

## “Helping Bring About a Revolution in Drive Technology”

2017 German Environmental Prize:  
Honoring Johannes and Bernhard Oswald

**Miltenberg. “The Oswalds, father and son, are among the first persons to recognize the feasibility and perspectives of a new technology and to successfully position the products in the market. As the ‘human motors’ of an environmentally-friendly innovation process they represent the small and mid-sized family businesses for whom Business Location Germany is of crucial importance.” – With these words today, Prof. Dr. Werner Wahmhoff, Assistant General Secretary of the German Federal Environmental Foundation (Deutsche Bundesstiftung Umwelt, DBU), explained the presentation of the DBU’S 2017 German Environmental Prize to the partners and Managing Directors of the Miltenberg company OSWALD Elektromotoren, Johannes (56) and Bernhard Oswald (86). Their electric motors, which work without gears, were described as having significantly raised the energy efficiency and productivity of systems such as industrial crushers and presses, and thus “helping to bring about the breakthrough in a revolution in drive technology”. German President Frank-Walter Steinmeier will present the award on 29 October in Braunschweig. The award is endowed with a financial prize of € 245,000.**

*Torque motors represent a revolutionary technical improvement*

The idea of using torque motors as the main drivers in direct drive technology is said to revolutionize the construction of electric motors, particularly for the main drivers themselves. In comparison with other mechanical or hydraulic drive solutions, such motors offer clear advantages: above all, however, energy consumption can be reduced by up to 50 percent, transmission oil is no longer necessary, the machines are lighter, require less space, produce less operating costs, and are quieter. They therefore have clear advantages in comparison to the electric motors used most frequently for industrial systems, such as the asynchronous or induction motor (ASM) which – although it is considered the “workhorse” in electric drive technology -- has the disadvantage of typically requiring a transmission or belt in order to provide the torque needed by the machines. Wahmhoff: “This reduces the dynamic of the drive to the square, and increases operating and

### Contact Person

Franz-Georg Elpers  
- Press Officer -  
Jana Nitsch

### Contact DBU

An der Bornau 2  
49090 Osnabrück  
Phone: 0541|9633-521  
0171|3812888  
Fax: 0541|9633-198  
presse@dbu.de  
[www.dbu.de](http://www.dbu.de)

maintenance costs. The ASM motors have low power density, and the total drives are sluggish and not very effective.”

*“Custom-tailored” solutions for industrial deployment*

However, the torque drives will need to be “custom-tailored” to customers’ specific requirements for industrial use. Wahmhoff: “Only in this manner will an optimized system of drive and machine be possible. For that reason, the technical capacities and the entrepreneurial expertise of the drive manufacturer are of decisive importance.” Torque motors, he said, have a very high degree of efficiency. Their unbeatable efficiency in comparison to traditional drive systems, though, cannot be realized until an optimized system integration exists.

*OSWALD is a trendsetter in innovative drive solutions*

The OSWALD company, founded in 1909 in the Bavarian town of Miltenberg, is a trendsetter for the implementation of technology in existing products. Johannes Oswald, who has led the company for some 15 years in its fourth generation of family management, has advanced the development of torque motors with great conviction, ultimately making the OSWALD family a worldwide market leader in this technological field. “The company has held this position as a ‘corporate motor’ for this innovative drive technology for years,” Wahmhoff continued – because its strength is based on innovative, customer-specific solutions and the small quantities required for system construction. In terms of extremely close relationships with customers and development, solutions are conceived which deliver results that are well above average.

*National and international cooperation*

OSWALD’s Managing Directors Bernhard and Johannes Oswald maintain, together with their key engineers, extensive national and international cooperative relationships with well-known research institutions and universities. Wahmhoff: “Because of its specific drive competence, and the flexibility and speed which is typical of mid-sized businesses, the company is a partner in development to – among others – major automobile and aircraft manufacturers.” In an exemplary manner, the two Managing Directors and their team have advanced their own company’s development with a strong focus on its direct drive work, and have led its customers to a paradigm shift: away from traditional drive technologies, and in the direction of the innovative and environmentally-friendly direct drive. Wahmhoff: “For a company of this size, this process has always involved substantial risks.” Both partners have emphasized, however, that this development has always been a team effort. Thus co-workers, such as mechanical engineer Michael Walter, have brought outstanding qualities to the process. He now supports the management as an authorized officer.

*Vision for the future: air travel with superconducting torque motors*

In another “key technology for the 21st Century” as well, according to Wahmhoff, the company is in the forefront of development. For many years, Bernhard Oswald has pushed within the company for the high-temperature superconductor technology (HTS). OSWALD now numbers among the internationally-recognized actors in this research field. Using superconducting belts, it may be possible in the future to build much more compact, lighter and more power-dense drives. One vision for future development involves driving hybrid commercial aircraft with superconducting synchronous motors in order to drastically reduce their energy consumption. OSWALD is dedicating itself to this fully new application for electric motors, under the direction of the OSWALD physicist Thomas Reis, together with other leading companies, in a research project supported by the European Union.

*Extraordinary civic commitment*

In addition to the company’s commitment, the two company directors have demonstrated notable dedication through their exemplary activity in associations, and an extraordinary civic commitment, above all in their own region. The Oswalds, father and son, are or have been active in the City Council, the Chamber of Commerce and Industry, in the German Chamber of Commerce and Industry, in the Association of Catholic Entrepreneurs (Bund Katholischer Unternehmer), in the MISEREOR business forum, with Young Researchers (“Jugend forscht”) and as visiting lecturers in schools and a technical college. This year, on its own initiative, the OSWALD company compiled an initial sustainability report which provides a comprehensive look into the diverse environmentally-relevant and social activities of the Miltenberg firm. Wahmhoff: “Their credibility is reflected in the manner in which they run the company: renewable energies are standard, and energy efficiency measures are implemented in the daily routine of the business. This is only one of the reasons why the Rhein-Main Chamber of Commerce and Industry included the OSWALD company on its ‘List of Model Businesses’.”

Lead 1.177 characters with blank spaces

Remaining text 5.925 characters with blank spaces

**IPTC-Standard photos for publication at no cost:** [www.dbu.de](http://www.dbu.de)