

For Immediate Release



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Fly Ash Use in Concrete Increases Slightly As Overall Coal Ash Recycling Rate Declines

December 15, 2020 – Fifty-two percent of the coal ash produced during 2019 was recycled – marking the fifth consecutive year that more than half of the coal ash produced in the United States was beneficially used rather than disposed. The volume of fly ash used in concrete increased 1 percent over the previous year, but most other uses saw significant declines, leading to an overall decrease in recycling activity of 31 percent.

“As coal ash production declines, beneficial use markets are adopting new logistics and technology strategies to ensure these valuable resources remain available for safe and productive use in the highest value applications,” said Thomas H. Adams, executive director of the American Coal Ash Association (“ACAA”) – an organization that advances the environmentally responsible and technically sound use of coal ash as an alternative to disposal. “However, declining use in applications with lower economic value represents a lost opportunity to create significant environmental benefits. We must continue to support these practices that safely conserve natural resources while dramatically reducing the need for landfills.”

According to ACAA’s just-released “Production and Use Survey,” 41 million tons of coal combustion products were beneficially used in 2019 out of 78.6 million tons that were produced. The rate of ash utilization decreased from 58.1 percent to 52.1 percent and the total volume of material utilized decreased by 18.4 million tons compared to the previous year. Coal ash production volume decreased 23 percent (or 23.6 million tons) from 2018 levels.

“Coal ash” is a generic term that encompasses several Coal Combustion Products (CCP) that can be beneficially used in a wide variety of applications. Highlights of CCP production and use in 2019 include:

- Use of coal fly ash in **concrete** increased 1 percent to 12.6 million tons. Concrete producers and consumers indicated a desire to use more fly ash, but several regional markets were 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** declined 22 percent to 5 million tons.
- Utilization of a key “non-ash” coal combustion product also declined. 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 21 percent to 9.7 million tons.
- Synthetic gypsum use in **agricultural applications** – in which the gypsum improves soil conditions and prevents harmful runoff of fertilizers – declined 38 percent to 572,399 tons.
- Use of CCP in **pond closure activities** declined 26 percent to 2.4 million tons, but remained well above 2016’s total of only 435,000 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, boiler slag, and synthetic gypsum were all used in construction of new permanent disposal facilities.
- Following a one-year volume increase in 2018, use of CCP in **structural fills** resumed a multi-year decline in 2019, dropping 62 percent to 1.7 million tons.
- Production of boiler slag declined 37 percent as the number of cyclone boilers producing this material also continued to decline. Approximately 246,000 tons of boiler slag was utilized in the production of **blasting grit and roofing granules**. Approximately 362,000 tons of bottom ash was used in this application, a huge increase over 2018’s utilization of only 27,000 tons and an indication that consumers have begun to shift away from the declining boiler slag resource.
- Approximately 944,000 pounds of **cenospheres** were sold in 2019, down 21 percent from the prior year but still well above 2017’s volume of 148,000 tons. Increased cenosphere recovery was likely linked to increased pond closure activities.

“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 approximately one-quarter 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 CCPs 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 12 million tons in 2019 alone.

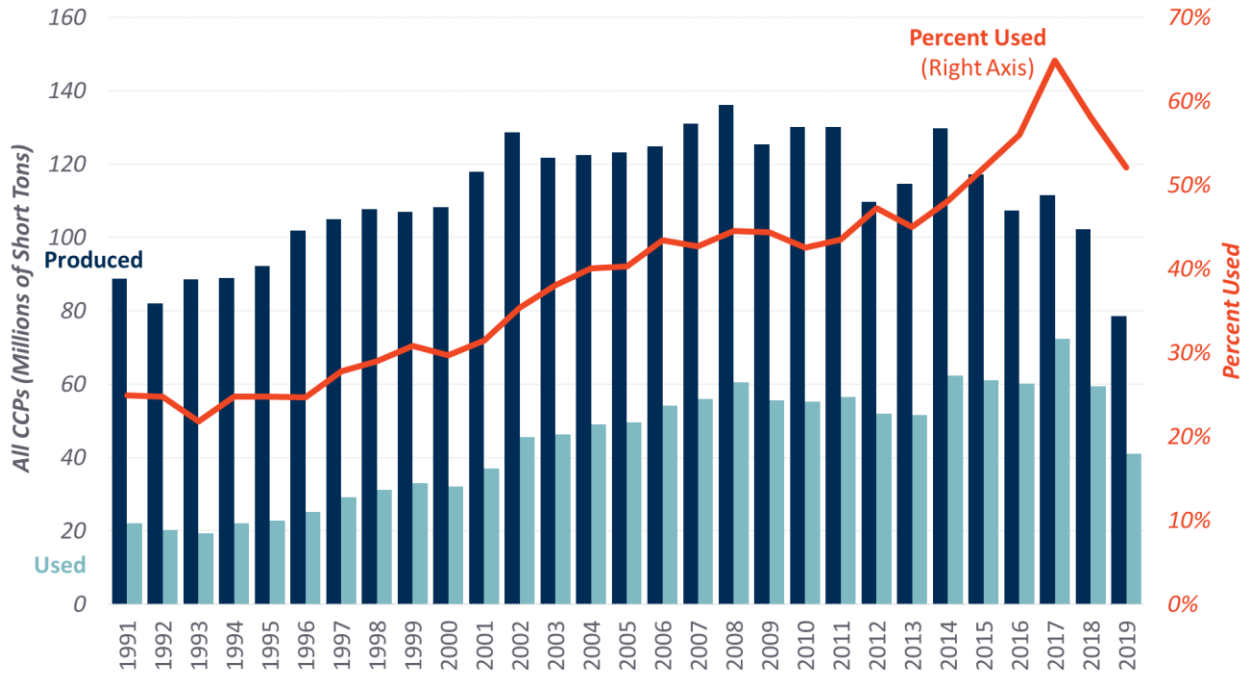
Major uses of coal combustion products include concrete, gypsum wallboard, blasting grit, roofing granules, and a variety of geotechnical and agricultural applications.

About ACAA’s Production and Use Survey

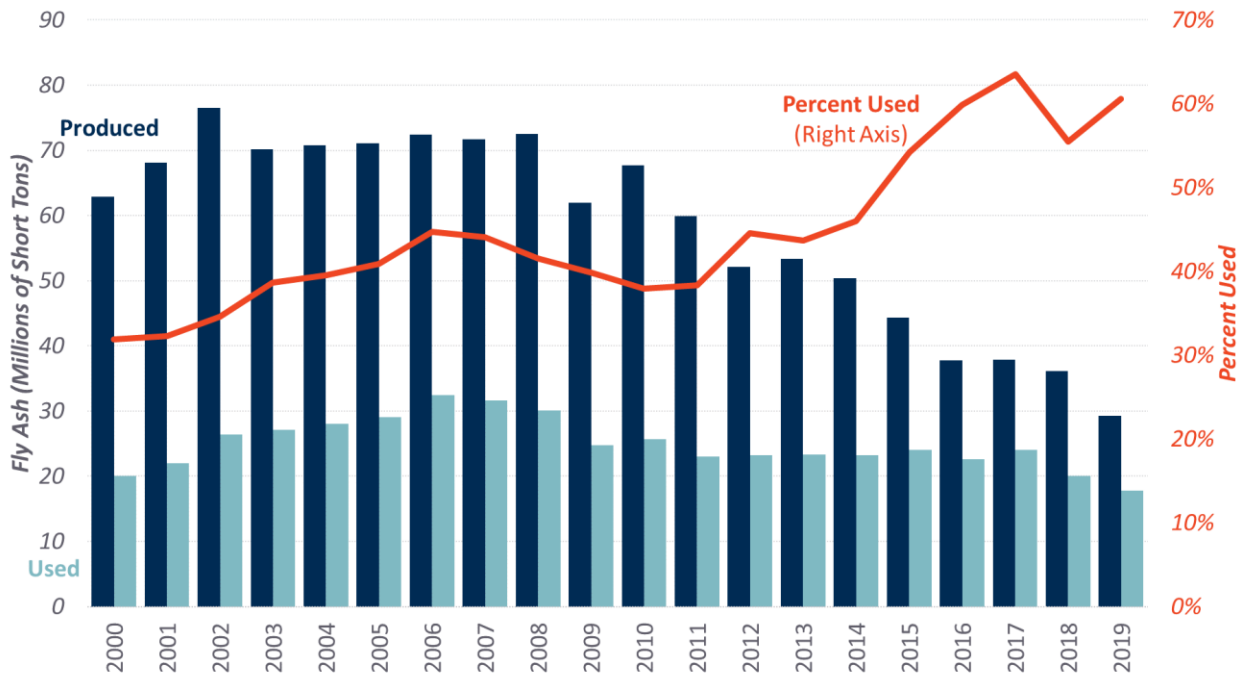
The American Coal Ash Association has conducted a survey quantifying the production and use of coal combustion products in the United States each year since 1966. Data is compiled by directly surveying electric utilities and utilizing additional data produced by the U.S. Energy Information Administration. 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 2019 survey results is on the final page.

All CCPs Production and Use with Percent Used



Fly Ash – Production and Use



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2019 Coal Combustion Product (CCP) Production & Use Survey Report

Beneficial Utilization versus Production Totals (Short Tons)

2019 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	29,319,239	9,150,680	965,138	22,975,581	6,217,129	3,707,974	18,428	6,293,721	78,647,890
Total CCPs Used by Category	17,768,235	2,923,586	697,001	13,285,876	359,529	90,346	0	5,882,468	41,007,041
1. Concrete/Concrete Products /Grout	12,604,878	332,036	0	95,090	0	10,300	0	0	13,042,304
2. Blended Cement/ Feed for Clinker	2,556,358	910,914	65,758	1,464,262	0	0	0	3,442	5,000,734
3. Flowable Fill	102,196	0	0	0	0	0	0	0	102,196
4. Structural Fills/Embankments	501,668	532,676	67,104	617,122	0	0	0	0	1,718,570
5. Road Base/Sub-base	154,822	105,869	0	0	0	0	0	0	260,690
6. Soil Modification/Stabilization	76,239	126,719	0	3,911	0	0	0	0	206,869
7. Mineral Filler in Asphalt	4,598	4,711	3,831	0	0	94	0	0	13,234
8. Snow and Ice Control	0	73,720	10,114	0	0	0	0	0	83,834
9. Blasting Grit/Roofing Granules	0	362,281	245,601	0	0	0	0	0	607,883
10. Mining Applications	17,282	0	0	0	0	0	0	5,831,652	5,848,935
11. Gypsum Panel Products (formerly Wallboard)	0	0	0	9,688,345	82,703	0	0	0	9,771,048
12. Waste Stabilization/Solidification	604,222	57,689	0	16,503	0	11,858	0	47,374	737,646
13. Agriculture	0	2,449	0	572,399	0	59,966	0	0	634,814
14. Aggregate	63,609	137	0	0	0	0	0	0	63,745
15. Oil/Gas Field Services	152,053	436	0	0	0	8,128	0	0	160,617
16. CCR Pond Closure Activities	720,411	357,558	304,592	713,573	276,826	0	0	0	2,372,960
17. Miscellaneous/Other	209,898	56,391	0	114,671	0	0	0	0	380,960

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	17,768,235	2,923,586	697,001	13,285,876	359,529	90,346	0	5,882,468	41,007,041
Category Use to Production Rate (%)	60.60%	31.95%	72.22%	57.83%	5.78%	2.44%	0.00%	93.47%	52.14%
2019 Cenospheres Sold (Pounds)	943,603	Data in this survey represents 152 GW of Name Plate rating of the total industry wide approximate 236 GW capacity based on EIA's July 2019 Electric Power Monthly.							