Building pressure

Which cement companies will be left behind in the low-carbon transition?

Executive Summary

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Linking climate-related metrics to earnings for cement companies

This report updates and expands CDP’s research and League Table for cement companies, first published in June 2016. It ranks 13 of the largest publicly listed cement companies on business readiness for a low-carbon economy transition. The companies in aggregate represent 15% of global cement production but cover significant portions of key markets, such as India, Europe and the US. A notable limit is related to the coverage of the Chinese cement sector, which represents more than 50% of the global market with limited disclosure preventing inclusion in our analysis.

Compared to our 2016 report, the scope of our report has been extended to include four additional Asian companies (ACC and Ambuja – both listed subsidiaries of LafargeHolcim, Dalmia Bharat and Asia Cement Corporation), while Italcementi is now part of HeidelbergCement. In addition, we analyze drivers in the built environment which could impact cement demand in the future.

The cement industry is the third largest consumer of energy and the second largest industrial emitter after the steel industry with 6% of global emissions (IEA, 2017). In its current form, it is not compatible with the commitment taken at COP21 in Paris, and needs a significant change in business-as-usual practices to align to a 2-degrees trajectory.

A majority of the sector’s emissions are inherent to its production process, making them more difficult to abate compared to other sectors. This poses numerous risks to the business-as-usual models of cement incumbents. Levers on the opportunities side remain limited with the use of alternative materials and alternative fuels the main routes for decarbonization – new product development activity is relatively low with CCS technology the main route for abatement.

There are four key areas assessed in the League Table, which are aligned with recommendations for company reporting from the G20 Financial Stability Board’s Task Force on Climate-related Financial Disclosures (TCFD):

**Transition risks:** We assess companies’ exposure based on emissions and thermal energy intensity, financial flexibility and exposure to downstream regulation.

**Physical risks:** We assess companies on exposure to acute physical risks, water stress risk and the usage and management of their water supply.

**Transition opportunities:** We assess companies’ progress in shifting towards a low-carbon economy by looking at exposure to alternative materials and fuel, and low-carbon products and technologies.

**Climate governance and strategy:** We analyze companies’ governance frameworks including emissions reduction targets and the alignment of governance and remuneration structures with low-carbon objectives.

### Key findings

- **The universe of companies has on average reduced their emissions intensity by 1% p.a. over the last 4 years but this is not enough for a 2-degrees trajectory** and would need to more than double to meet a 2-degrees target.

- **Strong regional trends are found with Indian companies outperforming international peers** with process emissions measured by the clinker ratio of 69% vs 78%. This is driven by better access to alternative materials such as fly ash and slag coming from other carbon intensive sectors, such as thermal power generation and steel production.

- **Use of alternative materials in developed markets is facing constrained supply.** European companies will need to find scalable and sustainable alternatives to fly ash and slag or develop low-carbon technologies to be able to improve current emission intensity levels.

- **Alternative fuels from waste offer another way to decarbonize at a low cost** with international companies in countries with robust waste legislation set to benefit compared to their Indian peers.

- **CCS is an important technology for this sector’s decarbonization but remains at pilot stage.** HeidelbergCement leads the main projects in this space, with only limited R&D spend on CCS outside Europe.

- **R&D expenditure as a proportion of sales is low compared to other industries.** HeidelbergCement, Taiheiyo Cement and LafargeHolcim lead with 0.6% on average. Development of low-carbon products is still at a very early stage, with the Europeans leading the group.

- **Changes to water supply and weather patterns can pose risks to the cement value chain.** We performed a plant-level analysis to identify companies most exposed to the risk of droughts, floods, weather variability and water supply.

- **Carbon regulation for the sector remains benign, with the sector in Europe continuing to benefit from surplus free allowances within the EU ETS – carbon prices need to rise by three to six times to provide incentives to deploy technologies such as CCS.**

- **Regulatory risks from tightening building regulation and ambitions for low-carbon cities could drive change** which could expose companies with plants near these cities – we conduct asset level analysis to evaluate this risk.

- **11 of the 13 companies in our sample have emission reduction targets, but only three of these meet a 2-degrees goal.**

- **Highest ranked companies are Dalmia Bharat, Ambuja Cement and Cementos Argos.** Lowest ranked are Taiheiyo Cement, Cementir Holding and Asia Cement Corporation.

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1. The clinker ratio refers to the proportion of clinker in one tonne of cement. Clinker is the main component of cement and highly carbon intensive.
2. Estimates based on IEA, 2017, ETP data.

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The summary League Table below presents headline company performance and ranking. It is based on detailed analysis across a range of carbon and water-related indicators which could have a material impact on company performance. The League Table is designed to serve as a proxy for business readiness in an industry which will undergo significant change as governments increase efforts to implement the Paris Agreement. Companies placed towards the bottom are deemed less prepared for a low-carbon transition.

Figure 1: League Table summary

<table>
<thead>
<tr>
<th>League Table rank</th>
<th>2016 League Table rank</th>
<th>Company</th>
<th>Ticker</th>
<th>Stock exchange listing</th>
<th>Average market cap 2017 (US$bn)</th>
<th>2016 cement production (million tonnes)</th>
<th>League Table weighted rank</th>
<th>Transition risks rank</th>
<th>Physical risks rank</th>
<th>Transition opportunities rank</th>
<th>Climate governance &amp; strategy rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>n/a</td>
<td>Dalmia Bharat</td>
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<td>3.4</td>
<td>15</td>
<td>4.64</td>
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<td>9</td>
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<td>4</td>
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<td>NSE India</td>
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<td>3</td>
<td>5</td>
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<td>SIX Swiss SE</td>
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<td>Deutsche Borse</td>
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Weighting
(i) Weighted ranks are calculated for each area. We display non-weighted ranks in this summary for simplicity only.
(ii) LafargeHolcim data is inclusive of its subsidiaries ACC and Ambuja Cement.
(iii) Data only available for Taiwan plants in transition risks and transition opportunities.
(v) Figures are 2015 production for CRH and 2016 sales for Cementir Holding and LafargeHolcim.

Source: CDP

Figure 2: Opportunity vs. risk for low-carbon transition

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