

## **Coal Utilization By-Products (CUB)**

### **Abstract**

CUBs are the solid materials formed during the combustion or gasification of coal during electric power generation. The primary large-volume CUBs are fly ash, bottom ash, slag, ash produced via fluidized bed combustion, and flue gas desulfurization by-products. Historically, CUBs have been disposed of in ashponds, landfills, and other sites. However, there are many incentives for developing more beneficial uses for these materials, including power generation economics, the conservation of natural resources and landfill space, and reductions in carbon dioxide emissions. As time passes, more and more CUBs are being sold or reused—over 40 percent in 2004 compared to less than 25 percent in 1996 while at the same time production of CUBs has increased significantly. Government agencies and other stakeholders have established a goal of 50 percent utilization by 2010.

1. Summary
2. Where do CUBs come from?
3. CUB properties and uses
4. Market analysis
5. Examples of Best-Practice Utilization of CUB Materials
6. Factors Limiting the Use of CUBs
7. Conclusions
8. Acronyms and Abbreviations
9. Literature