

**For Immediate Release**



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## **Coal Ash Recycling Rate Increased in 2022; Ash Harvesting Continued at Significant Volumes**

**December 27, 2023** – Sixty-two percent of the coal ash produced during 2022 was recycled – increasing from 60 percent in 2021 and marking the eighth consecutive year that more than half of the coal ash produced in the United States was beneficially used rather than disposed.

American Coal Ash Association (“ACAA”) today released its annual “Production and Use Survey” which also showed that use of harvested ash continues to play a significant role. Just over 4 million tons of previously disposed ash was utilized in a variety of applications in 2022, including coal ash pond closure activities, concrete products, cement kiln raw feed, and gypsum panel manufacturing.

“Harvested ash utilization volumes now equal 8.7 percent of the volume of ash recycled from current power plant operations,” said Thomas H. Adams, ACAA Executive Director. “The rapidly increasing utilization of harvested coal combustion products (“CCP”) shows that beneficial use markets are adapting to the decline in coal-fueled electricity generation in the United States. New logistics and technology strategies are being deployed to ensure these valuable resources remain available for safe and productive use. We must continue to support these practices that safely conserve natural resources while dramatically reducing the need for landfills.”

According to ACAA’s 2022 survey, 46.8 million tons of coal combustion products were beneficially used in 2022, an increase of 1 percent over the previous year. Production of new CCP declined from 77.3 million tons in 2021 to 75.2 million tons in 2022.

“Coal ash” is a generic term that encompasses several coal combustion products that can be beneficially used in a wide variety of applications. Highlights of CCP production and use in 2022 include:

- Use of coal fly ash in **concrete** declined from 11.9 million tons to 10.9 million tons. Concrete producers and consumers indicated a desire to use more fly ash, but several regional markets continued to be affected by shifting supply dynamics associated with closures of coal-fueled power plants. Fly ash improves concrete durability and significantly reduces greenhouse gas emissions associated with concrete production.
- Use of all coal combustion products in **cement production** increased 8 percent to just over 6 million tons.
- Utilization of a key “non-ash” coal combustion product posted a slight decline. Synthetic gypsum is a byproduct of flue gas desulphurization units, also known as “scrubbers,” located at coal-fueled power plants. Use of synthetic gypsum in **panel products** (i.e. wallboard) declined 4 percent to 11.3 million tons.
- Synthetic gypsum use in **agricultural applications** – in which the gypsum improves soil conditions and prevents harmful runoff of fertilizers – increased 13 percent over the previous year to 887,000 tons.
- Use of CCP in **pond closure activities** declined 40 percent from the previous year to 1.8 million tons. This activity is driven by utility compliance with coal ash regulations enacted in 2015 that effectively require an end to the practice of wet disposal. Fly ash, bottom ash, and synthetic gypsum were all used in construction of new permanent disposal facilities.
- Use of CCP in **structural fills** declined by nearly half in 2022 following a brief rebound in 2021. The drop to just over 1 million tons of use returned this activity to a level established following several years of declines.
- Production of boiler slag increased from 1.2 million tons in 2021 to nearly 1.6 million tons in 2022, with utilization in the production of **blasting grit and roofing granules** increasing from 481,245 tons to 634,330 tons.
- Use of **cenospheres** remained almost level with the previous year, with 108,344 pounds of the material reported as sold during 2022.

“As America’s electricity grid changes, the coal ash beneficial use industry is evolving as well,” said Adams. “As we work diligently to utilize the nearly half of coal combustion products that are still disposed annually, our industry is also taking significant strides in developing strategies for improving the quality and availability of these materials.”

Adams explained that increasing beneficial use requires ash marketers to ensure that products are consistent and available when customers need them – requiring large investments in technology and logistics. Additionally, the coal ash beneficial use industry is actively deploying technologies and strategies for harvesting coal ash materials that were previously disposed.

### **About Coal Ash Recycling**

Coal is the fuel source for 20 percent of electricity generation in America and produces large volumes of solid coal combustion products — primarily ash and synthetic gypsum from emissions control devices.

There are many good reasons to view coal combustion products as a resource, rather than a waste. Recycling them conserves natural resources and saves energy. In many cases, products made with CCP perform better than products made without it. For instance, coal fly ash makes concrete stronger and more durable. It also reduces the need to manufacture cement, resulting in significant reductions in greenhouse gas emissions – about 11 million tons in 2022 alone.

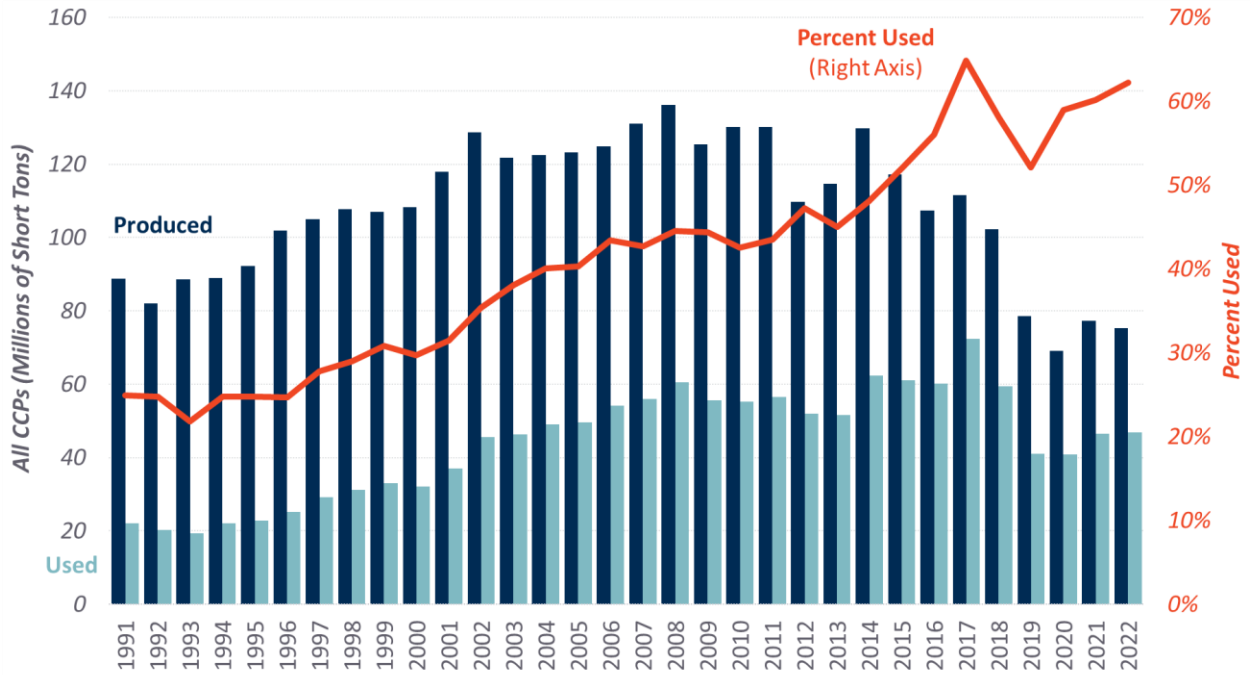
Major uses of coal combustion products include concrete, gypsum wallboard, blasting grit, roofing granules, and a variety of geotechnical and agricultural applications.

### **About ACAA's Production and Use Survey**

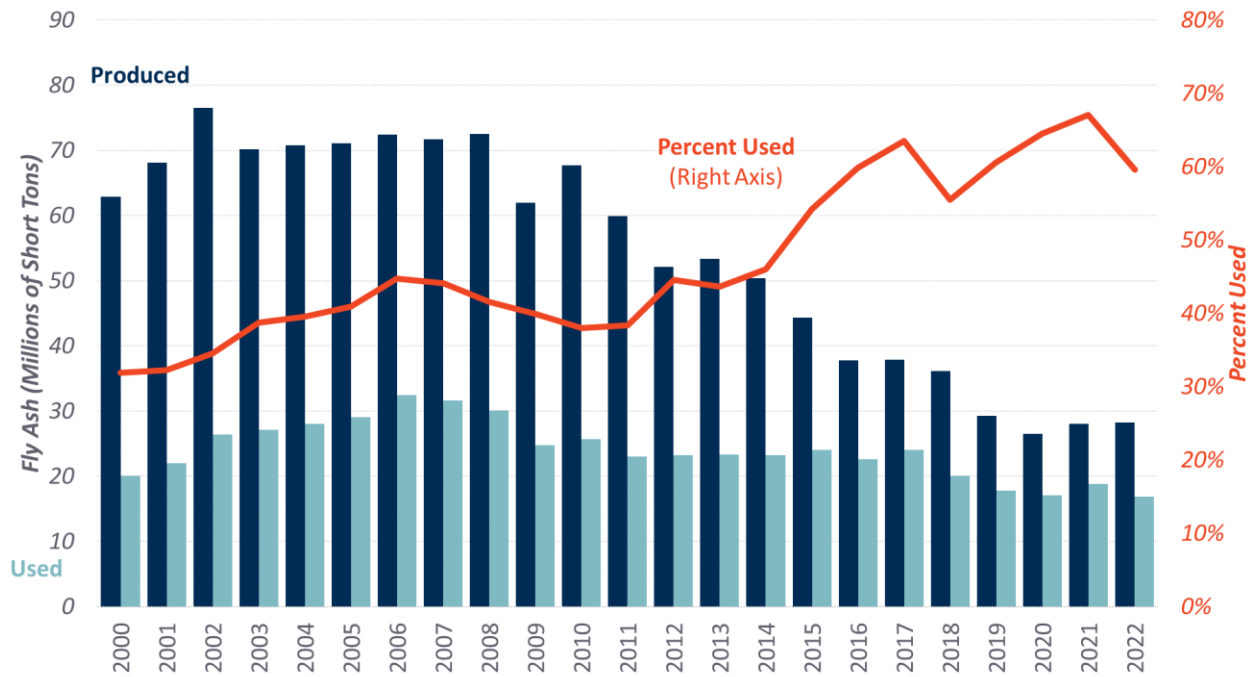
American Coal Ash Association – an organization that advances the environmentally responsible and technically sound use of coal ash as an alternative to disposal – has conducted a survey quantifying the production and use of coal combustion products in the United States each year since 1966. Data is compiled by directly surveying electric utilities and utilizing additional data produced by the U.S. Energy Information Administration. The survey's results have been widely utilized by federal agencies including the U.S. Environmental Protection Agency and U.S. Geological Survey.

Charts summarizing overall production and use data since 1991 and fly ash production and use since 2000 are included below. A complete copy of the 2022 survey results is on the final page.

### All CCPs Production and Use with Percent Used



### Fly Ash – Production and Use



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## 2022 Coal Combustion Product (CCP) Production & Use Survey Report

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

2022 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	28,227,974	7,576,840	1,565,764	17,308,377	4,576,313	3,214,471	0	12,772,198	75,241,938
Total CCPs Used by Category	16,831,464	2,981,553	733,028	14,428,769	4,677	42,903	0	11,813,474	46,835,868
1. Concrete/Concrete Products /Grout	10,915,822	505,825	23,519	182,961	0	0	0	0	11,628,126
2. Blended Cement/ Feed for Clinker	3,168,766	1,037,440	61,085	1,792,354	0	0	0	0	6,059,645
3. Flowable Fill	2,209	0	0	0	0	0	0	0	2,209
4. Structural Fills/Embankments	207,979	829,295	0	0	0	0	0	0	1,037,274
5. Road Base/Sub-base	4,497	120,462	0	0	0	0	0	0	124,959
6. Soil Modification/Stabilization	387,413	0	3,061	0	0	0	0	0	390,474
7. Mineral Filler in Asphalt	12,663	0	0	0	0	0	0	0	12,663
8. Snow and Ice Control	0	39,629	11,032	0	0	0	0	0	50,662
9. Blasting Grit/Roofing Granules	0	44,327	634,330	0	0	0	0	0	678,658
10. Mining Applications	0	0	0	0	0	0	0	11,813,474	11,813,474
11. Gypsum Panel Products (formerly Wallboard)	0	0	0	11,311,524	0	0	0	0	11,311,524
12. Waste Stabilization/Solidification	852,295	0	0	0	4,677	10,220	0	0	867,193
13. Agriculture	65	2,848	0	886,603	0	0	0	0	889,516
14. Aggregate	0	0	0	0	0	0	0	0	0
15. Oil/Gas Field Services	2,499	0	0	0	0	32,682	0	0	35,181
16. CCR Pond Closure Activities	1,221,559	401,725	0	140,430	0	0	0	0	1,763,714
17. Miscellaneous/Other	55,699	0	0	114,898	0	0	0	0	170,596

### 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	16,831,464	2,981,553	733,028	14,428,769	4,677	42,903	0	11,813,474	46,835,868
Category Use to Production Rate (%)	59.63%	39.35%	46.82%	83.36%	0.10%	1.33%	0.00%	92.49%	62.25%
2022 Cenospheres Sold (Pounds)	108,344	Data in this survey represents 78.10486 GWs of Name Plate rating of the total industry wide approximate 205.6617 GW capacity based on EIA's May 2022 Electric Power Monthly.							