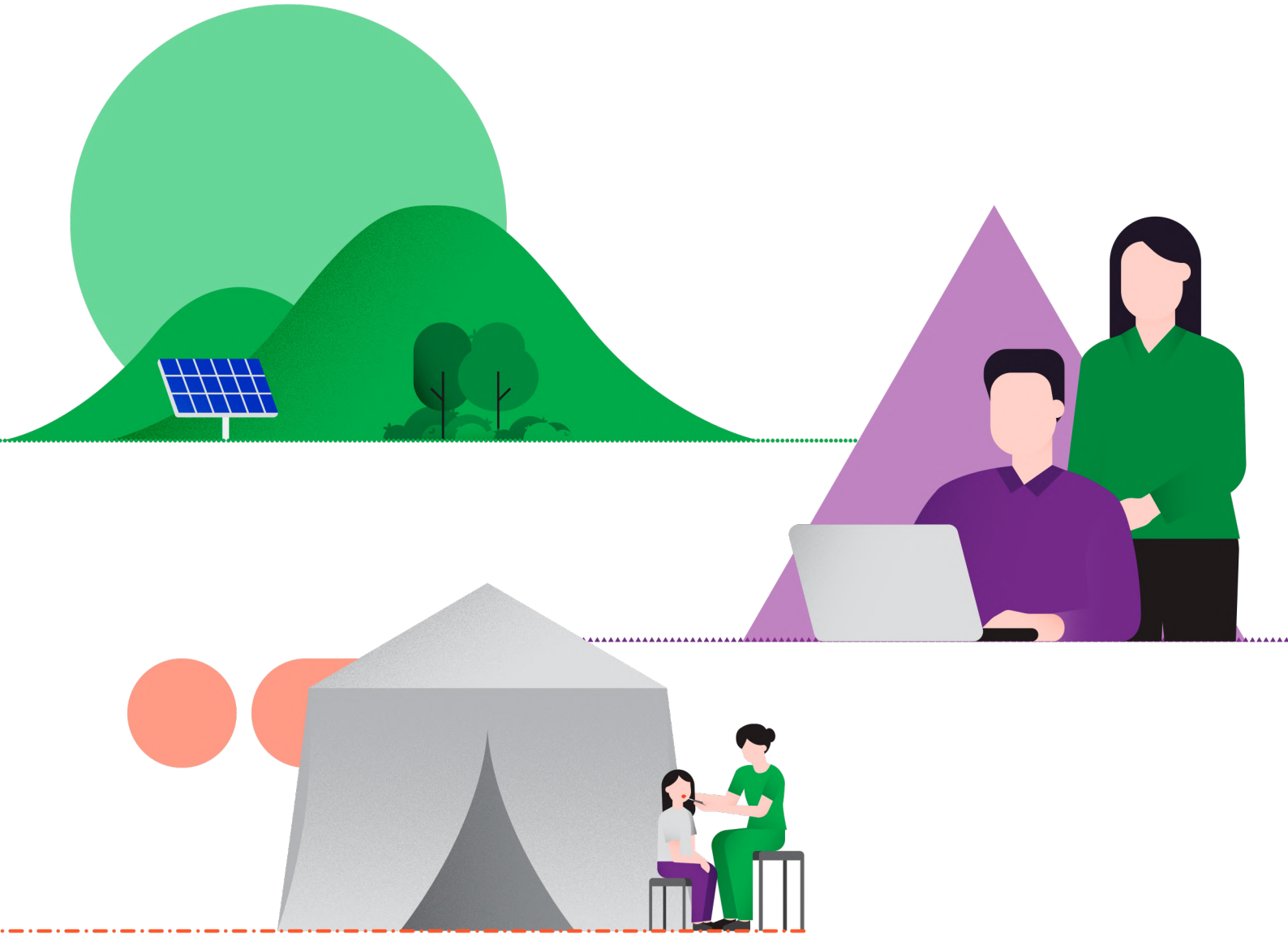
SAGAR CEMENT



Positive Transformation

ESG Roadmap

An ESG charter for Sagar Cements

Sagar Cements has been undertaking a host of initiatives across various environmental, social and governance (ESG) parameters. The Company believes that integrating sustainability objectives into its core business strategy is a value-creation imperative, which comes with significant long-term benefits for all stakeholders.

In order to further strengthen its commitment, the Company has now codified its ESG vision and roadmap. It has set targets across key focus areas over the medium (2030) and long term (2050). This document also outlines the progress made so far.

Read the latest Integrated Report 2021-22

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About Sagar Cements

Beginning its journey in 1985, Sagar Cements today is one of the most prominent cement producers in India with strong presence in the Southern markets and expanding footprint in Central and Eastern India. Embodying the qualities of ‘strength’, ‘endurance’ and ‘progress’, the Company has remained committed to building enduring stakeholder value with a sharp focus on driving sustainable growth.

Vision

To provide foundations for the society’s future.

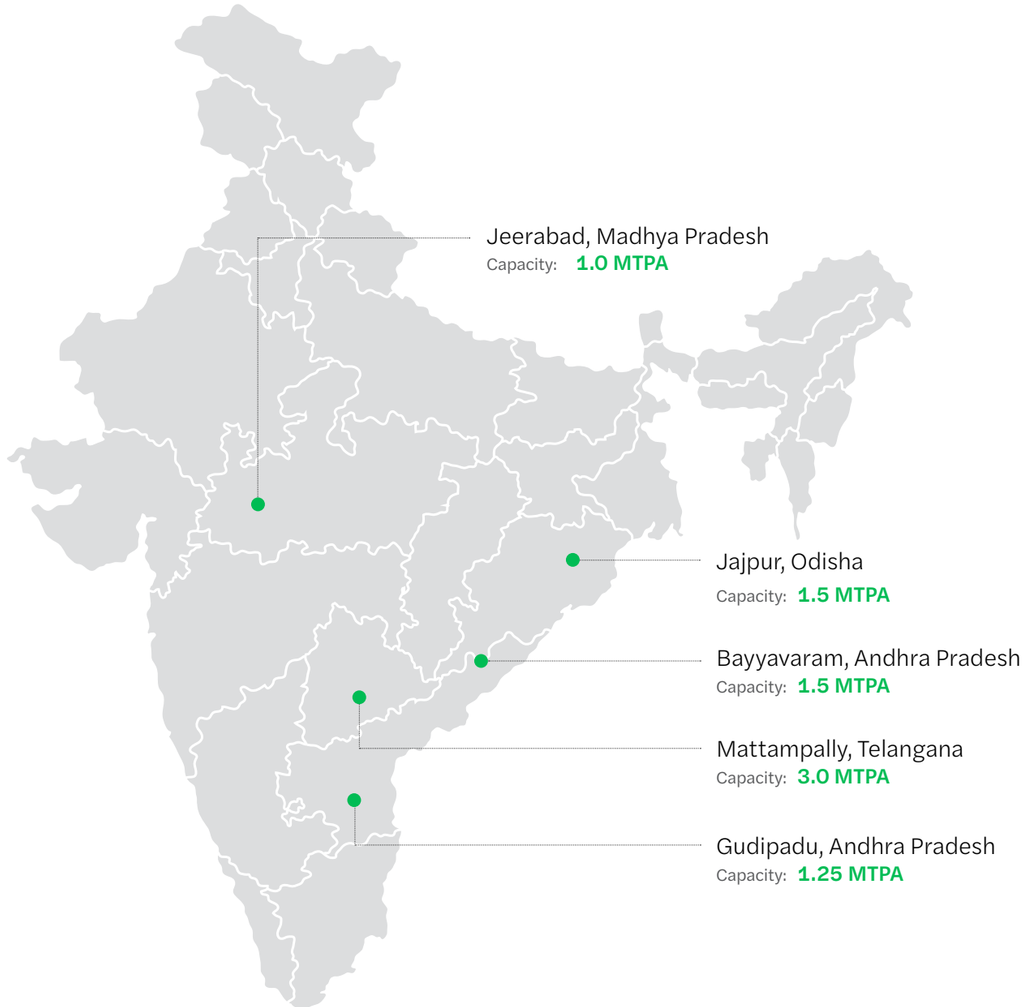
Mission

To be India’s most respected and attractive company in our industry—creating value for all our stakeholders.

Product portfolio

- Ordinary Portland Cement (OPC)
- Portland Pozzolana (PPC)
- Portland Slag (PSC)
- Composite Cement (CC)
- Ground Granulated Blast-furnace Slag (GCBS)
- Sulphate Resistant Cement (SRC)

Plants



At Glance

8.25 MTPA
TOTAL CEMENT CAPACITY

4.75 MTPA
CLINKER CAPACITY

66.85 MW
TOTAL CAPTIVE POWER CAPACITY

625.05 MT
LIMESTONE RESERVES

2,244
DEALERS

4,501
SUB DEALERS

58
C&F AGENTS

ESG vision

Positive transformation of the environment around us; the people amidst us; and the conduct among us.

Deconstructing the ESG vision

Positive transformation

Act as a force for good - for itself and for everyone else.

The people amidst us

To treat every human with respect and dignity, and nurture relationships with all stakeholders, including employees, communities, partners, and others, through active engagements.

The environment around us

To conserve and preserve the natural environment across the length of the business value chain.

The conduct among us

To continuously raise the bar in corporate governance and corporate behaviour and strive to be a model corporate citizen in every sense of the word.

Cementing ESG goals

Mr. K V Vishnu Raju
Chairman

> As Sagar Cements continues to grow at a significant pace, capturing new markets and implementing innovative practices across the Board, it becomes a strategic imperative to assess performance and progress through the sustainability lens.

In this context, this ESG Roadmap and Vision document not only puts our ambitions into motion but also provides clear pathways and targets through 2030 and then to 2050, inspired by the global efforts and sustainable development goals.

We have put in place well-defined policies and undertaken focused initiatives to reduce our environmental footprint, while strengthening relationships with our stakeholders in a fair and just manner, governed with the highest standards of ethics and integrity.

Staying on course

Dr. S. Anand Reddy and
S. Sreekanth Reddy
Managing Director & Joint Managing Director

> Our objective with this ESG Roadmap and Vision document is to communicate our efforts to achieve our environmental, social and governance ambitions. We have devised targeted policies and implemented various measures across our top material focus areas.

This document is a testament to our commitment to mitigating carbon emissions in our value chain, ensuring resource efficiency within our business, supporting our employees and uplifting local communities.

We have also developed and implemented best-in-class systems aligning with global standards, certified for various ISO standards and developed several policies and guidelines. We have ramped up renewable energy use, significantly reduced our water intensity, attained a strong record in safety, and established a wide CSR network, among others.

Materiality

Sagar Cements focused on identifying, prioritising and finalising its economic and material issues through peer benchmarking, stakeholder consultations, and management review. The critical material issues are those that significantly change the Company's ability to create value.

Sagar Cements conducted a full-fledged materiality assessment in 2021. The materiality assessment process helped the Company understand the issues faced by its internal and external stakeholders.

The yearly progress made on these priorities is submitted to the Board for review to devise the future action plans. The Board of Directors routinely, once every two years, revisits and approves the material topics for the Company. Moreover, Sagar Cements is also under the process of implementing ISO 26000.

Materiality assessment process

Identifying potential material issues on the basis of peer benchmarking

↓

Interaction Management

↓

Stakeholder

↓

Response

↓

Senior Management review and establishing materiality matrix

Material topics

Most critical

1. Economic performance and profitability
2. Order fulfilment
3. Fair business operations, business ethics and good governance
4. Compliance
5. Customer satisfaction
6. Brand and reputation
7. Transport and logistics
8. Waste management and circular economy
9. Interest payment
10. Tax and economic contribution
11. Benefits fair compensation and social security
12. Occupational health, wellbeing and safety
13. Employees work-life balance and human rights
14. Return on investment
15. Local economic value creation
16. Employee relations and engagements
17. Climate and energy
18. Business growth
19. Customer acquisition
20. Technology and process innovation
21. Distribution presence
22. Responsible consumption
23. Employee training and development

Critical

24. Responsible sourcing and alternate raw materials
25. Social responsibility and engagement
26. Biodiversity management
27. Vendor engagement and training
28. Quality and reliability of suppliers
29. Supplier engagement
30. Risk management
31. Public policy and advocacy
32. Sustainable land use, relocation and rehabilitation
33. Renewable energy

● Environmental ● Social ● Governance ● Economic

Focus areas

Derived from its existing material issues, Sagar Cements has defined its top 13 target areas where it has the opportunity to make maximum positive transformation across environmental, social and governance parameters. The Company arrived at these key topics through:

- A thorough peer review for assessing the latest trends
- Impact assessment to understand the impact the issue can have on the Company and the outside world
- Frameworks, disclosure standards, ESG rating analysis
- ESG priorities by institutional investors

ESG Vision

Positive transformation of the environment around us; the people amidst us; and the conduct among us.

Environment

- Energy
- Emissions
- Resources
- Water
- Waste
- Biodiversity

Social

- Health and safety
- Employee wellbeing and experience
- Customers and partners
- Communities

Governance

- Corporate Governance practices
- Transparency and stakeholder engagement
- Ethics and compliances

Progress in these top 13 areas collectively contributes to the realisation of Sagar Cements' ESG vision.

Targets

Sagar Cements has defined its key focus areas under the buckets of E, S, and G, has set medium- and long-term targets, and tracks progress on each of those.

Focus areas, KPIs and targets

Environment

Conserving and preserving the natural environment across the length of the business value chain

Energy

- Increasing the green electrical energy ratio in operations to 50% by 2030 and 100% by 2050
- Increasing the TSR to 25% by 2030 and 50% by 2050
- Specific electric consumption per ton of cement to be 65 kwh by 2030
- Specific thermal consumption per ton of clinker to be 700 Kcal by 2030, 685 Kcal 2050
- Deploying zero emission transportation vehicles; 30% by 2030 and 100% by 2050

Biodiversity

- Developing a diversified and native plantation across five hectares per year, with ~10,000 saplings

Emissions

- Achieve Net Zero by 2050
- Align with SBTi 1.5°-scenario by 2030
- Initiate CCS/CCU to achieve net zero emissions

Waste

- Install waste heat recovery systems
- Use cementitious waste materials and reduce clinker factor

Water

- Become 10x water positive by 2030
- Reduce freshwater consumption further by 20% by 2030

Resources

- Reduction in clinker factor - 64% by 2030, 50% by 2050
- Increased use of decarbonated raw materials, i.e., 2.0% by 2030 and 5.0% by 2050

*Read more on page 16

Social

Treating every human with respect and dignity, and nurture relationships with all stakeholders including employees, communities, partners, and others through active engagements

Heath and safety

- Ensure zero fatalities
- Continually improve the safety management system by carrying out regular safety audits

Community development

- Strengthen the community health centre by 2025
- Start a skill development training centre by 2030
- Offer vocational training programmes for the underprivileged by 2027

Employee wellness and experience

- Undertake effective steps to raise the female employee ratio

Customers and partners

- Focus on building stronger bonds and relationships with its customers and partners

*Read more on page 32

Governance

Continuously raise the bar in corporate governance and corporate behaviour and strive to be a model corporate citizen in every sense of the term

Consistently working towards meeting regulatory and compliance obligations, while aligning with the best practices of transparency and accountability

*Read more on page 42

ESG execution model

To achieve its targets across the key focus areas, Sagar Cements has developed a robust execution model, supported by four pillars: Leadership, Team and Action Plan, Engaging the Partners, and Review and Course Correction.

Leadership

- Believe that effective leadership is vital to achieving goals
- Give ESG performance the highest priority, the Board is undertaking responsibility and accountability
- Establish the management structure for developing and implementing plans about ESG and overseeing the progress
- Provide a dedicated budget for ESG, digitalisation, innovation and R&D programmes
- Link performance, appraisal and remuneration to ESG performance across all levels
- Undertake efforts to embed the climate goals and actions in the Company's culture and practices
- Conduct environmental impact assessment studies and identify the impact on various stakeholders

Team and Action Plan

- Establish the ESG action teams and leaders in all aspects of design, development, implementation, monitoring, review, and course correction in line with evolving global efforts
- Ensure that the teams have necessary skills, resources, and understanding to deliver results
- Create robust action plans to strengthen nature and biodiversity while also implementing impact mitigation measures
- Develop climate goals, climate budget and climate solutions using the cement sectoral pathway
- Establish a clear implementation and engagement strategy for defined targets and regularly monitor the progress
- Identifying and finance the projects in line with the targets
- Undertake regular third-party audits
- Continuously relook at the initiatives in line with current developments in climate science

Engaging the Partners

- Educate and advise clients about climate change mitigation
- To be aware that collective efforts are imperative while regularly engaging with suppliers, customers, transporters, and local communities

Review and Course Correction

- Performance as per the targets is important and regular critical review is imperative
- The review periodicity is defined, and the actual performance v/s targets is logged
- Transparent communication among all stakeholder groups and maximising engagement at all levels
- To be updated about best industry practices as a point of reference to implement measures across the Company

Environment

SDGs impacted

Operating in a ‘hard to abate’ and an energy-intensive sector, Sagar Cements has always been cognisant of its responsibility towards minimising its carbon footprint while maximising resource efficiency. The Company runs zero liquid discharge operations with increasing usage of industrial waste as alternate fuel and raw materials in its cement production.

Sagar Cements has also installed WHRS and is increasing the share of renewables in its total energy consumption. The Company has also been enhancing biodiversity in the areas surrounding its facilities and operational sites. Further, the Company rigorously identifies and mitigates potential environmental risks, while also investing on R&D to increase efficiency across operations.

Pledged to become Net Zero by 2050

Certifications

Bayyavaram Plant received the GreenCo Platinum Certificate award by CII for best practices

Gudipadu and Mathampally Plants received GreenCo Gold Certificate award by CII for best practices

Blended cements from all plants certified as Green Pro in 2019

Committed to SBTi to reduce emissions, aligned with the 1.5°C goal

Earned an ISO 14001:2015 and ISO 50001:2018 certification

Compliant to ISO 26000 standards

Focus areas

- Energy
- Emissions
- Resources
- Water
- Waste
- Biodiversity

Supporting policies

- Biodiversity Policy
- Corporate Sustainability Policy
- Energy Policy
- Environment Policy
- Green Purchase Policy
- Green Procurement Policy
- Product Sustainability Policy
- Waste Management Policy
- Water Management Policy

Energy

Cement manufacturing is an energy-intensive process. Therefore, it is of the essence that appropriate energy management, along with effective energy efficiency measures, are employed to achieve a low-carbon economy, minimising its impact on climate change. Sagar Cements has been at the forefront of adapting newer and innovative technologies aimed to achieve better efficiency

Progress

Sagar Cements has stepped up its consumption of green energy, and 1.35 MW and 130 KW solar plants are in operation at Sagar Cement's Mattampally and Bayyavaram locations, respectively. The Company has also implemented WHRS of 8.80 MW at Mattampally and 5.30 MW at Jeerabad. An 80 KW solar roof panel is also operational at its corporate office.

2,83,593 Mwh
TOTAL ENERGY CONSUMPTION

42,863 Mwh
WASTE HEAT RECOVERED

26%
GREEN ENERGY CONSUMPTION

Performance numbers are for FY2022 or as of 31st March, 2022 unless otherwise stated

Action plan

Sagar Cements has put in place well-defined policies and initiatives to drive continuous improvements in its cement manufacturing and power-generation activities.

- Reduce energy intensity by use of energy efficient processes and equipment and their continuous upgradation
- Minimise energy losses and maximise waste energy recovery
- Establish systems for monitoring and conducting periodic reviews of receipts, generation and consumption of all forms of energy
- Use of energy from alternate/waste energy materials
- Promote awareness and build competencies among all levels of employees, recognising and encouraging innovative ideas
- Conduct energy audit by in-house/ external teams at regular intervals, identifying and implementing betterment projects
- Benchmark the Company's performance with the best benchmark, set targets, document and communicate at all levels and provide resources to achieve targets

Enablers

- Enhancing the electrical efficiency
- Increasing the ratio of green electricity
- Improving the thermal substitution ratio
- Enhancing thermal efficiency thereby reducing specific thermal consumption
- Migrating to zero emission transportation

Targets

Deploying zero emission vehicles

30% BY 2030

100% BY 2050

Increasing green electrical energy ratio in operations to

50% BY 2030

100% BY 2050

Specific electric consumption per ton of cement

65 kWh BY 2030

Specific thermal consumption per ton of clinker

700 Kcal BY 2030

685 Kcal BY 2050

Increasing the TSR to

25% BY 2030

50% BY 2050

Emissions

Sagar Cements is aligned with the global goal and India's vision of decarbonisation. The Company is investing in the latest and advanced technology to minimise its carbon footprint, and is undertaking and exploring the steps it needs to take to reduce overall emissions. It is also working on internal carbon cost estimation and adaption.

Progress

Sagar Cements has successfully reduced its emissions over the last five years. The Company's GHG emissions arise mainly from its limestone-based cement manufacturing process and power generation. Hence, it continues to advance on improving its operational efficiency, thereby cutting down on the emissions. The company started capturing its GHG inventory every month from the year 2015.

Aligning with its commitment to the SBTi guidelines and the GHG Protocol, the company is inventorying scope 1,2, and 3 emissions. For Scope 1 and 2 emissions, inventorying is done in a comprehensive way covering all aspects of the business while Scope 3 emissions are limited to emissions from transportation and logistics.

The Company is also developing a methodology to assess its impact on the environment, its mitigation and preservation measures, which will be incorporated across all operations of the business. Sagar Cements is also collaborating with academia and research centres to excel in carbon capture and storage.

Carbon emissions in the past three years (tCO_2e)

Year	FY2022	FY2021	FY2020
Scope 1	24,39,571	18,84,489	20,30,741
Scope 2	46,452	44,541	74,012
Scope 3	80,852	69,450	72,981
Total	**25,66,875**	**19,98,480**	**21,77,734**

GHG emission intensity (tCO_2e/ton cement eq)*

Year	FY2022	FY2021	FY2020
GHG emission intensity	0.703	0.701	0.769

0.14 Kg/MT

SOx EMISSION

0.052 Kg/MT

SPM

Action plan

Through its detailed environment policy, Sagar Cements has undertaken several measures to pare down its emissions:

- To reduce CO_2 intensity by adopting the best technologies and practices across all functions—from manufacturing to distribution
- To reduce energy intensity while continuously increasing the ratio of green energy and alternate raw materials and fuels
- To comply with the latest environmental regulations and other requirements that come into effect
- Minimising transport emissions by reducing the lead distances and gradually migrating to environment-friendly modes such as EVs
- Setting performance objectives and targets, monitoring the environmental performance and periodical reporting to all stakeholders
- To mobilise and deploy financial and non-financial resources such as upskilling employees, propagating and delegating responsibilities, making it a collaborative effort at all levels of the organisation to achieve targeted reduction in emissions

Targets

Net Zero
BY 2050

ALIGNED WITH
SBTi
1.5°-SCENARIO
BY 2030

INITIATE
CCS/ CCU
TO ACHIEVE NET ZERO EMISSIONS BY 2050

SCOPE 1 EMISSIONS TO BE REDUCED TO
495 Kg
Net CO_2/MT
BY 2030

SCOPE 2 EMISSIONS TO BE REDUCED TO
8 Kg
Net CO_2/MT
BY 2030

SCOPE 3 EMISSIONS TO BE REDUCED TO
15.50 Kg
Net CO_2/MT
BY 2030

Emissions

On course to achieve Net Zero

Decarbonising raw materials

Target

2% by 2030 and 5% by 2050

- Conduct a detailed study of various sources of decarbonated lime
- Using industrial by-products as one of the sources
- Using infrastructure demolition waste

Reduction of specific electricity consumption

Target

70 kWh by 2030 and 65 kWh by 2050

- Upgrading the compressed air network, optimising the operating pressure and reducing leakages
- Replacing IE1 Motors with IE3, IE4 Efficiency class of motors to reduce specific electric consumption
- Installing VFD for all process fans and removing the flow control dampers
- Installing high-efficiency separators for raw mills in the Gudipadu plant
- Performing CFD Analysis study on all major process ducts and carrying out corrections
- Replacing low-efficiency process fans
- Replacing the big pressure compressor with an adequate compressor for fly ash unloading at the Mattampally plant
- Upgrading the water network and replacing the low-efficiency pumps with higher efficiency pumps

Increase use of alternate fuel

Target

25% by 2030 and 50% by 2050

- Collaborate with residential communities and their leaders for proper segregation of waste materials
- Collaborate with authorities, policymakers to develop and put in place the infrastructure pre-processing of waste materials
- Collaborate with waste generating industries to develop Standard Operating Procedures (SOP) to achieve consistency in chemistry of waste being generated
- To develop and install the necessary infrastructure at the plant premises for unconstrained use of waste materials
- Develop cultural change and infrastructure to use plastic waste in the cement kiln
- Upgrade the plant machinery to accept waste materials without constraints
- Installation of the pre-combustion chamber
- Undertake support from domain experts, other companies and countries who are ahead in the reuse of waste
- Upskill the team so that they are confident and can comfortably use waste without impacting product quality and system efficiency

Reduction of clinker ratio

Target

64% by 2030 and 50% by 2050

- Promoting the use of blended cement
- Increasing the ratio of cementitious waste materials in cement

Reduction of specific heat consumption

Target

700 Kcal by 2030 and 685 Kcal by 2050

- Upgrade the Mattampally Line 1 cooler to a new generation high-efficiency cooler
- Increase the size of the Mattampally Line 2 cooler for better heat recovery
- Modify/optimise the Mattampally Line 2 Pre-heater for reduction of pressure drop, cyclone efficiency and exit temperature
- Study and upgrade feed chutes in all pre-heaters to reduce/minimise fresh air ingress into the system
- Optimise the chemistry of raw mix to minimise the heat of reaction for clinker formation
- Use of upgraded refractory, insulation to reduce radiation losses
- To reduce the specific heat rate of captive power generation
- Upgrading maintenance practices to reduce unscheduled stoppages and minimise heat loss during start up
- Improved fuel storage and management to reduce ground and air losses of fuel

Increase of green electricity ratio

Target

50% by 2030 and 100% by 2050

- Installing the waste heat recovery system power plants for Mattampally Line 1 and Gudipadu plant
- Installing on-site solar power plants with additional capacity
- Improving the heat recovery efficiency and turbine efficiency of running WHRS power plants
- Reducing and preventing hot gas leakages through bypass ducts by better dampers and regular maintenance
- Exploring the feasibility of solar power with battery and other forms of storage to overcome the irregular availability of solar energy, thereby adding higher capacity than instantaneous power demand
- Exploring the feasibility of using HAG fired by waste fuels and using the hot gases for higher and stable operation of WHRS power plants

Increase use of zero emission vehicles

Target

30% by 2030 and 100% by 2050

- Deploy zero emission trucks for material and product movement in all feasible use cases

Resources

Sagar Cements is aware that the effective use of natural resources is core to its business sustainability strategy, especially considering that cement manufacturing is a resource-intensive process. The Company is committed to adopting the circular economy approach for optimum usage and local sourcing of products to have a minimal environmental impact and is striving towards enabling a circular economic business model.

Progress

By adopting innovative practices and technology, Sagar Cements has progressed on its green purchasing agenda. The Company is consistently purchasing energy- and water-efficient products, while reducing the purchase of hazardous materials. The overall utilisation of recycled material has also increased, which has helped Sagar Cements contribute to the circular economy.

3.97 MnT
LIMESTONE MINED

0.37 MnT
TOTAL COAL USED

0.37 MnT
FLY ASH CONSUMED

0.11 MnT
GYPSUM CONSUMED

0.34 MnT
SLAG CONSUMED

Action plan

With its Green Sourcing and Purchase Policy, Sagar Cements strives to reduce its impact on the environment.

- Giving preference to materials, products and services with lower environmental impact than the equivalent market average, considering all phases of the life cycle including, the end-of-life management
- Developing specific internal guidelines for sourcing of products and services. Integrating the concepts of reduction, reuse and recovery in the sourcing model
- Encouraging suppliers and service providers to adopt best environment practices in their manufacturing process
- Creating awareness and enhancing the competency of staff and other personnel involved in procurement activity by providing relevant information and training
- Complying with legal requirements and regulations, that come into effect

Enablers

- Implement ISO 20400 sustainable procurement in the near term
- Develop and implement a plan to enhance the use of waste materials, both as alternate raw materials and as alternate fuels

Targets

Reduction in clinker factor

64% BY 2030

50% BY 2050

Increased use of decarbonated raw materials, i.e.

2.0% BY 2030

5.0% BY 2050

Water

The cement industry is highly dependent on water resources for operations. Sagar Cements thus makes conscious efforts to reduce water consumption at all levels. The Company utilises harvested or recycled water for business operations, while freshwater is used for human consumption. The Company's water strategy involves zero liquid discharge and rainwater harvesting at all plant locations, while regularly upgrading its water filtration plants.

Progress

Over the last decade, the Company has gradually reduced its water usage. It has also minimised its reliance on freshwater withdrawals by resorting to rainwater harvesting at its plants and nearby communities. Sagar Cements also proactively undertakes initiatives to recharge groundwater. There has also been a transition from water-cooling systems to air-cooling systems to reduce usage and conserve water resources.

Water use at SCL (KL)	Quantity consumed in		
Source of water	**FY2022**	**FY2021**	**FY2020**
Harvested water	1,73,781	1,34,218	1,34,390
Bore well	1,61,441	1,77,246	1,93,178
Total water	3,35,221	3,11,464	3,27,568
Cement production	34,70,968	30,67,099	30,44,236
Specific water consumption (KL/t of cement)	0.10	0.10	0.11

1,61,441 KL
FRESHWATER WITHDRAWAL

91 Litre/Tonne
CEMENTITIOUS MATERIAL
SPECIFIC WATER CONSUMPTION

39,332 KL
WASTEWATER RECYCLED

Zero
LIQUID DISCHARGE

100%
INDUSTRIAL WATER REQUIREMENT MET FROM HARVESTED RAINWATER

Action plan

Sagar Cements is accelerating its processes to become water positive and, through its water policy, has actioned various measures:

- Constructing rainwater harvesting systems such as harvesting pits and check dams
- Introducing the water reporting system including specific water consumption
- Measurement and monitoring of water sourcing and consumption
- Implementing measures to reduce water consumption where avoidance is not possible
- Avoiding the use of water in the process wherever alternate systems are available
- Recycling/treatment of rejected water for reuse in process, plantation
- Promoting awareness about conservation among users

Enablers

- Reduce specific water consumption
- Implement an Integrated Water Resource Management plan

Targets

BECOME

10x

WATER POSITIVE BY 2030

REDUCE FRESHWATER CONSUMPTION FURTHER BY

20%

BY 2030

Waste

Sagar Cements, a responsible business, disposes off its hazardous and non-hazardous waste as per the norms prescribed by law. The Company also utilises the waste generated by other industries as a feed to its operations, thereby achieving resource optimisation and reducing waste generation. Waste such as fly ash, slag, gypsum, oil, and metal scrap are also disposed efficiently and responsibly with zero hazardous waste making it to landfills.

Progress

Waste disposal

Total hazardous waste disposed

Type of waste		Unit	FY2022	FY2021	FY2020
Waste lubricant oil	Generated	L	40,739	27,740	37,279
	Consumed	L	21,501	22,210	28,879
	Sold	L	19,238	5,530	8,400
Waste grease with cotton waste	Generated	KG	8,030	6,442	5,363
	Consumed	KG	2,980	2,970	1,403
	Sold	KG	5,050	3,472	3,960
E-waste	Generated	KG	2,057	401	231
	Disposed	KG	2,057	401	167

Total Non-hazardous waste disposed

Type of waste	Unit	FY2022	FY2021	FY2020
Metal Scrap	T	1,141	334	739
Belt Scrap	T	10	7	60
Office, In-House Packing & Socked Cotton	T	2	0	10
Tyre Scrap	No	0	0	4
PP Scrap	T	65	45	50

Waste from other industries

Type of waste	FY2022	FY2021	FY2020
Red Mud	6,834	9,336	
Bed Ash from CPP	1,398	3,204	
Blast Furnace Slag - Dry	3,06,313	2,48,980	1,57,414
Chemical Gypsum	1,02,350	76,530	
Fly Ash from CPP	42,069	32,720	
Fly Ash Outsource	3,15,925	2,53,893	2,52,506
Blast Furnace Slag - Wet	34,771	49,871	
Iron Sludge	1,945	2,441	
Alternate Fuels	28,193	17,835	
Spent Carbon	8,369	6,921	3,950
Carbon Black	0	835	2,010

Action plan

Sagar Cements' waste management policy enlists other objectives such as:

- Identifying and minimising waste generation by adopting a hierarchal approach to reduce, reuse, recycle and recover by making use of viable technologies
- Striving towards using recyclable material for product packaging
- Ensuring all waste collected, stored, transported, and disposed in an environmentally acceptable manner
- Collecting and reviewing data and identifying opportunities and setting targets for continual improvement in manageing and reducing waste
- Promoting the use of blended cements, thereby utilising the waste/by-products of other industries
- Liaisoning with the authorities/expert bodies regularly to learn and implement best practices, to source and consume RDF (Refuse Derived Fuels) in the kiln process with the larger objective of reducing environmental impact
- Developing framework for the use of demolition and construction waste in production process
- Promoting awareness via posters and notices and competency building among all employees through training
- Complying with all requirements, legal and others that come into effect

Enablers

- Enhance use of waste as alternate raw materials
- Enhance use of plastic and other waste energy materials as fuel in the process

Targets

USE
cementitious waste materials
AND REDUCE CLINKER FACTOR

INSTALL
waste heat recovery systems

Biodiversity

Sagar Cements has a range of operations in limestone mining and cement manufacturing. The business needs to co-exist with the local flora and fauna, and Sagar Cements has proactively undertaken several steps to ensure the protection and conservation of the biodiversity in its regions.

Progress

Sagar Cements regularly assesses the impact of its operations on flora and fauna, employs sustainable mining practices, such as controlled blasting to reduce dust, noise and emissions, and works to restore natural ecosystems after mine closures.

The Company also focuses on plantation and green belt development and goes above and beyond the required CPCB guidelines (i.e., 20%), having 33% of its premises under green cover. The plantation is spread across 287 hectares with 6 Lakhs+ saplings and a nursery, which has been established with an aim to grow both native and non-native plant species. The Company uses organic fertilisers and vermicomposting.

The Company has also established a goshala for cow care and supported the government's programmes for "Harita Haram". Sagar Cements has invested in employee training for biodiversity management, training its employees to become biodiversity lead auditors having them assigned the responsibility of managing the biodiversity in and around the plants.

Action plan

Sagar Cements is committed to conserving and protecting the biodiversity. Its biodiversity policy has the following objectives:

- Complying with all biodiversity-related laws and regulations
- Avoid or mitigate interference with nature to the maximum extent possible
- Carrying out impact assessment studies and implementing mitigation measures, including offsetting residuary impacts
- Preserving endemic, threatened or endangered species and protecting the natural habitat around the plant premises
- Continuing to raise awareness among suppliers and other stakeholders on the importance of biodiversity conservation and sustainable use of natural resources
- Maximising rainwater harvesting, reducing, recycling, and reusing water to minimise freshwater usage in operations
- Promoting biodiveristy awareness among all employees through training
- Conserving, enriching and promoting efficient and sustainable use of natural resources and raw materials in business activities; maximising the use of alternate/waste raw materials and fuels to move towards a circular economy
- Promoting activities for biodiversity conservation in partnership with relevant stakeholders, including local governments, farmers, local communities, self-help groups, and non-governmental organisations
- Increase carbon sequestration by restoration of degraded village commons, riverbanks and tanks, foreshore plantations, and development of community-managed forests in forest fringe areas

Enablers

- Engaging with all suppliers and communities on a regular basis i.e., once in two years, to encourage them towards biodiversity preservation
- Implementing biodiversity management plans across all plant locations

Target

DEVELOPING A DIVERSIFIED AND NATIVE PLANTATION ACROSS FIVE HECTARES PER YEAR, WITH ABOUT

1,000
saplings

Social

SDGs impacted

For a business to succeed, it is imperative to maintain continued trust with all stakeholders. Sagar Cements' strong relationships with its partners and the community helps it sustain its growth momentum. The Company employs and works with passionate individuals to ramp up its business operations, while providing them with a transparent, fair, safe, and equitable work environment that allows them to prosper and grow.

Focus areas

- **Health and safety**
- Employee wellbeing and experience
- Customers and partners
- Communities

Supporting policies

- Corporate Sustainability Policy
- CSR Policy
- Customer Service Policy
- Fair Competition Policy
- Human Rights Policy
- Stakeholder Engagement Policy

Health and Safety

Sagar Cements views health and safety as a fundamental principle to uphold. The Company has implemented a robust occupational health and safety management system. Health and safety measures are integrated across every process in the business, with the leadership establishing it as a critical concern. The measures implemented are regularly reviewed to keep them current and to improve the safety procedures and systems of work consistently. Hazard Identification and Risk Assessment (HIRA) keeps the frequency and severity of accidents in check across all high-consequence routine and non-routine jobs.

Certifications

Earned an ISO 45001:2018 certification

Factory Act 1948

Boiler Act 1923

AP Fire Rule (NBC) -2016 Guidelines

Andhra Pradesh Factories Rules 1950

Guidelines & Petroleum Act 1934 & Rules 2002

Progress

The Company mandates all employees to wear protective equipment across its production facilities. It conducts routine site/office disinfection and machinery inspection for potential issues. Medical staff is available on-site and around the clock to respond to emergencies. In addition to these measures, as part of the onboarding procedure, all workers must complete the safety training.

Zero
FATALITIES

98
NEAR MISSES

40,55,113
SAFE MANHOURS

2,603
EMPLOYEES ARE COVERED UNDER SOCIAL SECURITY SCHEMES

Occupational Health and Safety	FY2022
LTI Mattampally	0
LTIFR	0
Fatalities	0
First Aid	32
Near Miss Incidents	98
Safe Man Hours	40,55,113

Action plan

- Transform safety culture
- Engage and educate every individual on the importance of safety as a core value
- Leading by values rather than rules
- Onboarding contractors and other stakeholders to the Sagar Safety Vision
- Evaluating suppliers and contractors on HSE parameters as a significant qualification criterion
- Recognising good safety culture through rewards and certificates
- Strict penalties on violation or bad behaviour on performance
- Providing regular safety training to all employees and other stakeholders
- The Company also intends to incentivise people to report on near miss cases and undertake a detailed exercise of the report for mitigating such incidents.

Enablers

- Reduce first aid injuries
- Comply with all relevant statutory and legal requirements
- Maximise the involvement of the subcontractor in improving health and safety performance
- Increase awareness of health and safety issues among employees and other stakeholders

Targets

ENSURE

zero FATALITIES

CONTINUALLY IMPROVE THE SAFETY MANAGEMENT SYSTEM BY CARRYING OUT

regular safety audits

Employee wellness and experience

Sagar Cements' fair payment policy guarantees that permanent and temporary employees get fair wages in accordance with industry norms. The Company's employees are eligible to earn benefits such as leave encashment and bonuses, term insurance, Mediclaim, and accidental insurance. The Company is also committed to ensuring diversity and is keen to include and increase the number of female employees in the business. With the resources the Company has, it strives to improve the quality of life for its workforce.

Progress

Sagar Cements ensures the best to its employees by providing a well-established township with a school and recreation activities such as leisure trips, health awareness camps, and training sessions on professional and personality development. These aim to improve the quality of life and ensure a work-life balance. Moreover, it ensures that all employee benefits are regularly distributed among the employees.

The Company values its employees and is keen to achieve a high level of employee satisfaction. Regular employee satisfaction surveys are conduted and Employer Net Promoter Scores (eNPS) are measured. The Company harps on capacity building as one of the most fundamental requirements for a successful transformation towards a sustainable and circular business model.

Sagar Cements will be further engaging with its employees, for skill development to build newer competencies. Going forward, the Company intends to measure employee engagement using parameters such as Pulse and Great Place to Work surveys, Top Employer and Randstad awards, among others.

Action plan

- Established an Integrated Management Manual and BR Policy through which the Company has defined its commitment towards employee wellbeing and establishing safe working conditions
- No discrimination on the grounds of geography, gender, religion, ethnicity, and sexual orientation
- Providing and maintaining equal opportunities for employees at the time of recruitment as well as during employment
- Respecting employees'/workers' freedom of association, participation and collective bargaining
- Providing appropriate grievance redressal mechanisms
- Continuous skill and competence upgradation of all employees by access to consistent learning opportunities, and promoting career development
- Being committed to fair wages, including those with special needs, and ensure timely payment of fair living wages to meet the basic needs and economic security of the employee

Target

UNDERTAKE EFFECTIVE STEPS TO RAISE THE FEMALE EMPLOYEE RATIO

*Sagar Cements understands that the cement industry predominantly hires male employees. But the scenario is shifting towards a more gender inclusive work culture. The Company is undertaking all efforts to increase gender diversity in its workforce.

Customers and Partners

Sagar Cements has been a significant and vital element of the cement value chain in its operating regions for over three decades and it has turned this into a strong competitive advantage through its empathetic, value-based partner/distributor/supplier relationships. A strong brand identity, associated with quality and trust, has helped the Company to further strengthen bonds with its stakeholders through various engaging activities. It will also be conducting customer surveys to understand their concerns, expectations and aspirations. The feedback obtained would form the basis for developing and implementing various activities.

Progress

Vendor engagement	FY2022
Vendors/Suppliers onboarded to ERP system	944
Distribution presence	
New distributors	634
Transport and logistics	
Average lead distance	294 KM
Road accidents	0

Supplier engagement	FY2022
Quality and reliability of suppliers	
Suppliers	8,616
Average supplier availability	95%
Supplier defect rate	2%

Action plan

- Committing to specific principles when interacting with customers, which is reflective of shared company values
- All complaints will be dealt with efficiently. The Company has established a grievance redressal mechanism
- Conducting customer surveys to understand their concerns, expectations and aspirations
- Customers and employees have the right to be heard, understood and respected. The Company expects customers to be honest, polite and respectful in their dealings with the Company's employees. Aggressive or abusive behaviour, or unreasonable demands are discouraged
- Maintaining the confidentiality of information received by customers
- Ensuring social commitment towards value chain partners and prefer to engage only with environmentally responsible supply chain partners

Outlook

Across the external environment, markets are highly fragmented, while retail has consolidated, and competition has intensified. Sagar Cements foresees a healthy demand in the near future.

The Company is well-versed in the local dynamics of its regions. It continuously tracks newer markets with relatively low brand awareness and needs development.

Sagar Cements realises the importance of managing costs effectively to excel in an industry that faces intense competition.

Also, in this industry, the customer wields the power of choice. Cognisant of this fact Sagar Cements focuses on building stronger bonds and relationships with its customers and partners, while consistently creating and delivering value to them.

Target

FOCUSES ON BUILDING

stronger bonds and relationships

WITH ITS CUSTOMERS AND PARTNERS

Community Development

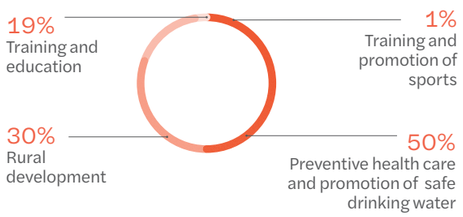
Every year, Sagar Cements has broadened the scope of its Corporate Social Responsibility (CSR) efforts to serve the local communities in a better way. The Company has undertaken a large number of projects in the areas of healthcare, education, the creation of sustainable livelihoods, and the development of infrastructure.

Progress

Sagar Cements develops and prioritises CSR projects based on the requirements and feedback of the local communities who would be benefited. The Company sets up a specific schedule for implementing the targets and KPIs for these projects, which are monitored and regularly reviewed to ensure definitive results.

At Sagar Cements social responsibility is practiced by one and all. The Company is developing a programme to recognise employees who actively participate in CSR projects by rewarding them with valuable prizes, certificates and additional appraisal scores. It is also engaging with external assurance providers, auditors and external party verifications on the CSR projects to ensure an improved delivery mechanism and to achieve a greater impact on the beneficiaries.

CSR spending FY2022



₹ 255 Lakhs

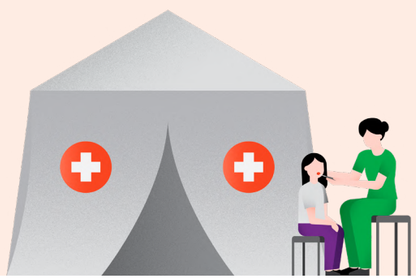
CSR SPEND FOR FY2022

42,000+

CSR BENEFICIARIES

Action plan

- Proactively engage with the community to address their concerns and focus on delivering value aligned to their expectations and fulfil government requirements
- Undertake initiatives aimed at rural development and upliftment of the marginalised stakeholders located in and around the Company's facilities
- Invest in technologies for community upliftment and development
- Eradicate hunger, poverty and malnutrition, promoting preventive health care and sanitation and making available safe drinking water for the neighbouring communities
- Provide scholarships to students, support the education, including special education of children, women, and the elderly, and livelihood enhancement projects
- Upskilling qualified students across the Company's manufacturing facilities
- Provide support to farmers through the construction of water check dams, servicing of farming infrastructure such as the power network, canal repairs, providing farm tools and livestock development, among others
- Extend support to the downtrodden sections of society by setting up homes and hostels for women, orphans and old age homes
- Protect national heritage, art and culture including restoration of buildings and sites of historical importance
- Contribute to the PM National Relief Fund and other funds set up by the Central Government for the socio-economic development and welfare of the SC, ST and other backward classes, minorities, and women
- Disaster management and activities including those related to amelioration and mitigation
- Regularly engaging with the neighbourhood communities and updating them on the pollution mitigation activities and accident prevention measures undertaken and implemented. Based on the suggestions received during the meetings, further action planning and implementation is carried out.



Enablers

- Support to self-help groups to empower women
- Skill development training for local unemployed youth
- Offering scholarships and support for higher studies
- RO plant for safe drinking water in surrounding villages and schools
- Medical camps for surrounding villages
- Water supply for irrigation
- Infrastructure development
- Construction of community toilets

Targets

STRENGTHEN THE COMMUNITY
health centre
BY 2025

START A
skill development training centre
BY 2030

OFFER VOCATIONAL
training programmes
FOR THE UNDERPRIVILEGED BY 2027

Governance

SDGs impacted

Sagar Cements is aware of the criticality of good corporate governance and the vigilant management of ESG parameters in delivering long-term value to the Company's diverse stakeholders. Founded on the principles of fairness, transparency and equity, the Company's governance model is supported by robust policies and procedures.

Led by an independent Board with expertise and insights, the Company is firm on embedding ESG into every core process and aspect of the business. The Board regularly discusses ESG priorities and action plans for implementation, and intends to formulate an ESG committee, having experts that will be responsible for driving the ESG performance of the Company with renewed vigour. The Company is also developing specific ESG related KRA's and incentives for the Board and the management which will link their compensation to achieving the ESG targets.

The Board periodically reviews the committees, the corporate governance charter and policies, and the succession planning while the Code of Conduct covers all the aspects, parameters and values that govern a responsible business. Sagar Cements is also compliant to General Data Protection (GDP), ensuring the data and information systems of the Company are safe and secure.

Focus areas

- Corporate Governance practices
- Transparency and stakeholder engagement
- Ethics and compliances

Supporting policies

- Whistle Blower Policy
- Business Responsibility Policy
- Code of Conduct
- Anti-Corruption Policy
- Anti-Corruption Risk Assessment Policy
- Fair Competition Policy
- Human Rights Policy
- Public Policy and Political Statement
- Stakeholder Engagement Policy
- Innovation Policy

Corporate Governance practices

Sagar Cements upholds the highest levels of corporate governance best practices and strives to be better every day. The Company has formalised various business governing policies that ensure a fair and transparent Code of Conduct while assuring the safety of its stakeholders and protecting their human rights.

Action plan

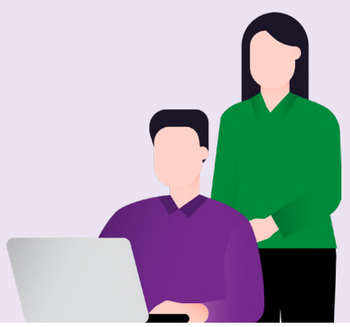
- Established a formal Code of Conduct and Vigil Mechanism
- Formulated a human rights policy and a grievance redressal mechanism that are tracked regularly. Currently available only for employees, the Company commits to extending the policy to its value chain partners soon
- Conduct due diligence on the possible impact of the Company's activities on human rights and implementing the measures to protect human rights
- Committed to conducting training and skill development for assessing human rights impacts
- Guarantee safety and anonymity of the employees who report any unethical and/or improper practices, or any other wrongful conduct in the Company to the notice of the Audit Committee under the whistle-blower policy
- Preparing a comprehensive risk register to enable better risk management
- Committed to anti-discriminatory behaviour and ensuring no discrimination on grounds of geography, gender, religion, ethnicity, and sexual orientation.
  Ensuring Fair Payment Policy and competitive salaries to both permanent and contractual employees
- Providing and maintaining equal opportunities to employees irrespective of caste, creed, gender, race, religion, disability or sexual orientation
- Committed to fair wages and conducting surveys to ensure fair labour practices across its stakeholders
- Conduct training for its employees and representatives to raise their awareness regarding responsible political involvement and contributions, and how to deal with conflicts of interests

Transparency and stakeholder engagement

Sagar Cements believes that its stakeholders are an extension of itself and maximising that stakeholder engagement is an indispensable component of its business functions. Understanding stakeholders' expectations and needs, involving them in managing risks and addressing issues early on ensure a long-term cordial and harmonious business relationship. '

Action plan

- Systematically identifying all stakeholders and establishing a structured mechanism with a defined cycle for conducting stakeholder meets
- Ascertain the nature of impacts on stakeholders, their legitimate concerns, interests and expectations as well as their potential influence on our functions. Designing appropriate engagement methods and plans that meet international standards and tailored to the stakeholders' needs with well-defined objectives and outcomes
- Practicing principles of inclusiveness, transparency, materiality and completeness in all engagements
- Assigning adequate resources and responsibilities for effective stakeholder engagement
- Undertaking engagement in a non-discriminatory and interactive manner which would allow the stakeholders to provide feedback and engage positively in the business operations
- Resolving stakeholder grievances in a fair, equitable and timely manner
- Special attention and special initiatives towards stakeholders



Ethics and compliances

Sagar Cements is committed to conducting business ethically and transparently and will formulate, implement and enforce systems to prevent corruption at every level. The Company undertakes all necessary measures to prevent, control, mitigate and eliminate corrupt practices, including bribery, fraud, embezzlement, concealment, and trading in influence.

Action plan

- Avoiding any direct or indirect involvement with corruption
- Acting fast upon detecting an act of attempted corruption or involving corruption
- Fostering an organisational culture with zero tolerance towards corruption in transactions with both Public and Private sectors
- Understanding responsibility for the acts of business partners and others acting on its behalf. Therefore, no business partner or others acting on the Company's behalf may engage in any act that could be construed as bribery or corruption
- Ensuring that business partners, or any person acting on behalf of them understand the Sagar Cements Anti-corruption and Anti-bribery Policy and are committed to abide by it
- Prompt reporting by employee or associate, who has reason to believe that a violation has occurred, to his or her supervisor guided by the Company's whistle blower policy
- Developed a comprehensive programme for implementing governance policies, through appropriate guidance and trainings on business ethics

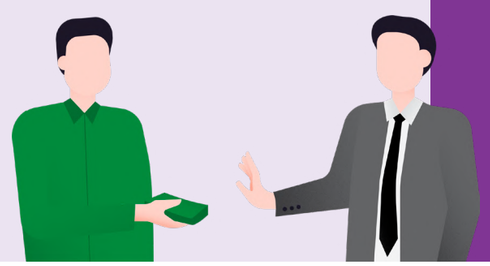
Outlook

Sagar Cements is continuously working towards meeting regulatory and compliance obligations, while aligning with the best practices of transparency and accountability. The Board is committed to regularly review the ESG strategy and performance of the Company. It is also aligning its ESG performance as per rating agency's requirements to comply towards best practices. Sagar Cements firmly believes in adhering to and upholding the best corporate practices to improve its operations and the quality of its relationship with all its stakeholders.

Target

UPHOLDING THE

best corporate practices



Annexure

Focus Areas	Initiatives/ Approach
Measures implemented	Limestone crusher installed in the mine to reduce hauling distance, thereby reducing fuel consumption and the emissions from transport vehicles
	Limestone crusher installed inside the pit avoiding the ramp thereby reducing the torque required for the vehicles, making them more energy efficient, are of low maintenance and more durable
	Secondary crusher installed to reduce specific electricity consumption as size reduction by crushing is more efficient
	Efficient Vertical Roller Mill (VRM) are installed to reduce specific electricity consumption for materials grinding
	Upgraded to six stage pre-heaters of high-efficiency and with low pressure drop to reduce specific thermal and specific electric consumption
	New-generation, high-efficiency cooler installed for better heat recuperation and improved thermal efficiency
	Pre-grinding roller press installed for clinker grinding to reduce specific electricity consumption
	High-efficiency fans are installed
	High-efficiency classifiers / fines separators are installed
	VFD are installed for speed variation thereby reducing specific electricity consumption. For feasible applications, dampers have been totally removed to avoid energy loss across them
	Pneumatic conveying systems are replaced by efficient mechanical conveying systems to reduce electricity consumption
	Online samplers along with automated laboratory installed for improved plant performance in the form of higher resource efficiency, mineral conservation and emission reduction among others
	Energy audits being done at regular intervals by internal team and external experts and implementing improvement measures on continuous basis
	Made investments in renewable energy sources such as hydro, wind and solar power plants
	Green Energy power plant from WHRS (Waste Heat Recovery System) is installed
	To avoid water spray and to reduce hot air required for materials drying, roll press equipment are preferred for new installations
	For lighting, efforts are made to use day light to the best and efficient LED lamps only are installed
	Specific electricity consumption reduced from 90.6 KwH in the year 2015-16 to 75.93 KwH in the year 2021-22, reduction of 16.19%
	Specific thermal consumption reduced from 763 Kcal in the year 2015-16 to 713 Kcal in the year 2021-22, reduction of 6.55%
	Continuous efforts are on to reduce clinker factor. Promoted blended cement. Installed clinker grinding unit, closer to location where SCM (Supplementary Cementitious Materials) GGBS from steel plant and fly ash from coal power plants
	Continuous efforts are on to enhance use of alternate raw materials and fuels
	Made efforts to put up plant capacities closer to the market thereby reducing the emissions from logistics
	Efforts are on to migrate to EV and green vehicles for transportation

Focus Areas		Initiatives/ Approach
Energy and Emissions		
a. Progress so far in reducing emissions		
1.	Process Emission – CO_2 emission from reaction of Limestone	▪ Reduced clinker factor from 88.3% in the year 2015-16 to 76.87% in the year 2021-22, about 12.94% by promoting higher volumes of blended cements
		▪ Started using alternate raw materials as substitute to natural minerals
2.	Fuel Emission-CO_2 emission from combustion of fuel in kiln	▪ Reduced specific thermal consumption by about 6.55% from the base year 2015-16 by improving thermal efficiency of the process
		▪ Increased the TSR (Thermal Substitution Ratio) to about 3.76% in the year 2021-22
3.	CPP Emission-CO_2 emission from combustion of fuel in CPP Boiler	▪ Reduced the emissions from electricity use, reduced specific electricity consumption by about 16.19% from the base year 2015-16
		▪ Increased the renewable energy ratio to about 26% in the year 2021-22 by installing WHRS power plant, solar power plant
4.	Transport Emission-CO_2 Emission from fuel used in vehicles for Materials movement inside the plant.	▪ Started using higher capacity and fuel-efficient equipment from global best suppliers like Volvo and Komatsy, both in mine and in plant.
5.	Emissions from power sourced from grid/external third party.	
6.	Emissions from fuel used in vehicles for inward materials movement and product distribution as well	
b. Projects identified to reduce emissions reach committed targets		
1.	To enhance the electrical efficiency and thereby reducing specific electric consumption	Digitalisation of maintenance and plant operation to reduce unscheduled halts and to enhance hourly production
		Replacing old low-efficiency motors with best efficiency motors.
		Replacing low-efficiency fans with best efficiency fans
		Upgrading the compressed air system
		Replacing the low-efficiency water pumps with best efficiency pumps
		Installing VFD for all process equipment and eliminating the damper controls
		Installing high-efficiency separator
		Performing CFD analysis of gas ducts and carrying needful modifications
2.	To enhance the ratio of green energy	Installing the waste heat recovery system power plants for all kiln systems
		Installing on-site solar power plants of additional capacity
		Improving the heat recovery efficiency and turbine efficiency of running WHRS power plants
		Reducing, preventing hot gas leakages through bypass ducts by better dampers and regular maintenance
		Exploring the possibility, feasibility of solar power with battery, other storages to overcome the non-continuous availability nature of solar energy thereby adding higher capacity than instantaneous power demand
		Exploring the possibility, feasibility of using HAG fired by waste fuels and using the hot gases for higher and stable operation of WHRS power plants
3.	To enhance the thermal efficiency and thereby reducing specific consumption	Upgrading and increasing the size of the kiln cooler to new-generation high-efficiency cooler
		To modify/optimise the kiln pre-heater for the reduction of pressure drop, cyclone efficiency, exit temp
		To study and upgrade feed chutes in all pre-heaters to reduce/minimise fresh air ingress into the system
		To optimise the chemistry off raw mix to minimise the heat of reaction for clinker formation
		Use of upgraded refractory, insulation to reduce radiation losses
		To reduce the specific heat rate of Captive power generation
		Upgrading maintenance practices to reduce unscheduled stoppages to reduce heat loss during start up
		Improved fuel storage and management to reduce ground and air losses of fuel

Annexure

Focus Areas	Initiatives/ Approach
4. To enhance the Thermal Substitution Ratio of (TSR)	To collaborate with residential communities and their leaders for proper segregation of waste materials
	To collaborate with authorities, policy makers to develop and put in place the infrastructure for pre-processing of waste materials
	To collaborate with waste generating industries to develop standard operating procedures (SOP) to achieve consistency in chemistry and other parameters of the waste that are being generated and supplied
	To develop and install the necessary infrastructure at the plant premises for unconstrained use of waste materials
	To develop cultural change and infrastructure to use plastic waste in the cement kiln
	To take up and upgrade the plant machinery to accept waste materials without constraints. Installation of pre-combustion chamber
	To take support from domain experts and other companies, countries who are ahead in the use of waste
	To upskill the plant team to be more confident and comfortable in using the waste without impacting the product quality and system efficiency
5. Use of waste cementitious materials and reduction of clinker factor	Large part of CO_2 emissions in cement production are from clinker production and hence reduction of clinker factor is the highly effective lever in emission reduction
	Recognising the huge effectiveness of less clinker in cement to reduce CO_2 emission. Best efforts are being made to promote blended cements in which huge quantities of other cementitious materials like blast furnace slag from steel production, fly ash from power plants are consumed to substitute the clinker.
	Increased the use of waste materials year-on-year reduced the clinker factor 89.5% in the year 2015 to 76.87% in the year 2021.
	Targeted to further reduce the clinker factor to 64.0% by 2030 and to 50.0% by 2050
	To further promote low-carbon cements, started offering construction solutions besides cement products
	Conscious of the possibility that these waste cementitious materials may become scarce as the Steel and Power process would undergo transformation to new climate-friendly methods, closely observing advancements on other cementitious materials like calcined clay, manufactured reactive materials as their process levels are at either pilot or small scale
6. Carbon Capture, Use, Storage (CCUS)	Sagar Cements is conscious that clinker production causes emissions, and hence CCUS of about 310 kg CO_2 / T of Cement may become necessary.
	Deputed team of engineers on study tour to Canada to look at the working system of ALGAE production using CO_2 from cement kiln flue gas.
	Making feasibility study for pilot projects of using OXY fuel and Hydrogen fuel, as it was reported that some global efforts met with positive results
	Collaborating with research centres and Academia who are conducting research on CO_2 Capturing Technologies and Capture process efficiency improvements
	Making feasibility studies for producing pre-cast structures using CO_2 for concrete curing
	Closely watching the various CO_2 Capture projects that are underway globally from cement plant process so that it would be ready for quick selection of appropriate system to achieve its ambition of Net Zero emission
7. To reduce the Scope 3 emissions	Scope 3 emissions are indirect emissions generated in supply chain and product distribution ▪ Extraction and production of purchased materials, fuels, and transportation to the plant gate ▪ Transportation of products to the customer ▪ Employee transportation
	Will reduce the emissions by: ▪ Switching to low-emission intensity input materials ▪ Prioritising more sustainable eco-friendly suppliers. ▪ Engaging key suppliers to reduce their carbon emissions. ▪ Optimising the routes and loads ▪ Using efficient vehicles and efficient modes of transport ▪ Increasing the ratio of rail transport ▪ Using eco-friendly biofuels
	The Company is working on migrating to EV transport and has ordered 2 EV trucks for material transport. It will the make best efforts for early migration of transport activity towards green fuels

Focus Areas	Initiatives/ Approach
Resource conservation and circular economy	
Alternate raw materials	Considering the fact that largest portion of CO_2 emissionscomes from calcination (chemical de-composition) of limestone to produce clinker, the use of alternate decarbonated raw materials like construction and demolition waste, Industrial lime would be of great choice to reduce CO_2 emissions.
	Other waste materials like iron sludge, foundry sand and contaminated soil are the raw materials being used as substitutes to natural aluminium, iron minerals
	Sagar Cements aims to achieve increased use of decarbonated raw materials - 2.0% by 2030 and 5.0% by 2050.
Alternate fuels	Coal is the primary fuel in the Indian cement industry, being both a heat source and fuel for captive power plants
	Urban waste management is one of the major components of sustainable economies and hence good waste management is necessary
	Waste is recognised as a resource
	Thermal Energy (Fuel) is another critical input which is also the cause for second largest portion of CO_2 consumption in cement manufacturing process.
	Use of waste fuels (Thermal Substation Ratio) is another necessary lever in mineral conservation, circular economy, and emission reduction. Utilisation of alternate fuels will result in a drop in net GHG emissions
	Cement plant kilns have many attributes that make them ideal systems for harmless disposal of all kinds of waste materials: ▪ **High flame (1700°C) and Material (1400°C) Process temperatures incinerating them all.** ▪ **Long treatment time** ▪ **Oxidising condition** ▪ **Alkaline condition** ▪ **Leftover combusted solids absorbed by the clinker**
	Cement industry demonstrated capacity to provide SAFE, SUSTAINABLE, ENVIRONMENTALLY SOUND solution for waste disposal, whether urban waste or industrial waste.
	Waste as alternate raw material, alternate fuel
	Use of alternate (waste) fuels in cement kilns has multiple environmental benefits like. ▪ **Resource conservation** ▪ **Reduced GHG Emissions** ▪ **Avoiding landfill of waste materials**
Biomass/agriculture waste	The Company has been using agriculture waste as fuel
	In parallel, The Company is developing bio-mass production systems as it offers renewable and consistent emission off-setting fuels. At present, a pilot project of growing in ~20 hectares is in progress.
Industry waste as SCM (Supplementary Cementitious Material)	Taking the early clues from the global practices in the industry of using industrial waste materials like GGBS from steel plants and fly ash from power plant as substitute for clinker, made strong efforts to reduce clinker factor
	Promoted blended cements. Installed clinker grinding unit, closer to location where SCM (Supplementary Cementitious Materials) GGBS from steel plants and fly ash from Coal Power Plants.
	Established a concrete laboratory to develop low clinker cements and test their long-term performance
	Established separate department and enhancing research and development capabilities
	Made successful efforts in enhancing the ratio of waste materials in cement to the very maximum allowed by the standard/regulation.

Annexure

Focus Areas	Initiatives/ Approach
Other initiatives	Taking clues from global cement industry, identifying best pathway for decarbonisation of its production process
	Efforts are on for process/tech innovation to use less limestone in clinker production
	Conducting studies to make low carbon products by modification of particle size distribution, use of chemical admixtures in cement
	Sagar Cements is upgrading kiln systems to make them more robust to handle all kinds of waste materials, both as raw materials and fuels
	Enhancing the waste management infrastructure like receiving equipment, storage capacity, pre-processing etc.
	Phasing out inefficient / high-emitting equipment
Water	
Measures implemented within the premises	The water department headed by the manager is tasked with the following responsibilities: ▪ Water manager reports daily water performance ▪ Specific water consumption and progress of the conservation projects/activities are reviewed in monthly meetings ▪ Develop strategies to meet water supply and conservation goals ▪ Conduct chemical, physical water quality monitoring and sampling to ensure compliance with water quality standards. ▪ Recommend new or revised policies, procedures, or regulations to support water conservation goals ▪ Encouragement of employee participation in water policy processes, grievance mechanisms and monitoring systems ▪ Conducting seminars and workshops on water conservation to promote awareness among all employees
	Implementing an Integrated Water Resource Management plan
	Installed network of water meters and water balance and specific water consumption reports are generated
	Adppted concept of Reduce, Recycle/ Reuse and Recharge.
	Upgraded water systems to reduce usage and intensity: ▪ Water spray nozzles are modified in vertical roller mill to reduce specific water consumption ▪ Migrated to air-cooled systems from water-cooled systems ▪ Plantation water is provided with drip and sprinklers to optimum use of water ▪ Made changes to reduce the drift loss of water in cooling towers ▪ Educating employees, colony members and children about present water scenario, including scarcity and need for effective utilisation of water ▪ Celebration of World Water Day for better involvement of all towards conservation
	Several good practices implemented to Recycle/Reuse water: ▪ Reject water from CPP is being used as process water in cement plant and achieved absolute zero water discharge. ▪ Blow down water from CPP is being used as makeup water in cooling ▪ Only recycled and treated water with drip and sprinklers are being used for gardening/ plantations. ▪ No ground water, 100% recycled water is used in plant operation ▪ STP recycled water is being used in grinding process.
	Several good practices implemented to Recharge water: ▪ Constructed rainwater harvesting tanks along with connected drain lines from building roof to harvesting pits ▪ Regular maintenance of water harvesting tanks ▪ Converted the limestone mine pit to a water storage body

Focus Areas	Initiatives/ Approach
Measures implemented beyond the premises	Promoted water conservation techniques and systems among local communities
	Conducted a competition for school children on water and winners were awarded
	Supported local communities in water conservation through construction of check dams and harvest pits
	Performed watershed protection and restoration activities like silt removal from water bodies of neighbourhood areas to enhance their charging and storage capacities
	Helped in increase in agriculture production. Provided infrastructure support for irrigation. Encouraged water efficient farming.
	Encouraged channel partners towards water management practices
	Constructed water distributed networks for the neighbouring communities
	Ensured availability of clean and sufficient water to all
	Promoted use of cement products with low water demand for concrete and curing

List of abbreviations

BR Policy	Policy on Business Responsibility
CC	Composite Cement
CCS	Carbon capture and storage
CCU	Carbon capture and utilisation
CFD	Computational fluid dynamics
CII	Confederation of Indian Industry
CPCB	Central Pollution Control Board
CPP	Coal power plant
CSR	Corporate social responsibility
eNPS	Employer Net Promoter Scores
ESG	Environment, Social and Governance
EV	Electric vehicles
GDP	General Data Protection
GGBS	Ground Granulated Blast-furnace Slag
GHG	Greenhouse gas
HIRA	Hazard Identification and Risk Assessment
IE1	Standard efficiency
IE3	Premium efficiency
IE4	Super premium efficiency
ISO	International standards organisation
Kcal	Kilo calories
KL	Kilo litres
KRA	Key Responsibility Area
KW	Kilo Watt
kWh	Kilo Watt hour
LED	Light-emitting diode
LTI	Lost time injury
LTIFR	Lost time injury frequency rate
MnT	Million tonnes
MT	Metric tonnes
MTPA	Metric tonnes per annum
NBC	AP Fire Rule (NBC) -2016
OPC	Ordinary Portland Cement
PMNRF	Prime Minister's National Relief Fund
PPC	Portland Pozzolana Cement
PSC	Portland Slag Cement
R&D	Research and development
RDF	Refuse Derived Fuels
SBTi	Science-based targets initiative
SC	Scheduled castes
SCL	Sagar Cements Limited
SCM	Supplementary Cementitious Materials
SOP	Standard operating procedures
Sp EC	Specific electric consumption per tonne of cement
Sp TC	Specific thermal consumption per tonne of clinker
SRC	Sulphate Resistant Cement
ST	Scheduled tribes
STP	Sewage treatment plant
TSR	Thermal substitution rate
VFD	Variable Frequency Drive
VRM	Vertical Roller Mill
WHRS	Waste to heat recovery system
ZLD	Zero liquid discharge

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