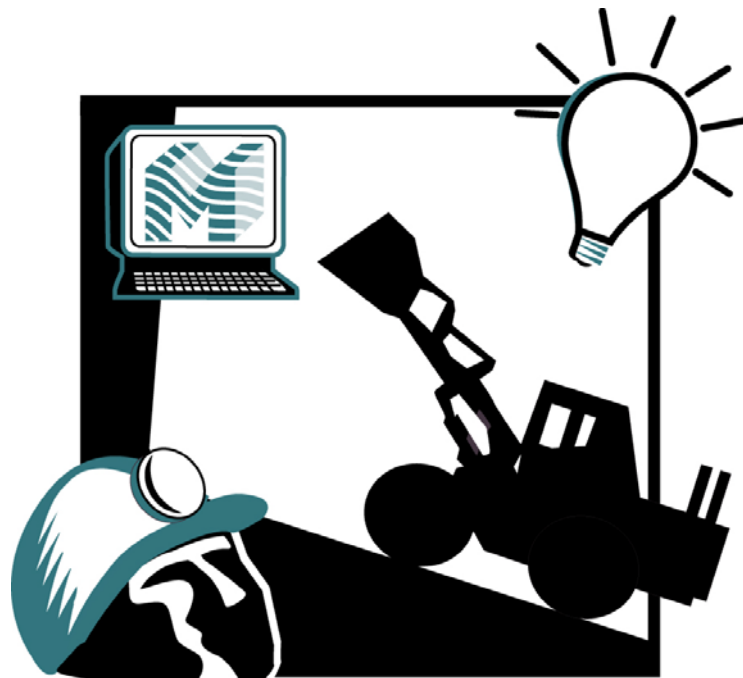


MINING

INDUSTRY OF THE FUTURE



December 2002

**ENERGY AND ENVIRONMENTAL
PROFILE OF THE
U.S. MINING INDUSTRY**

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Prepared for

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Office of Energy Efficiency and Renewable Energy

Preface

The U.S. Department of Energy and the National Mining Association are working in partnership to implement the Mining Industry of the Future strategy. Cooperatively, the two organizations selected specific mineral commodities to review in the Mining Industry Profile. These mineral commodities selected are those that require significant energy to extract and prepare for a first saleable product, and have the potential for energy and environmental improvement through research and development. The eight groups of minerals commodities selected include: Coal; Potash, Soda Ash, and Borate; Iron; Copper; Lead and Zinc; Gold and Silver; Phosphate Rock, and Crushed Rock. These commodities represent 66 percent of all production value in mining in the U.S. Although energy data are withheld for a number of mined commodities, the commodities selected for this report consume an estimated 78 percent of the energy consumed by the U.S. mining industry. Analysis of the energy consumption for these commodities will provide industry with a valuable benchmark for identifying opportunities for improved energy efficiency.

The Mining Industry of the Future is a working partnership between government and industry. Among the goals of the partnership is to research, develop, and deploy new technologies to achieve the goals listed in the National Mining Association's Vision "The Future Begins with Mining, A Vision of the Mining Industry of the Future." The Vision goals are as follows:

- **Low-cost and Efficient Production:** Use advanced technologies to improve process efficiencies from exploration to final product.
- **Superior Exploration and Resource Characterization:** Develop ways to find and define larger high-grade reserves with minimal environmental disturbances.
- **Safe and Efficient Extraction and Processing:** Use advanced technologies and training to improve the worker environment and reduce worker exposure to hazards that reduce lost-time accidents and occupational diseases to near zero.
- **Responsible Emission and By-Product Management:** Minimize the impact from mining activities on the environment and the community by fully integrating environmental goals into production plans. Support the development of technologies to reduce carbon dioxide emissions to near zero and sequester additional emissions.
- **Advanced Products:** Maintain and create new markets for mining products by producing clean, recyclable, and efficiently transportable products and form cooperative alliances with the processing and manufacturing industries to jointly develop higher-quality and more environmentally friendly products.
- **Positive Partnership with Government:** Work with government to reduce the time for resource development cycle by two-thirds. Achieve equitable treatment for mining compared to other industries that produce materials and energy relative to international competition by making legal and regulatory framework rational and consistent.
- **Improved Communication and Education:** Attract the best and the brightest by making careers in the mining industry attractive and promising. Educate the public about successes in the mining industry of the 21st century and remind them that everything begins with mining.

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