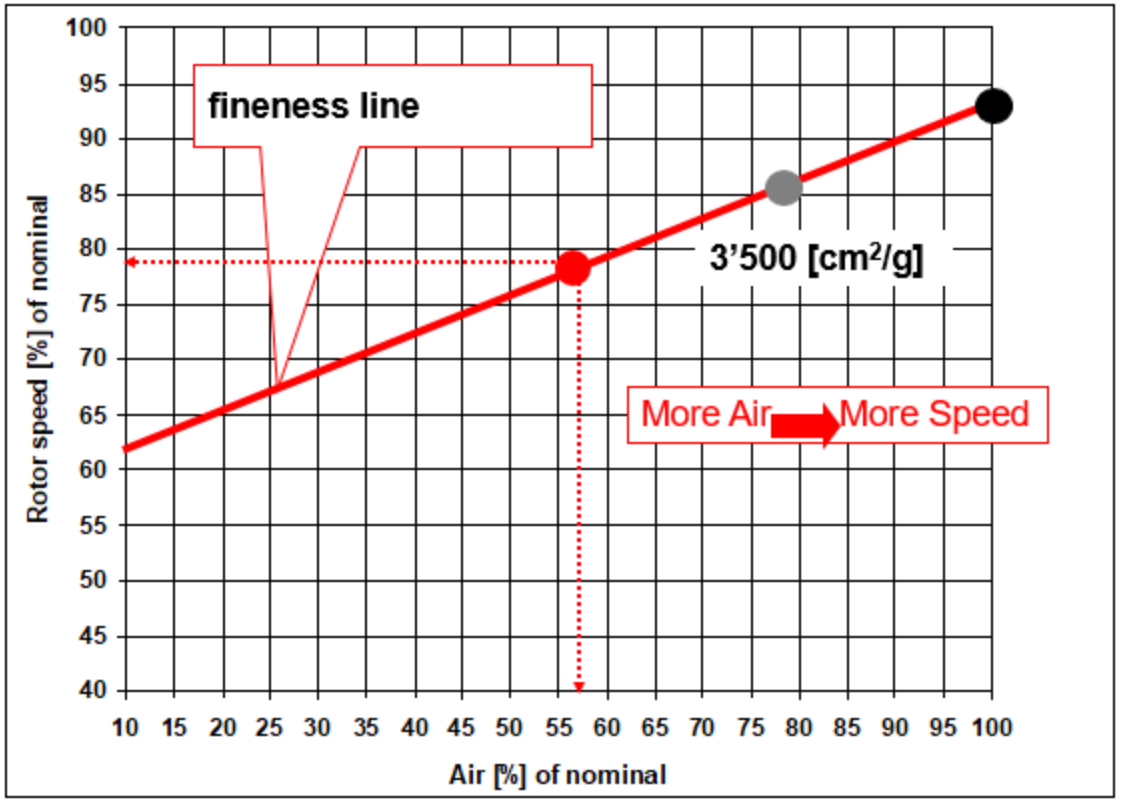


IP - 1

Innovative Project - 1

Dalmia BHARAT GROUP

Optimisation of Classifier speed :



The quality of separation requires sufficient ventilation

IP - 1

Innovative Project - 1

Dalmia BHARAT GROUP

Optimisation of Mill :

Conclusion :

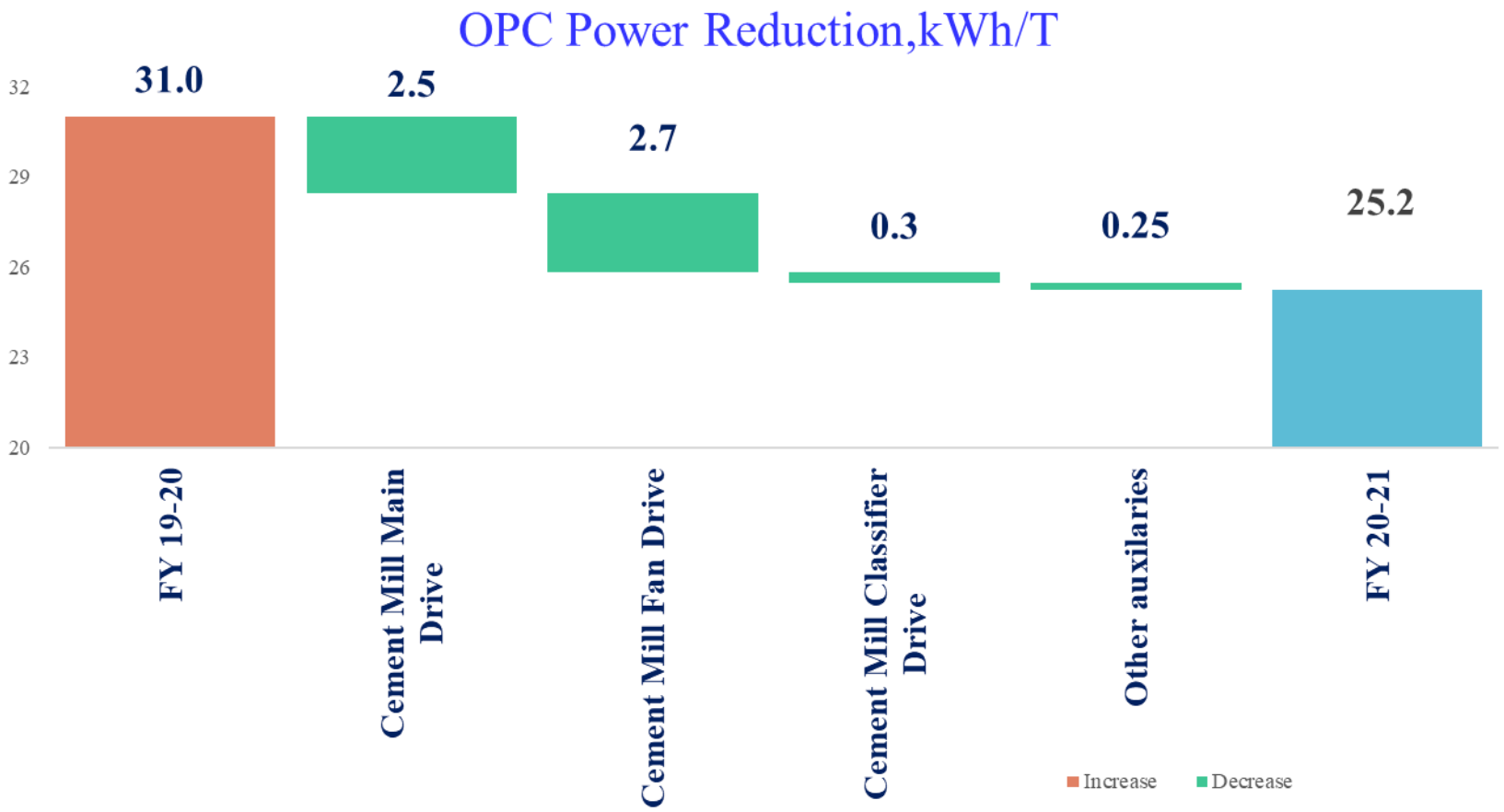
- ✓ Nozzle ring area reduced from 6.2 to 4.5 m^2
- ✓ Mill Reject reduced from 25% to <7% of total feed
- ✓ Dam ring height reduced from 260 to 170 mm
- ✓ Fan operating point with max.efficiency point
- ✓ Improved clinker grind ability

IP - 1

Innovative Project - 1

Dalmia BHARAT GROUP

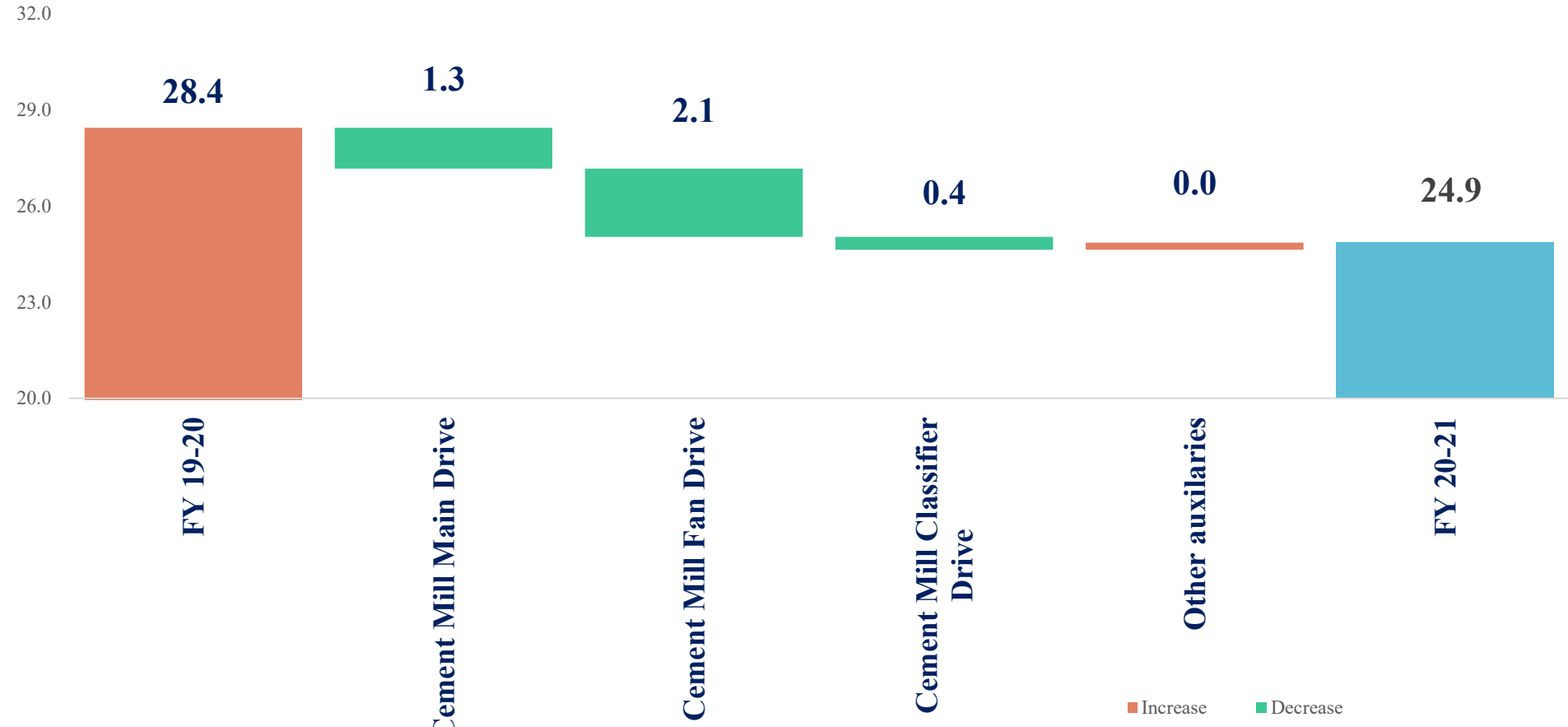
Cement Mill Specific power reduction :



IP - 1

Innovative Project - 1

Cement Mill Specific power reduction (PPC) :



IP - 1

Innovative Project - 1

Dalmia BHARAT GROUP

Optimisation of Classifier speed

Dashboard-Cement Mill	OPC		PPC		Total Cement		
Description	FY 20-21	FY 19-20	FY 20-21	FY 19-20	FY 20-21	FY 19-20	Difference (FY-FY)
Mill Production(Tons)	10,43,229	12,51,840	6,69,890	5,90,801	17,37,639	18,42,641	
Mill R.hrs	3,470	4,439	2,182	1,929	5,780	6,368	
Mill Output rate(TPH)	300.7	282.0	306.9	306.4	300.6	289.4	11.3
Units per ton of Cement							
Cement Mill Main Drive	15.01	17.54	14.08	15.35	14.71	16.84	-2.13
Cement Mill Fan Drive	7.40	10.05	6.69	8.82	7.16	9.66	-2.50
Cement Mill Classifier Drive	0.42	0.75	0.46	0.86	0.45	0.78	-0.33
Other auxilaries	2.42	2.67	3.63	3.41	2.85	2.91	-0.06
Total Cement Mill	**25.24**	**31.01**	**24.86**	**28.44**	**25.17**	**30.19**	**-5.02**
Units per hour							
Cement Mill Main Drive	4,512	4,946	4,322	4,704	4,423	4,873	-450
Cement Mill Fan Drive	2,224	2,835	2,054	2,702	2,151	2,795	-643
Cement Mill Classifier Drive	126	211	140	264	135	227	-92
Other auxilaries	726	753	1,115	1,044	856	841	15
Total Cement Mill	**7,589**	**8,744**	**7,631**	**8,713**	**7,565**	**8,735**	**-1,170**

IP - 1

Innovative Project - 1

Tangible & Intangible Benefits

- Mill operation is stable
- Mill Specific power reduced by 5.02 kWh/T of cement
- Classifier speed reduced from 74 to 63 rpm with optimum air flow
- Annual savings – (17,37,639 x 6.0 x 5.02) – 523.4 Lakhs per year
- Mill output increased from 306 TPH to 330 TPH resulting to savings in peak hour power utilization operating

Renewable Energy Sources (2020-21)

Type of Renewable Energy Source	Installed Capacity in KW	Savings	
		Energy Generated (Lakhs Unit)	Cost Saving (Rs. Lakhs)
Non Solar REC	-	23.18	-
Solar REC	-	19.58	-
Solar Power	30	0.49	3.13
Bio Gas Plant	At Guest House	1800 m^3/Yr.	1.20

1MW Roof Top in Pipe Line
13.1MW Solar Plant

Renewable Energy

13.1 MW Solar Power Plant Under Erection- Target Dec;21

Renewable Energy

Solar Roof Top-30 KW at Guest House

Solar Street Lights(8 Nos)

Solar power Pack – 2 KW

Dalmia Cement Committment

http://there100.org/dalmia-cement

(page 13)

Group Profile

Affliations and Membership on Environment and Sustainability Domain (RE 100)

First Cement Plant in India Committed Volunteerly

Dalmia Cement RE100 Committment & Action Plan

RE 100 Action Plan	Total Power Requirement / Consumption at Kadapa	Lakh Units / Annum	1290
	GPP Generation with 9 MW WHRS	Lakh Units / Annum	400
	12 MW Solar Plant within Premises (Installation)	Lakh Units / Annum	198
	28 MW Solar Plant Through Open Access	Lakh Units / Annum	462
	1 MW Roof Top Solar	Lakh Units / Annum	15
	Minimum Grid Power Consumption	Lakh Units / Annum	108
	Potential for Other Source & Energy Saving Opportunity Utilization	Lakh Units / Annum	107

Waste Consumption as Green Fuel
(FY 2020-21)

SI.NO	Name of the Fuel	QT in MT	GCV in Kcal/Kg	Percentage
1	Spent Solvent Liquid	1670	3247	0.12%
2	Process organic residue liquid	1602	3031	0.11%
3	Waste Process salt	346	3943	0.11%
4	Waste mixed solid	320	3898	0.07%
5	Organic residue solid	410	3020	0.49%
6	Spent carbon	210	3650	0.44%
7	Plastic waste	10227	4651	4.32%
8	Rubber foam waste	155	4856	0.07%
9	Rice Husk	137	3271	0.04%
10	FRP waste	178	5957	0.93%
11	MSW	18	2690	0.79%
12	RDF	3018	3382	0.01%
13	Multi layer plastic waste	1822	4772	0.08%
14	ETP sludge	17	4120	0.07%
15	Assorted AFR	192	4410	0.00%
16	Biomass waste	218	3353	0.10%
17	Paint Sludge	32	4568	0.01%

Total - 7.9 %

Waste Consumption as Green Fuel
(FY 2019-20)

SI.NO	Name of the Fuel	QT in MT	GCV in Kcal/Kg	Percentage
1	Waste Process salt	703	3697	0.19%
2	Waste mixed solid	857	3428	0.21%
3	Organic resuidue solid	6450	3634	1.67%
4	Pyro Carbon	6535	6878	3%
5	Spent carbon	1032	3311	0.24%
6	Spent Solvent Liquid	3831	3584	0.98%
7	Organic Residue Liquid	7590	3254	1.76%
8	Plastic waste	4879	3907	1.36%
9	Tyre chips	20	5550	0.01%
10	Rice Husk	29	3550	0.01%
11	RDF	4683	3682	1.23%
12	MSW	212	3423	0.05%
13	Bamboo	14	4191	0.00%
14	Assorted AFR	97	4165	0.03%
15	Biomass waste	503	2976	0.11%
16	Paint Sludge	92	3356	0.02%

Total - 11 %

Waste Consumption as Raw Material

Sl.No	Year	Waste as Raw Material	Quantity (Tones)	Replaced material	Waste as percentage
1	2018-19	Wet Flyash	14932	Aluminus Laterite	0.48
2		Slag	31147	IronOre	1
3		Gas Cleaning Plant waste (GCP Dust)	113	IronOre	0.004
4	2019-20	Wet Flyash	25418	Aluminus Laterite	0.84
5		Slag	28067	IronOre	0.92
6		Redmud	12107	Aluminus Laterite & Ironore	0.4
7	2020-21	Wet Flyash	39394	Aluminus Laterite	1.64
8		Slag	2011	Aluminus Laterite & Limestone	0.08
9		Redmud	8239	Aluminus Laterite & Ironore	0.34

GHG Inventorisation

Carbon Foot Print Activities					
Year	Scope 1 emissions CO_2e (MT)	Scope 2 emissions CO_2e (MT)	Scope 3 emissions CO_2e (MT)	kg CO_2e/MT of Cement	Mitigation Total Reduction in emission intensity since baseline year study CO_2e (MT)
2012 - 13 (Baseline Year)	731	70	28	829	Baseline Year
2013 - 14	722	76	24	822	7
2014 - 15	689	80	27	796	33
2015 - 16	706	77	10	793	36
2016 - 17	694	76	11	781	48
2017 - 18	698	75	13	786	43
2018 - 19	698	75	11	784	45
2019 - 20	697	74	10	781	48
2020 - 21	693	73	10	776	53
-	Process	Electricity	Transport	Overall	6.4% Reduction from Base Line

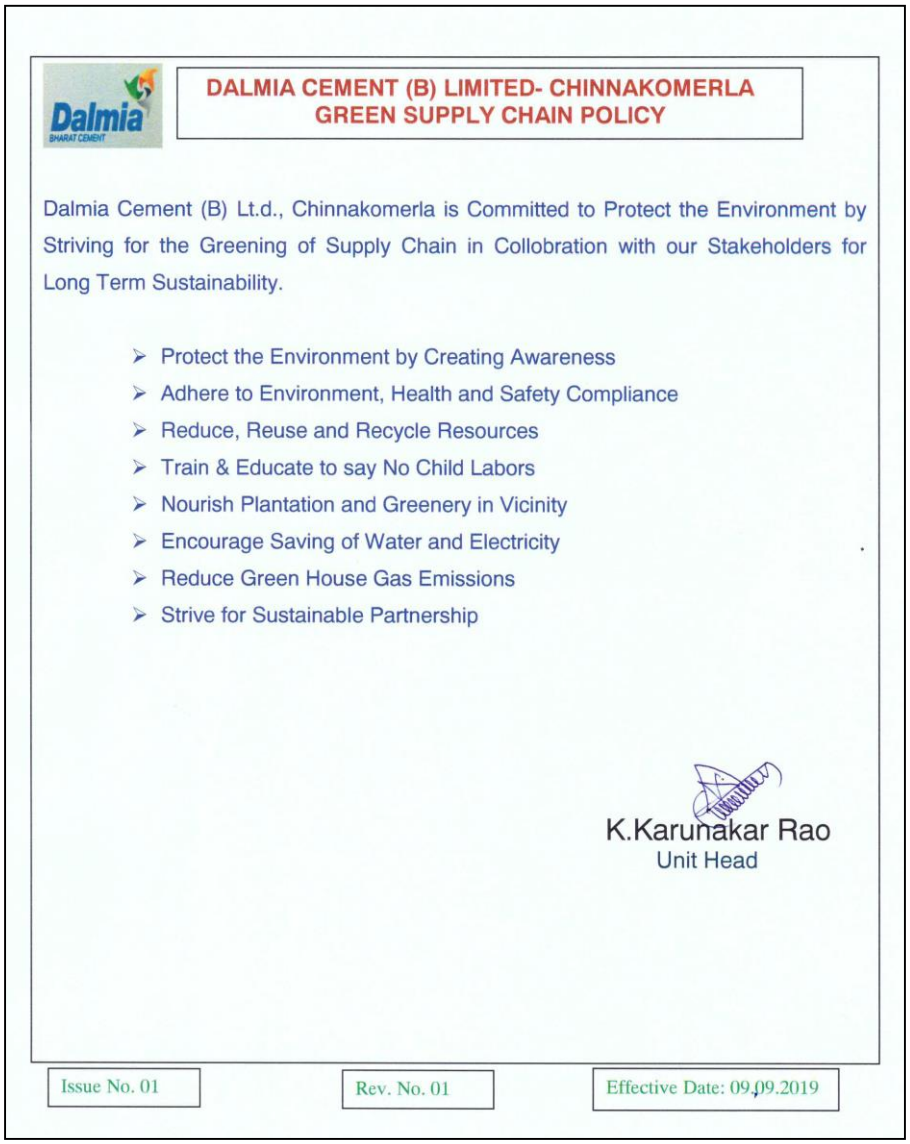
Target : 755 kg CO_2 e/MT of Cement

(WHRS, Cooler Up gradation, PPC% …)

Green Supply Chain Project (FY 2020-21)

Sl.No.	Name of Project Implemented	Investment	Benefits
1	PLMS- Plant Logistics Management System	8Lakhs	Tracking of Truck Waiting time at different Loaction.
			Reduction of Truck Turnaround Time.
2	RFID- Radio Frequency Interface Device	7 Lakhs	Unmaned weigh Bride operation.
			Reduction of Man intervention and reduction of Error
			Reduction of Truck Turnaround Time.
3	TBPS-Transporter Bill Payment System	5 Lakhs	Bill process time reduction
			Tracking of invoice status.
4	End to End Project	2 Lakhs	Goods Transition Through Godown Eliminated
			Good Travel Distance Reduced
			Energy & Cost Savings in Logistics
5	Vehicle up Size	-	To reduce No of trips
			Energy & Cost Savings in Logistics
6	DD (Direct Dispatch)	-	Delivery to End customer to reduce handling in depots
			Energy & Cost Savings in Logistics

Green Supply Chain Policy



DALMIA CEMENT (B) LIMITED- CHINNAKOMERLA
GREEN SUPPLY CHAIN POLICY

Dalmia Cement (B) Lt.d., Chinnakomerla is Committed to Protect the Environment by Striving for the Greening of Supply Chain in Collobration with our Stakeholders for Long Term Sustainability.

- Protect the Environment by Creating Awareness
- Adhere to Environment, Health and Safety Compliance
- Reduce, Reuse and Recycle Resources
- Train & Educate to say No Child Labors
- Nourish Plantation and Greenery in Vicinity
- Encourage Saving of Water and Electricity
- Reduce Green House Gas Emissions
- Strive for Sustainable Partnership

K.Karunakar Rao
Unit Head

Issue No. 01	Rev. No. 01	Effective Date: 09.09.2019

Team Work, Employee Involvement & Monitoring

Energy Monitoring System

Daily Power Consumption Report

Dalmia Cement (Bharat) Limited. Kadapa Project
Daily Power Consumption Report

	132Kv Main Incoming Units	374595	Kwhr		Avg PF:	0.990	Report Date:	XX.06.20XX
	DG Generation Units	0	Kwhr				Consumption Date:	XX.06.20XX
	Peak Hour Consumption	20715	Kwhr		(MD) KVA	22500	OLTC Opn. Count	9

Sl. No.	Section Description	Units Consumption	Running Hrs	Prodn.	Production Rate	Avg Kw	Guaranteed U/T of Matl.	Actual U/T of Matl.
1	LS Crusher		16.17	11445	707.79	628		
	LS Crusher Main Drive	3771				233	0.38	0.33
	LS Crusher Auxiliaries	1938				70	0.46	0.17
	211BC2 Long Belt	2386				14	0.42	0.21
	211BC2A Long Belt	2060				127		0.18
	LS Crusher & Transport-Total	10155					1.25	0.89
2	Raw Mill		16.92	7105	419.92	7106		
	Raw Mill Main Motor	63[illegible]8				3733	17.42	8.89
	Raw Mill Fan Motor	44678				2638		6.28
	Raw Mill Classifier	152				90		0.21
	MCC - 02 (LS Transport)	195				116	2.07	0.28
	MCC - 03 (RM Grinding Aux.)	6936				410		0.98
	Additive Reclaimer	327				19		0.05
	LS Stacker & Reclaimer	1706				101		0.24
	RM Fan SPRS Recovery	0				0		0.00
	Total	120235					19.49	16.92
3	Coal Mill		14.33	577	40.27	877		
	Coal Mill Main Motor	5197				363	25.51	9.01
	Coal Mill Fan Motor	3577				250		6.20
	Coal Mill Classifier	272				19		0.47
	MCC - 07 (Coal Mill Grinding Aux.)	2169				151	16.73	3.76
	RMH & Coal Crusher	1349				94		2.34
	Total	12564					25.51	21.77

MODEL

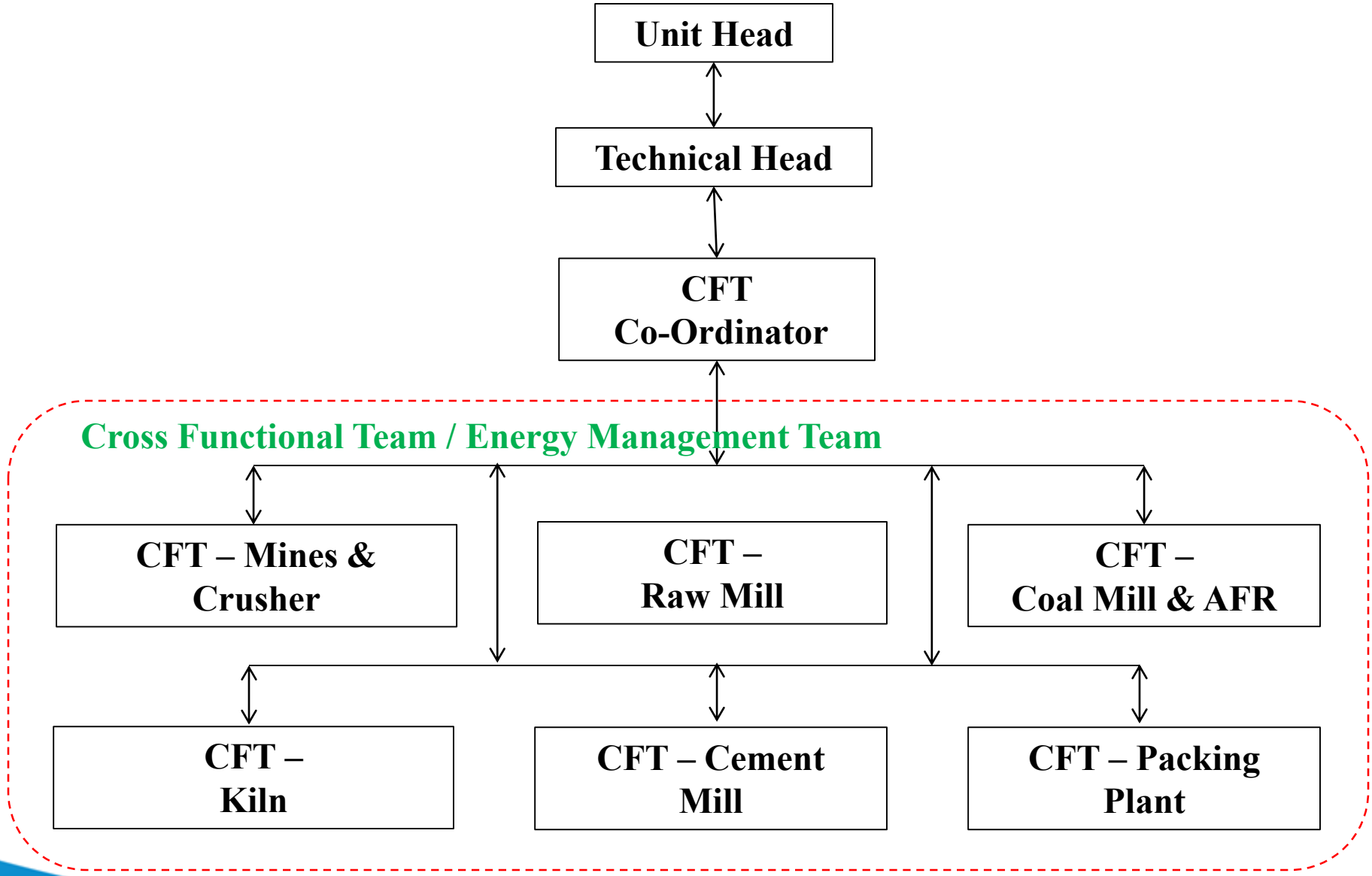
Daily Energy Conservation Report

ENERGY CONSERVATION (IDLE POWER CONSUMPTION REPORT)

SECTION	SECTION DESCRIPTION	OPTIMUM SATRT UP TIME	ACTUAL RUNNING HOURS	XX.06.20XX IDLE RUNNING TIME	ENERGY IN KWH: IDLE /SHUT DOWN UNITS	ACTUAL U/Ton	WITHOUT IDLE RUNNING U/Ton	Kwh
LS CRUSHER	APRON FEEDER	0.00	16.17			0.89	0.86	
	CRUSHER MAIN DRIVE	0.17	17.67	1.33	106.40			80.00
	211BC2	0.50	17.92	0.00	0.00			145.00
	211BC2A	0.50	17.92	1.25	181.25			145.00
	MINES DEWATERING PUMP		66.00					
	IDLE/SHUT DOWN POWER				87.65			
	No of Start/ Stops 3.00							
Raw Mill	WEIGH FEEDER	0.00	16.92			16.92	16.88	
	MAIN DRIVE	0.00	16.90	-0.05	0.00			150.00
	FAN	0.30	16.90	-0.32	0.00			26000.00
	LS RECLAIMER FEED GROUP	12.20	16.50	4.30	335.40			78.00
	AD. RECLAIMER FEED GROUP	10.10	12.70	2.60	0.00			49.00
	TOTAL DCS IDLE / SHUT DOWN POWER				335.40			
	No of Start/ Stops 0.00 Dcs Idle Power 331.00							
Coal Mill	WEIGH FEEDER	0.00	14.33			19.44	19.06	
	MAIN DRIVE	0.03	14.40	0.04	2.00			50.00
	FAN	0.17	14.70	0.13	32.50			250.00
	COAL STACKER FEED GROUP	3.30	3.30	0.00	0.00			54.00
	COAL RECLAIMER FEED GROUP	3.80	5.30	1.50	180.00			120.00
	RAW MATERIAL HANDLING				1349.00			
	TOTAL DCS IDLE / SHUT DOWN POWER				214.50			
	No of Start/ Stops 4.00 Dcs Idle Power 75.00							

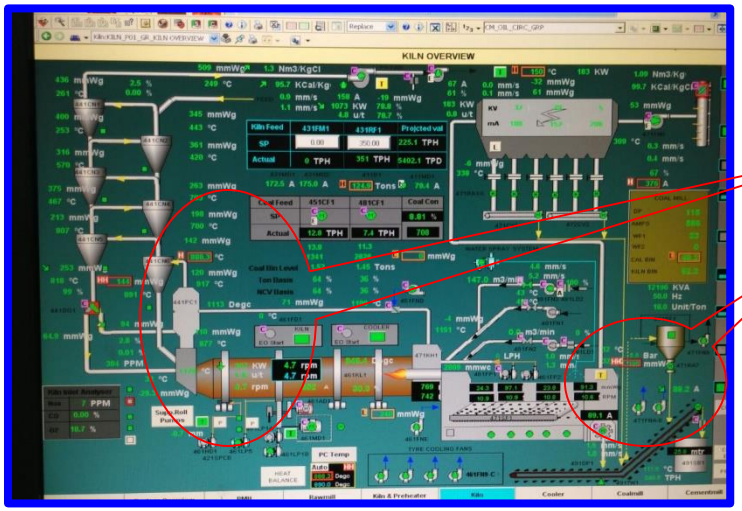
MODEL

Monitoring & Review Mechanism



Online Sp. Energy Monitoring

Online SEC Monitoring by CCR Operator and taking Immediate action during increase in SEC Indication



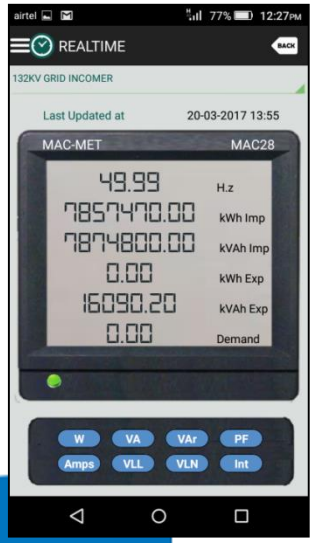
Online SEC of Electrical & Thermal Energy Consumption as per

1. Sum of Electrical Power Consumption
2. Coal Feed Rate
3. Process Material Feed Rate

Cloud Based Energy Management System

Grid I/C Meter

Data in Website & Mobile



Employees Involvement
Training – Summary (FY 2020-21)

Sl.No	Training Program	Internal / External	No.of participants	Duration (Hrs)
1	Heat & Mass Balance	Virtual	12	2
2	Circulation Phenomena in Pyro Process	Virtual	13	2
3	MV Drives & SPRS-Slip Power Recovery System	Virtual	13	2
4	BAG FILTER (Over View ,operation & Maintenance)	Virtual	15	2
5	Basics of Fan Engineering	Virtual	12	2
6	Combustion Engineering	Virtual	13	2
7	Mill-Separation	Virtual	12	2
8	Motor Basics & Energy Saving	Virtual	16	2

Encon Total Employee Involvement
(Engineers, Supervisors, Workmen…)

	Project - 1	Project - 2	Project - 3	Project - 4
Source of En-Con Idea :	NECD	CFT Meeting	Kaizen	Kaizen
Idea Originated From :	Engineer	Fitter	Operator	Engineer
Idea Originated in the Year :	2020	2020	2021	2021
Whether Idea Implemented :	YES	YES	YES	YES
Name of the Project	Eliminated tripping of raw mill Feed RAL. Replaced the lower kW RAL motor with higher KW RAL, leads to reduced trippings.	Provision of Bin at bulk loading and eliminated start stop consumption of silo extraction group.	Speed reduction of fly ash silo aeration blower K21BL4 when RAL is stopped. Reduced the speed of blower by providing the interlock with feed RAL when it stops.	Added Additional Pilot Direction Control Check Valve in the Raw Mill Hydraulic Circuit to reduce the Pump Operation Cycle Time (300 Times to 4)
No. of Team Members Involved	2	3	2	2
Benefits	6.6 Lakh Units / Annum	0.54 Lakh Units / Annum	0.02 Lakh Units / Annum	0.1 Lakh Units/Annum

ISO Certifications

ISO 9001:2015

ISO 14001:2015

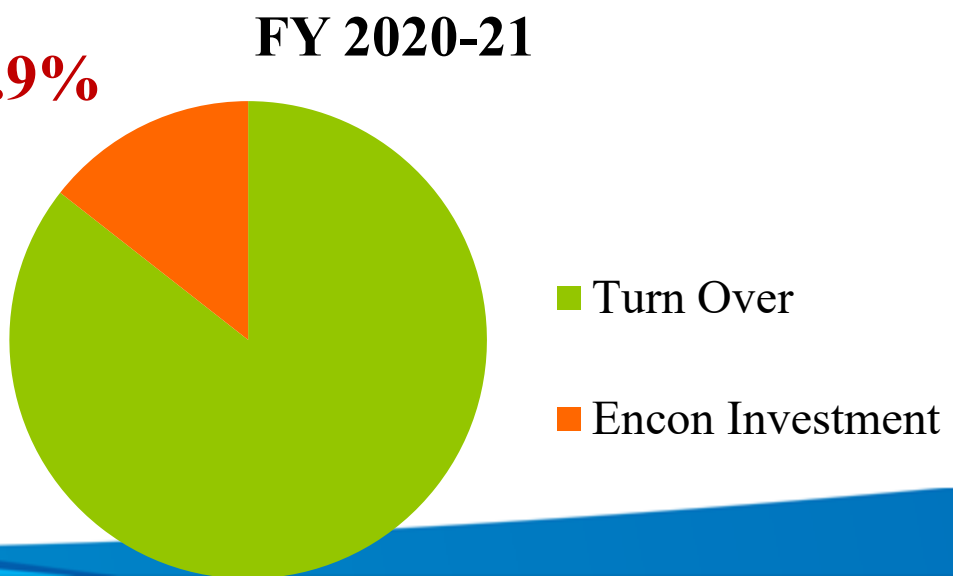
ISO 45001:2007

ISO 50001:2011

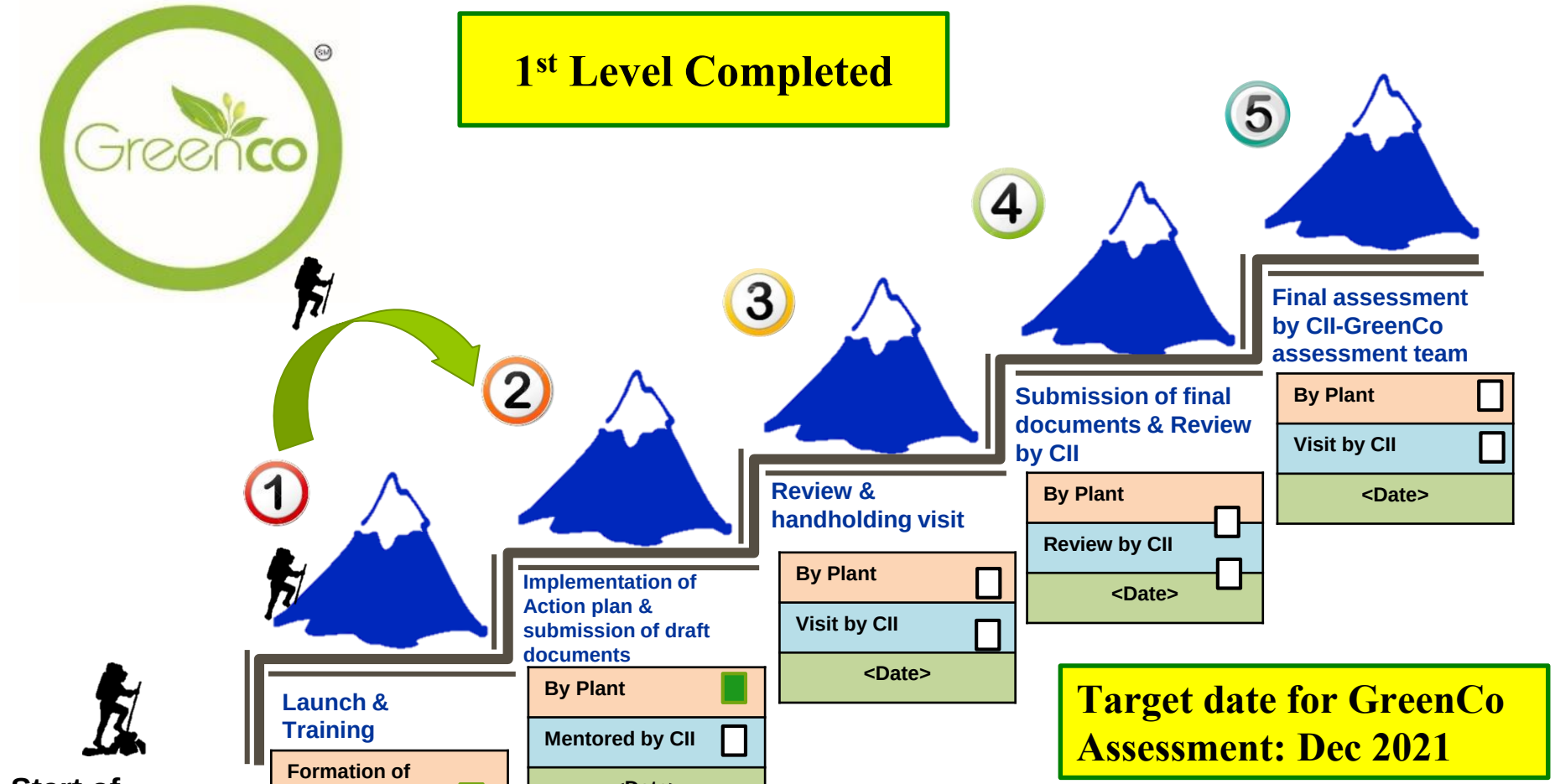
Turn Over & Investment

Rs. 166.7 Crores, 16.9%

Rs. 989 Crores , 83.1%



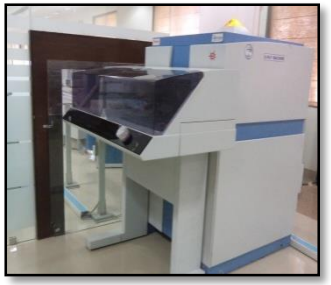
GreenCo Rating System – Roadmap



Innovative EE Technologies

Technologies Adopted

1. Robotic Lab with X-Ray Analyzer for Consistent Quality, Production and Sp. Power Consumption.



2. MV & LV Drives for all Process Fans (PH Fan, BH Fan, Mill Fan and other Fans).

3. Online Energy Management System with Cloud Supported. (Monitoring & Reduction of Idle Power, Analysis for Variation in Sp. Power Consumption.

4. Cross Belt Analyzer for Consistent Quality and Improved Additives Consumption.

Innovative EE Technologies

Technologies Adopted

5. Expert Optimizer for Energy Efficient Plant Operation with Minimized Variation and Maximized the Capacity Utilization.

6. Intelligent MCC Panels for High Reliability and Elimination of Breakdown Energy Losses

7. High Accurate Pfister System for Consistent Feeding of Fine Coal, which avoids Variation and Reduction of Thermal Consumption

8. Online SEC Monitoring of Thermal & Electrical SEC through DCS

Long Term Target for Energy Efficiency

1. High Efficiency Clinker Cooler to Reduce the Thermal Energy Consumption. (Technical Support & Supplier Engagement)

2. Burn ability Improvement by Mineralizer to Reduce the Thermal Energy Consumption. (Technical Support)

3. Top cyclone modification to improve the thermal and electrical energy. (Technical Support & Supplier Engagement with Guaranteed Parameters)

4. Lower Cyclone Dispersion Box Height in Raiser Duct Modification to Improve the Heat Transfer. (Technical Support & Supplier Engagement)

APSECM - Award

FICCI – Excellence in Mines Safety

Total 7 Nos. of Awards Received in FY 2020-21

Environmental Projects

Theme : Water Pond Development & Rain Water Harvesting

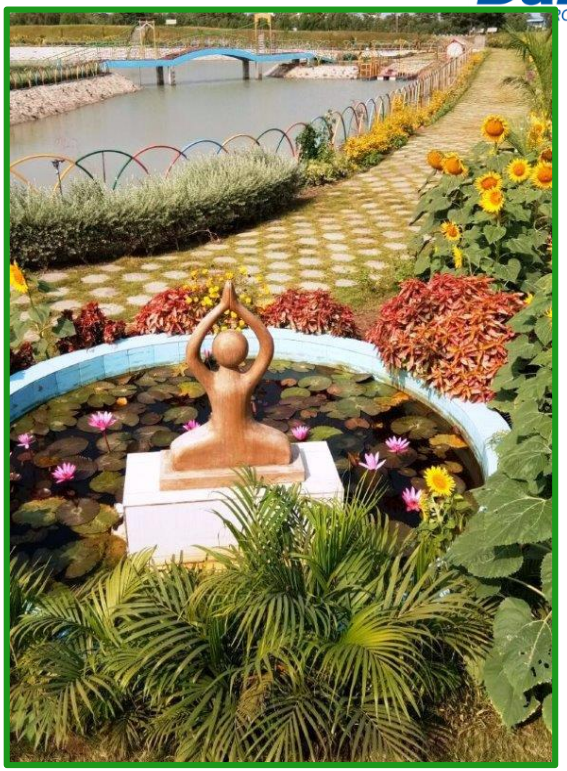





Kadapa Plant is Water Positive

400%

Environmental Projects



Dalmia
BHARAT GROUP

5S Model Company

Dalmia
cement
FUTURE TODAY

Thanks

v.mohanraj@dalmiacement.com
k.santhoshkumar@dalmiacement.com
s.muthamilselvan@dalmiacement.com