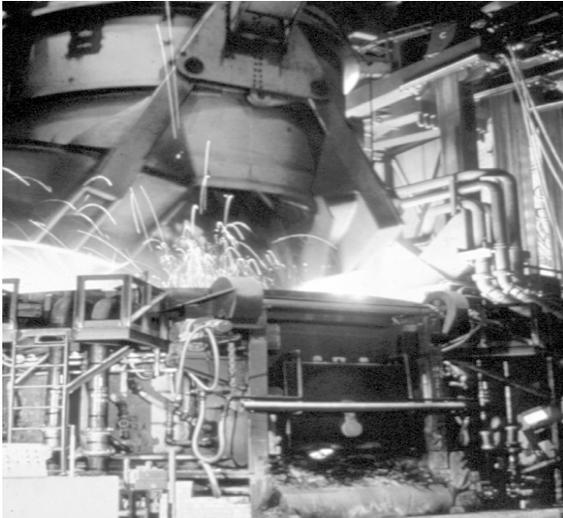


Demonstration of Dust Recycling in Electric Arc Furnaces



Despite the relative popularity of EAF melting, your steel customers face strong competition both here and abroad and must continue to reduce their operating costs.

Steel production using electric arc furnaces (EAFs) is an important energy services market. EAF production consumes 18 billion kWh per year, and each EAF steel producer spends between \$5 million and \$10 million on electricity. These levels of power consumption will only continue to grow because the EAF method is increasingly prevalent.

The dust generated by EAF production is, however, considered a hazardous waste by the U.S. Environmental Protection Agency. Costing between \$110 and \$175 per ton, dust disposal can have a significant impact on the bottom line.

Reducing the amount of EAF dust shipped off-site for treatment is crucial to your steelmaking customers. EPRI research shows the potential for a 50% reduction, using such

methods as recycling dust back to the furnace. By using recycling, some plants may be able to reduce their dust disposal costs by up to 90%. Further research is needed to optimize recycling.

Reduces Dust Treatment and Disposal for Steel Industry Customers

By participating in the EPRI *Demonstration of Dust Recycling in Electric Arc Furnaces*, you can help your customers in the steelmaking industry to cut production costs, especially those associated with EAF dust disposal. The project offers site-specific recommendations for your customers, while leveraging resources from EPRI.

PROJECT SUMMARY The main purpose of this project opportunity is to optimize the recycling of dust back to the EAF, to allow the recapture of iron in the dust and reduce the amount of dust requiring treatment. Engineers from the EPRI Center for Materials Production will test dust recycling, with a focus on lessening zinc and lead content. They will experiment with a variety of recycling methods to determine which are most effective, what effect dust recycling has on energy consumption, and exactly what costs are incurred in recycling dust. They will also investigate the use of adjustable speed drives (ASDs) in dust recycling to save energy and increase efficiency.

Your steel customer can host this demonstration project and witness how EAF dust recycling works in their own operations. EPRI will hold meetings with you and your customer to ensure useful results.

DELIVERABLES

- Installation and demonstration of EAF dust recycling equipment at a site yet to be named
- Assessments of EAF dust recycling and evaluation of the use of ASDs in recycling
- EPRI technical support throughout testing

- Technical Advisory Group meetings to solicit industry input in project development and execution
- Final report, including findings and recommendations
- Opportunities for your customers to adopt technologies before they are widely available

RETURN ON INVESTMENT Innovations in EAF dust recycling could help your customer's steel operations remain viable. By providing practical assistance with the problem of EAF dust, you can strengthen your customer relationship as you develop expertise about the industry. You may also enhance your public image as you help solve a serious environmental problem.

DEMONSTRATED VALUE Only EPRI has the diverse resources necessary to position your company to win customer loyalty in today's increasingly competitive energy services market. EPRI's broad knowledge of energy customers, changing markets, and international developments can help you anticipate and shape the changes that are transforming the energy industry along with the needs of your customers.

For nearly 30 years, EPRI has been at the leading edge of market insights and technology development, delivering a wide range of products, support, and services. In 1997, the company managed \$428 million in collaborative technology development and demonstration projects. EPRI has created an unparalleled network of technical experts, research allies, manufacturers, industry representatives, and marketing specialists from around the world. As an objective source, EPRI can seek the best technology, vendor, and fit for your particular needs.

PRICE OF PARTICIPATION An investment of \$15,000 is required to participate in this project.

PROJECT STATUS AND SCHEDULE This project is open to participation and will begin as soon as funding is secured. The total length of the project is 24 months.

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