

ACAA Releases 2002 Coal Combustion Products Production and Use Figures

On November 25, 2003 the American Coal Ash Association released the coal combustion product (CCP) production and use data for calendar year 2002. ACAA is a trade association whose purpose is to advance the safe and economic utilization of CCPs. ACAA's membership includes electric utilities, CCP marketers, and various corporate and university research and development institutions.

The Association estimates an overall 2002 CCP production total of 128.7 million tons as compared to 117.9 million tons in 2001. This is an extrapolated increase of about 9%. The 2002 figures are estimates based on a sampling survey of nearly 600 coal-fueled power plants in the U.S. Most of these facilities are investor-owned utilities. Overall CCP utilization for 2002 is estimated at 45.5 million tons, or 35.4% compared to 37.1 million tons and 31.5 % for 2001. Total CCP production can vary significantly from year to year and is influenced by such factors as the total amount of coal burned, ash content of the coal burned (i.e. different coals sources possess different ash contents and blending may change ash production rates), and the amount of flue gas treated by scrubber systems.

On a tonnage basis, fly ash was the largest individual category with 2002 production estimated at 76.5 million tons. Fly ash is collected by equipment (such as electrostatic precipitators and fabric filter bag houses), which is part of the plant's air emissions control systems. As in prior years, it contributed the largest percentage of utilization. For example, fly ash can be substituted for a portion of the portland cement used in concrete products. Approximately 12.6 million tons was used this way in 2002, up slightly from 12.4 million tons in 2001. The total fly ash usage for 2002 is estimated at 26.5 million tons compared to 22.0 million tons in 2001, about a 7% increase. ACAA surveys continue to show that fly ash usage is increasing notwithstanding a slow economy and a relatively flat construction industry. Possible explanations for this growth include local material/mineral shortages, improved fly ash quality due to beneficiation technologies, larger percentages of fly ash used in mix-designs, increased usage of fly ash in soil projects and waste stabilization or a combination of several of these factors.

Other CCP types also increased in production and use during 2002, most notably bottom ash and synthetic gypsum. Bottom ash is used in roadwork, embankments, and structural fills where it is a substitute for sand and gravel and as raw feedstock for portland cement manufacturing. Bottom ash use increased to 7.6 million tons, up significantly from 5.7 million tons in 2001. Synthetic gypsum is produced by flue gas desulfurization systems, which are part of a plant's air emission controls. The primary use of synthetic gypsum is in the making of wallboard. Usage increased to 7.8 million tons up from approximately 7.0 million in 2001. On a percentage basis, increases in bottom ash and FGD gypsum utilization rates for 2002 account for most of the industry's upward trend of CCP utilization (i.e. 31.5% in 2001 to 35.4% in 2002). This trend is expected to continue, particularly for synthetic gypsum, as power plants continue to add new flue gas scrubbing systems.

The industry anticipates CCP production and use to grow in the future. Working with the Coal Combustion Products Partnership (C2P2), sponsored by the Environmental Protection Agency and the Department of Energy, many companies hope to find new uses for CCPs and to identify and reduce potential barriers associated with increased utilization. The data collected by ACAA represents voluntary responses from the utility industry. This year's responses account for approximately 65% of the investor-owned electric generating stations in the US. The balance of the data is extrapolated from information gathered by the Energy Information Agency (EIA) and validated by sources outside the CCP industry for applications such as cement and concrete production and use, synthetic gypsum and bottom ash. Some data, such as for different types of FGD material, FBC ash and boiler slag, is simply reported as received and not extrapolated as there are no outside sources to compare.



2002 Coal Combustion Product (CCP)
Production and Use Survey

CCP Categories	Fly Ash*	Bottom Ash*	FGD Gypsum*	FGD Material Wet Scrubbers*	Boiler Slag**	FGD Material Dry Scrubbers**	FGD Other**	FBC Ash**
CCP Production Category Totals	76,500,000	19,800,000	11,400,000	16,900,000	1,919,579	935,394	0	1,248,599
All CCP Production Total								128,703,572
CCP Used Category Totals	26,628,881	7,689,589	7,770,000	560,000	1,549,972	371,404	0	953,410
All CCP Used Total								45,523,256
CCP Use (Short Tons)	Fly Ash	Bottom Ash	FGD Gypsum	FGD Material Wet Scrubbers	Boiler Slag	FGD Material Dry Scrubbers	FGD Other	FBC Ash
1. Concrete/Concrete Products /Grout	12,579,136	406,255	60,606	0	9,000	35,436	0	0
2. Cement/ Raw Feed for Clinker	1,917,690	585,480	303,807	0	0	3,000	0	0
3. Flowable Fill	455,018	0	0	0	0	1,014	0	0
4. Structural Fills/Embankments	4,200,982	2,046,545	0	427,000	12,103	0	0	0
5. Road Base/Sub-base/Pavement	767,182	1,472,291	0	616	4,484	2,558	0	0
6. Soil Modification/Stabilization	904,745	98,509	0	0	0	0	0	0
7. Mineral Filler in Asphalt	103,173	96,218	0	0	38,496	2,852	0	0
8. Snow and Ice Control	2,645	767,455	0	0	8,612	0	0	0
9. Blasting Grit/Roofing Granules	61,964	137,455	0	0	1,440,706	0	0	0
10. Mining Applications	1,888,855	802,582	0	131,600	0	258,043	0	760,000
11. Wallboard	0	0	7,247,856	0	0	0	0	0
12. Waste Stabilization/Solidification	3,187,773	19,091	0	0	0	67,053	0	193,410
13. Agriculture	0	6,873	77,700	0	0	0	0	0
14. Aggregate	0	678,109	6,216	0	3,200	1,448	0	0
15. Miscellaneous/Other	559,718	572,727	73,815	784	33,371	0	0	0
CCP Category Use Totals	26,628,881	7,689,589	7,770,000	560,000	1,549,972	371,404	0	953,410
All CCP Use Total								45,523,256
Individual Use Percentage of Total Produced	34.81%	38.84%	68.16%	3.31%	80.75%	39.71%	0.00%	76.36%
Cumulative Use Percentage	34.81%	35.64%	39.08%	34.23%				

* Data are extrapolations of utility (predominantly investor owned) survey submissions representing approximately two-thirds of US utility coal burn.

** NOTE: Survey data for fly ash, bottom ash, FGD gypsum and FGD material wet scrubbers is a compilation of data reported by industry respondents and extrapolated to the entire industry by comparing other sources for companies that did not respond to this survey. Boiler slag, FGD material dry scrubber, FGD other and FBC ash is not extrapolated and only reflects production and usage by industry respondents.