

CCP – WASTE OR RESOURCE: BREAKING THE REGULATORY PARADIGMS

Craig Heidrich¹, Colin R. Ward^{2,4}, David French^{3,4}, and Harry Bowman⁵

¹Ash Development Association of Australia, PO Box 1194, Wollongong 2500; (presenting co-author) ²School of Biological, Earth and Environmental Sciences, University of New South Wales, Sydney 2052; ³CSIRO Energy Technology, PMB 7, Menai 2234; ⁴Co-operative Research Centre for Coal in Sustainable Development, PO Box 883 Kenmore 4069; ⁵Consultant Geologist, 16 Viburnum Rd, Loftus 2232

KEYWORDS: CCP, fly ash, furnace bottom ash, resource, regulation, applications, agriculture

ABSTRACT

Although regulations have classified the solid products of coal combustion in pulverised fuel power stations, e.g. fly ash and bottom ash (generally referred to as coal combustions products or CCP) as wastes, CCP are increasingly being recognised as a useful mineral resource, with applications and potential applications that include the cement and concrete industries, stabilisation of engineered soils for construction purposes, production of synthetic aggregates and zeolites, and improvement of soils for agriculture and horticulture. This paper discusses applications with greatest potential in the Australian context: (1) backfill in mining operations, and the resultant benefits to the mine through rehabilitation, subsidence control and other mechanisms; (2) improving poor structural or weathered soils through amendment with CCP, leading to increased agricultural yields. The mineralogical, geotechnical and geochemical characteristics of individual ashes may vary, depending on the coal feedstock and combustion conditions. The mobility of particular elements may also vary, depending in part of the environmental conditions and soil types onto which the CCP are applied. Site-specific studies of the chemical interactions between CCP, soils, rock and water may be significant in establishing the environmental risks, if any, associated with use. The regulatory framework within which CCP are used for these applications also needs to be taken into account, requiring some paradigm shift.

Submitted for consideration in the World of Coal Ash 2007 Conference, held May 7-10, 2007.