



Indian Cement Industry

New Horizons

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Second largest cement market
Demand: ~275 mio

Effective Capacity
360 mio tpa

+230 plants,
75-85 companies

Past Cement demand growth
of 4-6% p.a.

Overcapacity in short-medium term

PCC
India: ~215 kgs
World: ~550 kgs

Economic growth:
GDP growth of ~7.5%
in 2015-16

Infrastructure Constraint

Boon in the construction Industry? - which is main driver of Cement Demand

Paucity of limestone??

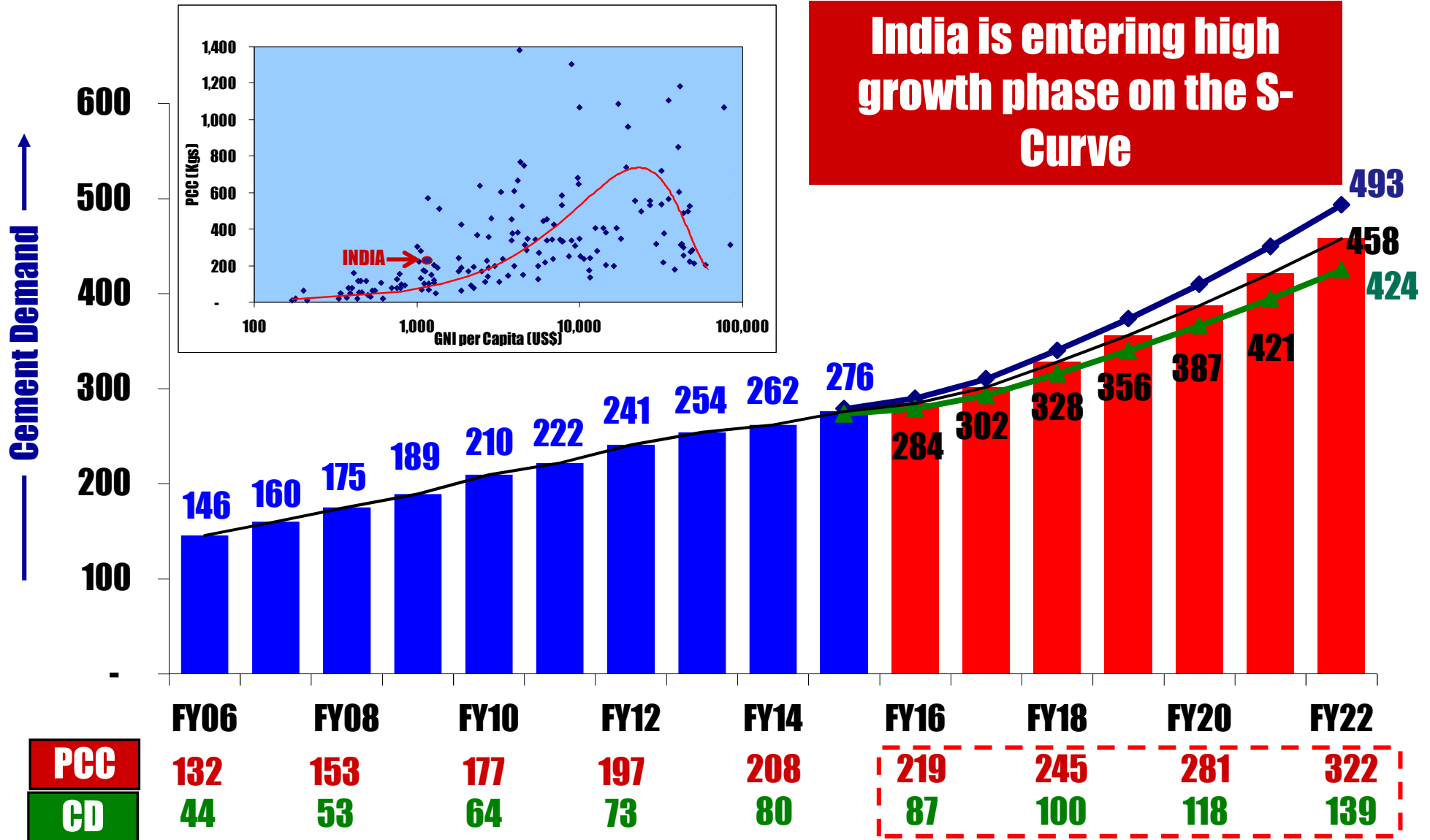
Urban population to increase by 200m in 20 yrs from 377m in 2011 to 600m by 2031

Obsolete Construction Techniques





Cement Demand

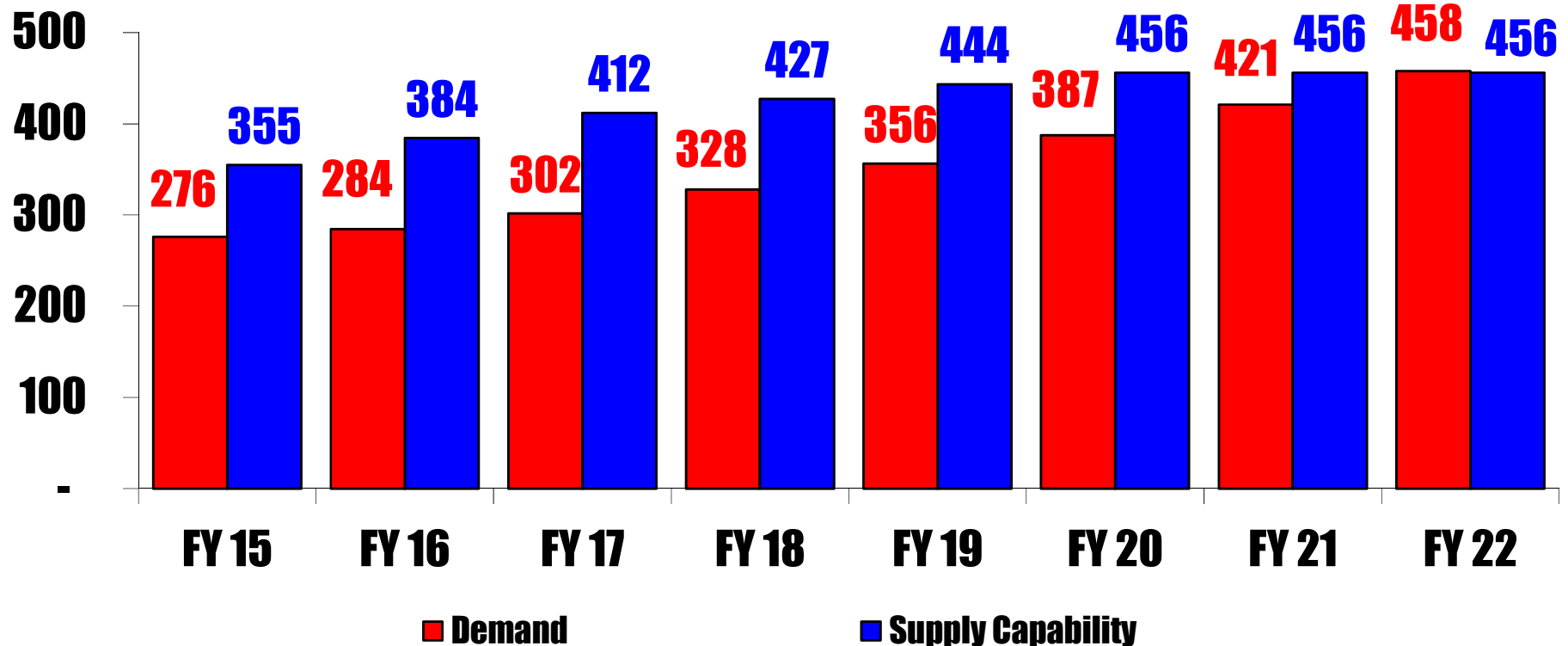


Demand forecast est. in the range of 6.5 -8.5% pa, with the Most Likely being closer to 7.5% pa.



Future Demand – Supply Projections

Supply Capability assumed static at FY 20 level of 456 mio t



**Refers to domestic supply (net of exports), assuming supply for any capacity added as 50% in Yr 1 & 100% from Yr2 onwards and Cap. Util. of 90%.*

Supply capability also accounts for possible plants' closure – those that are very old, are not strategically located and have paucity of limestone.

After trailing potential supply between FY 15 – FY 21, demand could again exceed supply beyond FY 22, if fresh capacity expansion is not planned earlier.



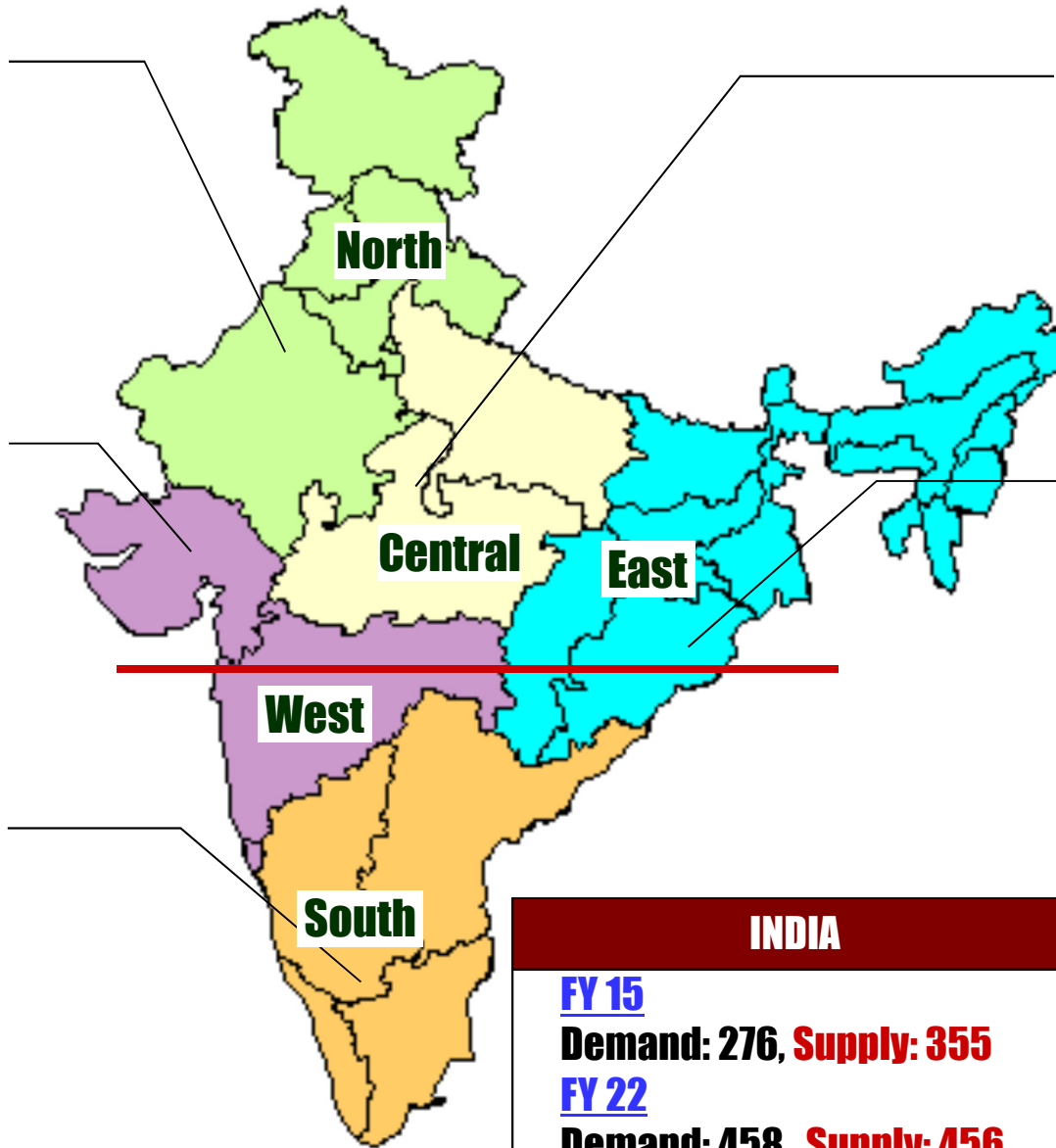
Demand & Supply at Regional Level

(All figures in mio t)

FY15	Demand : 50	Supply : 72	(22)
FY22	Demand : 80	Supply : 89	(9)

FY15	Demand : 54	Supply : 42	(-12)
FY22	Demand : 91	Supply : 61	(-30)

FY15	Demand : 72	Supply : 137	(65)
FY22	Demand : 113	Supply : 165	(52)



FY15	Demand : 47	Supply : 47	(0)
FY22	Demand : 81	Supply : 62	(-19)

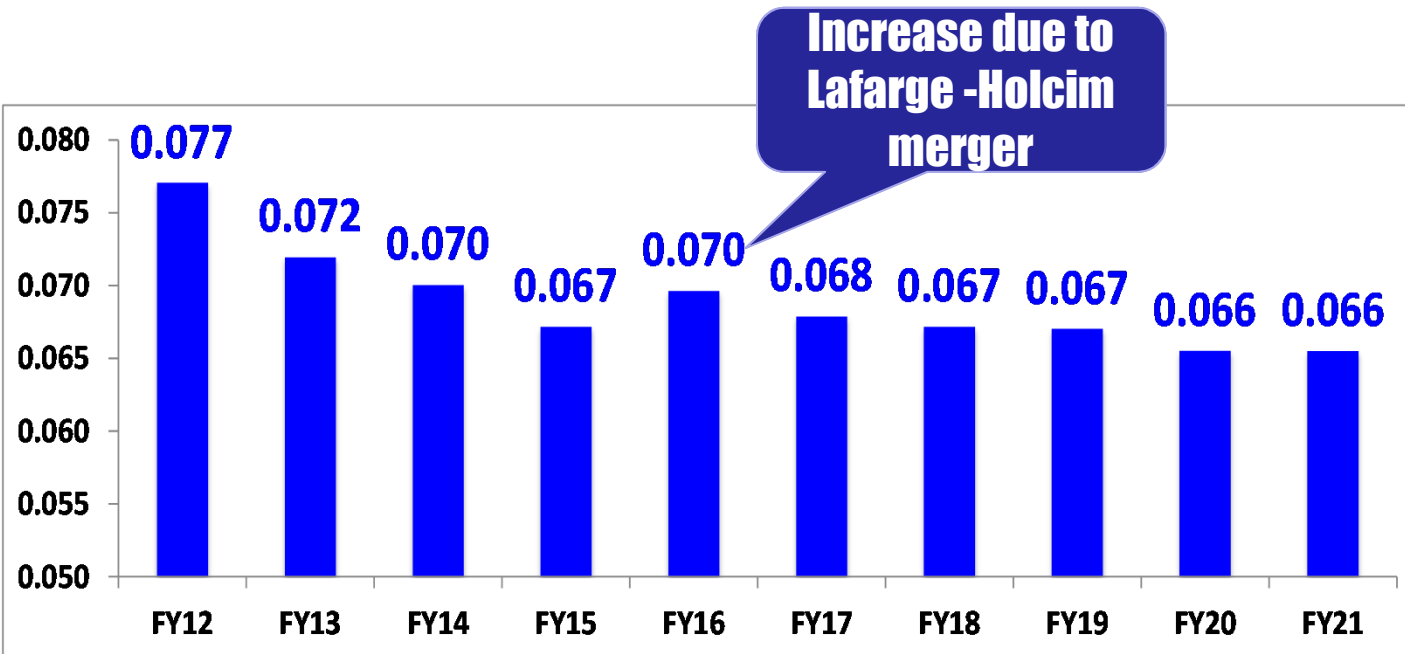
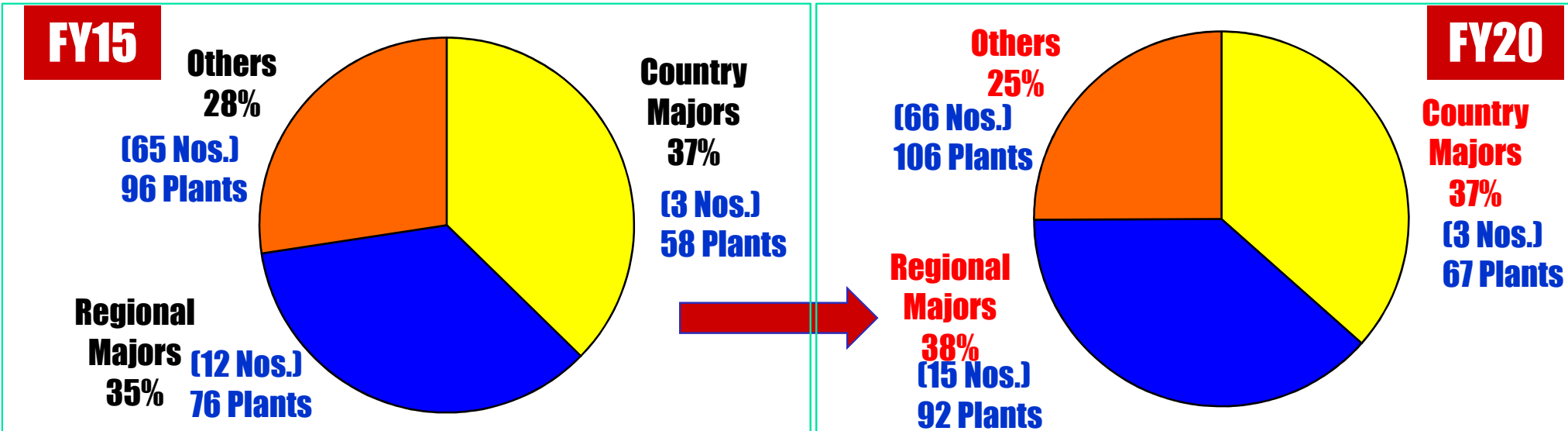
FY15	Demand : 53	Supply : 57	(4)
FY22	Demand : 92	Supply : 79	(-13)

INDIA	
FY 15	Demand: 276, Supply: 355
FY 22	Demand: 458, Supply: 456

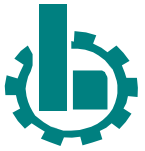
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Capacity Ownership

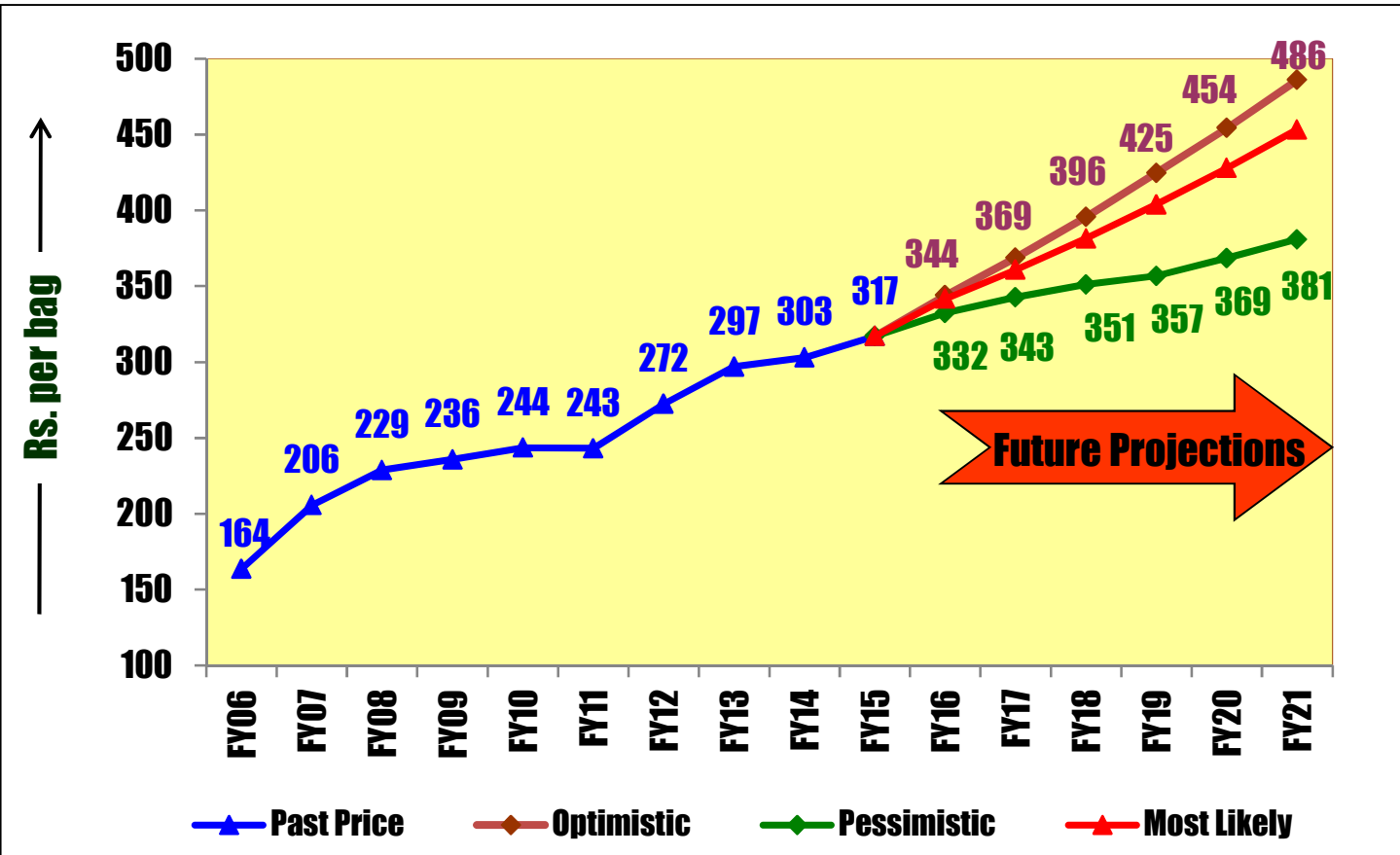


Herfindahl Index (HI) is a preferred metric to measure industry consolidation when studying market price implications



Simulated Price Forecasts

Prices in past have grown at a rate of 5-8% pa. Future prices likely to increase by around 5-6% pa under Most Likely Scenario.



Modeling with 40 variables, e.g.

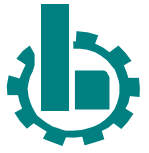
- ✓ Cement Spend
- ✓ Demand - Supply Gap
- ✓ Industry Consolidation
- ✓ Return Expectations of Investors
- ✓ Past Cement Prices
- ✓ Price Elasticity of Demand
- ✓ CAPEX for Capacity Creation
- ✓ Availability of Input Materials
- ✓ Price Indices
- ✓ Differential Costs of Delivery

After Demand – Supply gap, rising input materials' prices is seen to have the most significant impact on Cement Price

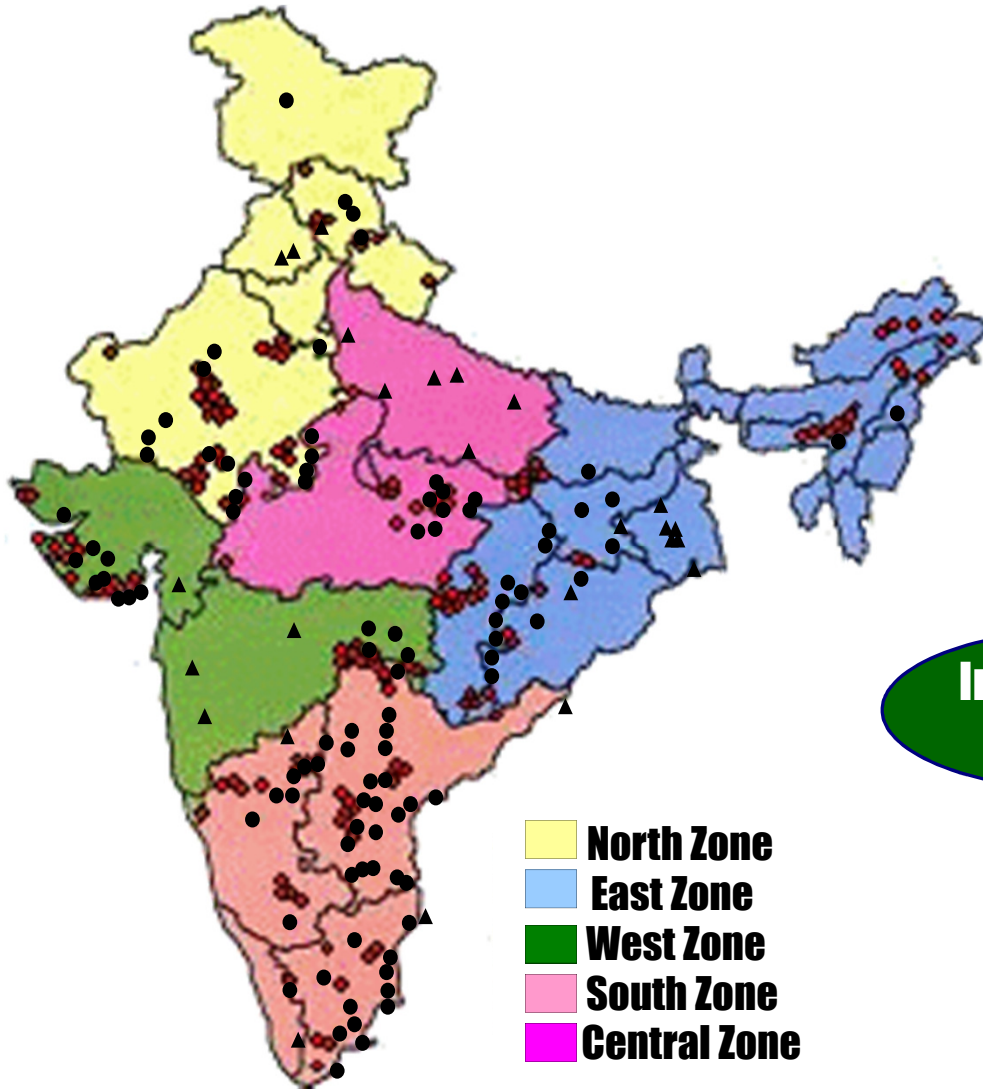


Some Trends

- ➡ **~ 30 new clinker capacities to be between 6 - 10 k tpd/ lines.**
- ➡ **25-30 new split units with capacities between 1 - 4 Mio tpa.**
- ➡ **Raw Materials & Fuel characteristics to dictate choice of technology.**
- ➡ **Alternate fuels to receive enhanced attention.**
- ➡ **Coastal locations to be increasingly favoured for split units.**
- ➡ **Bulk cement sales to increase from 15 to 40 mio tpa and road despatches from around 185 to 235 mio tpa.**
- ➡ **Ready mix consumption to increase from 7 % to 15 % of total concrete.**
- ➡ **Energy consumption to fall to 670 kcal/ kg clinker and 70 kwh/ t of OPC.**
- ➡ **Adoption of global cement nomenclature and standards.**
- ➡ **Stricter statutory interventions in the utilisation of diminishing resources, environmental control and customer safeguards.**
- ➡ **Significant increase foreseen in carbon trading.**
- ➡ **New environmental laws to control NO_x and SO_x emissions.**



Limestone Reserves

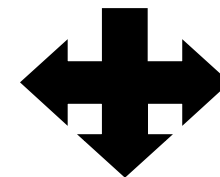


Total Deposits
50 bio t



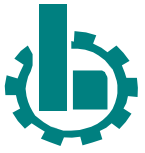
Individual Deposit > 50 mio t
CaO > 42%
45 bio t

In Forest Land
4 bio t

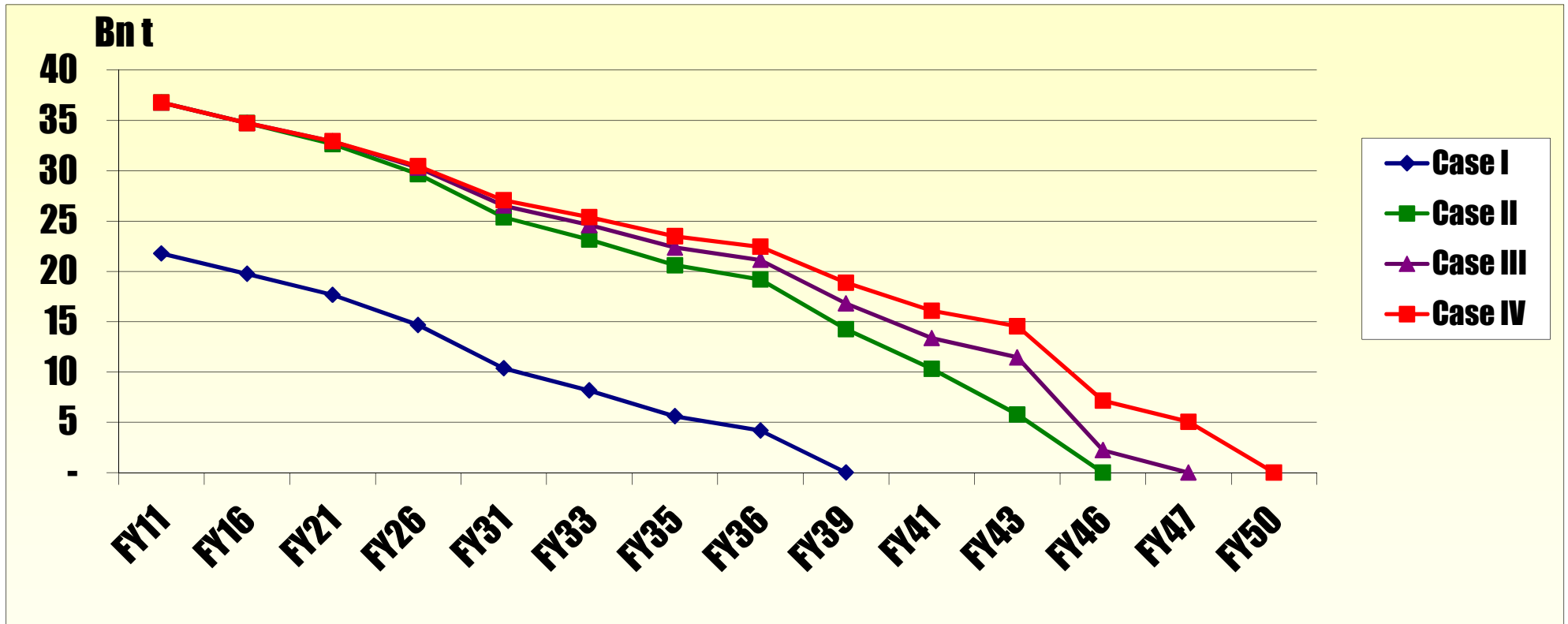


Statutorily Blocked
19 bio t

Exploitable Reserves
22 bio t



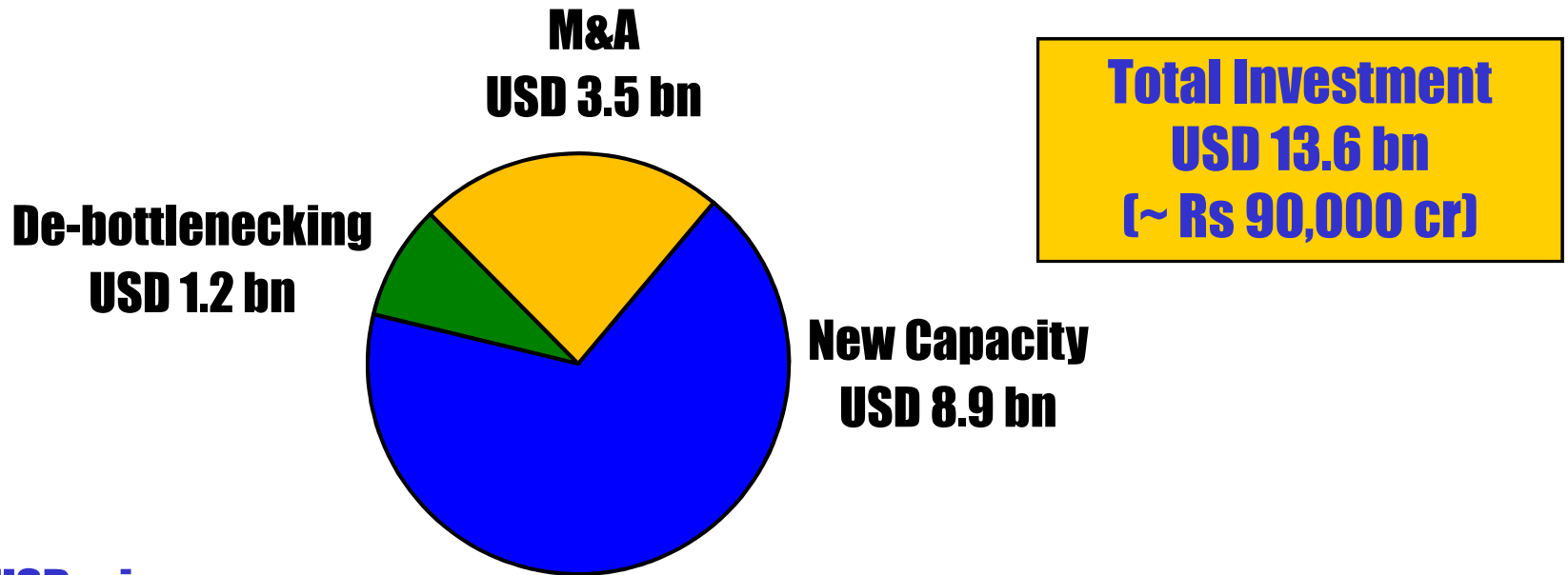
Residual Limestone Reserves



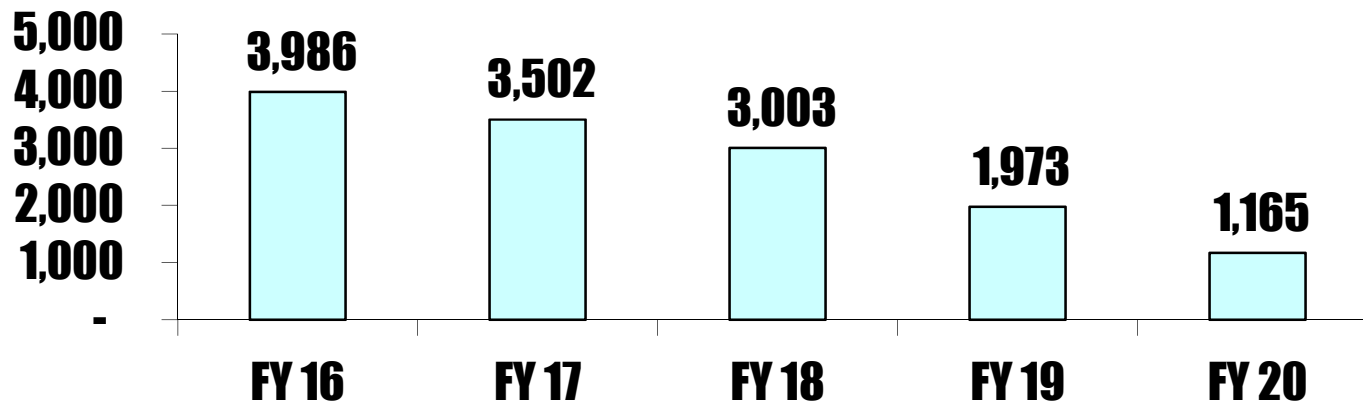
- Case - I : Current product mix with current limestone reserve**
- Case - II : Current product mix with increased exploitable limestone**
- Case - III : Case II with 100% blended cement beyond 2017**
- Case - IV : Case III with lower demand growth**



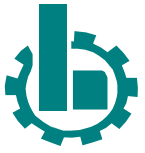
Investment



USD mio.



Unit Investment Costs could increase by 16 % over the period



The Challenges of Tomorrow

- ✓ **Dwindling Natural Resources** : Limited limestone, fossil fuel and water resources. **Life of cement grade limestone reserves** is estimated to be **around 40 years more**.
- ✓ **Increasing Costs**: **Energy efficiencies, equipment availability and input material costs** have been the major focus areas for cost reduction in the past. However, recently **freight** (both inwards and outwards) has also become a focus point.

The potential also exists for reducing costs in non-equipment related domains, **e.g. material inventories, consumable consumption rates, financial expenses, etc.**

- ✓ **Fuel Shortage**: Given the acute shortage of domestic coal, **alternate fuels** could provide **7-10 %** of the total thermal fuel requirements in next few years.
- ✓ **Increase in Gestation Period**: The gestation period **in the future** is likely to be in the **range of 5-7 years**, due to prolonged pre-project activities like land acquisition and statutory clearances.

Industry players could attempt to bring down actual construction time by employing more steel in civil engineering structures.



Opportunities

- ✓ **Favorable Demand-Supply balance by FY 22:** Demand is likely to overtake supply in next 6-7 years. Typically, plant commissioning can take 5-7 years from planning stage; now is the **time to plan** to take advantage of forthcoming deficit situation.
- ✓ **Limestone paucity:** Limestone resources are **limited and valuable**.
- ✓ **Growing demand:** India has **immense growth potential**. The future of cement market is likely to remain buoyant in medium to long term.
- ✓ **Capacity Utilization:** Present industry capacity utilization is at ~70%; this is likely to start **improving in coming years**.
- ✓ **Price:** **Prices have held up**, despite lower capacity utilisation. This is likely to continue even in the future.

Currently, industry is bottoming out and likely to start improving in next 1 – 2 years.



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Thank you