Friday, September 01, 2006

Inquiry into Waste Generation and Resource Efficiency
Productivity Commission
Locked Bag2, Collins Street East
Melbourne VIC 8003

Email: waste@pc.gov.au

RE: Draft Report on Waste Management, Productivity Commission 2006

The Australasian (Iron & Steel) Slag Association[1] ("the ASA") welcomes the opportunity to submit comments to the Productivity Comission ("the PC") in relation to the – "Draft Report on Waste Management, Productivity Commission 2006" ("the Report").

INTRODUCTION

Our association's aims are to facilitate the responsible and increased utilisation of iron and steel slags (ISS) as valued recovered resource. Currently, some 78 percent of all ISS produced are utilised within various civil and construction applications throughout Australia.

Members including Generators, (Iron & Steel plants) Marketers, (Reprocessing and Marketing Companies) and downstream users are surveyed for the total production and resulting sales by uses. Response rates are typically over 95 percent. The key results for the calendar period 2005 survey were:

- For the calendar period 2005 approximately 3.1 Mt (million tonnes) of iron and steel slag products were produced within Australasia (Australia and New Zealand).
- From the slag's produced, some 2.35 Mt or 78 percent can be said to have been effectively utilised. On per capita basis this equates to 118 kgs per person recycled or reused.
- 25 percent or 0.595 Mt was used in cementitious applications
- 75 percent or 1.763 Mt was used in non cementitious applications
- The balance of 0.75 Mt or remaining surplus stored onsite awaiting some future opportunity for economic reuse[2]
- From 1989 to 2005 utilisation rates have increased from 21 percent to 78 percent.

[1] The Australasian Slag Association Incorporated was formed in 1990 by a group of leading steel, cement, quarrying and slag processing companies. With the common interest of the member companies to increase the community, business and government awareness of the superior construction properties and value added benefits derived from the various iron and steel furnace slags. The activities of the ASA are primarily focused on increasing users, stakeholders, and regulators awareness of the benefits arising through the effective utilisation of slag, which is a valuable renewable resource.

[2] Heidrich, C. SCM's potential to lower Australia's greenhouse gas emissions profile. in Iron and Steel Slag Products: A significant resource in a time of scarcity. 2005. Sydney, NSW, Australia: Australasian (iron & steel) Slag Association.

- Revenues of more than $60 million were generated from the reuse of 2.35 Mt.

Surplus ISS represent a significant alternative raw material (ARM), with characteristics and properties lending themselves to a wide range of potential applications (cement, concrete manufacture and engineering fills) and when effectively utilised, ISS can provide significant positive environmental impacts and economic returns.

COMMENTS ON THE REPORT FINDINGS & RECOMMENDATIONS

Firstly, the ASA welcomes many of the report findings and considers the commissions recommendations to be sound and with merit in regard to waste management and resource efficiency.

The commission's attention is drawn to the recent publication of the "Cement Industry Action Agenda"[3] (CIAA) report. It is noteworthy that a number of recommendations arising from CIAA report strike some accord with the commission's findings. In particular those in relation to addressing regulatory barriers and those that frustrate the use of recovered resources. We encourage the commission to review the findings of the CIAA report, as they represent a significant and independent source, supporting the recommendations within commission's report.

In particular, we strongly support the commission recommendations of 7.1, 12.2, 12.3, 12.4, 13.1 and 13.2. That is, we would advocate strongly for the retention of these recommendations into the final report.

Response approach to recommendations arising from the report - we have limited our comments on those findings and recommendations of relevance to our industry and members. Where we have made no comment/s, it can be said we are in general agreement, to the limit of our interest, with the commission's recommendations.

DRAFT FINDING 2.2

Whilst we support the commissions general findings in this regard, the report should not ignore, where data is comparable, that efforts can be undertaken to establish international comparison for best practice purposes. That is, utilisation practices. These comparisons can be insightful and important in determining appropriate policy, leading to effective industry action.

DRAFT RECOMMENDATION 12.2 & 12.3

In context of issues raised in chapter 12 of report, institutional and regulatory impediments have figured as significant imposts for our members and have frustrated many attempts to develop and sustain new market uses for ISS.

It is noteworthy for the volumes currently utilised, some 2.35 million tonnes annually, we acknowledge that there is general acceptance by regulators for these typical uses for ISS, that is, for use by the cement and concrete sector and as general engineering fill. To this end there have been significant achievements to gain some exemptions for the use of ISS, but there are still considerable barriers to overcome.

[3] DITR (2006). Punching Above its Weight - Australia's Cement Industry. Canberra, Department of Industry, Tourism and Resources: pp. 87.

Where attempts have been made by members to expand this list of typical uses, regulations, moreover so called waste levies have been used inappropriately to frustrate these endeavors.

We support the commission's recommendation for state and territory environmental regulators to undertake a review of those regulatory requirements that lead to the unnecessary regulation of byproduct materials where it can be demonstrated that the materials can be safely reused or recycled.

The commission's call for further information in relation to the costs and benefits of harmonising "waste classification systems" is an interesting one. The report is devoid of any substantive economic analysis or conclusions. We believe the commission's report presents much of the evidence required to form these conclusions.

We see "waste management requirements" as requiring some considerable effort, but separate from any resultant "material classification system". The inclusion of a "waste exemption system" within any recommendation for a classification system, where environmental bona fides are demonstrated would helpful.

We strongly support the goal to develop a national classification system that is both "low cost", and balances the needs of state jurisdictions, thus leading towards, over time, regulatory convergence.

Classification systems, for example NSW EG's[4], of both virgin materials and wastes exist and are appropriate and necessary to determine levels of environmental risk. The key is the development and general agreement on a national classification system, that is both broadly supported by industry and governments. This may not be that costly given their existence.

What is costly from the current fragmented state based system is the range of classification systems which result in various jurisdictions and differing laboratory test procedures, multiplying the costs of analysis, interpretation and reporting, as well as industry management time.

DRAFT RECOMMENDATION 13.1

The Environment Protection and Heritage Council is an organisation we have engaged with and who's goals we broadly support. Whilst we generally support the principles to coordinate the development of a concise, nationally consistent, data set for waste management that would facilitate evaluation and comparison of waste management policies across jurisdictions.

We wish to offer the following observations about EPHC, in particular the NEPC and methodologies used to develop consensus positions. Members of the NEPC are ministers, although not necessarily environment ministers, appointed by the principal ministers of participating jurisdictions. Given the membership constitution, decisions can be distorted by political motives from time to time and furthermore lead to frustration of efficient outcomes.

GENERAL COMMENTS ON THE REPORT

[4] NSW EPA (1999). Environmental Guidelines: Assessment, Classification & Management of Liquid & Non-liquid Wastes. EPA 99/21. Sydney, NSW, Australia, Environment Protection Authority.

Glossary

Definitions additions:

Iron Blast Furnace Slag (BFS) is a by-product of the iron making process. Air Cooled Blast Furnace Slag (ABFS), predominantly a crystalline structured rock, has very similar properties to igneous rock (Basalt), although more vesicular, and forms when the molten slag is allowed to solidify slowly in ground bays. ABFS products have comparable properties and similar end uses to conventional quarried products such as; fine and coarse aggregate in concrete, road construction products and other similar applications. ABFS can also be referred to as Rock Slag or Air Cooled Slag.

Granulated Blast Furnace Slag (GBFS) is formed when the molten iron slag is rapidly quenched with high volume high-pressure water sprays. GBFS is essentially an alumino-silicate glass. On observation, GBFS resembles a coarse river sand with top size of 8 mm. The unprocessed form GBFS can be used as a fine aggregate and binder in road and hard-stand pavement products. GBFS is also referred to as Granulate.

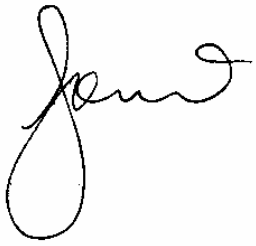
Steel Furnace Slag (SFS) is produced in the process of refining molten iron and recycled steel in the presence of oxygen and fluxes to produce steel and molten slag in a Basic Oxygen Steelmaking Vessel (BOS). After the separation of metallics, the slag material is transformed into a range of products by conventional crushing and screening processes. Aggregates and fine materials are produced to comply with relevant Australian Standards and/or customer requirements.

Electric Arc Furnace Slag (EAFS) is a by-product of the steel making process. Steel and molten slag is produced during the melting and refining of recycled steel using electrical energy and fluxes. EAFS solidifies in a similar manner to lava from a volcano. Its cooled structure is best described as a solid solution of oxides. The solidified material is excavated by a front-end loader from the bays when cooled, and transported by road to a metallic separation, crushing and screening plant. EAFS aggregates are produced to comply with relevant Australian Standards & State Authority specifications and are included in industry based technical publications.

SUMMARY

In closing, we again offer our support to the Commissions findings and recommendations subject to the above comments. We look forward to meeting with the Commissioner next week to discuss aspects of our submission.

Regards



Craig Heidrich
Executive Director
Australasian (Iron & Steel) Slag Association

CC:
Board

SUMMARY OF MANUFACTURING PROCESSES AND APPLICATIONS FOR IRON AND STEEL SLAGS

SLAG SOURCE	COMMON NOMENCLATURE	MANUFACTURING PROCESS	APPLICATIONS
Blast Furnace Iron Slag	Rock slag or air cooled slag	Crushing and screening slag which has been slowly air cooled. Also available as uncrushed slag, i.e. spalls or skulls.	Base Subbase Concrete aggregate Filter aggregate Construction fill and selected fill Scour protection Rockwool
	Granulated slag or slag sand	Rapidly quenching molten slag with high pressure, high volume water sprays.	Subbase Construction fill Construction sand Stabilising binder Cement manufacture Grit blasting Reinforced earth wall infill Glass manufacture
	Ground Granulated Slag (GGBFS)	Grinding granulated slag to cement fineness.	Cement replacement able to enhance concrete durability and other desirable properties. Stabilising binder, either alone or blended
	Pelletised slag (Not produced in Australia)	Water quenching molten slag on a sloped table and rotating drum, which throws the pellets into the air for further cooling.	Cement manufacture. Lightweight aggregate for concrete and masonry products.
	Expanded slag or lightweight slag (Not produced in Australia)	Controlled cooling of slag as a thin layer in a pit followed by crushing and screening.	Lightweight aggregate for masonry products and structural concrete. Skid resistant aggregate.
Basic Oxygen Steel Slag	BOS slag	Crushing and screening slag which has been air cooled and watered.	Sealing aggregate (skid resistant) Asphalt aggregate Base, subbase Construction fill Subsoil drains Grit blasting
Electric Arc Steel Slag	EAF slag	Crushing and screening slag which has been air cooled and watered.	Sealing aggregate (skid resistant) Asphalt aggregate Base, subbase Construction fill Subsoil drains Grit blasting