

Mentor:- Mr. Ajay Kumar Sharma (Unit Head) Presented By:- Mr. Vipin Joshi (Ele Engineer)

I - TATA AND A TATA AND A TATA AND A TATA AND A TATA



1. Brief introduction on Company/Unit



▶ **1.1 Profile:-** JK Lakshmi Cement Limited is a part of the prestigious 135 years old JK Organisation, which owes its name to Late Shri Lala Juggilal Ji Singhania and his son Late Shri Lala Kamlapat Ji Singhania. JK Lakshmi Cement Limited was started in 1982, we have modern and fully computerized, integrated cement plants at Jaykaypuram, in the Sirohi district of Rajasthan, at Dabok, in the Udaipur district of Rajasthan (a subsidiary of the company) and at Ahiwara, in the Durg district of Chhattisgarh.

We also have four split location grinding units at -Kalol and Surat in Gujarat, Jharli in the Jhajjar district of Haryana and Cuttack in Odisha. The combined capacity of our company is 13.9 Million MT per annum.



JK Lakshmi Cement Limited, Surat



1. Brief introduction on Company/Unit



1.2 Process:- Here at Surat grinding unit, having capacity of 1.35 Million MT per annum, we are only grinding, packing and dispatching the cement.

1.3 Products:- At JKLCL Surat, we have wide product portfolio catering to varied construction requirements. We grind cement grades like OPC 43 & OPC 53 and Blended Cements like PPC and composite Cement.

2. Technology/specifications of major sections:-

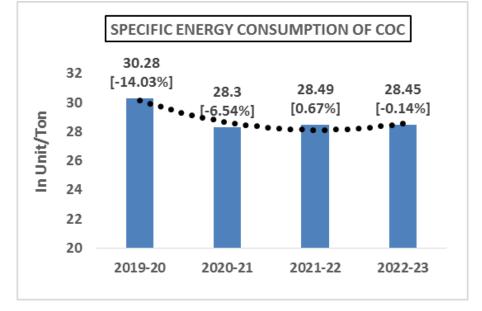
Sr. No.	Equipment Name	TPH (Installed OPC)
1	Ball Mill	80
2	Vertical Roller Pre-Grinding Mill	40

Packing Plant Power Utilisation								
Sr. No.	Sr No FY (Unit/Ton)							
Sr. No.	FY	Bulk Loading	Bags					
1	2019-20	0.18	1.26					
2	2020-21	0.16	1.44					
3	2021-22	0.15	1.35					
4	2022-23	0.18	1.24					



2. Percentage Improvement in SEC in last 4 years



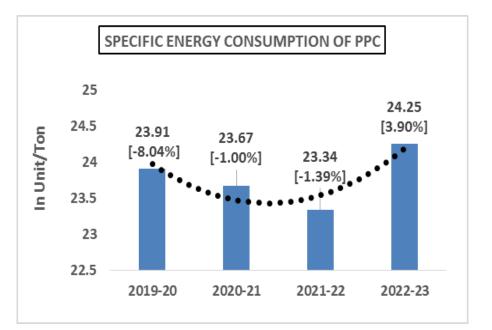


Percentage of Overall Power improvement (in last 4 years) in

- 1. Composite cement :- -20.04%
- 2. PPC:- -6.53%.

We have replaced PPC with COC to reduce consumption of clinker up to 10%.

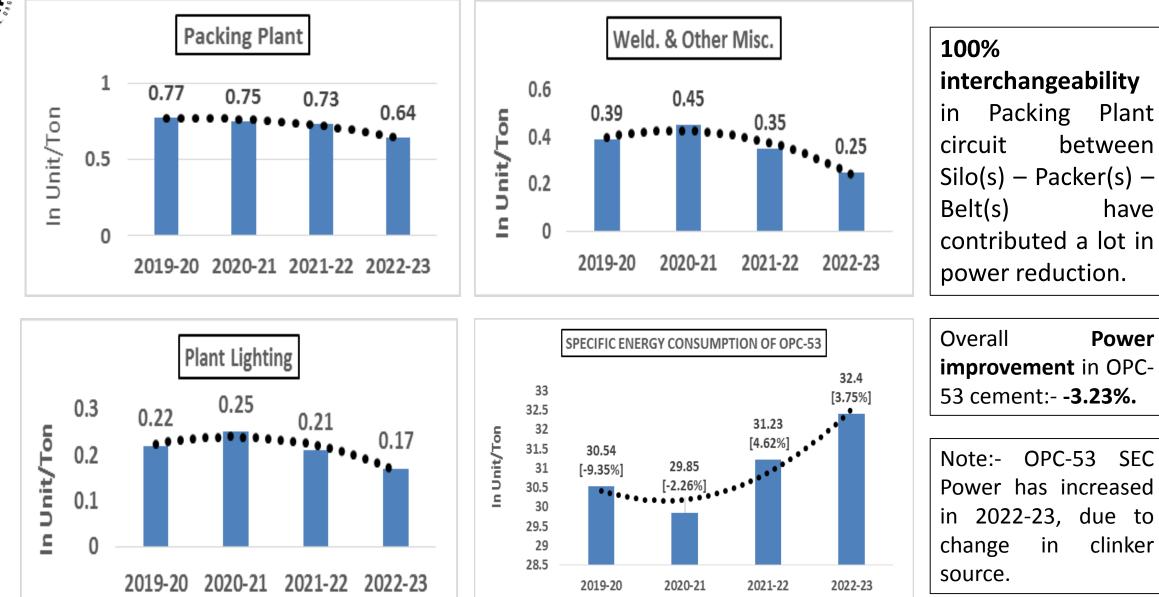
With collection of smart-resilient techniques and methodologies aimed at reducing the overall power consumption we have decreased, achieved and sustained our power consumption





2. Percentage Improvement in SEC in last 4 years

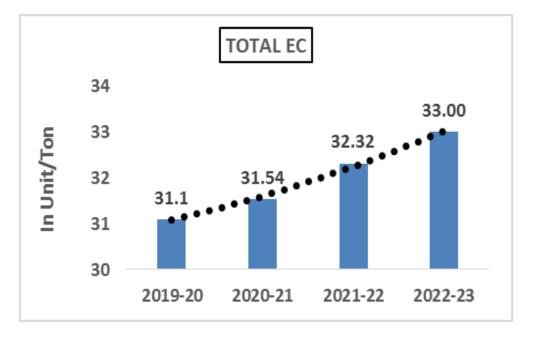


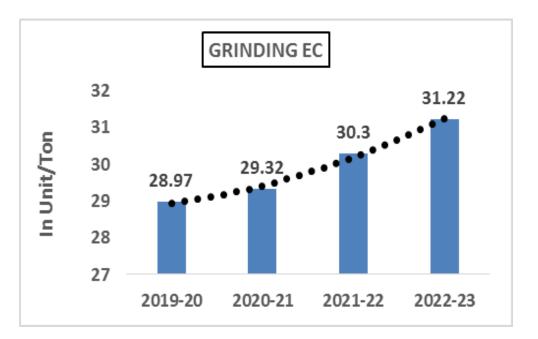




2. Total and Grinding EC from FY 2019-23







Grinding EC and Total EC have increased due to increased production of OPC-53 from 59.88% in 2019-20 to 66.79% in 2022-23 and decrease in production of PPC from 23.42% in 2019-20 to 0.29% in 2022-23.

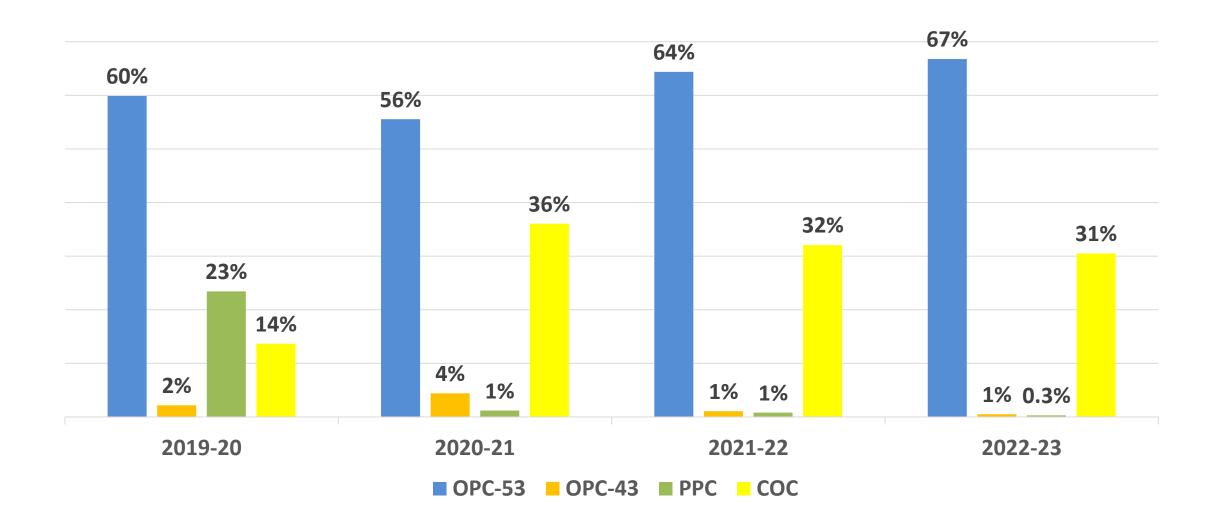
% OF PRODUCTION										
FY 2019-20 2020-21 2021-22 2022-23										
OPC-53	59.88 %	55.56 %	64.38 %	66.79 %						
сос	13.67 %	36.07 %	32.07 %	30.5 %						
РРС	23.42 %	1.18 %	0.81 %	0.29 %						



2. Total and Grinding EC from FY 2019-23



Percentage of Production





3. Information on Competitors, National & Global benchmark



NATIONAL & GLOBAL ENERGY BENCHMARKING								
Sr. No. Name of Competitors EC Grinding Values (FY 21-22)								
1	JK Cement, Jharli	20.56						
2	Heidelberg Cement India LtdUnit Jhansi	23.76						
3	JK Lakshmi Cement LtdUnit Surat	31.32						

Here we find a room for improvement in our performance activities and a void between top performing competitors. We continue to strive for the better results in FY 2023-24. For that we have developed an action plan and have aligned ourselves to achieve the bench markings.

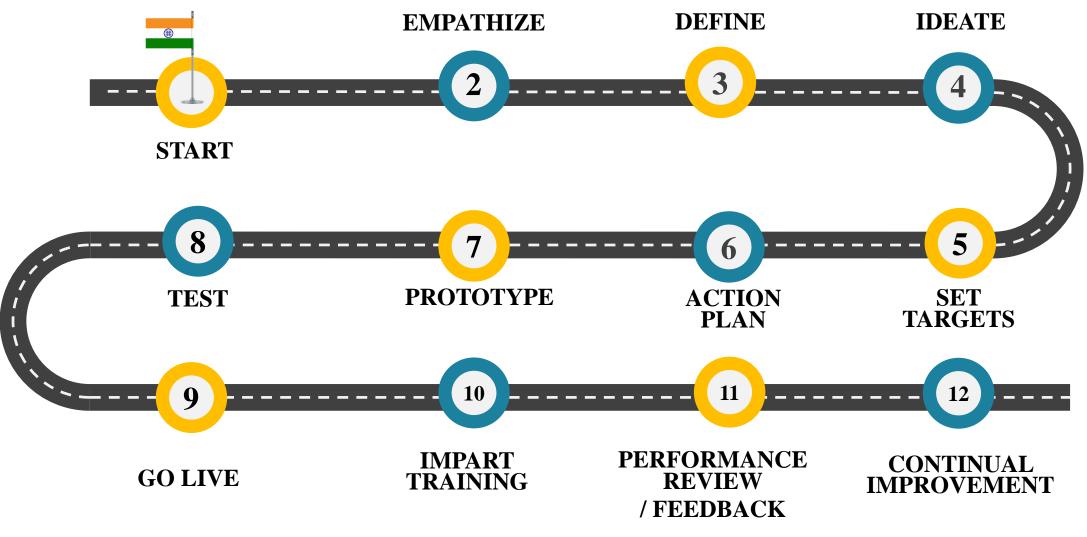
Ref. Energy Consumption data reported in earlier Energy Award Programs.

Let Us Make Our Plant a Better Plant Every Moment



3. Road Map to achieve The Target





Moving towards excellence





	ACTION PLAN TO ACHIEVE NATIONAL/GLOBAL BEST SEC						
SR. NO.	ACTION PLAN FY 2023-24						
1	Use of wet and dry fly ash in manufacturing of cement.						
2	Will ensure continuous use of 100% Chemical Gypsum which is a waste product of chemical industry.						
3	Promote and motivate suppliers having focus on green energy.						
4	Purchase of 5 star rated and energy efficient electrical products.						
5	Usage of STP treated water for gardening.						
6	Use of recyclable cement bags for dispatching cements.						
7	To expand our "Green Energy Footprints we are purchasing power from renewable sources which will reach 60%-65% of our total consumption. To achieve this we are working for Solar Wind hybrid power purchase from M/s Continuum Energy from December 2023 onwards, over and above existing sources. Along with this we'll continue to purchase wind power from M/s Trinetra 20%-25% of Total Energy consumption.						
8	Will incline our plant operation timings in such a way so that our solar generation utilization is maximized.						
9	Have achieved best "TURN AROUND TIME" from last 4 consecutive years and will continue to strive for the same.						



3. Information on Competitors, National & Global benchmark



LIST OF ENCON PROJECTS PLANNED FOR FY 2023-24								
Sr. No.	Title of Project	Annual Saving	Investment					
51. 140.		(Million kWh)	(Rs in Million)					
1	Reduce pressure drop across CM separator	0.078	1					
2	Optimize operation of silo top bag filters by interlocking VFD rpm with silo suction	0.0072	0.1					
3	Installation of New LP Screw compressor for Fly Ash Unloading	0.171	1.6					
4	Convert existing Cement Mill into mono chamber mill	0.39	3					
5	Optimize performance of PID loops	0.21	1					
6	Reducing the compressed air leakage in Packing plant	0.02	0					
7	Adding VFD in screw compressor for reducing power consumption.	0.072	0.3					



4. Energy Saving projects implemented in last Four years



Year	No of Energy saving projects	Investments (INR Millions)	Electrical savings (Million kWh)	Savings (INR Million)	Impact on SEC (Electrical kWh /MT cement)
FY 2019-20	4	0.300	0.037	0.306	0.048
FY 2020-21	2	0.020	0.045	0.358	0.08
FY 2021-22	4	4	0.027	0.216	0.035
FY 2022-23	3	0.003	104.100	0.221	0.002



Let Us Make Our Plant a Better Plant Every Moment



5. Innovative Projects implemented



***** GREEN PAHAL BEHTAR KAL:-

Brief description on why innovative:- JK Lakshmi cement Ltd. becomes India's first cement company to deploy Green LNG trucks for transportation.

Impact created:- The Company flagged off a fleet of 10 Green LNG trucks form its Sirohi plant in Rajasthan to transport its clinker to the Surat grinding unit. The Green Pahal, Behtar Kal Campaign is a prime example of this, aimed at creating awareness about the importance of improving energy efficiency saving the environment. Deploying LNG trucks is our first step towards sustainable transportation as LNG is an excellent green alternative for fossil fuel that saves 35000 Kg CO2 (equivalent to 41176kWh) emissions per year per truck. This initiative will act as a game-changer for the country's cement transportation industry and help facilitate the eventual transition towards a more circular economy."









5. Innovative Projects implemented

REPLACEMENT OF PPC WITH COMPOSITE CEMENT CoC:-

Brief description on why innovative:- Replacement Of PPC With Composite Cement CoC.

Impact created:- First cement industry to introduce composite cement in Gujarat state. Homogeneous blending of highly reactive Fly Ash, high glass content Slag and high - quality Clinker results in this modern product resulting in numerous benefits to the customers and society at large. Composite Cement produced by JK Lakshmi Cement has resistant properties from alkaline and sulphate environments which makes it ideal for coastal regions. This is a highly progressive cement offering better cohesiveness, superior workability and less water requirement than Ordinary Portland Cement (OPC). Manufacturing of composite cement instead of PPC in FY-2022-23 we produced 270661 ton of CoC cement, resulting in consumption of 55850 ton of slag and reduced 12% clinker consumption.

Replication potential:- Replication potential is medium, with proper product design and manufacturing process strategies it can be implemented in Indian industry.







6. Utilisation of Renewable Energy sources



Year	Technology (electrical)	Type of Energy	Onsite/Offsite	Investment made (Rs. Million)	Installed Capacity (MW)	Capacity Addition	Generation (million kWh)	Utilization (million kWh)	% of Overall Electrical Energy
FY 2020-21	Renewable	Solar	Onsite	None	2.2	None	3.09	1.88	17.48%
FY 2020-21	Renewable	Wind	Offsite	None	2.362	None	5.28	5.28	29.93%
FY 2021-22	Renewable	Solar	Onsite	None	2.2	None	3.16	2.53	12.85%
	Renewable	Wind	Offsite	None	2.362	None	5.32	5.32	21.63%
FY 2022-23	Renewable	Solar	Onsite	None	2.2	None	3.02	2.56	10.32%
	Renewable	Wind	Offsite	None	2.362	None	4.64	4.64	15.83%

Note:-1.Maintenance cost of Onsite solar power plant is1.2 Million INR per year.



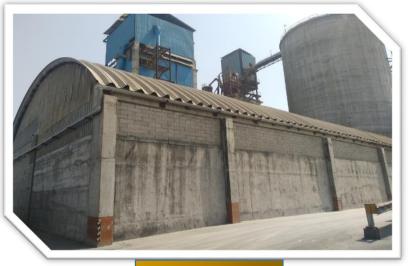


7. Waste utilization and management



Sr. No.	FY	Chemical Gypsum	Fly-Ash /Additive	Slag	Total Cement Grinding (MT)
	2019-2020	22815	96076	21651	774044
1	% of Material Uses	3%	12%	3%	100%
2	2020-2021	15209	60205	40557	559642
	% of Material Uses	3%	11%	7%	100%
	2021-2022	21121	78589.5	49981	761370
3	% of Material Uses	3%	10%	7%	100%
4	2022-2023	26394	79893	55850	887272
	% of Material Uses	3%	9%	6%	100%

Note:- Chemical gypsum has been used as an **replacement of mineral** gypsum. Dry Fly-ash, Wet Fly-ash and Slag are being used as a **replacement of clinker.**



Gypsum Yard



Slag Yard





7. Infrastructures

Paver Blocks are used in Parking area, Walkways, pathways and Roads construction.



Fly-ash bricks used in the making of walls for Plant Offices, Packing plant, gypsum yard, slag yard etc.

For plant beautification, fish pond and gardening tiles stones wastes are used for making ways.

All office building roofs are made of tin shed or using precast bricks. No red bricks used in plant.











8. GHG Inventorisation



Annual Report	GHG Report
---------------	-------------------

Sr. No.	Financial Year	GHG Emission (tonnes) Scope 1	GHG Emission (tonnes) Scope 2	GHG Emission (tonnes) Scope 3	GHG Emission (tonnes) Total	Production MT	Net CO2 Emission in Tons	CO2 Emission in per ton of cement ground
1	2019-20	21	17502	2274	19797	774044	17023	0.022
2	2020-21	12	12939	2417	15367	559642	12836	0.023
3	2021-22	17	18862	2642	21521	761370	18929	0.025
4	2022-23	14	21112	3330	24456	887272	18443	0.021

Public Disclosure:- LED screen placed outside of plant premises for displaying live SPM and weather data.





8. Initiatives on Carbon reduction:-



Facility of Car-pooling for staffs arriving duties, results in 356.97Kg of Carbon emission reduction annually.

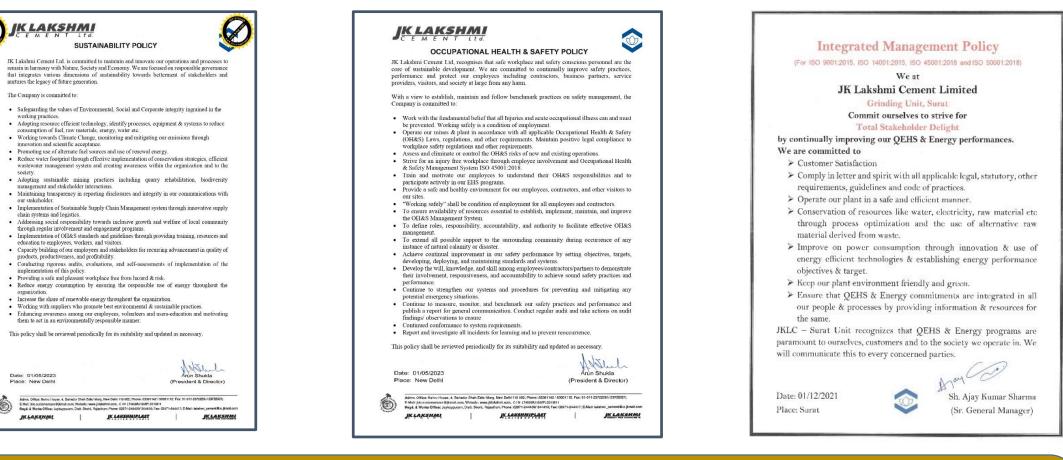
Proper inspection of PUC certificate of all vehicles entering plant premises including Staffs, workers, vendors, contractors etc.





9. Green Supply Chain Management:-





We have,

- 1. Sustainability Policy on Organisation level which is committed to maintain and innovate our operations and process to remain in harmony with Nature, Society and Economy.
- 2. Corporate Environment Policy that abide us in making efforts to integrate the environment concerns.
- 3. Integrated Management Policy at unit level making us committed towards Green Supply Chain Management.



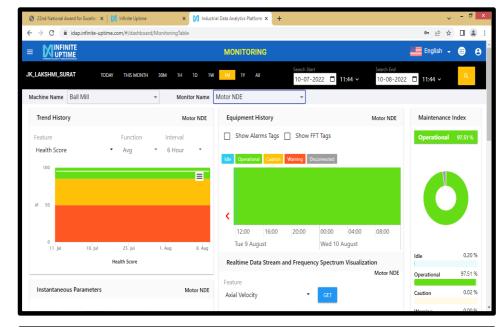
10. Teamwork, Employee Involvement & Monitoring:-

JK LAKSHMI

Daily Monitoring System:- Live monitoring & Alert based IOTs sensors installed for tracking key metrics like MTBF, Health Scores etc. to improve the health of our rotatory assets (Ball Mill, VRPM, CA Fans and Aux. equipments).

It provides shift-wise OEE status with Pareto downtime reasons, productivity losses, and quality defects. This data, coupled with the current status of process yield per hour and process critical parameter analytics, shall help drive OEE improvement.

IOTs Sensors









10. Teamwork, Employee Involvement & Monitoring:-









Imparting EnMS training, TBT, BBS to Staff, Workers, contractual workmen, labours, families etc. related to energy use and consumption on Weekly/monthly basis.



Daily review meeting chaired by Unit Head Shri. Ajay Sharma Sir, Sr. General Manager.



Electric Safety Training imparted to workmen and staff.



Electric Safety Training imparted in nearby schools.



11.NET ZERO Commitment RE100 and EP100:-

इंस्टॉलेशन

में वेस्ट

आदि के

विद्यत

और हाल



जेके लक्ष्मी सीमेंट जुड़ी आरई१०० और ईपी१०० के साथ २०४० तक १०० फीसदी नवीकरणीय उर्जा की शपथ लेने वाली चौथी विश्वस्तरीय सीमेंट कंपनी बनी

अधिक से अधिक कंपनियां जयपर (उदय टडे)। अपनी कंपनी विश्वस्तरीय कॉर्पोरेट लिए हमने अपनी प्रोडक्शन यनिटस में उर्जा प्रभावी तकनीकों स्थायी भविष्य एवं अनुकुल ऊर्जा प्रभावी पहल ईपी100 में उत्पादन प्रक्रिया को कार्बन-मक्त भी शामिल हो गई है, जो उर्जा को अपनाया है और कई सही जलवाय के निर्माण क लिए भविष्य के बनाने एवं स्थायी देने दक्षता में सधार लाने के लिए योगदान के कदम उठाए हैं। आरई100 और सख्त कदम उठाएं।आरई100 का में सदस्य होने के नाते सीमेंट जगत उल्लेखनीय प्रयास में भारत की प्रयासरत 120 से अधिक एनर्जी ईपी100 के साथ जुडना, हमारे स्मार्ट बिजनसेज को एक दसरे अग्रणी सीमेंट निर्माताओं में से लिए बहुत अधिक मायने रखता की यह दिग्गज नवीकरणीय उर्जा के साथ जोडती है। कंपनी ने है, जो सरक्षित पर्यावरण एवं स्रोतों सीमेंट जैसे जेके लक्ष्मा और अपनी विश्वस्तरीय कॉपोरेट नवीकरणीय 2040 तक उज स्थायी भविष्य के लिए हमारे यनिरस उत्पादकता को दोगना करने का हीट-रिकवरी कैपेसिटी ऊर्जा पहल आरई100 के साथ सतत प्रयासों को दर्शाता माध्यम से जड गई है, विद्यत की 100 लक्ष्य रखा है और ईपी100 में अतुल मुदालियर, हैड अपनी आवश्यकताओं को परा करने फीसदी मांग को नवीकरणीय शामिल होने वाली 11वीं ऐसी बिजनेस एक्शन, भारत, क्लाइमेट के लिए काम कर रही है। इससे स्रोतों से परा करना इस पहल कंपनी ग्रुप ने कहा, ''भारतीय कारोबार जिसका कार्बन फटप्रिन्ट को कम करने भारत में है। इस जलवाय को लेकर सक्रिय हैं। का मख्य उद्देश्य है। कंपनी ने अवसर पर है कि जेके लक्ष्मी श्री अरूण शक्ला, प्रेजीडेन्ट एवं एवं संबंधित चनौतियों को हल हमें 2040 तक इस लक्ष्य को हासिल ख्झा करने की जेके लक्ष्मी सीमेंट सीमेंट करने में मदद मिलेगी। ईपी100 पतिबद्धता तय को डायरेक्टर. 100 आरई लिमिटेड ने कहा, "हम हमेशा है। इस कदम के साथ कंपनी ईपी100 के साथ जडने को प्रतिबद्धता के साथ कंपनी अपने इस पहल के साथ जडने वाली शपथ ली हैं ऐसा करके उन्होंने से स्थायी भविष्य के निर्माण के संचालन के हर क्षेत्र को कार्बन मक्त बनाने के लिए तत्पर है। चौथी सीमेंट फर्म लिए कार्बन फटप्रिन्ट कम करने उर्जा के स्वच्छ उपयोग एवं उर्जा दनिया को उत्पादकता को बढाने के लिए कंपनी और अपने संचालन में ऊर्जा ने TTa ated अपनी प्रतिबद्धता को दशाया है को अपनाने पर जिससे वे उर्जा दक्षता के साथ टक तैनात किए लक्ष्मी सीमेंट की प्रतिबद्धता की जोर देते रहे हैं। पर्यावरण के अनुकल व्यवहार को अपनाना पष्टि करता है। यह दनिया के जलवाय संरक्षण में योगदान दे ही में अपनी दर्ग यनिट के लिए सकेंगे। हम जलवाय परिवर्तन के खतरे से उनकी 56 मेगावॉट पावर के सोलर 400 अग्रणी कारोबारों क साथ इस लडने और हमारे पर्यावरण को महत्वाकांक्षा की सराहना करते पावर प्लांट की स्थापना हेत शामिल हो चकी है जो 100 फीसदी नवीकरणीय विद्यत को गिरती गुणवत्ता से बचाने के हैं। इस जलवाय दशक में यह एमप्लस सोलर के साथ एक सोसिंग के लिए समर्पित हैं। लिए बेहद जरूरी है। इसके सबसे ज्यादा जरूरी है कि एग्रीमेन्ट भी किया है।

JK Lakshmi Cement Joins RE100 and EP100; becomes 4th Global **Cement Company to Pledge 100% Renewable Energy by 2040**

Sunvilla News: Ahmedabad

In a major move to make its production process carbon-free and contribute to creating a sustainable future, JK Lakshmi Cement, one of India's leading cement manufacturers, has joined RE100, a global corporate renewable energy initiative to ensure meeting 100% electricity demand through renewable sources. The company has committed to meeting this target by 2040. With this step, the company has become the 4 th cement firm globally to join the initiative which demonstrates its unflinching commitment toward environment and sustainability. It joins over 400 of the world's leading businesses dedicated to sourcing 100% renewable electricity. The company has also joined EP100, a global corporate



energy efficiency initiative that brings together over 120 energy businesses committed smart to measuring and reporting on energy efficiency improvements. The company has committed to doubling energy productivity by 2040 and is the 11 th Indiaheadquartered company to join EP100. Commenting on the move, Mr. Arun Shukla, President & Director, JK Lakshmi Cement Ltd. said.



12.Implementation of ISO 50001/Green Co/IGBC rating:-



ureau Veritas Certification

 \mathbf{m}

BUREAU

JK LAKSHMI CEMENT LTD.



VILLAGE: DASTAN, TALUKA: PALSANA, SURAT - 394 310, GUJARAT, INDIA.

Bureau Verilas Certification Holding SAS – UK Branch certifies that the Management System of the above organization has been audited and found to be in accordance with the requirements of the Management System standard detailed below.

Standard

ISO 50001:2018

Scope of certification

MANUFACTURING AND PACKING OF ORDINARY PORTLAND CEMENT (OPC), PORTLAND POZZOLANA CEMENT (PPC) AND COMPOSITE CEMENT.

 Original cycle start date:
 27 April 2018

 Expiry date of previous cycle:
 26 April 2021

 Recertification Audit date:
 21 April 2021

 Recertification cycle start date:
 14 June 2021

Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on: 26 April 2024

Certificate No. IND.21.5454/EN/U Version : 1 Revision date: 14 June 2021





IGBC CERTIFICATE

IN THE MAKING

Already applied Ref. No. GF 21 1177



13. Awards and Recognitions:-



2022



Prashansa Patra-2021- NSCI for good performance in OSH during 2018-20.

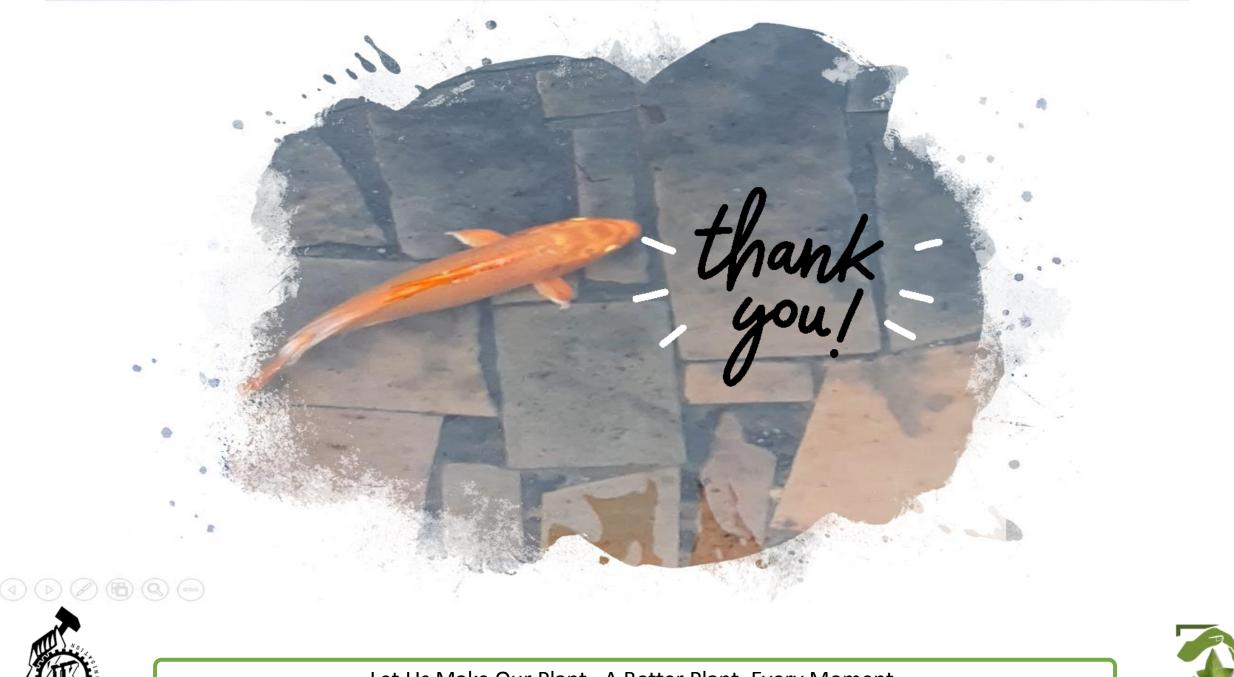




14001:2015,45001:2018

NABL Accreditation





Let Us Make Our Plant, A Better Plant, Every Moment.