



**ASH Development
Association of Australia**

Ash Development Association of Australia

Annual Membership Survey Results

January - December 2007

Prepared by
HBM Group Pty Ltd

Membership Survey Results: 2007

The Ash Development Association of Australia (ADAA) conducts an annual survey for information regarding coal combustion products (CCPs) production and sales by members and non-members for each calendar year. This report provides results for the 2007 calendar year.

Information provided by members and non-members is collated and then aggregated into a national set of results and include CCP production levels, and nominated uses for all CCP products.

For the calendar period January to December 2007, approximately 30% of all CCPs produced were utilised within various civil and construction applications throughout Australasia.

The survey results include all generators, marketers, (processing and marketing companies) and users for the total production and resulting sales by each end use. Where required, data is supplemented with importation data and other secondary data¹ sources for accuracy purposes.

The key results for the calendar period 2007 survey were:


- Approximately 14.5 Mt (million tonnes) of CCPs were produced within Australasia. On a per capita basis, this equates to about 659 kg/person
- Some 4.308 Mt (or 30%) of CCPs have been effectively utilised in various value-added products or to some beneficial end over the period. On a per capita basis, this equates to about 195 kg/person recycled or reused.
- Approximately 1.504 Mt (or 11%) was used in high value-added applications such as cementitious applications or concrete manufacture. This use resulted in more than 1.2 million tonnes of CO₂-^e being abated through reduced requirements for clinker manufacture
- About 0.5 Mt (or 4%) were used in non-cementitious applications
- Some 2.2 Mt (or 15%) was used in projects offering some beneficial use (e.g. onsite mine site remediation, local haul roads etc.). These uses typically generate no economic return, that is, cost recovery only.
- Surplus CCPs (10.2 Mt) are typically placed into onsite storage ponds awaiting some future opportunity for economic reuse
- More than 26 million tonnes of CCPs [fly ash] have been used in cementitious applications or concrete manufacture from 1975 to 2007 [32 years] or 18 million tonnes of CO₂-^e being abated through reduced clinker manufacture

In summary the recovery and reuse of CCPs provide significant positive environmental impacts, including resource conservation and in this case, the reduction of greenhouse gas emissions from the processing of virgin resources.

¹ Company annual reports and other published data sources

The following table provides more detail for individual category sales of CCPs for the 2007 calendar year.

Table 1 - 2007 CCP Sales and Production Survey

 ASH Development Association of Australia	Ash Development Association of Australia "2007" CCP Production & Use Survey			
A. Coal Burned	Tonnes Consumed	Avg % Ash Content	Ash (Auto-Calc)	
Bituminous (Black Coal)	55,259,503	22.40%	12,378,129	
Sub-bituminous	4,022,445	20.23%	813,741	
Lignite (Brown Coal)	57,850,000	2.22%	1,285,427	
Total Coal Burned (Auto-calc)	117,131,948	12.36%	14,477,296	
B. CCPs Beneficial Use Calculations (Tonnes)	Fly Ash	Bottom Ash	Cenospheres	Combined
1. Total Produced in 2007 (Jan-Dec)	12,299,592	2,051,357	32,374	14,383,323
2. Total 2007 Production not used [Stored]	10,410,705	1,856,059	198	12,266,962
3. Total 2007 Production Placed in Storage Inventory in 2007	0	0	0	0
4 Total of 2007 Production Used (Auto-Calc)	1,888,887	195,298	32,176	2,116,361
5. Amount removed or diverted from storage during 2007	2,190,625	2,000	0	2,192,625
6. Total of All Used in 2007 (Auto-Calc)*	4,079,512	197,298	32,176	4,308,986
C. CCP Use (Tonnes)	Fly Ash	Bottom Ash	Cenospheres	Combined
Category 1				
Concrete/Concrete Products /Grout	<u>1,472,456</u>	<u>0</u>	<u>32,176</u>	<u>1,504,632</u>
Cement/ Raw Feed for Clinker				
Mineral Fillers				
Category 2				
Flowable Fill CLSM				
Structural Fills/Embankments				
Road Base/Sub-base	<u>255,988</u>	<u>203,282</u>	<u>0</u>	<u>459,270</u>
Soil Modification/Stabilization				
Mineral Filler in Asphalt				
Agriculture				
Aggregate				
Category 3				
Mining Applications (e.g. Backfill)	<u>4,759</u>	<u>0</u>	<u>0</u>	<u>4,759</u>
Waste Stabilization/Solidification				
Miscellaneous/Other				
Total Use (C1 - C12)*(Auto-calc)	<u>1,733,203</u>	<u>203,282</u>	<u>32,176</u>	<u>1,968,661</u>
D. Summary Results	Fly Ash	Bottom Ash	Cenospheres	Combined
7. Total of All Sold in 2007 (Auto-Calc)*	1,733,203	203,282	32,176	1,968,661
6. Total of All Beneficially Used in 2007 (Auto-Calc)*	2,346,309	(5,984)	0	2,340,325