SUSTAINABLE INITIATIVES TOWARDS CO-PROCESSING OF WASTE IN CEMENT KILN _ SUCESSES TRENDS >>>>>>>>>>>>>>

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Co-processing success- Points to Ponder.

- The AF success lies ON THE WILL OF MANAGEMENT to use and create suitable environment in the cement plant conducive to utilization of different materials along with their existing conventional fuels.
- Create suitable facilities in the plant for storage, feeding and testing facilities . Commencing with systems initially for use of simple materials and subsequently moving to industrial wastes utilization once THE WILL sustains.
- The waste generating industries look at those cement plants who can offer a total solution for their waste disposal. Cement plant has to gear up for utilization of different types of waste by providing proper blending & mixing system in order to have a uniform waste composition that can be fed to Kiln so that it does not affect production processes and product quality. Better the facilities higher will be waste usage in their plants.
- Cement plant needs to understand the waste characteristic, fuel characteristic, raw material characteristics and their process to make a proper blend that can be uses without any affect on kiln operations.
- Plant must create facilities that can feed the wastes at all available feeding points like at calciner, kiln inlet and kiln burner based on their available waste characteristics.
- Cement plants must focus on having right mix of wastes that can be used like RDF, Biomass, liquid waste,solid & semi solid waste streams in the right praportions.

VICAT GROUP – INTRODUCTION

- The Vicat Group is an international cement company with expertise acquired through more than 160 years of research, discoveries and participation in countless construction projects.

- The jointly-owned company founded in 2008 by Vicat and Sagar Cements Limited had a cement plant built on a greenfield site in Gulbarga, in the State of Karnataka. The first production line, with capacity for 2.8 million tons per year, was commissioned at the end of 2012. In 2014, Vicat bought the total stakes.

- In 2010, Vicat made a second major acquisition in India by purchasing a controlling stake in Bharathi Cement Company Limited, which operates a plant in the state of Andra Pradesh and has an annual production capacity of 05 million tons.

Summary :

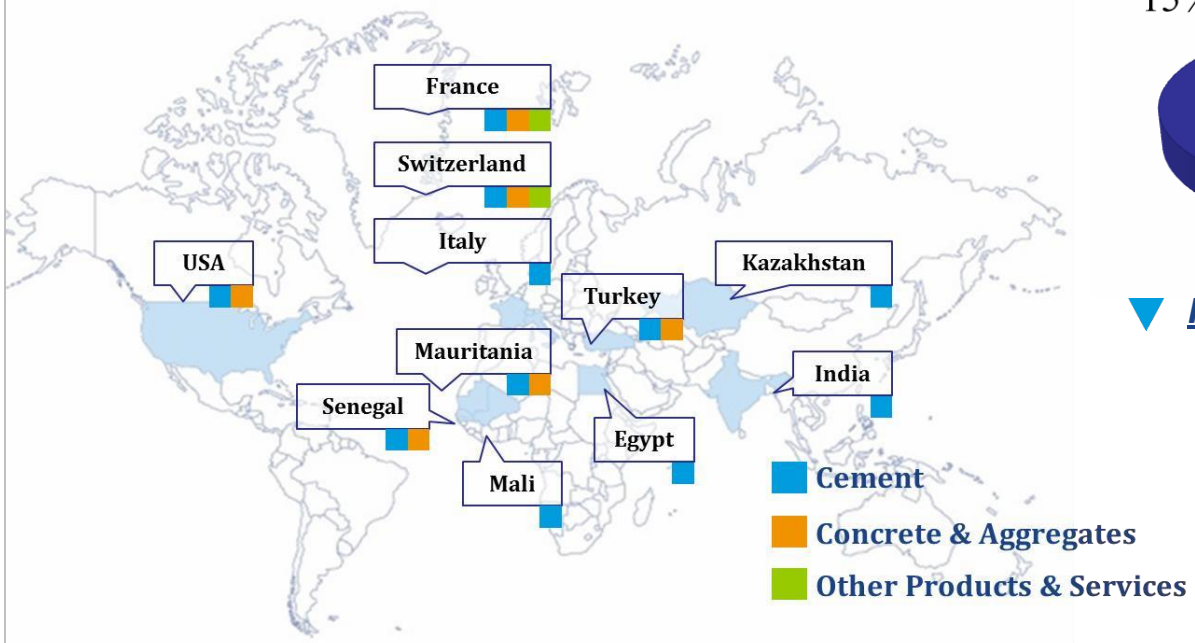
- **€2,423 billion in** sales
- **€144 billion** consolidated net profit
- **7,750 employees**, of which 5,200 are outside France
- **3 business segments -** Cement, Concrete and Aggregates
- **11 countries -** where Vicat operates

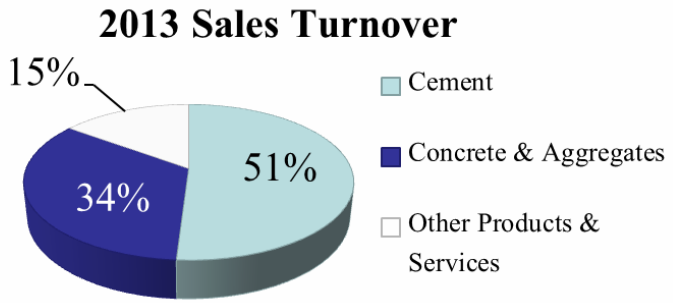
Bharathi CEMENT
SUPERIOR QUALITY... GUARANTEED

VICAT UNE FILIALE DU GROUPE VICAT

VICAT GROUP PRESENCE – WORLD WIDE

- Vicat Group is in the business of Cement, Aggregates, Ready Mix and related services Globally Vicat is having close to 7,700 employees , well spread over 11 countries Sales of € 2,286 million in 2013





- ***Industrial Profile***
  - 15 cement plants
  - 5 grinding centers
  - 243 concrete batch plants
  - 73 aggregate quarries

Bharathi CEMENT

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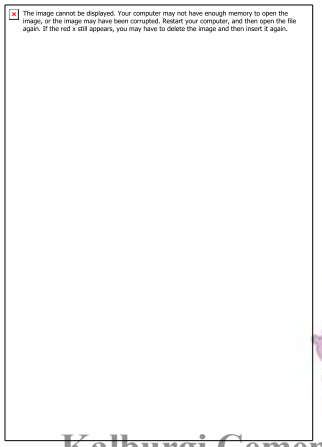
VICAT IN INDIA OPERATIONS



Kalburgi Cement,
Kalburgi Plant

- 2.75 MTPA Capacity
- 1 Kiln : 7000 TPD
- (Line 1 : Nov' 2012)
  AF usage since 2013
- AF Substitution Rate : ≈20%

Bharathi Cement,
Kadapa Plant

- 5.5 MTPA Capacity
- 2 Kilns : 5000 TPD
- (Line 1 : 2009, Line 2: 2010)
  AF usage since 2011
- AF Substitution Rate : ≈20%

VICAT IN INDIA:

- A producer of superior quality cement since 2009
- A modern cement plant with state of the art technology
- Adopted German Technology
- Facilitated with Robotic Labs
- Assured with Tamper proof packaging
- Actively involved in Corporate Social Responsibility
- Sustainable practice for protecting Environment since 2011
- Specially trained Health & Safety Team
- Continuous innovation & technology up gradation

ASIA'S MOST PROMISING BRAND
VALIDATED BY CONSUMERS & INDUSTRY

Global Green
FUTURE LEADERSHIP
AWARDS

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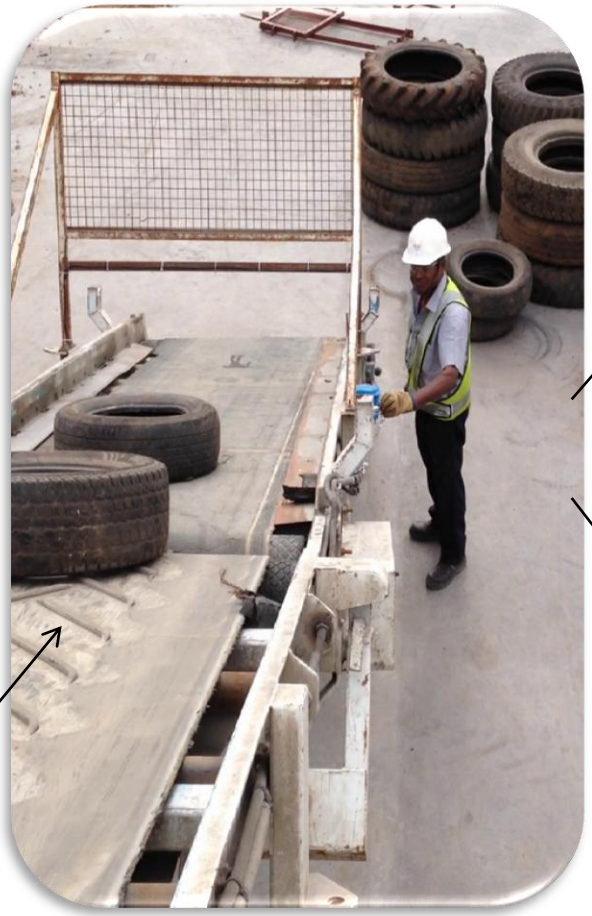
FEEDING MECHANISMS

- **Available feeding systems**
  - RDF – Shredder , Pneumatic conveying system to Pre-calciner.
  - Tyres - Shredder , Double flap valve to kiln.
  - Closed handling, storage, transportation and feeding system for materials like Black carbon that impact the usability.
  - Solid & semi solid feeding – pre processing plat form & Double flap valve to kiln.
  - Liquid – Liquid handling system connected to Kiln through pipe lines.
- **Laboratory**
  - Dedicated laboratory to measure various parameters like Calorific value , Ph,Moisture , Metals ,Ash, Viscosity etc.
- **Expertise & Dedicated Team**
  - Almost 50 people are working @ plant for alternate fuels to increase the substitution rate .
- **Environment & Safety**
  - All our stacks and ambient air quality monitoring stations are well connected with APPCB website and also we have arranged fire fighting equipment's , fire hydrant systems.
- **Commitment**
  - we have commitment in group level to reach alternate fuels substitution rate up to 30 % from your support.

RDF HANDLING SYSTEM at BHARATHI CEMENT PLANT

- Mechanized system to collect the material from unloading point and transfer to the hopper for feeding in to secondary shredder through conveyor.
- Capacity of grab crane - 1 MT
- Through Crane, material will be passed into shredder
- Shredded material will be pumped into precalciner through pneumatic system

PRE-PROCESSING OF TYRES



Shredding

Tire Chips

SOLID & SEMI SOLID WASTE FEEDING SYSTEM

ALTERNATIVE FUELS – LIQUID FEEDING SYSTEM

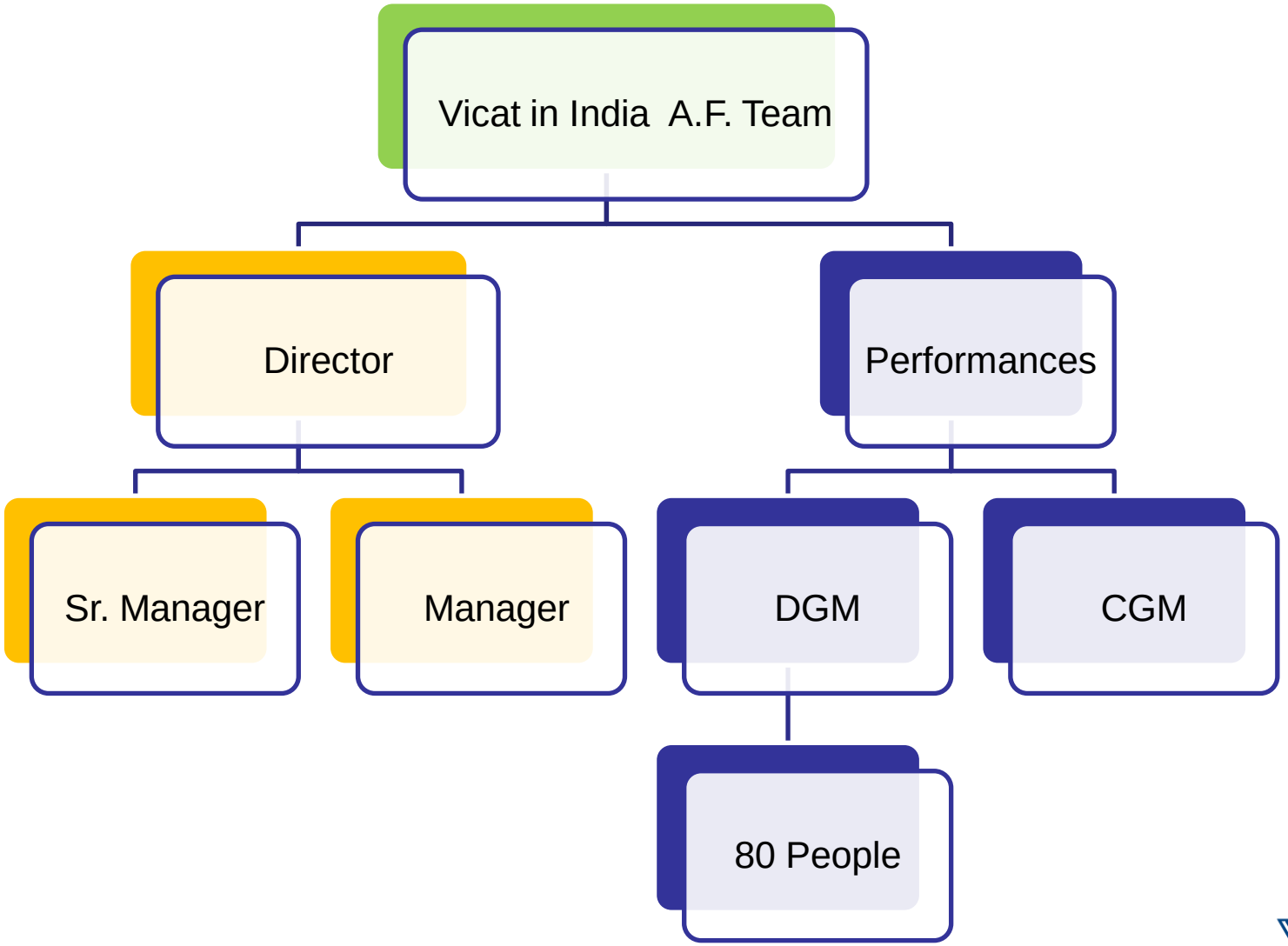
ALTERNATE FUEL – LABORATORY

I-CAP from Thermo (Detection of Metals)

Spectrophoto meter (Detection of chlorides)

IKA Bomb Calorimeter for testing Calorific Value

AF TEAM IN INDIA



ONLINE EMISSION MONITORING

Time office

Club house

S. No	Stack	Height (in Meters)	Diameter (in Meters)	OPMS
1	Line-1 RABH Stack	163	5	SPM, SO2 & Nox
2	Line-1 Cooler Stack	41	4	SPM
3	Line-2 RABH Stack	163	5	SPM, SO2 & Nox
4	Line -2 Cooler Stack	41	4	SPM
5	Line-1 Coal Mill stack	55.6	1.7	SPM
6	Line -1 Cement Mill stack	53	3.8	SPM
7	Line-2 Coal Mill Stack	55.6	1.7	SPM
8	Line-2 Cement Mill Stack	53	5.3	SPM
9	CPP stack	85	2.4	SPM

Stacks of various locations

Mines

SAFETY & ENVIRONEMNT

Shower

Eye Wash

Nitrogen Blanket

SUPPORT & ENCOURAGE MENT FOR IMPROVED CO-PROCESSING IN CEMENT KILN

- Polluter - pay concept is being encouraged now by many PCB's.
- **Permission to the transporters should be considered by PCB's to have proper monitoring of HW movement**
- With respect to Revised HWM Rules 2016, Interstate movement may be fully permitted to reduce logistic cost & risk involved in transit.
- Transportation should be done by the waste generator as they are fully aware of the material characteristics its hazard and the required safety concerns during the transportation.
- **PCB to consider certain subsidies/support to the cement plants in order to improve utilization of industrial waste**
- Pharma industries should be in a position to supply their waste in tankers / HDPE drums as supplies in MS drums create problems of utilization during usage due to leaks & spillages in cement plants.
- Proper labeling on consignments/ drums /tankers indicating the nature of hazardous waste will give a better idea to the cement plants in view of safety.
- Regular seminars trainings can be organized by the authorities in creating awareness about waste disposal options having in their states and areas.

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