



# Building on our fundamental strengths

Our mission of gaining global repute for efficiency is majorly driven by our adept manufacturing capabilities, enabling us to create world-class, green cement that is trusted across the Board. Underpinned by an integrated supply chain, we are continuously enriching our portfolio with innovative and value-added products and services. Our commitment to embedding sustainability into our operations is evident in our tech-led innovative approach, bolstering our position as the leading manufacturers of sustainable cement for a self-reliant India.



We have a total manufacturing capacity of 15.1 MTPA spread across two integrated units and four grinding units. We are working to expand on our scale and capacity, firmly securing our position as one of the most trusted cement companies in the country and the world.

**67%**

Capacity utilisation

**8.8 MTPA**

Cement production & GGBS

## FY 2021-22 highlights

Optimising resource consumption and maximising production

### Our key inputs

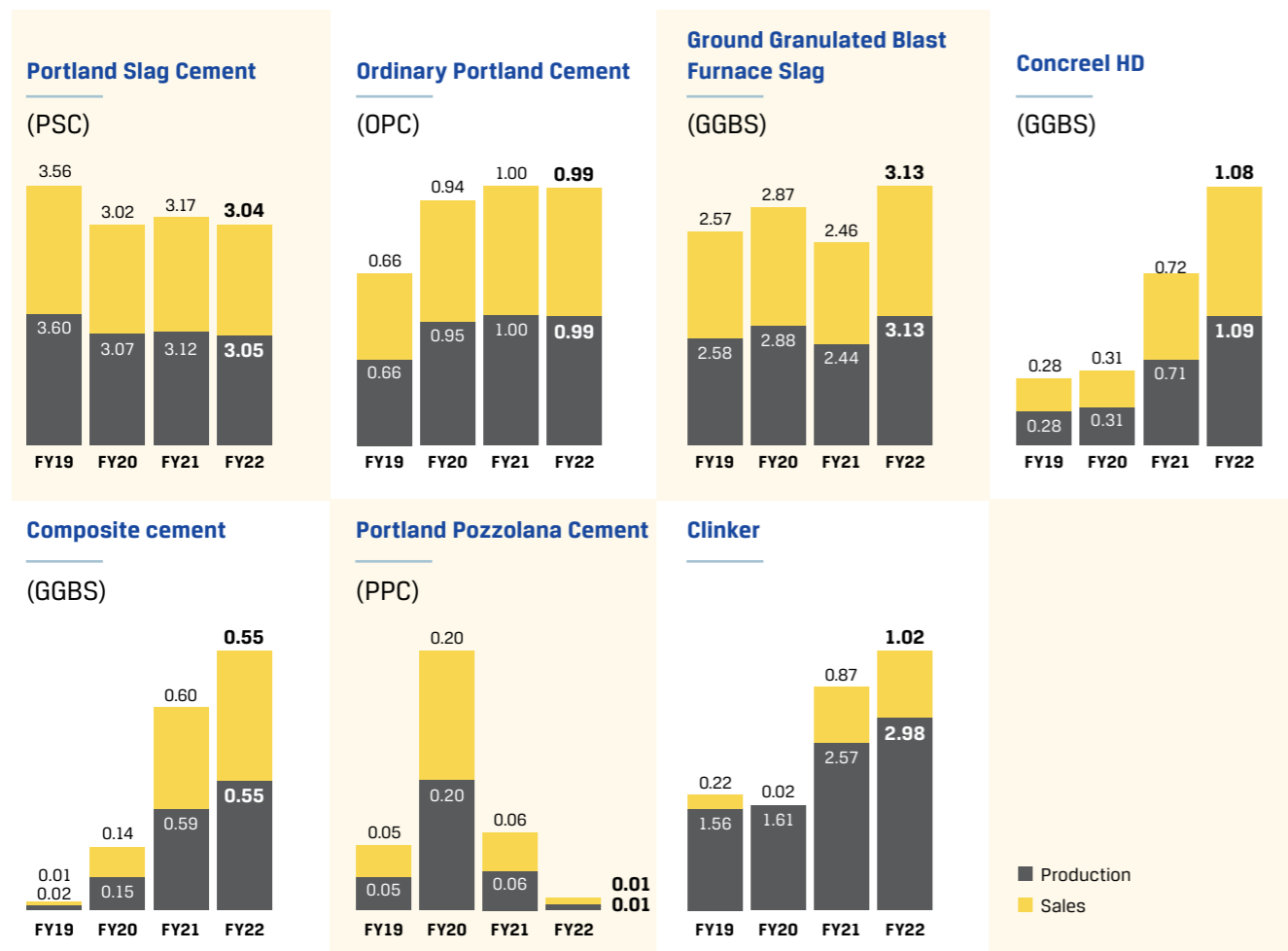
- > 2 Integrated units
- > 4 Grinding units
- > 15.1 MTPA cumulative capacity

### Our key outcomes

- > 64% Capacity utilisation
- > 7.1% Thermal Substitution Rate
- > Specific Power consumption Grinding - 32.8 units
- > Specific Heat consumption - Grinding - 52 Kcal

## MANUFACTURED CAPITAL

## Steadfast volume growth over the years



## Capex development and efficiency

In order to improve our position in the market and develop a more effective, efficient, sustainable and reliable business model, we invest in multiple projects.

- › At Nandyal, we are upgrading our Kiln capacity from 6500 TPD to 8500 TPD. We are investing in a Waste Heat Recovery System of 12.29 MW with a total investment of ₹451 crore. Additionally, we have tied up with JSW Energy to put up a 10 MW ground-mounted solar power-plant, to reduce dependency on grid power and reduce unit cost of power
- › At Vijayanagar, we have tied up with JSW Energy to put up an 8 MW Ground mounted solar power plant to reduce the unit cost of power
- › Increasing the capacity of Vijayanagar and Dolvi plants by 2 MTPA
- › At Fujairah, we are enhancing capacity by 1.36 MTPA with 14.7 MW WHRS

At Shiva Cement, we are enhancing the capacity by 1.36 MTPA with 8.9 MW WHRS in the first phase.

## Performance in manufacturing

- › Deployed the latest technologies and are using energy-efficient processes led by a roller press grinding system to manufacture cement products
- › Observed higher clinker production as compared to the previous year. At Nandyal, it was 14% higher and at Fujairah, 28% higher due to Kiln availability
- › Cement and GGBS dispatches were higher by 11% over the previous year

## Improving our efficiency

- › Investing in opportunities to reduce power and heat consumption, while looking at alternate raw materials to conserve natural resources
- › Substituting Aluminium Laterite, an expensive material with Alumina-rich steelmaking slag for clinker making in Nandyal
- › AOD slag in cement grinding and utilising waste hot gases from the clinker plant for slag drying in the Nandyal plant



- › Increased the TSR by 69% with the increase in consumption of higher alternate fuel by 47% at our clinker plant in Nandyal, thus saving fuel
- › Co-processed ~35,000 tonnes of waste at the Nandyal plant's cement kiln which led to achieving a 7.1% TSR, as compared to 4.15% TSR in FY 2020-21

## Maintaining product quality

- › Maintaining best-in-class testing norms and aligned to IS -269(OPC) IS -455(PSC), IS 16415(Composite) in Cement, and GGBS -IS -16714. We are, in the process of getting NABL accreditation for four of our concrete labs in Salboni, Dolvi, Hyderabad and Kolkata
- › Installed state-of-the-art testing equipment for GGBS, to further strengthen our raw material testing capabilities
- › Moving towards increasing the usage of alternate fuel, we have put up a dedicated alternate fuel testing facility at Nandyal - which includes equipment such as Auto titor, Flash point tester and chloride testing. Supported with excellent lab testing equipment, we ensure that all our products are of superior quality

## Fuel consumption

Location	SHC (Kcal/Kg)	
	Grinding	Kiln
Vijayanagar*	70.43	-
Nandyal	-	728.82
Dolvi	52.79	-
Salboni	62.32	-
Jajpur	62.89	-
Fujairah	-	720
Flue dust		Alternative

## FY 2021-22 developments

- › In FY 2021-22, the heat consumption in Fujairah amounted to 720 kcal/kg clinker, against 731 kcal/kg clinker in FY 2020-2021
- › All plants continued to optimise energy consumption in FY 2021-22 by adopting best practices and processes

## MANUFACTURED CAPITAL



## Fuel replacement

FY 2021-22	SHC (Kcal/Kg)	
	Nandyal TSR %	Alternate fuel (MT)
FY 2020-21	4.15	23,200
FY 2021-22	7.1	~35,000
% Increase	69%	47%

## FY 2021-22 developments

- › Recycled waste heat by utilising hot gases from the clinker plant for slag drying in Nandyal, thereby saving coal/diesel
- › Increased TSR by 69% by adopting 47% higher alternate fuel usage in the clinker plant at Nandyal, thus cutting down dependency on fossil fuels
- › During the reporting year, ~35,000 tonnes of waste was co-processed at the Nandyal plant's cement kiln in an environment-friendly manner; 7.1% TSR achieved in FY 2021-22, compared to 4.15% TSR in FY 2020-21

## Power consumption

FY 2021-22	SPC(Kwh/T)	
	Grinding	Kiln
Vijayanagar*	28.76	-
Nandyal	32.49	56.34
Dolvi	33.73	-
Salboni	34.11	-
Jajpur	32.91	-
Fujairah	-	51.83

## FY 2021-22 developments

- › Deployed latest technologies and energy-efficient processes, with a roller press grinding system for manufacturing cement products
- › Reduced specific power consumption by 5% in Vijayanagar with power consumed being 28.75 kWh/T of cement in FY 2021-22, as against 30.27 kWh/T of cement in FY 2020-21



## Green power

Solar power (Million units)	
FY 2020-21	11.5
FY 2021-22	15.1
% Increase	31%

## FY 2021-22 developments

- › 5.45 MW and ~3.5 MW solar power plant utilised at the Nandyal and the Salboni units, respectively
- › Began installing Waste Heat Recovery Systems (WHRS) of 12.29 MW and 9.0 MW capacity at the Nandyal and Shiva units, respectively
- › Consumed 31% higher solar power at the Nandyal and Salboni units, amounting to 15 million units of solar power consumed in FY 2021-22, as against 11.5 million units in FY 2020-21

## Green initiatives

Plantation	
Vijayanagar*	59,205
Nandyal	10,030
Dolvi	465
Salboni	1,76,705
Jajpur	5,879
Fujairah	22,524
<b>Total</b>	<b>2,74,808</b>

## FY 2021-22 developments

- › Planted ~2,75,000 trees for developing a green belt in and around plant premises at all operating locations
- › Established rainwater harvesting facilities inside plant premises across all locations; worked on the mining pit in the limestone mines at Nandyal
- › Utilised ~33,297 MT of alumina killed slag during FY 2021-22, thus reducing an equivalent amount of laterite sourced from mines
- › Reused industrial waste such as blast furnace AOD slag for manufacturing cement and cementitious products
- › Utilised off-gas, such as CO and blast furnace gas, from steel production



## Increased dispatches during FY 2021-22

- › Increased clinker production by 28%, producing 10,73,500 MT clinker during the reporting year, compared to 8,38,100 MT clinker in FY 2020-21 at Fujairah
- › Increased clinker production by 14%, producing 19,14,985 MT clinker, as against 16,85,123 MT clinker in FY 2020-21 at Nandyal
- › Overall dispatches of cement and GGBS increased by 11%, amounting to 8.83 million MT in FY 2021-22, as compared to 7.97 million MT in FY 2020-21
- › Overall GGBS dispatches increased by 27% with 3.13 million MT in FY 2021-22, as compared to 2.46 million MT in FY 2020-21
- › The Vijayanagar dispatches of cement and GGBS increased by 37% to 3.20 million MT in FY 2021-22, as against 2.37 million MT in FY 2020-21
- › Screened slag and GBS dispatches at Vijayanagar increased by 70%, amounting to 1.51 million MT in FY 2021-22, as compared to 0.89 million MT in FY 2020-21
- › Dolvi dispatches of cement and GGBS increased by 31% to 1.84 million MT in FY 2021-22, as compared to 1.40 million MT in FY 2020-21