1991 Coal Combustion By-product—Production and Consumption*

(SHORT TONS**)

	FLY *** ASH	BOTTOM *** ASH	BOILER *** SLAG	FGD *** MATERIAL
A. By-product Production	**51,300,000**	**13,300,000**	**6,050,000**	**18,100,000**
Subtotal			**70,700,000**	
Total				**88,800,000**
B. By-product Consumption	13,200,000	5,000,000	3,600,000	350,000
Subtotal			**21,800,000**	
Total				**22,150,000**
1. External Market				
a. Cement and concrete products	7,650,000	700,000	300,000	0
b. Structural fills	550,000	300,000	300,000	0
c. Road base/Subbase	900,000	350,000	100,000	< 100,000
d. Mineral filler in asphalt	100,000	< 50,000	< 100,000	0
e. Snow and ice control	< 50,000	1,050,000	550,000	0
f. Blasting grit/Roofing granules	0	< 50,000	1,950,000	0
g. Grouting	200,000	0	0	0
h. Coal mining applications	200,000	< 50,000	0	0
i. Wallboard	< 50,000	0	0	< 100,000
j. Waste Stabilization	400,000	0	0	0
k. Miscellaneous/Other	600,000	650,000	< 50,000	150,000
Subtotal	**10,650,000**	**3,100,000**	**3,350,000**	**300,000**
2. Internal Utility Use				
a. Cement and concrete products	< 100,000	< 50,000	0	0
b. Structural fills	2,000,000	550,000	0	0
c. Road base/Subbase	100,000	350,000	< 50,000	< 50,000
d. Snow and ice control	0	< 50,000	< 50,000	0
e. Miscellaneous/Other	450,000	950,000	250,000	< 50,000
Subtotal	**2,600,000**	**1,900,000**	**250,000**	**< 100,000**
C. By-product Consumption as a Percentage of Production by Individual By-product	25.8%	37.4%	59.2%	1.9%
D. By-product Consumption as a Percentage of Fly Ash, Bottom Ash, & Boiler Slag Only			30.8%	

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

	1988	1989	1990	1991
Fly Ash	50.91	53.38	48.93	51.30
Bottom Ash	14.27	14.21	13.71	13.30
Boiler Slag	5.03	4.27	5.23	6.05
Combined	**70.20**	**71.86**	**67.87**	**70.65**

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	11.36	10.15	12.42	13.20
Bottom Ash	5.43	4.85	5.36	5.00
Boiler Slag	2.83	2.52	3.25	3.60
Combined	**19.83**	**17.52**	**21.03**	**21.80**

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	22.3%	19.0%	25.4%	25.8%
Bottom Ash	38.1%	34.1%	39.1%	37.4%
Boiler Slag	56.4%	59.0%	62.1%	59.2%
Combined	**28.0%**	**24.4%**	**31.0%**	**30.8%**

*Based on total coal burn of 772,316,000 short tons by domestic electric utilities, as reported by the National Coal Association.
**1 short ton = 2,000 pounds.
metric tons = short tons X 0.9078
***All tons have been rounded to the nearest 50,000; all percentages are based on exact tonnage figures.
****Data is also available for earlier years beginning in 1966.

Compiled by the AMERICAN COAL ASH ASSOCIATION, INC., 1913 I Street, N.W., 6th Floor, Washington, DC 20006
Phone: 202-659-2303 FAX: 202-223-4984