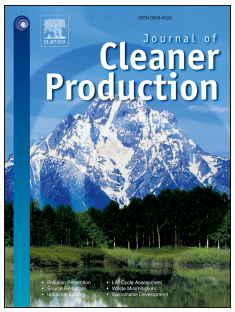
Accepted Manuscript



`Environmental Impact Analysis of Blast Furnace Slag Applied to Ordinary Portland Cement Production

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PII: S0959-6526(15)01896-X

DOI: 10.1016/j.jclepro.2015.12.071

Reference: JCLP 6544

To appear in: *Journal of Cleaner Production*

Received Date: 3 February 2015

Revised Date: 17 December 2015

Accepted Date: 19 December 2015

Please cite this article as: Li Y, Liu Y, Gong X, Nie Z, Cui S, Wang Z, Chen W, `Environmental Impact Analysis of Blast Furnace Slag Applied to Ordinary Portland Cement Production, *Journal of Cleaner Production* (2016), doi: 10.1016/j.jclepro.2015.12.071.

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Abstract: This study was conducted based on the ISO 14040/14044 standards to analyze the environmental impact caused by blast furnace slag utilization for ordinary Portland cement production in typical plants in Beijing. In addition, sensitivity analysis of resource consumption, transport distance, the allocation methods and life cycle impact assessment model were discussed in detail. The results showed that global warming potential and acidification potential were the most significant environmental impacts resulted by slag-based cement production, accounting for 58.5% and 21.7% of the total environmental impact, respectively. Moreover, the cement production and energy generation phases accounted for 66.6% and 29.6% of total environmental loads of slag-based cement from cradle to gate, respectively. Sensitivity analysis showed that the comprehensive environmental impact of