

COAL COMBUSTION PRODUCTS STATISTICS¹

U.S. GEOLOGICAL SURVEY

[All values in metric tons gross weight]

Last modification: November 28, 2012

| Year | Fly ash production | Fly ash used | Bottom ash production | Bottom ash used | Boiler slag production | Boiler slag used | FGD material production | FGD material used | FBC ash production | FBC ash used | Total CCP production | Total CCP apparent consumption |
|-------------|---------------------------|---------------------|------------------------------|------------------------|-------------------------------|-------------------------|--------------------------------|--------------------------|---------------------------|---------------------|-----------------------------|---------------------------------------|
| 1966 | 15,500,000 | 1,270,000 | 7,350,000 | 1,540,000 | NA | NA | NA | NA | NA | NA | 22,900,000 | 2,810,000 |
| 1967 | 16,700,000 | 1,270,000 | 8,260,000 | 2,090,000 | NA | NA | NA | NA | NA | NA | 24,900,000 | 3,360,000 |
| 1968 | 18,000,000 | 1,720,000 | 6,620,000 | 1,630,000 | 2,360,000 | 1,360,000 | NA | NA | NA | NA | 26,900,000 | 4,720,000 |
| 1969 | 19,100,000 | 1,720,000 | 6,890,000 | 1,810,000 | 2,630,000 | 907,000 | NA | NA | NA | NA | 28,700,000 | 4,450,000 |
| 1970 | 24,000,000 | 2,000,000 | 8,980,000 | 1,630,000 | 2,540,000 | 998,000 | NA | NA | NA | NA | 35,600,000 | 4,630,000 |
| 1971 | 25,200,000 | 2,990,000 | 9,160,000 | 1,450,000 | 4,540,000 | 3,360,000 | NA | NA | NA | NA | 38,900,000 | 7,800,000 |
| 1972 | 28,800,000 | 3,270,000 | 9,710,000 | 2,360,000 | 3,450,000 | 1,180,000 | NA | NA | NA | NA | 42,000,000 | 6,800,000 |
| 1973 | 31,400,000 | 3,540,000 | 9,710,000 | 2,090,000 | 3,630,000 | 1,630,000 | NA | NA | NA | NA | 44,700,000 | 7,260,000 |
| 1974 | 36,700,000 | 3,080,000 | 13,000,000 | 2,630,000 | 4,350,000 | 2,180,000 | NA | NA | NA | NA | 54,000,000 | 7,890,000 |
| 1975 | 38,400,000 | 4,080,000 | 11,900,000 | 3,180,000 | 4,170,000 | 1,630,000 | NA | NA | NA | NA | 54,400,000 | 8,890,000 |
| 1976 | 38,800,000 | 5,170,000 | 13,000,000 | 4,080,000 | 4,350,000 | 2,000,000 | NA | NA | NA | NA | 56,200,000 | 11,200,000 |
| 1977 | 44,000,000 | 5,720,000 | 12,800,000 | 4,170,000 | 4,720,000 | 2,810,000 | NA | NA | NA | NA | 61,500,000 | 12,700,000 |
| 1978 | 43,800,000 | 7,620,000 | 13,300,000 | 4,540,000 | 4,640,000 | 2,720,000 | NA | NA | NA | NA | 61,800,000 | 14,900,000 |
| 1979 | 52,200,000 | 9,070,000 | 11,300,000 | 2,990,000 | 4,720,000 | 2,180,000 | NA | NA | NA | NA | 68,200,000 | 14,200,000 |
| 1980 | 43,800,000 | 5,820,000 | 13,100,000 | 3,860,000 | 3,300,000 | 1,590,000 | NA | NA | NA | NA | 60,200,000 | 11,300,000 |
| 1981 | 45,600,000 | 8,540,000 | 11,700,000 | 3,690,000 | 4,700,000 | 2,660,000 | NA | NA | NA | NA | 62,000,000 | 14,900,000 |
| 1982 | 43,500,000 | 7,210,000 | 11,900,000 | 3,290,000 | 3,960,000 | 1,790,000 | NA | NA | NA | NA | 59,300,000 | 12,300,000 |
| 1983 | 42,800,000 | 6,820,000 | 11,500,000 | 2,500,000 | 3,570,000 | 2,300,000 | NA | NA | NA | NA | 57,900,000 | 11,600,000 |
| 1984 | 46,600,000 | 9,460,000 | 12,400,000 | 2,690,000 | 3,820,000 | 2,400,000 | NA | NA | NA | NA | 62,700,000 | 14,600,000 |
| 1985 | 43,800,000 | 10,300,000 | 11,900,000 | 3,720,000 | 3,310,000 | 2,160,000 | NA | NA | NA | NA | 59,100,000 | 16,200,000 |
| 1986 | 44,700,000 | 7,960,000 | 12,200,000 | 3,250,000 | 3,750,000 | 1,950,000 | NA | NA | NA | NA | 60,600,000 | 13,200,000 |
| 1987 | 45,500,000 | 10,000,000 | 13,400,000 | 4,330,000 | 3,740,000 | 2,210,000 | 12,900,000 | 925,000 | NA | NA | 75,400,000 | 17,500,000 |
| 1988 | 46,200,000 | 10,300,000 | 12,900,000 | 4,930,000 | 4,560,000 | 2,570,000 | 12,300,000 | 844,000 | NA | NA | 76,000,000 | 18,600,000 |
| 1989 | 48,400,000 | 9,210,000 | 12,900,000 | 4,400,000 | 3,870,000 | 2,290,000 | 14,200,000 | 103,000 | NA | NA | 79,300,000 | 16,000,000 |
| 1990 | 44,400,000 | 11,300,000 | 12,400,000 | 4,860,000 | 4,740,000 | 2,950,000 | 17,200,000 | 196,000 | NA | NA | 78,700,000 | 19,300,000 |
| 1991 | 46,500,000 | 12,000,000 | 12,100,000 | 4,540,000 | 5,490,000 | 3,270,000 | 16,400,000 | 318,000 | NA | NA | 80,500,000 | 20,100,000 |
| 1992 | 43,600,000 | 11,900,000 | 12,600,000 | 3,510,000 | 3,730,000 | 2,810,000 | 14,400,000 | 260,000 | NA | NA | 74,400,000 | 18,500,000 |
| 1993 | 43,400,000 | 9,540,000 | 12,900,000 | 3,840,000 | 5,660,000 | 3,110,000 | 18,500,000 | 1,050,000 | NA | NA | 80,400,000 | 17,500,000 |
| 1994 | 49,800,000 | 11,700,000 | 13,500,000 | 4,610,000 | 3,440,000 | 2,830,000 | 14,100,000 | 850,000 | NA | NA | 80,800,000 | 20,000,000 |
| 1995 | 49,200,000 | 12,300,000 | 13,800,000 | 4,600,000 | 2,550,000 | 2,440,000 | 18,300,000 | 1,340,000 | NA | NA | 83,700,000 | 20,700,000 |
| 1996 | 53,900,000 | 14,700,000 | 14,600,000 | 4,430,000 | 2,360,000 | 2,170,000 | 21,700,000 | 1,500,000 | NA | NA | 92,400,000 | 22,800,000 |
| 1997 | 54,700,000 | 17,500,000 | 15,400,000 | 4,600,000 | 2,490,000 | 2,340,000 | 22,800,000 | 1,980,000 | NA | NA | 95,400,000 | 26,500,000 |
| 1998 | 57,200,000 | 19,200,000 | 15,200,000 | 4,760,000 | 2,710,000 | 2,170,000 | 22,700,000 | 2,260,000 | NA | NA | 97,800,000 | 28,400,000 |
| 1999 | 56,900,000 | 18,900,000 | 15,300,000 | 4,930,000 | 2,620,000 | 2,150,000 | 22,300,000 | 4,030,000 | NA | NA | 97,100,000 | 30,000,000 |
| 2000 | 57,100,000 | 17,600,000 | 15,400,000 | 4,460,000 | 2,430,000 | 2,120,000 | 23,300,000 | 4,380,000 | NA | NA | 98,200,000 | 28,600,000 |
| 2001 | 61,800,000 | 20,000,000 | 17,000,000 | 5,180,000 | 2,300,000 | 1,650,000 | 25,800,000 | 6,880,000 | NA | NA | 107,000,000 | 33,700,000 |

COAL COMBUSTION PRODUCTS STATISTICS¹
U.S. GEOLOGICAL SURVEY

[All values in metric tons gross weight]
 Last modification: November 28, 2012

| Year | Fly ash production | Fly ash used | Bottom ash production | Bottom ash used | Boiler slag production | Boiler slag used | FGD material production | FGD material used | FBC ash production | FBC ash used | Total CCP production | Total CCP apparent consumption |
|------|--------------------|--------------|-----------------------|-----------------|------------------------|------------------|-------------------------|-------------------|--------------------|--------------|----------------------|--------------------------------|
| 2002 | 69,400,000 | 24,200,000 | 18,000,000 | 6,980,000 | 1,740,000 | 1,400,000 | 26,500,000 | 7,890,000 | 1,130,000 | 865,000 | 117,000,000 | 41,300,000 |
| 2003 | 63,700,000 | 24,600,000 | 16,400,000 | 7,490,000 | 1,670,000 | 1,590,000 | 28,000,000 | 8,150,000 | 723,000 | 239,000 | 110,000,000 | 42,100,000 |
| 2004 | 64,200,000 | 25,500,000 | 15,600,000 | 7,400,000 | 2,000,000 | 1,790,000 | 28,500,000 | 9,450,000 | 787,000 | 429,000 | 111,000,000 | 44,500,000 |
| 2005 | 64,500,000 | 26,400,000 | 16,000,000 | 6,840,000 | 1,780,000 | 1,720,000 | 28,200,000 | 9,180,000 | 1,240,000 | 857,000 | 112,000,000 | 45,000,000 |
| 2006 | 65,700,000 | 29,400,000 | 16,900,000 | 7,600,000 | 1,840,000 | 1,530,000 | 27,400,000 | 9,650,000 | 1,430,000 | 978,000 | 113,000,000 | 49,200,000 |
| 2007 | 65,000,000 | 28,700,000 | 16,400,000 | 6,630,000 | 1,880,000 | 1,510,000 | 30,100,000 | 9,350,000 | 5,530,000 | 5,570,000 | 119,000,000 | 51,800,000 |
| 2008 | 65,700,000 | 27,300,000 | 16,700,000 | 7,330,000 | 1,840,000 | 1,530,000 | 30,500,000 | 10,700,000 | 8,610,000 | 8,040,000 | 123,000,000 | 55,000,000 |
| 2009 | 57,200,000 | 22,400,000 | 15,100,000 | 6,350,000 | 1,970,000 | 1,660,000 | 28,300,000 | 9,380,000 | 11,400,000 | 10,700,000 | 114,000,000 | 50,500,000 |
| 2010 | 61,400,000 | 23,300,000 | 16,100,000 | 6,840,000 | 2,120,000 | 1,290,000 | 29,100,000 | 10,800,000 | 9,310,000 | 7,920,000 | 118,000,000 | 50,200,000 |
| 2011 | 54,300,000 | 20,800,000 | 15,000,000 | 5,520,000 | 1,820,000 | 1,250,000 | 34,900,000 | 12,500,000 | 12,000,000 | 11,300,000 | 118,000,000 | 51,300,000 |

NA Not available.

¹Compiled by T.D. Kelly (retired), D.E. Sullivan (retired), and H. van Oss from annual survey data published by the American Coal Ash Association. Data are calculated, estimated, or reported. See notes for more information.

Coal Combustion Products Worksheet Notes

Data Sources

For 1994–2001, data were from the Minerals Yearbook (MYB). From 2002 to the most recent year, data were from Coal Ash Association's Coal Combustion Product (CCP) Production and Use Survey (American Coal and Ash Association, Inc.). For 1966–93, data were recorded from the American Coal and Ash Association's Coal Combustion Byproduct (CCB) Production and Use: 1966–1994 (CCBPU).

Production

Data were from the MYB and CCBPU for fly ash, bottom ash, boiler slag, and flue gas desulfurization (FGD) material. Data were not available for 1966 and 1967 for boiler slag, and for 1966–86 for FGD material. FBC (Fluid Bed Combustion) ash is reported for the first time in 2002. In prior years, FBC ash was reported as flyash. Beginning in 2007, data include ARIPPA FBC ash. Data excluding this ash were 1,270,000 metric tons in 2007 but breakout data were unavailable for later years.

Used

Boiler slag, bottom ash, fly ash, and FGD material are reported in the MYB and CCBPU. Data were not available for 1966 and 1967 for boiler slag, and 1966–86 for FGD material. FBC ash is reported for the first time in 2002. Beginning in 2007, data include ARIPPA FBC ash. Data excluding this ash were 324,000 metric tons in 2007, but breakout data were unavailable for later years.

Total CCP Production

Total CCP production represents the sum of boiler slag, bottom ash, fly ash, FBC ash, and FGD material produced. The boiler slag, FBC ash, and FGD material are not included for the years in which the data were not available.

Total Apparent Consumption

Total CCP apparent consumption represents the sum of boiler slag, bottom ash, fly ash, FBC ash, and FGD material produced. The boiler slag, FBC ash, and FGD material are not included for the years in which the data were not available.

References

American Coal Ash Association, Inc., 1996, Coal combustion byproduct (CCB) production and use: 1966–1994, 59 p.

American Coal Ash Association, Inc., 2004–most recent, Coal combustion product (CCP) production and use survey, available via <http://www.aca-usa.org/>.

U.S. Geological Survey, 1997–2003, Minerals Yearbook, v. I, 1995–2001.

Recommended Citation Format:

U.S. Geological Survey, [year of last update, e.g., 2005], [Mineral commodity, e.g., Gold] statistics, *in* Kelly, T.D., and Matos, G.R., comps., Historical statistics for mineral and material commodities in the United States: U.S. Geological Survey Data Series 140, accessed [date], at <http://pubs.usgs.gov/ds/2005/140/>.

Coal combustion products are no longer monitored by the U.S. Geological Survey.

For more information, please contact:

The American Coal Ash Association at <http://www.aca-usa.org/>.