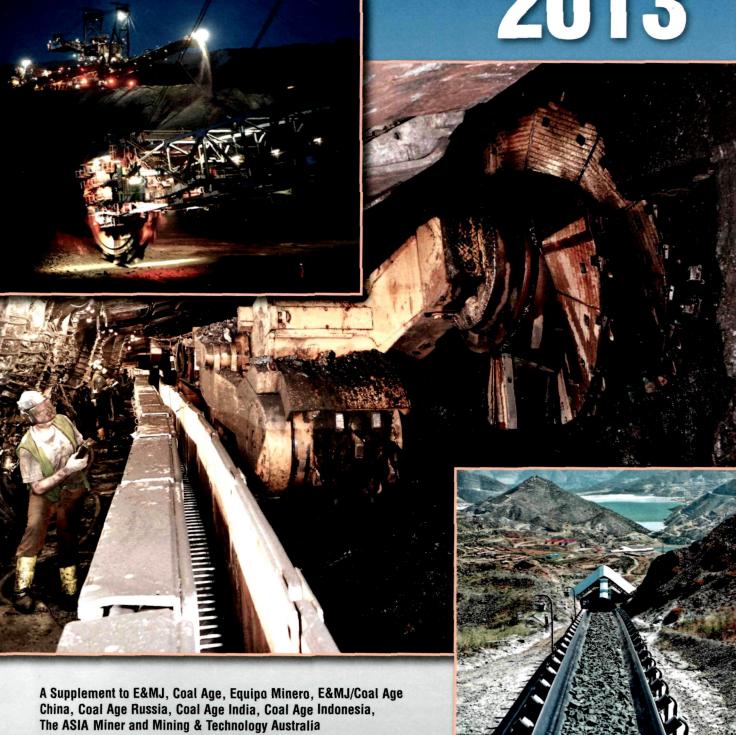
mining Equipment and Technology

## Best of Germany 2013



MININGMEDIA



## FOREWORD:



Welcome to the 2013 edition of **Best of Germany**, highlighting the expertise of German companies that supply equipment and services to the exploration, mining and mineral-processing industries around the world. Expertise in engineering is not something that is achieved easily. Many of these companies have histories that date back to the 19th century, and have prospered since then only through investing strongly in research and development.

With such foundations, it should come as no surprise that Germany leads the world with its mining-sector technology. Germany's reliance on its own hard- and brown-coal resources led to the development of technology that was suited first to local conditions, and then later transferred successfully to other applications in different parts of the world. However, many people forget that German hard rock mining also led the world in terms of its technology, with a legacy of innovation that continues to this day. Consequently, two of the country's three principal mining institutes are located where they could best serve local metal producers.

Innovation, research and development are key features that support German success in world markets. This edition of **Best of Germany** focuses on work being done by VDMA mining branch member companies in this area, from new chain links or electronic control systems, to energyefficient drives for big mining machines, mills or pumps.

We hope that you will enjoy reading this publication, wherever you are in the world.

Glückauf!

Dr. Paul Rheinländer President of the VDMA-Mining Equipment Association

VDMA, the German Engineering Federation, Mining Equipment Association Lyoner Strasse 18 D-60528 Frankfurt Germany

## TABLE OF CONTENTS:

A Special Supplement to Engineering & Mining Journal (E&MJ) Produced by Mining Media International 11555 Central Parkway, Suite 401 Jacksonville, FL 32224, USA Tel: +1-904-721-2925 Fax: +1-904-721-2930 www.mining-media.com Copyright 2013 Mining Media

Sponsor: German Engineering Federation Verband Deutscher Maschinenund Anlagenbau (VDMA) e.V. Lyoner Str. 18. D-60528 Frankfurt/Main Tel: +49-6966-031262 Fax: +49-6966-032262 www.vdma.org

Germany's Mining-equipment Manufacturers Achieve Another Year of Record Sales. Developing New Markets Worldwide ......4 Research and Development: Laying the Foundations for a New Generation of World-leading Technology .......6 Underground Mining Technology: Centuries of History Form the Foundation for Today's Sophisticated Systems ......8 Surface Mining Technology: Mining Machines for all Applications ......22 Pumping Technology: Providing Solutions for All Types of Fluids .......40 Enhancing Safety in the Workplace.......48 Innovative Technology to Keep Mines More Productive ......50 Vendor Matrix and Buyers Guide ......56

The Bucketwheel photo on the cover was supplied by Johannes Ewers (E-mail: johannesewers@t-online.de), a semi-professional photographer who retired from RWE. Articles in this publication were researched and written by Simon Walker, European Editor for Engineering & Mining Journal, For additional information about the articles or the manufacturers highlighted here, please contact Mining Media (info@mining-media.com) or one of our regional representatives.

Published by Mining Media Int'l in cooperation with the VDMA







World Mining Equipment



