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Revised 2009 Coal Combustion Product (CCP) Production & Use Survey Report

| Beneficial Utilization versus Production Totals (Short Tons) | | | | | | | | | |
|---|------------|--------------|--------------|--------------|-----------------------------|-----------------------------|------------|------------|-------------------------------------|
| CCP Categories | Fly Ash** | Bottom Ash** | Boiler Slag* | FGD Gypsum** | FGD Material Wet Scrubbers* | FGD Material Dry Scrubbers* | FGD Other* | FBC Ash* | CCP Production / Utilization Totals |
| 2009 Total CCPs Produced by Category | 63,000,000 | 16,600,000 | 2,176,054 | 18,000,000 | 11,700,000 | 1,405,448 | 76,288 | 12,524,796 | 125,482,586 |
| 2009 Total CCPs Used by Category | 24,716,665 | 7,000,665 | 1,834,257 | 8,951,315 | 907,543 | 415,521 | 67,671 | 11,748,374 | 55,642,011 |
| 1. Concrete/Concrete Products /Grout | 9,796,483 | 555,996 | 0 | 239,376 | 0 | 18,555 | 0 | 0 | 10,610,410 |
| 2. Blended Cement/ Raw Feed for Clinker | 2,435,904 | 720,828 | 0 | 420,994 | 0 | 0 | 0 | 0 | 3,577,726 |
| 3. Flowable Fill | 264,611 | 113,395 | 0 | 0 | 0 | 16,212 | 192 | 20,000 | 414,410 |
| 4. Structural Fills/Embankments | 4,646,626 | 2,944,354 | 64,727 | 413,790 | 394,920 | 192,997 | 53,982 | 145,000 | 8,856,396 |
| 5. Road Base/Sub-base | 198,507 | 765,181 | 0 | 0 | 0 | 0 | 160 | 4,443 | 968,291 |
| 6. Soil Modification/Stabilization | 670,035 | 188,504 | 1,200 | 0 | 0 | 3,332 | 0 | 94,045 | 957,116 |
| 7. Mineral Filler in Asphalt | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8. Snow and Ice Control | 0 | 207,250 | 45,275 | 0 | 50,302 | 0 | 0 | 0 | 302,827 |
| 9. Blasting Grit/Roofing Granules | 47,710 | 78,156 | 1,617,755 | 0 | 0 | 0 | 0 | 0 | 1,743,621 |
| 10. Mining Applications | 2,148,171 | 498,180 | 43,511 | 195,526 | 462,321 | 124,320 | 0 | 11,425,386 | 14,897,415 |
| 11. Gypsum Panel Products | 0 | 0 | 0 | 7,286,404 | 0 | 2,351 | 0 | 0 | 7,288,755 |
| 12. Waste Stabilization/Solidification | 3,515,289 | 5,867 | 0 | 108,869 | 0 | 35,937 | 13,337 | 59,500 | 3,738,799 |
| 13. Agriculture | 102,908 | 3,696 | 0 | 282,386 | 0 | 0 | 0 | 0 | 388,990 |
| 14. Aggregate | 87,317 | 452,066 | 34,700 | 0 | 0 | 0 | 0 | 0 | 574,083 |
| 15. Miscellaneous/Other | 803,104 | 467,192 | 27,089 | 3,970 | 0 | 21,817 | 0 | 0 | 1,323,172 |
| Summary Utilization to Production Rate | | | | | | | | | |
| CCP Categories | Fly Ash | Bottom Ash | Boiler Slag | FGD Gypsum | FGD Material Wet Scrubbers | FGD Material Dry Scrubbers | FGD Other | FBC Ash | CCP Utilization Total** |
| 2009 Totals by CCP Type/Application | 24,716,665 | 7,000,665 | 1,834,257 | 8,951,315 | 907,543 | 415,521 | 67,671 | 11,748,374 | 55,642,011 |
| Category Use to Production Rate (%)*** | 39.20% | 43.70% | 84.20% | 50.30% | 7.70% | 3.90% | 88.70% | 93.80% | 44.30% |
| Supplemental: In 2005, the industry established a goal of 50% utilization for CCPs by the year 2011, not including mine reclamation. This year's utilization rate without mine reclamation is 30.5% | | | | | | | | | |
| 2009 Cenospheres Sold (Pounds) | 9,120,702 | | | | | | | | |

ACAA received survey data representing 200,198 MegaWatts Name Plate capacity of the total industry-wide 337,300 MegaWatts Name Plate capacity (i.e., 59.3%)

Oct. 5, 2011

* These are actual tonnages reported by utilities responding and do not reflect estimates for utilities that did not respond this year; Mine reclamation data includes tonnages reported by ARIPPA

**These numbers are derived from previous, current and applicable industry-wide available data, to include Energy Information Administration Reports 923 and 860.

***Estimates based on actual tons reported and based on extrapolated estimates for fly ash, bottom ash, and FGD gypsum; Utilization exceeded 2009 production as some CCPs were reclaimed from storage

Note - Survey corrected for arithmetic errors in reporting of FGD Dry discovered during compilation of 2010 data in October 2011