1987 Coal Combustion By-product—Production and Consumption*

(SHORT TONS**)

	FLY ASH	BOTTOM ASH	BOILER SLAG	FGD SLUDGE
A. By-product Production	50,113,178	14,715,570	4,115,899	14,204,638
Subtotal			**68,944,647**	
Total				**83,149,285**
B. By-product Consumption	11,049,576	4,769,054	2,436,178	1,021,032
Subtotal			**18,254,808**	
Total				**19,275,840**
1. External Market				
a. Cement and concrete products	6,331,331	803,907	119,246	688
b. Structural fills	178,268	230,538	41,114	893
c. Road base/Subbase	247,675	165,419	46,816	0
d. Mineral filler in asphalt	97,592	5,482	38,265	0
e. Snow and ice control	5,123	562,978	194,176	0
f. Blasting grit/Roofing granules	0	30,995	1,573,990	0
g. Grouting	129,124	0	0	0
h. Coal mining applications	73,737	370,842	0	0
i. Wallboard	1,281	0	0	155,866
j. Miscellaneous/Other	686,175	327,583	51,705	19,532
Subtotal	**7,750,305**	**2,497,743**	**2,065,312**	**176,978**
2. Internal Utility Use				
a. Cement and concrete products	387	0	0	0
b. Structural fills	1,349,315	574,060	3,202	0
c. Road base/Subbase	33,644	229,206	14,909	34,716
d. Snow and ice control	0	53,000	68,638	0
e. Miscellaneous/Other	1,915,924	1,415,046	284,117	809,338
Subtotal	**3,299,270**	**2,271,311**	**370,866**	**844,054**
C. By-product Consumption as a Percentage of Production by Individual By-product	22.0%	32.4%	59.2%	7.2%
D. By-product Consumption as a Percentage of Combined Production of Fly Ash, Bottom Ash & Boiler Slag Only			26.5%	

Comparative Results by Year***

E. By-product Production (million short tons) by Individual By-product and for Combined Production of Fly Ash, Bottom Ash & Boiler Slag Only

	1984	1985	1986	1987
Fly Ash	51.32	48.31	49.26	50.11
Bottom Ash	13.62	13.15	13.41	14.72
Boiler Slag	4.21	3.65	4.13	4.12
Combined	**69.15**	**65.11**	**66.80**	**68.95**

F. By-product Consumption (million short tons) by Individual By-product and for Combined Production of Fly Ash, Bottom Ash & Boiler Slag Only

Fly Ash	10.43	11.39	8.78	11.05
Bottom Ash	2.96	4.10	3.59	4.77
Boiler Slag	2.65	2.38	2.15	2.44
Combined	**16.04**	**17.87**	**14.52**	**18.26**

G. By-product Consumption (percent) as Percentage of Production by Individual By-product and as Percentage of Combined Production of Fly Ash, Bottom Ash & Boiler Slag Only

Fly Ash	20.3%	23.5%	17.8%	22.0%
Bottom Ash	21.7%	31.1%	26.7%	32.4%
Boiler Slag	62.9%	65.2%	51.9%	59.2%
Combined	**23.1%**	**27.4%**	**21.7%**	**26.5%**

*Based on total coal burn of 717,894,000 short tons by domestic electric utilities, as reported by the National Coal Association.
**1 short ton = 2,000 pounds.
1 metric ton = 1 short ton × 0.9078.
***Data is also available for 1966–1983.

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