

March 19, 2009

Impact of Potential Mercury Emission Changes on Domestic Cement Capacity

Overview

Economic Research has been tasked to provide a rough estimate regarding the potential impact of tighter mercury (Hg) emissions on domestic cement supply. PCA assumes an Hg emission policy commences in 2013. PCA's analysis compares three scenarios including:

- **Baseline Scenario:** Hg emission standards remain unchanged.
- **Moderate Hg Cap Scenario:** Hg emissions are capped 90 pounds (lbs) per million tons of clinker production per year per plant.
- **Severe Hg Cap Scenario:** Hg emissions are capped at 50 lbs per million tons of clinker production per year per plant.

Policy impacts are measured by comparing the moderate and severe Hg cap scenarios against the baseline scenario. These impacts are shown for 2013, 2015 and 2020. The EPA conducted a plant-by-plant study on Hg emissions from the cement industry reflecting 2006 information for 100 cement plants. A follow-up study was performed reflecting 2007 information for some 50 cement plants. Historical benchmarks on plant-by-plant Hg emissions reflect the most recently available data for each plant.

Undoubtedly, actual United States Hg emission policy will vary significantly from these scenarios – both in form and in standard levels. The purpose of this report, however, is to provide initial assessments regarding the impact on the United States cement industry of potential changes in EPA emission policies. These assessments can be refined at a later date as more details become known.

Key Findings

- Compared to baseline estimates, United States Hg emissions decline from 18,800 pounds in 2020 under the baseline, to 1,571 pounds under the moderate Hg cap scenario, and 1,150 pounds under the severe Hg cap scenario.
- Installation of Hg controls at cement plants account for roughly 60% of the total reduction in cement industry Hg emissions in the United States under the moderate Hg cap scenario and less than 50% under the severe Hg cap scenario by 2020.

- Plant closures account for roughly 40% the reduction in cement industry Hg emissions under the moderate cap scenario and more than 50% under the severe Hg cap scenario.
- In addition to the expected retirement of older capacity, 7 cement plants could close by 2020 under the moderate Hg cap scenario and 14 plants could close under the severe cap scenario.
- Compared to PCA's baseline, clinker capacity could be reduced nearly 8% under the moderate Hg cap scenario by 2020 and 18% under the severe Hg cap scenario.
- Hg emission compliance could add \$10-\$13 per ton to domestic cement production costs by 2020 (95% utilization). This suggests that the international competitive dynamics of the cement industry could result in significant, unintended, import leakage – adding to further plant closures.
- Imposition of mandatory Hg controls during weak market conditions and low utilization rates increases the fixed costs per ton associated with emission equipment and enhances the likelihood of plant closures.
- United States' construction markets could become more dependent on cement imports under each of the Hg cap scenarios. To fill the imbalance between expected United States' cement consumption and domestic production, imports increase to more than a 36% share of the US cement market by 2020 under the moderate cap scenario and 43% under the severe Hg cap scenario. This compares to less than 27% under the baseline scenario.
- In the context of anticipated growth in longer term consumption, Hg compliance costs could reduce and/or alter the sourcing formulas used by cement companies for required industry investment.

Baseline Scenario (No Hg Emission Policy)

United States' Cement Consumption Projections

United States' cement consumption is expected to decline to 93 MMT in 2010, compared to near record levels of 127 MMT recorded in 2006. This decline reflects current economic adversities and includes PCA's assessment of the American Recovery and Revitalization Act (ARRA) impact on cement consumption. With economic recovery, cement consumption is expected to reach 116,000 in 2013, nearly 130 MMT in 2015 and 153 MMT in 2020.

The stimulus program will be overlaid atop weakening underlying economic fundamentals. These underlying fundamentals suggest cement consumption could decline to 70 million metric tons during 2010 – reflecting nearly a 57 million metric ton decline from peak 2005-2006 levels.

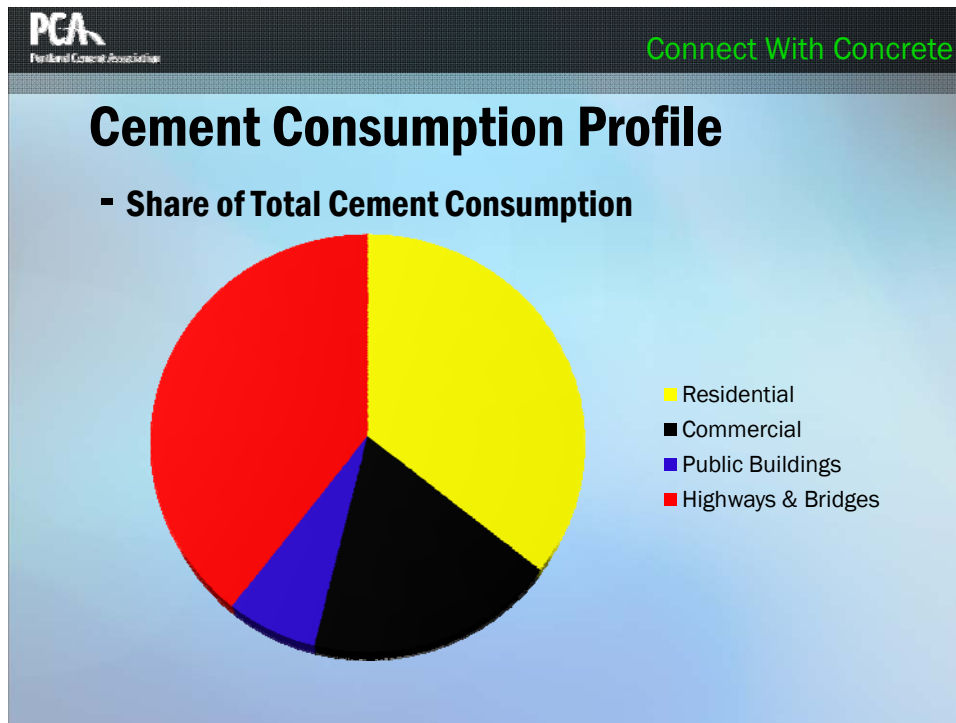
The stimulus program, however, will undoubtedly brighten the outlook for cement consumption. Tax and entitlement spending aspects of the stimulus bill are expected to carry relatively small impacts on cement consumption. Aid-to-states could make a more significant improvement in the cement consumption outlook - estimated at roughly 2 million tons in 2009, 6 million tons in 2010, and 3 million tons in 2011. Spending initiatives are expected add roughly 2 million tons in 2009, 11 million tons in 2010, and 4 million tons in 2011.

In assessing the potential impacts of the stimulus on cement consumption, direct and indirect impacts must be addressed. Direct impacts on cement consumption arise from spending and tax initiatives. Indirect benefits (induced benefits) arise by generating economic momentum and brightening the jobs and

construction markets to the benefit of cement consumption. By 2011, indirect benefits to cement consumption resulting from the stimulus could be the largest contributor to cement consumption volumes.

All totaled, cement consumption is expected to decline to 83 million metric tons in 2009, increase to 93 million metric tons in 2010, and approach 100 million metric tons in 2011. Despite stimulus induced gains materializing in 2010 and 2011, cement consumption is expected to lie 30 million tons below peak 2005-2006 levels.

Longer term, PCA expects cement consumption will reach 153 million metric tons by 2020 – reflecting growth of nearly 38 million tons compared to 2007 levels and growing at a 2.3% compound annual rate. Roughly 50% of the growth in cement consumption is driven by growth in population. The remaining 50% is driven by gains in growth in per capita cement consumption. In comparison, during 1993-2007, cement



consumption grew 33 million metric tons at a compound annual growth rate of 2.9%. During 1993-2007, 37% of the market growth was driven by population gains and 63% by gains in cement consumption per capita.

Long-term cement projections are calculated by combining Bureau of Census' (BOC) population projections with per capita cement consumption estimates to yield total cement consumption. Changes in per capita cement consumption are driven by projected economic activity at the state level and measured by real gross state product.

The anticipated increase in population will result in additional demand for housing, commercial buildings, public buildings and infrastructure – all boosting demand for cement consumption. Population in the United States is expected to grow by 40 million persons by 2020 compared to 2007 levels. According to the Bureau of Census (BOC) April 2005 forecast, United States' 2007 population is estimated at almost 301 million persons and is expected to reach 341 million persons by 2020 – reflecting a 13% increase over 2007 levels.

Nationally, per capita cement consumption is expected to reach .451 metric tons per thousand persons (PTP) by 2020, compared to .380 PTP recorded in 2007. This reflects an increase of slightly more than 18%. The projections fall well below those experienced during the previous 13 year period when per capita cement consumption grew by nearly 44%. Economic growth directly impacts growth in per capita cement consumption. Stronger economic activity leads to higher household formation, stronger fiscal conditions at the state level, and higher expected return on real investments – leading to higher levels of residential, public and nonresidential construction activity. Stronger long-term economic growth will encourage greater construction activity and hence cement consumption per capita. According to PCA estimates, per capita cement consumption grows 0.7% for every one percent increase in real GDP growth.

PCA expects the long-term United States' economic growth rate will underperform consensus projections of 3% annually. As the United States' population ages, slower economic growth may materialize. The argument for slower, future long-term economic growth rates is anchored in future demographic changes and its likely impact on spending habits among age groups. The persistent and sustained aging of the population will slow down consumer spending. PCA calculates that the aging of America will result in a 50 basis point reduction in growth of consumer spending and overall economic activity by 2020. PCA's long-term cement consumption projections are based on 2.5% real GDP growth. Upside risks are contained in PCA projections.

United States' Cement Capacity Projections

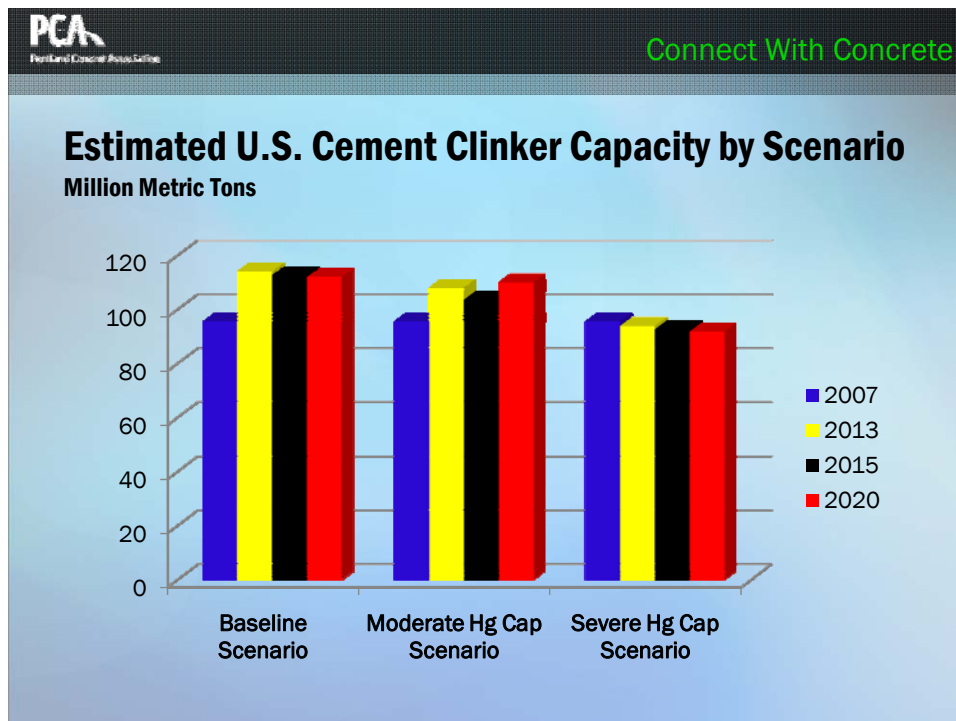
Domestic cement capacity is expected to increase from 99.4 million metric tons (MMT) in 2006 to 107 MMT in 2010, to 121 MMT in 2013 and declines slightly to 120.7 MMT in 2015 and again in 2020 to 119.9 MMT. These estimates reflect planned expansions. PCA assumes no new capacity is added beyond these announced plans. Capacity estimates also include recently announced closures (permanent and temporary) as well as assumptions regarding the continued retirement of older wet kilns.

The portland cement industry in the United States is currently comprised of more than 35 producers operating more than 150 kilns with an estimated domestic clinker capacity of nearly 96 million metric tons. Gypsum is mixed with clinker to form portland cement. Gypsum accounts for 5.5% of the mix. Including gypsum additions, domestic cement capacity is currently estimated at 101 million metric tons.

Nearly three million metric tons of new clinker capacity came on-line during 2008. An additional 9.7 million metric tons of new clinker capacity is expected to come on-line during 2009. Further expansions are planned in the out years, bringing the total clinker capacity expansion to 23.4 million metric tons by the end of 2013. This investment will increase capacity nearly 25% over 2007 levels. The expansion affects 22 plants with a mix of greenfield sites (4) as well as expansions at existing facilities.

In addition to clinker capacity expansions, changes in U.S. specifications allowing for increased use of limestone in portland cement, could increase the potential domestic supply even further. Depending on how plants elect to exercise the option to use limestone, domestic cement supply could increase more than 2 million additional metric tons by 2013. PCA assumes that the trend toward increased use of limestone additions is unaffected by the 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% gypsum premium currently to a 7% gypsum/limestone premium by 2013.

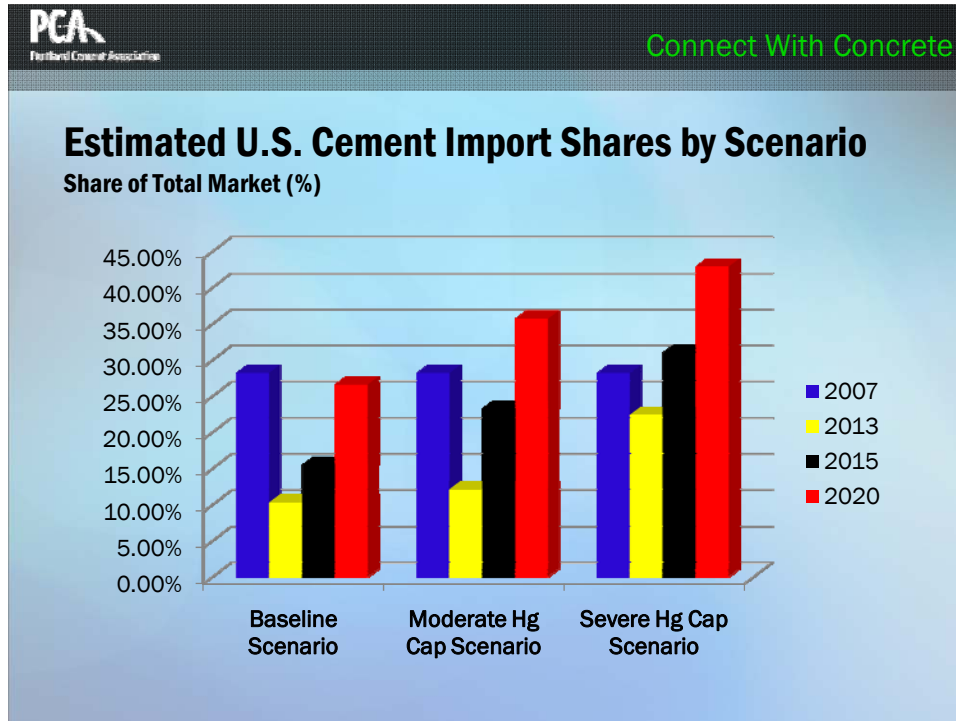
These expansions in cement supply are expected to be offset by some displacements of capacity. Economic stress and declining cement consumption has resulted in commissioning delays and slower planned ramp-ups for new plants. Two planned “greenfield” plants may be postponed indefinitely. Permanent or temporary displacement of production capacity in eleven plants have been announced or are planned. Clinker capacity displacements reduced year-end 2008 production capacity by 578,000 metric tons with another 4.5 million metric tons announced in 2009. Most, but not all, of these capacity displacements may be permanent. Of the closure announcements, seven plants are considered permanent, reflecting 3.4 million metric tons. Of the remaining temporary closures, PCA assumes these plants will remain closed through the first half of 2011, at which time stronger market conditions may dictate reopening.



In addition to cyclical displacement of capacity, the cement industry has been gradually phasing out its wet kiln clinker capacity – reducing its clinker capacity by approximately one million metric tons annually during the past ten years. The wet kiln process is an older process and is typically less energy efficient (note: the last wet kiln was installed 35 years ago). During the past two years the phase-out of wet kilns has accelerated – reducing wet kiln clinker capacity by nearly 1.8 million metric tons annually. In the context of current economic distress, the potential for higher energy prices in the future, and impending climate change legislation, this accelerated pace of wet kiln retirement is expected to continue. PCA assumes total wet kiln clinker capacity will decline to 1.1 million metric tons annually through 2020, compared to 12 million metric tons in 2007. This assumption suggests an 11.2 million ton reduction in existing wet-kiln clinker capacity.

Domestic cement capacity (includes gypsum and limestone additions to clinker) is expected to increase from 99.4 million metric tons (MMT) in 2006 to 107 MMT in 2010, to 121.1 MMT in 2013, and declines slightly in 2015 to 120.7 MMT and again in 2020 to 119.9 MMT. These estimates reflect planned expansions, but PCA assumes no new capacity is added beyond these announced plans. Capacity

estimates also include recently announced closures (permanent and temporary) as well as assumptions regarding the continued retirement of older wet-kilns.



United States' Imported Cement Projections

In the context of weak demand conditions and low domestic utilization rates, PCA expects imports shares will decline to 6.5% in 2010, compared to 28.2% in 2006. With economic recovery and higher utilization rates, import shares are expected to increase to 10.3% in 2013, 15.5% in 2015 and 26.6% in 2020.

Aside from domestic supply, the industry operates roughly 125 import terminals with an estimated capacity of 45 million metric tons. The ability and willingness to import cement is determined by demand conditions, prevailing global shipping rates, and the availability of ships to carry cement. Imports are viewed as swing supply, with volume increasing and decreasing depending upon the shortfall between domestic capacity and total United States consumption.

Imports have declined since 2006 from 36 million metric tons to roughly 11 million metric tons in 2008. The combination of weak demand and high international freight rates are largely responsible for this decline. In the context of weak demand and low domestic utilization rates, PCA expects imports shares will decline to 6.5% in 2010, compared to 28.2% in 2006. With economic recovery and higher utilization rates, import shares are expected to increase to 10.3% in 2013, 15.5% in 2015 and 26.6% in 2020.

Mercury Emission Projections

Mercury emissions from domestic cement production are expected to decline to 14,610 pounds in 2010, compared to a PCA benchmark estimate of 16,316 pounds in 2006. With the revival of cement production, Hg emissions increase to 17,033 pounds in 2013, 17,976 pounds in 2015, and 18,807 pounds in 2020.

Mercury emissions are largely driven by domestic production. Domestic cement production is expected to decline from 93.6 MMT in 2006 to 88 MMT in 2010. With the economic recovery, cement production is expected to reach 110 MMT in 2015 and over 114 MMT in 2020. This projection reflects PCA's estimates regarding cement consumption, import volume, exports and probable inventory changes.

With the decline in production arising from economic adversity, Hg emissions are expected to decline to 14,610 pounds in 2010, compared to 16,316 pounds estimated by PCA in 2006. With the revival of cement production, Hg emissions increase to 17,033 pounds in 2013, 17,976 pounds in 2015 and 18,807 pounds in 2020. PCA combines capacity, EPA emission data, utilization rates, and production estimates to calculate potential Hg emissions. Using the EPA's 2006 and 2007 studies on individual cement plant Hg emissions, PCA converted total plant emissions to a per ton of cement production basis. The most recent information on Hg emissions for each plant was used. The conversion was performed using existing 2006 and 2007 plant capacities and applying national utilization rates that prevailed in 2006 (94.1%). All plants were assumed to operate at the same national utilization rate. National averages of Hg emissions per ton of cement production were assumed for all plants not in existence in 2006. Projected Hg emissions by plant were derived by applying the Hg emission per ton produced at each plant and then applying the projected national capacity utilization rate for each plant. Hg emissions from all plants were then summed.

Baseline: No Emission Policy					
	2006	2010	2013	2015	2020
US Cement Consumption (000 tons)	127,281	93,000	116,000	130,000	153,000
US Cement Capacity (000 tons)	99,400	107,100	121,100	120,700	119,900
US Production (000 tons)	93,600	88,000	104,750	109,850	114,302
Imports (000 tons)	35,895	6,045	12,000	20,150	40,698
Hg Emission from US Production (lb)	16,316	14,610	17,033	17,976	18,807

Moderate Cap Scenario (90 lb Hg Emission Cap per Million Tons of Production per Plant)

The moderate cap scenario includes all assessments regarding cement consumption and capacity changes contained in the baseline scenario. Potential impacts on cement capacity, domestic cement production, imports, and total U.S. cement Hg emissions are estimated in the context of an assumed EPA imposed policy that limits all cement plants to a maximum of 90 pounds of Hg emissions per million tons of clinker production annually.

Two layers of analysis were performed to determine Hg emission control policy impacts on cement capacity. First, Hg emission control technologies were applied to each plant's expected emissions.

Expected emissions by plant were calculated using the same method identified in the baseline scenario. Three Hg emission control technologies were applied including enhanced baghouse/ESP controls, ACI systems and wet scrubber systems. Technology efficiencies were assumed in the capture of Hg emissions by each system. Regardless of costs, if a plant failed to meet the standard, it was assumed to be a forced closure. To minimize plant closure exaggeration errors using this methodology, PCA used upper end Hg capture efficiencies associated with each technology, according to a review of research. Furthermore, due to uncertainties associated with Hg capture technologies, PCA raised the 90 pound Hg per million tons of clinker production per plant imposed policy by 25% before assuming closure due to technical non-compliance.

In the second layer of calculation, plants meeting the EPA standard were subjected to cost analysis. PCA assumes a 10 year horizon for the capitalization of fixed costs. For plants with less than an estimated 10 years left in quarry life, fixed Hg compliance costs are capitalized over the longest period possible. Plants passing technology standards but failing to meet economic payoffs were also assumed to be a forced closure. All estimates were calculated on an individual plant basis.

Hg Emission Control Technology Assumptions

Most research regarding Hg emission control and capture has been targeted at coal burning utilities. Sparse evidence exists regarding the actual effectiveness of Hg control technologies applied to cement kilns. Due to uncertainties regarding Hg emission control efficiencies, PCA has assigned high Hg capture efficiencies to minimize the potential impact of plants forced to close due to the inability to comply. PCA estimates, therefore, contain upside risk regarding plant closures.

Technology assumptions were made regarding the effectiveness of various mercury emission control systems, include activated carbon injection (ACI), wet scrubbers, and baghouse/ESP systems. No other systems or technology measures are considered in the context of this analysis.

PCA assumes all plants will initially try to capture Hg emissions by adding Hg specific baghouse and ESP systems to existing systems. According to some experts, these systems could capture as much as 95% of Hg emissions. Others suggest that plants will not use their existing dust collectors because they do not want the mercury impregnated carbon to be captured with process dust. Weighing the two divergent opinions, PCA assumes these systems will capture 25% of all Hg emissions. Based on information garnered, PCA assumes that enhancements to baghouse and ESP systems cost \$5 million per million tons of capacity in capitalized costs and \$1 million per million tons of capacity in annual operating costs.

PCA assumes that ACI or wet scrubber systems will be employed to capture residual Hg emissions after baghouse controls have been implemented. According to some experts, ACI systems are preferred and can capture 75% to 85% of Hg emissions. Depending on the types of Hg present inside the kiln, wet scrubber systems could be as effective as the ACI systems. PCA assumes ACI and wet scrubber systems have equal efficiency in Hg control and identical costs. Based on information garnered, PCA assumes ACI/scrubber systems cost \$20 million per million tons of capacity in capitalized costs and \$4 million per million tons of capacity in annual operating costs.

Most research regarding Hg emission control and capture has been targeted at coal burning utilities. Sparse evidence exists regarding the actual effectiveness in capturing Hg emissions for a cement kiln using the various control systems identified above. As a result, PCA increased the threshold for required plant closure by 25% over the 90 pounds Hg emission per million tons of clinker production per plant. In other

words, due to uncertainties regarding Hg emission control efficiencies, no plants are forced to close unless Hg emissions at the plant exceed the 25% premium.

Forced Cement Capacity Closures Due to Hg Emission Standards

The Moderate Hg Cap scenario is likely to result in more than a 8% reduction in United States' clinker capacity, implying heightened reliance on foreign sourcing strategies.

In the context of an assumed EPA imposed policy that limits all cement plants to a maximum of 90 pounds of Hg emissions per million tons of clinker production annually, PCA estimates that 7 plants would be forced to close. These closures represent more than 6 million metric tons of clinker capacity in 2013 or more than a 5% reduction of clinker capacity compared to the baseline scenario. Further plant closures and capacity reduction materialize during 2010-2020 resulting in a capacity reduction totaling more than 9 million metric tons in 2020, or 8.3% below baseline clinker capacity estimates.

Cement capacity is reduced from 121.1 MMT in 2013, 120.7 MMT in 2015 and 119.9 MMT in 2020 estimated in the baseline scenario to 115.6 MMT in 2013, 110.8 MMT in 2015 and 109.9 MMT in 2020 estimated in the Moderate Hg Cap scenario.

To compensate for plant closures, remaining domestic plants are expected to operate near full utilization, assumed at 95%. The 95% assumption is used due to differences between the concepts of "straight time" capacity maximums and "real world" maximums. Furthermore, this utilization rate is comparable to levels achieved during 2005-2006 peak production levels. This assumption implies that production is eliminated at high Hg emission plants and transferred to low Hg emission plants. The extent that this happens is limited by "real world" capacities at the low emission plants. Higher utilization rates and higher production implied for lower Hg emission plants also implies higher Hg emissions at each of the plants that remain open.

Moderate Cap Scenario: United States' Imported Cement Projections

Reduction in cement capacity will force increased reliance on imports to meet expected future consumption. By 2020, import share is expected to reach more than 35%, compared to roughly 6% estimated for 2009. While in the context of weak global demand, import conditions are currently favorable – these conditions could change significantly with the return of stronger global economic growth conditions.

Cement consumption estimates remain unchanged in the Moderate Hg Cap scenario. With the forced closure of domestic plants due to Hg emission standards, increased reliance on cement imports is expected to materialize. PCA estimates that import shares increase to nearly 12% in 2013, 23% in 2015, and 36% in 2020. These share estimates reflect volume estimates of 14 MMT in 2013, 30 MMT in 2015, and nearly 55 MMT in 2020. It should be kept in mind, that current import terminal capacity is estimated at 45 million metric tons. These import volume increases compare against baseline United States cement market import share projections of 10% in 2013, 15.5% in 2015, and 26.6% in 2020. These baseline share estimates reflect volume estimates of 12 MMT in 2013, 20 MMT in 2015, and 41 MMT in 2020.

The ability and willingness to import cement is determined by demand conditions, prevailing global shipping rates, and the availability of ships to carry cement (dry-bulk carriers). With the onset of weak global economic conditions, freight rates have declined significantly and ship availability has improved since mid-2008 – making imported cement more economically viable. These conditions are expected to continue through 2010. Given the amount of economic stimulus undertaken on a global scale, it is likely that world economic growth will return. Dry-bulk freight rates correlate well with international oil prices. As world

demand increases, ocean shipping does as well increasing freight rates and the cost of delivering foreign cement to the United States market. The EIA estimates that oil prices will increase to \$127 per barrel by 2015. This suggests that increased dependence on imported cement could carry significant risks with respect to the cost and availability of foreign cement.

Moderate Hg Cap Scenario: Mercury Emission Projections

Annual United States’ cement Hg emissions are expected to decline significantly under the Moderate Hg Cap scenario. Reductions are achieved by plant closures, as well as increased Hg capture.

PCA estimates that cement plant Hg emissions are reduced from 17,033 pounds in 2013, 17,976 pounds in 2015, and 18,807 pounds in 2020 estimated in the baseline scenario to 1,657 pounds in 2013, 1,573 pounds in 2015, and 1,571 pounds in 2020 under the Moderate Hg Cap scenario.

Compared to baseline projections Hg emissions under the Moderate Hg Cap scenario are reduced by 15,376 pounds in 2013, 16,403 pounds in 2015, and 17,236 pounds in 2020. Reduction in Hg emissions from United States cement plants arise from two key sources including; (1) reductions attributed to the implementation of Hg emission controls at cement plants and, (2) reductions in domestic production attributed to plant closures resulting from Hg standards.

PCA estimates that 8,869 pounds of Hg emission reductions are attributed to the implementation of Hg emission controls at cement plants during 2013, 9,795 pounds in 2015 and 10,598 pounds in 2020. Compared to total Hg reductions from cement plants, emission controls account for nearly 60%. This implies that roughly 40% of Hg emissions reductions within the cement industry are achieved by plant closures.

Since cement consumption remains unchanged from the baseline scenario, total global Hg emissions from cement plants will remain relatively unchanged. Absent global Hg standards, the improvement in global Hg emissions arising from EPA policy is limited to the improvements attributed to the implementation of Hg emission controls at United States’ cement plants. Since United States’ cement plant closures necessitate an increase in imports, the potential policy impact of EPA Hg standards is to export the mercury problem to foreign cement producing countries.

Moderate Scenario: Hg Cap at 90 lbs per Million Tons of Clinker Production					
	2006	2010	2013	2015	2020
US Cement Consumption (000 tons)	127,281	93,000	116,000	130,000	153,000
US Cement Capacity (000 tons)	99,400	107,100	115,600	110,800	109,900
US Production (000 tons)	93,600	88,000	102,700	100,000	99,700
Imports (000 tons)	35,895	6,045	14,000	30,050	54,980
Hg Emission from US Production (lb)	16,316	14,610	1,657	1,573	1,571

Severe Hg Cap Scenario (50 lb Hg Emission Cap per Million Tons of Production per Plant)

The Severe Hg Cap scenario includes all assessments regarding cement consumption and capacity changes contained in the baseline scenario. Potential impacts on cement capacity, domestic cement production, imports, and total US cement Hg emissions are estimated using identical methodology contained in the Moderate Hg Cap scenario. This scenario, however, assumes an EPA imposed policy that limits all cement plants to a maximum of 50 pounds of Hg emissions per million tons of clinker production annually.

In the context of an assumed EPA imposed policy that limits all cement plants to a maximum of 50 pounds of Hg emissions per million tons of clinker production annually, PCA estimates that 14 plants would be forced to close. These closures represent more than 20 million metric tons of clinker capacity in 2013 – representing roughly a 18% reduction of clinker capacity compared to the baseline scenario.

Cement capacity is reduced from 121.1 MMT in 2013, 120.7 MMT in 2015 and 119.8 MMT in 2020 estimated in the baseline scenario to 99.8 MMT in 2013, 99.0 MMT in 2015, and 98.2 MMT in 2020 estimated in the Severe Hg Cap scenario.

With the additional forced closure of domestic plants due to Hg emission standards, increased reliance on cement imports is expected to materialize. PCA estimates that import shares increase to nearly 22.4% in 2013, 31% in 2015, and 43% in 2020. These share estimates reflect import volume estimates of 26 MMT in 2013, 40 MMT in 2015, and nearly 66 MMT in 2020. It should be kept in mind, that current import terminal capacity is estimated at 45 million metric tons. Additional dependence on imported cement could increase risks associated with foreign cement sourcing strategies.

According to the assumptions contained in the Severe Hg Cap scenario, PCA estimates that cement plant Hg emissions are reduced to 1,177 pounds in 2013, 1,167 pounds in 2015, and to 1,150 pounds in 2020. PCA estimates that 6,591 pounds of Hg emission reductions are attributed to the implementation of Hg emission controls at cement plants during 2013, 7,485 pounds in 2015, and 8,387 pounds in 2020. Compared to total Hg reductions from cement plants, emission controls account for nearly 42% in 2013, 44% in 2015 and 48% in 2020. This implies that the bulk of Hg emissions reductions within the cement industry are achieved by plant closures.

Severe Scenario: Hg Cap at 50 lbs per Million Tons of Clinker Production					
	2006	2010	2013	2015	2020
US Cement Consumption (000 tons)	127,281	93,000	116,000	130,000	153,000
US Cement Capacity (000 tons)	99,400	107,100	99,800	99,000	98,200
US Production (000 tons)	93,600	88,000	90,754	90,027	88,730
Imports (000 tons)	35,895	6,045	26,000	40,000	66,000
Hg Emission from US Production (lb)	16,316	14,610	1,177	1,167	1,150