American Coal Ash Association Phone: 720-870-7897

## 2018 Coal Combustion Product (CCP) Production & Use Survey Report

### Beneficial Utilization versus Production Totals (Short Tons)

| 2018 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 |
|---|---|---|---|---|---|---|---|---|---|
| Total CCPs Produced by Category | **36,178,427** | **9,197,362** | **1,534,945** | **32,783,995** | **4,732,900** | **2,154,301** | **121,126** | **15,571,824** | **102,274,881** |
| Total CCPs Used by Category | **20,081,330** | **4,350,321** | **1,036,919** | **18,337,477** | **91,036** | **498,532** | **0** | **15,045,225** | **59,440,839** |
| | | | | | | | | | |
| 1. Concrete/Concrete Products /Grout | 12,520,492 | 582,010 | 0 | 235,578 | 0 | 0 | 0 | 93,555 | 13,431,635 |
| 2. Blended Cement/ Feed for Clinker | 3,127,447 | 1,218,581 | 167,996 | 1,865,279 | 0 | 0 | 0 | 5,585 | 6,384,889 |
| 3. Flowable Fill | 83,761 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 83,761 |
| 4. Structural Fills/Embankments | 1,515,590 | 1,320,439 | 0 | 1,735,008 | 0 | 0 | 0 | 0 | 4,571,036 |
| 5. Road Base/Sub-base | 234,798 | 160,061 | 0 | 4,978 | 0 | 1,159 | 0 | 0 | 400,997 |
| 6. Soil Modification/Stabilization | 245,197 | 2,070 | 0 | 0 | 0 | 0 | 0 | 0 | 247,267 |
| 7. Mineral Filler in Asphalt | 10,424 | 0 | 0 | 0 | 0 | 173 | 0 | 0 | 10,597 |
| 8. Snow and Ice Control | 0 | 134,503 | 11,018 | 0 | 0 | 0 | 0 | 0 | 145,521 |
| 9. Blasting Grit/Roofing Granules | 0 | 27,148 | 468,365 | 0 | 0 | 0 | 0 | 0 | 495,513 |
| 10. Mining Applications | 530,444 | 0 | 0 | 20,487 | 0 | 0 | 0 | 14,827,122 | 15,378,053 |
| 11. Gypsum Panel Products (formerly Wallboard) | 0 | 0 | 0 | 12,282,870 | 0 | 0 | 0 | 0 | 12,282,870 |
| 12. Waste Stabilization/Solidification | 953,235 | 101,890 | 0 | 34,068 | 0 | 19,746 | 0 | 90,753 | 1,199,692 |
| 13. Agriculture | 0 | 0 | 0 | 918,386 | 0 | 85,671 | 0 | 0 | 1,004,057 |
| 14. Aggregate | 0 | 2,927 | 0 | 0 | 0 | 0 | 0 | 0 | 2,927 |
| 15. Oil/Gas Field Services | 39,400 | 0 | 0 | 0 | 0 | 13,558 | 0 | 0 | 52,958 |
| 16. CCR Pond Closure Activities | 600,861 | 732,022 | 389,539 | 1,035,612 | 91,036 | 378,224 | 0 | 0 | 3,227,295 |
| 17. Miscellaneous/Other | 219,681 | 68,669 | 0 | 205,210 | 0 | 0 | 0 | 28,210 | 521,771 |

### 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** |
|---|---|---|---|---|---|---|---|---|---|
| Totals by CCP Type/Application | 20,081,330 | 4,350,321 | 1,036,919 | 18,337,477 | 91,036 | 498,532 | 0 | 15,045,225 | **59,440,839** |
| Category Use to Production Rate (%) | **55.51%** | **47.30%** | **67.55%** | **55.93%** | **1.92%** | **23.14%** | **0.00%** | **96.62%** | **58.12%** |
| 2018 Cenospheres Sold (Pounds) | 1,192,568 | Data in this survey represents 127.52499152 GWs of Name Plate rating of the total industry wide approximate 248.928 GW capacity based on EIA's July 2018 Electric Power Monthly. | | | | | | | |