

April 20, 2011

## Capacity Update

### Overview

In the wake of continued weak cement consumption, the industry's operating rates remain at extremely depressed levels – estimated at less than 60% utilization. Inventory levels remain well above desired levels. A mix of temporary and permanent actions has resulted in 17 plant shut downs – reflecting a loss of 10.3 million metric tons of capacity.

Unfortunately, these difficult operating conditions are likely to remain in-place for some time. Cement consumption is not expected to reach past cyclical peak levels (2005) until at least 2016 – reflecting an eleven year peak-to-peak cycle. While PCA believes the trough point in the cycle has already been reached, only meager volume gains are expected during 2011-2012. Residential construction is unlikely to generate significant cement consumption gains as long as foreclosure activity remains elevated and new home prices weak. Nonresidential construction activity remains plagued by low occupancy levels, weak leasing rates, and commercial property depreciation – resulting in difficult access to capital. Finally, state fiscal conditions remain depressed, ARRA spending is subsiding, and uncertainty remains regarding a new highway bill – all depressing the near-term outlook for public construction. These obstacles to a revival in construction activity will take time to heal. Among the three construction sectors, none appear in a position to generate substantive increases in cement consumption during 2011-2012.

### Recent Permanent Plant Closures

<b>Buzzi Unicem: Independence, Kansas</b> <ul style="list-style-type: none"> <li>Capacity: 324,000 metric tons annually</li> <li>Employment estimated at 108 workers</li> </ul>	<b>CEMEX: Davenport, California</b> <ul style="list-style-type: none"> <li>Capacity: 842,000 metric tons annually</li> <li>Employment estimated at 114 workers</li> </ul>
<b>Essroc: Frederick, Maryland</b> <ul style="list-style-type: none"> <li>Capacity: 308,000 metric tons annually</li> <li>Employment estimated at 82 workers</li> </ul>	<b>Essroc: Bessemer, Pennsylvania</b> <ul style="list-style-type: none"> <li>Capacity: 605,000 metric tons annually</li> <li>Employment estimated at 111 workers</li> </ul>
<b>Holcim: Clarksville, Missouri</b> <ul style="list-style-type: none"> <li>Capacity: 948,000 metric tons annually</li> <li>Employment estimated at 164 workers</li> </ul>	<b>Holcim: Dundee, Michigan</b> <ul style="list-style-type: none"> <li>Capacity: 830,000 metric tons annually</li> <li>Employment estimated at 155 workers</li> </ul>
<b>Texas Industries: Riverside, California</b> <ul style="list-style-type: none"> <li>Capacity: 86,000 metric tons annually</li> <li>Employment estimated at 88 workers</li> </ul>	

If PCA is correct in its outlook for construction and near-term cement consumption, it is likely depressed operating rates will remain in effect during the next 2-3 years. Furthermore, temporary plant closures will probably not come back on-line until cement consumption gains enough strength to support utilization rates near 80%. Analysis suggests the bulk of plant re-openings may not materialize until at least 2013. Plant re-openings will probably not occur in a synchronized fashion. Regional variations, depending on the strength of expected market recoveries and net capacity changes, will determine the time line for plant re-openings.

The conditions for plant re-openings will likely be further complicated by the EPA's NESHAP compliance date of 2013. PCA estimates that 18 plants could be forced to close due to the inability to meet NESHAP standards or because the compliance investment required may not be justified on a financial basis. These potential closures represent roughly 11 million metric tons of clinker capacity, or roughly 12% of current capacity. An additional 3 plants are at high risk of closure, representing an additional 2.5 million metric tons. These high risk plants are assumed to continue to operate.

Furthermore, the EPA's regulatory standards are not static – they are dynamic and are designed to become ever more difficult to meet as time passes. This is accomplished by a set of standards for existing sources and much more rigorous standards for new sources. The EPA's NESHAP and CISWI standards emission limits, for example, are considerably more severe for new sources than existing sources. New greenfield plants commissioned after 2013 are subject to the new source emission standards. Major modifications to **existing plants** could force, or “trigger”, a reclassification of the plant from an existing source to a new source – potentially requiring further compliance investment for cement plants. Similarly, the New Source Performance Standards (NSPS) and the Clean Air Act's Tailoring Rule contain an investment “trigger” prompting compliance investment. Roughly 63% of all cement kilns are at least 30 years old and may require substantial investment and modification to insure efficiency and to remain world-class competitive.

New source triggers are particularly alarming and could lead to decisions to abstain from necessary competitive investments that have always been on-going and, most recently, done at an aggressive pace. In some ways, the “new source” trigger provisions send a clear signal to cement producers not to invest to remain world-class competitive. Keep in mind, large multinational companies dominate ownership of the United States cement industry. Within a multinational company, each geographic region, such as North America, competes for scarce corporate investment dollars (expanding cement capacity is extremely expensive – a two million metric ton plant now costs upwards of \$600 million). The rate of return on investment for new capacity in the United States is compared against returns in other countries. The new source provisions could reduce expected returns on investments in the United States and contribute to corporate decisions to pursue other options to source the United States cement market. As the economy regains its footing, strong growth in construction activity is expected to eventually materialize. Given the forced closure of domestic plants due to NESHAP emission standards and potential reluctance to add capacity in the longer term, increased reliance on cement imports is eventually expected to materialize.

## Capacity Expansion

Slightly more than 3.6 million metric tons of capacity is estimated to have been added in 2010. An additional 1.8 million tons of new clinker capacity is scheduled to come on-line during 2011. Further expansions are planned in the out years, bringing the total 2008-2015 North American clinker capacity expansion to 25.8 million metric tons by the end of 2015. This investment will have increased capacity

nearly 27% over 2007 levels. The expansion affects 23 plants with a mix of greenfield sites (8) as well as expansions at existing facilities. The current capacity expansion estimates take into account several expansion projects that have been delayed compared to year-ago plans as well as one greenfield plant that may be postponed indefinitely.

The potential increase in domestic capacity during 2010-2015 is probably overstated by raw capacity announcements. The capacity volume estimated to come on-line through 2015 is based on 100% kiln utilization. In light of current economic conditions, a lower utilization rate of 80% to 85% is probably closer to real world operating conditions. This implies that the likely increase in new domestic supply from capacity expansion is closer to 20 to 21 million metric tons rather than the 25.8 million metric tons implied by raw capacity announcements.

## **Plant Closures**

Economic distress has resulted in 17 plant closures during 2008-2011. These closures represent roughly 10.3 million metric tons of clinker capacity. The closures represent a mix of temporary and permanent actions. Based on news releases and company announcements, up to 4 million metric tons could be permanent closures.

It is likely that most temporary closures will not begin to come back on-line until 2013 at the earliest. Regional variations, depending on the strength of expected market recoveries and net capacity changes, will determine the time line for plant re-openings. A rough analysis suggests the bulk of plant re-openings may not materialize until at least 2013.

## **Limestone and Processing Additions**

In addition to capacity expansions, changes in U.S. specifications allowing for increased use of limestone and inorganic materials (slag & fly ash) in portland cement could increase the potential domestic supply even further. Depending on how plants elect to exercise the option to use these additions, domestic cement supply could increase more than 3.6 additional metric tons by 2015. PCA assumes that the trend toward increased use of limestone additions is unaffected by cyclical economic conditions and are taken into account in arriving at market imbalance estimates. PCA assumes that the conversion of clinker capacity into cement supply rises from roughly a 5.0% gypsum premium in 2007 to an 8.5% gypsum/limestone/inorganic premium by 2015.

Unfortunately, there is significant risk to this assumption. The EPA is proposing to regulate coal ash, for the first time, in order to address the risks posed by the disposal of the wastes generated by electric utilities and independent power producers. The EPA is considering reclassifying fly ash as a hazardous waste under Subtitle C of the Resource Conservation and Recovery Act. The EPA may exclude from the hazardous designation material used for beneficial purposes (as specified by the EPA).

The EPA concluded the public comment stage regarding fly ash's designation as a hazardous waste. The EPA is currently considering two options: (1) designation of all fly ash as a hazardous waste when disposed or as a solid waste, and (2) omitting the designation of fly ash as a hazardous waste if its use has beneficial purposes.

Fly ash's designation as a hazardous waste, whether for beneficial use or not, would have several impacts including stigmatizing its use as an ingredient in concrete or cement; raising the potential of law

suits against producers and end-users of fly ash, including electric utilities, cement and concrete producers, and construction companies; and potentially raising insurance premiums for principals that continue to employ the use of fly ash. The exposure to legal action could dramatically hinder, and possibly eliminate, the use of fly ash use in concrete mixes.

Should the EPA designate fly ash as a hazardous waste under the proposed rule, it would go against decades of progress in sustainability of building materials. PCA's baseline capacity assumes that "inorganic" additions (fly ash and slag) would represent 2.5% of the cement mix by 2015 and beyond. Under the proposed fly ash ruling, these additions cease. This implies that while domestic supply of clinker remains unchanged by the fly ash rule, domestic supply of cement could be reduced by roughly 2.5 million metric tons annually if the rule goes into effect.

### ***Impact on Cement Consumption and Investment Decisions***

The EPA's proposal on fly ash has potentially large impacts on cement consumption. Consumption levels play a role in determining plant operating rates, expected return on investments (ROI), and imports. The use of fly ash in concrete mixes has been increasing steadily – constituting roughly 10.5% of total cementitious material consumption (cement, slag cement, and fly ash). By 2025, PCA expects fly ash will account for 14%-15% of total cementitious material consumption. PCA expects fly ash consumption used in concrete mixes will reach nearly 30 million tons by 2025. This implies that cement consumption could increase by an equal amount. Such a scenario would force cement producers to re-assess how they source the United States' cement market.

### **Potential Regulatory Impacts on Capacity**

The cement industry faces seven different existing or proposed EPA regulatory standards. PCA recently completed a detailed economic impact review of the standards, "Overview Impact of Existing and Proposed Regulatory Standards on Domestic Cement Capacity." These standards are at different stages of potential enactment, ranging from in-place standards to the public comment stage. As a result, in some instances, PCA must make assumptions regarding the substance and timing of these potential regulations. The standards include;

- National Ambient Air Quality Standards (NAAQS) (Currently effective).
- Greenhouse gas reporting (Currently effective).
- New Source Performance Standards (NSPS) (Currently effective).
- Clean Air Act's "Tailoring Rule" (Currently effective).
- National Emission Standards for Hazardous Air Pollutants (NESHAP) (Compliance 2013).
- Potential new standards for Commercial and Industrial Solid Waste Incinerators (CISWI) (Proposed compliance to be effective 2015).
- Fly Ash determination as a hazardous waste (Assumed to be effective 2015).

The EPA has been vague regarding the meshing of these standards into a coherent regulatory strategy directed at emitting industries, including those targeting cement producers. PCA, as a result, is forced to make assumptions regarding the coherency and consistency of the EPA's regulatory policies targeting the cement industry. Actual form and substance of EPA regulations that characterize the compliance scenario may differ significantly from the regulations that eventually materialize. As a result, risk should be attached to PCA's impact estimates.

Key conclusions from this report on the EPA's impact on domestic cement capacity are as follows:

- The NESHAP standards alone could force the closure of 18 cement plants representing 11 million metric tons of capacity. An additional 3 plants are at high risk of closure, representing an additional 2.5 million metric tons. These high risk plants are assumed to continue to operate.
- EPA regulations that trigger “new source” designations under the NESHAP, CISWI or NSPS standards could hinder the cement industry's ongoing modernization efforts to remain world class competitive, and as a result, could eventually lead to an additional 4 plant closures representing another 3.4 million metric tons of capacity beyond NESHAP. Furthermore, this aspect of the EPA's standards is a subtle message to the industry to shut down plants and source cement from foreign sources – thereby exporting emissions along with jobs, associated with cement production.
- EPA regulations will result in a dependence on cement imports.
- EPA regulations could potentially lead to higher overall concrete costs to the construction industry of at least \$2.5 to nearly \$4 billion annually.
- To meet NESHAP and CISWI standards, cement plants will be forced to invest in a combination of abatement equipment including bag houses, wet scrubber systems, ACI systems, Regenerative Thermal Oxidizer (RTO) systems, and SNCR systems.
- To comply with NESHAP standards, the industry must invest at least \$3.4 billion. An additional \$2.0 billion must be invested to meet CISWI standards. This excludes potential spending by plants PCA estimates will close due to the inability to meet standards or due to excessive financial burdens.
- The combination of the industry's pre-existing financial commitment to provide a reliable and efficient supply of cement to the United States' market, coupled with sustained harsh economic and financial realities may overwhelm the industry's financial capability to comply with the NESHAP standards and proposed CISWI standards. NESHAP will be in force in three short years which means compliance investments must begin soon. PCA estimates total industry revenues during 2010-2012 at \$19 billion. The \$3.4 billion in investment required to comply with NESHAP standards equates to more than 18% of industry revenues accumulated during the years preceding NESHAP compliance (2010-2012).

## Net Domestic Supply

Changes in specifications, coupled with planned expansions, is expected to increase domestic cement capacity during 2010-2015. These increases may be partially offset by an estimated 15 million metric tons of closed plants and EPA policy-induced closings. In net, domestic cement **supply** increases from an estimated 106.8 million metric tons in 2010 to 110.2 million metric tons in 2015.



## *Capacity Report Tables*

*(Updated April 20, 2011)*

Source: Portland Cement Association's Economic Research Department based on publicly available sources believed to be reliable; however, accuracy cannot be guaranteed. The Portland Cement Association assumes no legal responsibility for the outcome of decisions or commitments made on the basis of this information.

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## Capacity Expansion

(Clinker, Thousands of Short Tons)

Update: 4/20/2011

			Existing	Expanded	Expansion								
Company	Location	On-Line	Capacity*	Capacity	2008	2009	2010	2011	2012	2013	2014	2015	Total
Total Expansion					2,467	8,165	4,002	2,022	8,180	2,670	0	944	28,450
- Estimated Dollar Investment (\$ Millions)					\$617	\$2,041	\$1,001	\$506	\$2,045	\$668	\$0	\$236	\$7,113
2008													
Cemex (South)	Brooksville, Florida	2008	667	1,563	448	448	0	0	0	0	0	0	896
Cemex	New Braunfels, Texas	2008	999	2,237	1,238	0	0	0	0	0	0	0	1,238
Continental Cement	Hannibal, Missouri	2008	611	1,200	589	0	0	0	0	0	0	0	589
Texas Industries	Oro Grande, California	2008	1,236	2,004	192	576	0	0	0	0	0	0	768
2009													
American Cement Co.	Sumterville, Florida (G)	2009	-	1,050	0	1,050	0	0	0	0	0	0	1,050
Buzzi Unicem	Festus, Missouri	2009	1,340	2,500	0	1,160	0	0	0	0	0	0	1,160
Eagle Materials	Fernley, Nevada	P**	498	-	0	0	0	0	0	0	0	0	0
Essroc Cement	Martinsburg, West Virginia	2009	805	1,764	0	959	0	0	0	0	0	0	959
GCC America	Pueblo, Colorado (G)	2009	-	972	0	972	0	0	0	0	0	0	972
Holcim	St. Genevieve, Missouri (G)	2009	-	4,104	0	3,000	1,104	0	0	0	0	0	4,104
2010													
Ash Grove Cement	Foreman, Arkansas	2010	961	1,700	0	0	739	0	0	0	0	0	739
Drake Cement	Paulden, Arizona (G)	2010	-	660	0	0	330	330	0	0	0	0	660
Florida Rock	Newberry, Florida	2010	789	1,539	0	0	750	0	0	0	0	0	750
Giant Cement/Keystone	Bath, Pennsylvania	2010	617	996	0	0	379	0	0	0	0	0	379
Lafarge	Harleyville, South Carolina	2010	1,078	2,478	0	0	700	700	0	0	0	0	1,400
2011													
Sumter Cement Company	Center Hill, Florida (G)	P**	-	1,500	0	0	0	0	0	0	0	0	0
2012													
CalPortland	Rillito, Arizona	P**	1,468	-	0	0	0	0	0	0	0	0	0
Cemex	Seligman, Arizona (G)	2012	-	1,900	0	0	0	0	1,900	0	0	0	1,900
Eagle Materials	Laramie, Wyoming	P**	632	-	0	0	0	0	0	0	0	0	0
Houston American Cement	Perry, Georgia (G)	2012	-	900	0	0	0	0	900	0	0	0	900
Lafarge	Exshaw, Alberta	2012	1,470	2,462	0	0	0	992	0	0	0	0	992
Lehigh	Mitchell, Indiana	2012	855	2,079	0	0	0	0	1,224	0	0	0	1,224
Titan America	Castle Hayne, North Carolina (G)	2012	-	2,300	0	0	0	0	2,300	0	0	0	2,300
Texas Industries Inc	New Braunfels, Texas	2012	860	2,260	0	0	0	0	1,400	0	0	0	1,400
2013													
Lafarge	Grand Chain, Illinois	2013	1,118	2,944	0	0	0	0	456	1,370	0	0	1,826
National Cement	Ragland, Alabama	2013	991	2,291	0	0	0	0	0	1,300	0	0	1,300
2015													
Lafarge	Ravena, New York	2015	1,866	2,810	0	0	0	0	0	0	0	944	944
Net North American Capacity Changes			18,861	46,213	2,467	8,165	4,002	2,022	8,180	2,670	0	944	28,450
Net United States Capacity Changes			18,861	46,213	2,467	8,165	4,002	1,030	8,180	2,670	0	944	27,458
Net Canadian Capacity Changes			0	0	0	0	0	992	0	0	0	0	992

(G) Greenfield

(P\*\*) Postponed - no additional information available

\* Source: PCA U.S. and Canadian Portland Cement Industry: Plant Information Summary, 2008

Source: Portland Cement Association's Market Intelligence Group. Based on publicly available

sources believed to be reliable; however, accuracy cannot be guaranteed. The Portland Cement Association assumes no legal responsibility for the outcome of decisions or commitments made on the basis of this information.

# Capacity Expansion

(Clinker, Thousands of Metric Tons)

Update: 4/20/2011

Company	Location	On-Line	Existing Capacity*	Expanded Capacity	Expansion								
					2008	2009	2010	2011	2012	2013	2014	2015	Total
Total Expansion					2,238	7,408	3,631	1,834	7,421	2,422	0	856	25,811
- Estimated Dollar Investment (\$ Millions)					\$617	\$2,041	\$1,001	\$506	\$2,045	\$668	\$0	\$236	\$7,113
2008													
Cemex (South)	Brooksville, Florida	2008	605	1,418	406	406	0	0	0	0	0	0	813
Cemex	New Braunfels, Texas	2008	906	2,029	1,123	0	0	0	0	0	0	0	1,123
Continental Cement	Hannibal, Missouri	2008	554	1,089	534	0	0	0	0	0	0	0	534
Texas Industries	Oro Grande, California	2008	1,121	1,818	174	523	0	0	0	0	0	0	697
2009													
American Cement Co.	Sumterville, Florida (G)	2009	-	953	0	953	0	0	0	0	0	0	953
Buzzi Unicem	Festus, Missouri	2009	1,216	2,268	0	1,052	0	0	0	0	0	0	1,052
Eagle Materials	Fernley, Nevada	P**	452	-	0	0	0	0	0	0	0	0	0
Essroc Cement	Martinsburg, West Virginia	2009	730	1,600	0	870	0	0	0	0	0	0	870
GCC America	Pueblo, Colorado (G)	2009	-	882	0	882	0	0	0	0	0	0	882
Holcim	St. Genevieve, Missouri (G)	2009	-	3,723	0	2,722	1,002	0	0	0	0	0	3,723
2010													
Ash Grove Cement	Foreman, Arkansas	2010	872	1,542	0	0	670	0	0	0	0	0	670
Drake Cement	Paulden, Arizona (G)	2010	-	599	0	0	299	299	0	0	0	0	599
Florida Rock	Newberry, Florida	2010	716	1,396	0	0	680	0	0	0	0	0	680
Giant Cement/Keystone	Bath, Pennsylvania	2010	560	904	0	0	344	0	0	0	0	0	344
Lafarge	Harleyville, South Carolina	2010	978	2,248	0	0	635	635	0	0	0	0	1,270
2011													
Sumter Cement Company	Center Hill, Florida (G)	P**		1,361	0	0	0	0	0	0	0	0	0
2012													
CalPortland	Rillito, Arizona	P**	1,332	-	0	0	0	0	0	0	0	0	0
Cemex	Seligman, Arizona (G)	2012	-	1,724	0	0	0	0	1,724	0	0	0	1,724
Eagle Materials	Laramie, Wyoming	P**	573	-	0	0	0	0	0	0	0	0	0
Houston American Cement	Perry, Georgia (G)	2012	-	817	0	0	0	0	817	0	0	0	817
Lafarge	Exshaw, Alberta	2012	1,334	2,234	0	0	0	900	0	0	0	0	900
Lehigh	Mitchell, Indiana	2012	776	1,886	0	0	0	0	1,110	0	0	0	1,110
Titan America	Castle Hayne, North Carolina (G)	2012	-	2,087	0	0	0	0	2,087	0	0	0	2,087
Texas Industries Inc	New Braunfels, Texas	2012	780	2,050	0	0	0	0	1,270	0	0	0	1,270
2013													
Lafarge	Grand Chain, Illinois	2013	1,014	2,671	0	0	0	0	414	1,243	0	0	1,657
National Cement	Ragland, Alabama	2013	899	2,078	0	0	0	0	0	1,179	0	0	1,179
2015													
Lafarge	Ravena, New York	2015	1,693	2,549	0	0	0	0	0	0	0	856	856
Net North American Capacity Changes			17,111	41,926	2,238	7,408	3,631	1,834	7,421	2,422	0	856	25,811
Net United States Capacity Changes			17,111	41,926	2,238	7,408	3,631	934	7,421	2,422	0	856	24,911
Net Canadian Capacity Changes			0	0	0	0	0	900	0	0	0	0	900

(G) Greenfield

(P\*\*) Postponed - no additional information available

\* Source: PCA U.S. and Canadian Portland Cement Industry: Plant Information Summary, 2008

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(Clinker, Thousands of *Short Tons*)

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Company	Location	On-Line	Existing Capacity*	Expanded Capacity	Expansion								Total
					2008	2009	2010	2011	2012	2013	2014	2015	
Total Expansion					2,467	8,165	4,002	2,022	8,180	2,670	0	944	28,450
- Estimated Dollar Investment (\$ Millions)					\$617	\$2,041	\$1,001	\$506	\$2,045	\$668	\$0	\$236	\$7,113
New England													
Middle Atlantic													
Giant Cement/Keystone	Bath, Pennsylvania	2010	617	996	0	0	379	0	0	0	0	0	379
Lafarge	Ravena, New York	2015	1,866	2,810	0	0	0	0	0	0	0	944	944
Subtotal			2,483	3,806	0	0	379	0	0	0	0	944	1,323
East North Central													
Lafarge	Grand Chain, Illinois	2013	1,118	2,944	0	0	0	0	456	1,370	0	0	1,826
Lehigh	Mitchell, Indiana	2012	855	2,079	0	0	0	0	1,224	0	0	0	1,224
Subtotal			1,973	5,023	0	0	0	0	1,680	1,370			3,050
West North Central													
Continental Cement	Hannibal, Missouri	2008	611	1,200	589	0	0	0	0	0	0	0	589
Buzzi Unicem	Festus, Missouri	2009	1,340	2,500	0	1,160	0	0	0	0	0	0	1,160
Holcim	St. Genevieve, Missouri (G)	2009	-	4,104	0	3,000	1,104	0	0	0	0	0	4,104
Subtotal			1,951	7,804	589	4,160	1,104	0	0	0	0	0	5,853
South Atlantic													
Cemex (South)	Brooksville, Florida	2008	667	1,563	448	448	0	0	0	0	0	0	896
American Cement Company	Sumterville, Florida (G)	2009	-	1,050	0	1,050	0	0	0	0	0	0	1,050
Essroc	Martinsburg, West Virginia	2009	805	1,764	0	959	0	0	0	0	0	0	959
Florida Rock	Newberry, Florida	2010	789	1,539	0	0	750	0	0	0	0	0	750
Lafarge	Harleyville, South Carolina	2010	1,078	2,478	0	0	700	700	0	0	0	0	1,400
Houston American Cement	Perry, Georgia (G)	2012	-	900	0	0	0	0	900	0	0	0	900
Sumter Cement Company	Center Hill, Florida (G)	P**	-	1,500	0	0	0	0	0	0	0	0	0
Titan America	Castle Hayne, North Carolina	2012	-	2,300	0	0	0	0	2,300	0	0	0	2,300
Subtotal			3,339	13,094	448	2,457	1,450	700	3,200	0	0	0	8,255
East South Central													
National Cement	Ragland, Alabama	2013	991	2,291	0	0	0	0	0	1,300	0	0	1,300
Subtotal			991	2,291	0	0	0	0	0	1,300	0	0	1,300
West South Central													
Ash Grove Cement	Foreman, Arkansas	2010	961	1,700	0	0	739	0	0	0	0	0	739
Texas Industries Inc	New Braunfels, Texas	2012	860	2,260	0	0	0	0	1,400	0	0	0	1,400
Cemex	New Braunfels, Texas	2008	999	2,237	1,238	0	0	0	0	0	0	0	1,238
Subtotal			2,820	6,197	1,238	0	739	0	1,400	0	0	0	3,377
Mountain													
CalPortland	Rillito, Arizona	P**	1,468	-	0	0	0	0	0	0	0	0	0
Drake Cement	Paulden, Arizona (G)	2010	-	660	0	0	330	330	0	0	0	0	660
Eagle Materials	Laramie, Wyoming	P**	632	-	0	0	0	0	0	0	0	0	0
Eagle Materials	Fernley, Nevada	P**	498	-	0	0	0	0	0	0	0	0	0
GCC America	Pueblo, Colorado (G)	2009	-	972	0	972	0	0	0	0	0	0	972
Cemex	Seligman, Arizona (G)	2012	-	1,900	0	0	0	0	1,900	0	0	0	1,900
Subtotal			2,598	3,532	0	972	330	330	1,900	0	0	0	3,532
Pacific													
Texas Industries	Oro Grande, California	2008	1,236	2,004	192	576	0	0	0	0	0	0	768
Subtotal			1,236	2,004	192	576	0	0	0	0	0	0	768
Canada													
Lafarge	Exshaw, Alberta	2012	1,470	2,462	0	0	0	992	0	0	0	0	992
Subtotal			1,470	2,462	0	0	0	992	0	0	0	0	992
Net North American Capacity Changes			18,861	46,213	2,467	8,165	4,002	2,022	8,180	2,670	0	944	28,450

(G) Greenfield

(P\*\*) Postponed - no additional information available

\* Source: PCA U.S. and Canadian Portland Cement Industry: Plant Information Summary, 2008

Source: Portland Cement Association's Market Intelligence Group. Based on publicly available

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## Capacity Expansion

(Clinker, Thousands of Metric Tons)  
Update: 4/20/2011

Company	Location	On-Line	Existing Capacity*	Expanded Capacity	Expansion									Total
					2008	2009	2010	2011	2012	2013	2014	2015		
Total Expansion					2,238	7,408	3,631	1,834	7,421	2,422	0	856	25,811	
- Estimated Dollar Investment (\$ Millions)					\$617	\$2,041	\$1,001	\$506	\$2,045	\$668	\$0	\$236	\$7,113	
New England														
Middle Atlantic														
Giant Cement/Keystone	Bath, Pennsylvania	2010	560	904	0	0	344	0	0	0	0	0	344	
Lafarge	Ravena, New York	2015	1,693	2,549	0	0	0	0	0	0	0	856	856	
Subtotal			2,253	3,453	0	0	344	0	0	0	0	856	1,200	
East North Central														
Lafarge	Grand Chain, Illinois	2013	1,014	2,671	0	0	0	0	414	1,243	0	0	1,657	
Lehigh	Mitchell, Indiana	2012	776	1,886	0	0	0	0	1,110	0	0	0	1,110	
Subtotal			1,790	4,557	0	0	0	0	1,524	1,243	0	0	2,767	
West North Central														
Continental Cement	Hannibal, Missouri	2008	554	1,089	534	0	0	0	0	0	0	0	534	
Buzzi Unicem	Festus, Missouri	2009	1,216	2,268	0	1,052	0	0	0	0	0	0	1,052	
Holcim	St. Genevieve, Missouri (G)	2009	-	3,723	0	2,722	1,002	0	0	0	0	0	3,723	
Subtotal			1,770	7,080	534	3,774	1,002	0	0	0	0	0	5,310	
South Atlantic														
Cemex (South)	Brooksville, Florida	2008	605	1,418	406	406	0	0	0	0	0	0	813	
American Cement Company	Sumterville, Florida (G)	2009	-	953	0	953	0	0	0	0	0	0	953	
Essroc	Martinsburg, West Virginia	2009	730	1,600	0	870	0	0	0	0	0	0	870	
Florida Rock	Newberry, Florida	2010	716	1,396	0	0	680	0	0	0	0	0	680	
Lafarge	Harleyville, South Carolina	2010	978	2,248	0	0	635	635	0	0	0	0	1,270	
Houston American Cement	Perry, Georgia (G)	2012	-	817	0	0	0	0	817	0	0	0	817	
Sumter Cement Company	Center Hill, Florida (G)	P**	-	1,361	0	0	0	0	0	0	0	0	0	
Titan America	Castle Hayne, North Carolina	2012	-	2,087	0	0	0	0	2,087	0	0	0	2,087	
Subtotal			3,029	11,879	406	2,229	1,315	635	2,903	0	0	0	7,489	
East South Central														
National Cement	Ragland, Alabama	2013	899	2,078	0	0	0	0	0	1,179	0	0	1,179	
Subtotal			899	2,078	0	0	0	0	0	1,179	0	0	1,179	
West South Central														
Ash Grove Cement	Foreman, Arkansas	2010	872	1,542	0	0	670	0	0	0	0	0	670	
Texas Industries Inc	New Braunfels, Texas	2012	780	2,050	0	0	0	0	1,270	0	0	0	1,270	
Cemex	New Braunfels, Texas	2008	906	2,029	1,123	0	0	0	0	0	0	0	1,123	
Subtotal			2,558	5,622	1,123	0	670	0	1,270	0	0	0	3,064	
Mountain														
CalPortland	Rillito, Arizona	P**	1,332	-	0	0	0	0	0	0	0	0	0	
Drake Cement	Paulden, Arizona (G)	2010	-	599	0	0	299	299	0	0	0	0	599	
Eagle Materials	Fernley, Nevada	P**	573	-	0	0	0	0	0	0	0	0	0	
Eagle Materials	Laramie, Wyoming	P**	452	-	0	0	0	0	0	0	0	0	0	
GCC America	Pueblo, Colorado (G)	2009	-	882	0	882	0	0	0	0	0	0	882	
Cemex	Seligman, Arizona (G)	2012	-	1,724	0	0	0	0	1,724	0	0	0	1,724	
Subtotal			2,357	3,205	0	882	299	299	1,724	0	0	0	3,204	
Pacific														
Texas Industries	Oro Grande, California	2008	1,121	1,818	174	523	0	0	0	0	0	0	697	
Subtotal			1,121	1,818	174	523	0	0	0	0	0	0	697	
Canada														
Lafarge	Exshaw, Alberta	2012	1,334	2,234	0	0	0	900	0	0	0	0	900	
Subtotal			1,334	2,234	0	0	0	900	0	0	0	0	900	
Net North American Capacity Changes			17,111	41,926	2,238	7,408	3,631	1,834	7,421	2,422	0	856	25,811	

(G) Greenfield

(P\*\*) Postponed - no additional information available

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## Capacity Displacements

(Clinker, Thousand *Short Tons* )

Update: 4/20/2011

				Displacement										
				2007	2008	2009	2010	2011 <sup>(1)</sup>	2012 <sup>(1)</sup>	2013	2014	2015	Current	Permanent
Total				0	-286	-7,973	-10,112	-11,047	-11,363	-4,346	-4,346	-4,346	-11,047	-4,346
Company	Location	Off-Line	Capacity*											
Buzzi Unicem	Independence, Kansas	9/1/2008	357	0	-119	-357	-357	-357	-357	-357	-357	-357	-357	-357
Essroc Cement Corp	Frederick, Maryland	11/1/2008	340	0	-57	-340	-340	-340	-340	-340	-340	-340	-340	-340
St. Mary's Cement	Dixon, Illinois	12/1/2008	701	0	-58	-701	-701	-701	-701	0	0	0	-701	-
Buzzi Unicem	Oglesby, Illinois	12/1/2008	625	0	-52	-625	-625	-625	-625	0	0	0	-625	-
Cemex (North Plant)	Brooksville, Florida	1/1/2009	1,381	0	0	-1,381	-1,381	-1,381	-1,381	0	0	0	-1,381	-
Holcim	Clarksville, Missouri	1/1/2009	1,045	0	0	-1,045	-1,045	-1,045	-1,045	-1,045	-1,045	-1,045	-1,045	-1,045
Holcim	Dundee, Michigan	1/1/2009	915	0	0	-915	-915	-915	-915	-915	-915	-915	-915	-915
Ash Grove	Inkom, Idaho	1/1/2009	287	0	0	-287	-287	-287	-287	0	0	0	-287	-
Cemex	Davenport, California	1/1/2009	928	0	0	-928	-928	-928	-928	-928	-928	-928	-928	-928
Texas Industries (White)	Riverside, California	1/2/2009	95	0	0	-95	-95	-95	-95	-95	-95	-95	-95	-95
Essroc Cement Corp	Bessemer, Pennsylvania	4/1/2009	667	0	0	-500	-667	-667	-667	-667	-667	-667	-667	-667
Holcim	Artesia, Mississippi	4/1/2009	434	0	0	-326	-434	-434	-434	0	0	0	-434	-
Holcim	Mason City, Iowa	8/1/2009	988	0	0	-412	-988	-988	-988	0	0	0	-988	-
CalPortland	Colton, California	12/1/2009	750	0	0	-62	-750	-750	-750	0	0	0	-750	-
Cemex	Wampum, Pennsylvania	4/1/2010	800	0	0	0	-600	-800	-800	0	0	0	-800	-
Lafarge	Seattle, Washington	1/1/2011	420	0	0	0	0	-420	-420	0	0	0	-420	-
Holcim	Catskill, New York	6/1/2011	631	0	0	0	0	-315	-631	0	0	0	-315	-

(Clinker, Thousand *Metric Tons* )

				Displacement										
				2007	2008	2009	2010	2011 <sup>(1)</sup>	2012 <sup>(1)</sup>	2013	2014	2015	Current	Permanent
Total				0	-260	-7,233	-9,174	-10,022	-10,308	-3,943	-3,943	-3,943	-10,022	-3,943
Company	Location	Off-Line	Capacity*											
Buzzi Unicem	Independence, Kansas	9/1/2008	324	0	-108	-324	-324	-324	-324	-324	-324	-324	-324	-324
Essroc Cement Corp	Frederick, Maryland	11/1/2008	308	0	-51	-308	-308	-308	-308	-308	-308	-308	-308	-308
St. Mary's Cement	Dixon, Illinois	12/1/2008	636	0	-53	-636	-636	-636	-636	0	0	0	-636	-
Buzzi Unicem	Oglesby, Illinois	12/1/2008	567	0	-47	-567	-567	-567	-567	0	0	0	-567	-
Cemex (North Plant)	Brooksville, Florida	1/1/2009	1,253	0	0	-1,253	-1,253	-1,253	-1,253	0	0	0	-1,253	-
Holcim	Clarksville, Missouri	1/1/2009	948	0	0	-948	-948	-948	-948	-948	-948	-948	-948	-948
Holcim	Dundee, Michigan	1/1/2009	830	0	0	-830	-830	-830	-830	-830	-830	-830	-830	-830
Ash Grove	Inkom, Idaho	1/1/2009	260	0	0	-260	-260	-260	-260	0	0	0	-260	-
Cemex	Davenport, California	1/1/2009	842	0	0	-842	-842	-842	-842	-842	-842	-842	-842	-842
Texas Industries	Riverside, California	1/2/2009	86	0	0	-86	-86	-86	-86	-86	-86	-86	-86	-86
Essroc Cement Corp	Bessemer, Pennsylvania	4/1/2009	605	0	0	-454	-605	-605	-605	-605	-605	-605	-605	-605
Holcim	Artesia, Mississippi	4/1/2009	394	0	0	-296	-394	-394	-394	0	0	0	-394	-
Holcim	Mason City, Iowa	8/1/2009	896	0	0	-373	-896	-896	-896	0	0	0	-896	-
CalPortland	Colton, California	12/1/2009	680	0	0	-57	-680	-680	-680	0	0	0	-680	-
Cemex	Wampum, Pennsylvania	4/1/2010	726	0	0	0	-545	-726	-726	0	0	0	-726	-
Lafarge	Seattle, Washington	1/1/2011	381	0	0	0	0	-381	-381	0	0	0	-381	-
Holcim	Catskill, New York	6/1/2011	572	0	0	0	0	-286	-572	0	0	0	-286	-

<sup>(1)</sup> Unless reported to the contrary by members, PCA assumes displacement status extends into the current and following year.  
No assumption for closure beyond that period is made.

Compiled from public sources believed to be reliable; however, accuracy cannot be guaranteed.  
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