PRODUCTION AND USE OF COAL COMBUSTION PRODUCTS (CCPS)

CCP Production and Use statistics have been collected annually by Statistics Canada on behalf of Natural Resources Canada, Minerals & Metals Division from 1999-2006 and published in "Mineral and Metal Commodity Reviews"[1] under Cement (Table 4), reflecting the majority of CCP usage as a performance-enhancing, supplementary cementing material (SCM) in production of cement and concrete:

http://www.nrcan-rncan.gc.ca/mms-smm/busi-indu/cmy-amc/com-eng.htm

Note: From 2005, data presents 3-year averages, i.e: 2005 figures represent average data from 2003, 2004 & 2005

CCPs were also addressed in 2005 in the "Recycled Metals" chapter of the Canadian Minerals Yearbook, as "non-ferrous ash", capturing CCPs' value in the context of recycled minerals and metals in Canada:

http://www.nrcan-rncan.gc.ca/mms-smm/busi-indu/cmy-amc/content/**2005**/72.pdf

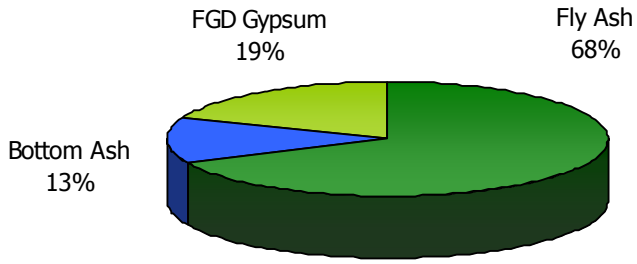
2004-2006 data is the most recent published, as of October, 2010.

CIRCA continues to encourage NRCan to restore collection of this important data.

Graphic presentations, below, are based on NRCan data most recently published to the worldwide web.

Canadian recycling and use of CCPs is increasing. Production and Use data collected by Natural Resources Canada (2004-2006) indicates Canadians recycled 30% of CCPs produced in valued construction applications nationwide.

Average Annual CCP Production in Canada
2004-2006



Fly Ash comprises the vast majority of annual CCP production; it is the CCP most widely used in cement, concrete and a growing range of "non-traditional" applications, including paints and plastics. In Canada, FGD (Flue Gas Desulfurization) Gypsum is used principally in the manufacture of wallboard.

Averaged over 2004-2006, **31% of Fly Ash, 15% of Bottom Ash** and **95% of FGD Gypsum** generated were directed to beneficial use **amounting to an overall 30% use rate** (Table, below).

CANADA, PRODUCTION (1) **AND USE** (2) **OF COAL COMBUSTION PRODUCTS (CCPs), 2004-06 AVERAGE**					
	Fly Ash	**Bottom Ash**	**FGD Gypsum**	**Other** (3)	**Total CCPs**
		(000 tonnes)			
PRODUCTION					
Produced	4189	1658	385	184	6424
Disposed / Stored	3285	1390	–	184	4859
Removed from Disposal	2	37	1	–	39
USE (DOMESTIC)					
Cement	638	147	10	–	795
Concrete / Grout	472	–	0	–	472
Mining Applications	89	–	0	–	89

[1] "Mineral and Metal Commodity Reviews" was previously published under the title "Canadian Minerals Yearbook", Natural Resources Canada.

Roadbase / Subbase	17	94	0	–	111
Wallboard	–	–	313	–	313
Other (4)	84	6	43	–	133
TOTAL USE	1300	247	366	–	1913
Individual Use Percentage	**31**	**15**	**95**	–	**30**
– Nil.					

(1) Reported production of coal combustion products (CCPs) may include both dry & ponded categories.

(2) Use (domestic), as reported, includes amounts imported (assumed World Customs Organization's Harmonized Standard codes 2621.00 relating to fly ash and HS 2520.10 relating to gypsum).

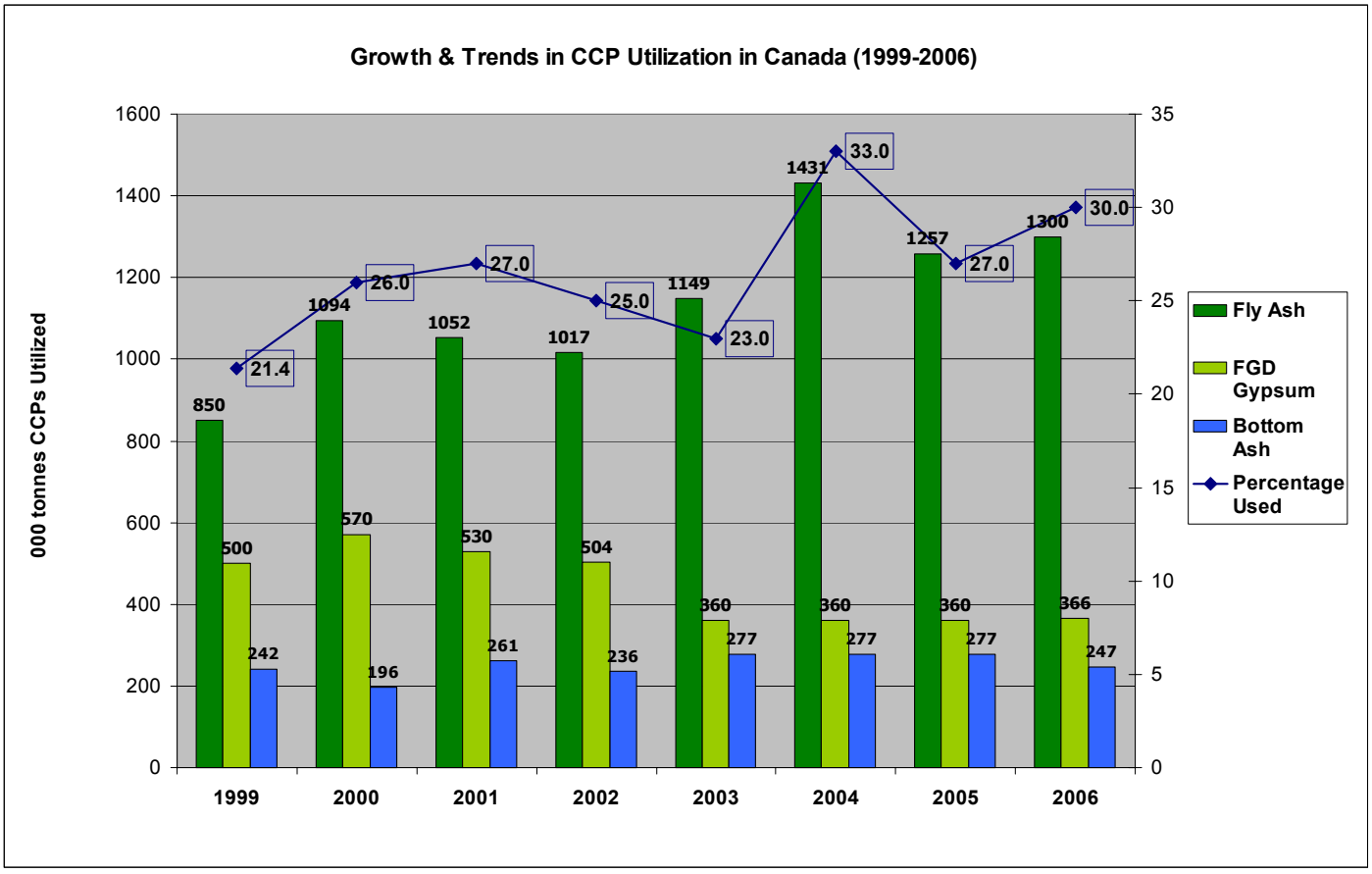
(3) CFB (Circulating Fluidized Bed) Fly Ash and Bottom Ash.

(4) Includes waste stabilization and specialty uses such as mineral filler and flowable fill.

Note: Numbers may not add to totals due to rounding.

Source: Natural Resources Canada, Minerals and Metals Sector, Mineral & Metals Commodity Reviews, under Cement, (Table 4): http://www.nrcan-rncan.gc.ca/mms-smm/busi-indu/cmy-amc/content/**2006**/17.pdf

Canadian use rates have climbed steadily since the late '90s. 2006's 30% utilization represents significant improvement in national recycling rates over the previous 8 years; in 1999 only 21.4% of Canada's CCPs produced were recycled (chart, below):



2003, 2004 & 2005 data shown above are 3-year averages (reported in 2005 for Bottom Ash and FGD Gypsum for 2003-2005) as individual data were not reported for those years.

Considerable opportunity remains to improve Canadians' CCP recycling rate. As sustainability becomes an increasingly compelling driver of public policy, it is logical that Canadian CCP recycling rates will increase.

Global Context

Canada's 2006 overall use rate (30% of annual production) is on par with Australia's 30% (2007) use

rate [2] , but modest compared to those of other international counterparts. 2006 use rates in the US (43%) [3] and the European Union [4] (93%) reflect these nations':

- commitment to beneficial application of mineral by-products;
- openness to non-traditional use, specifically in mining and agricultural applications;
- broader definition of "beneficial use", specifically in mining applications;
- specifications, regulations and legislation that support use of CCPs in a broader spectrum of applications.

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2 "Annual Membership Survey Results, Jan. – Dec., 2007", Ash Development Association of Australia : http://www.adaa.asn.au/docs/ADAA_Mship_Report_2007.pdf

3 "2006 Coal Combustion Product (CCP) Production and Use Survey" American Coal Ash Association: http://acaa.affiniscape.com/associations/8003/files/2006_CCP_Survey_(Final-8-24-07).pdf

4 "Production and Utilisation of CCPs in 2006 in Europe (EU15)", European Coal Combustion Products Association: http://www.acaa-usa.org/associations/8003/files/ECOBA_Stat_2006_EU15.pdf