



## The Consortium

The project is sponsored by the German Federal Ministry of Education and Research (BMBF). It is carried out by a consortium managed by Oeko-Institut e. V. and joined by Umicore, Vacuumschmelze and others. Local implementation is supported by City Waste Recycling Ltd. (Ghana) and CEDARE (Egypt). Thus the project combines the strengths of leading companies in the field of critical metals recycling and application with environmental research and project management capacity as well as strong local engagement in Ghana and Egypt.

The project will run from June 2012 to May 2015.

More information can be obtained from:

[www.resourcefever.org](http://www.resourcefever.org)

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## Partners



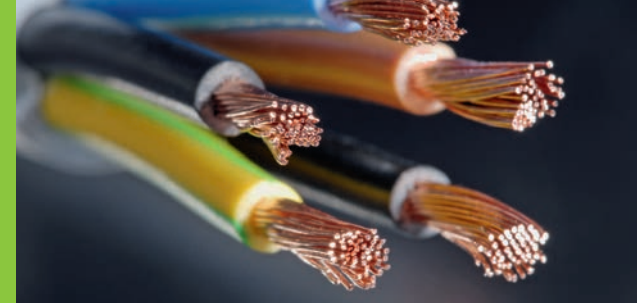
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## Global Circular Economy of Strategic Metals

*Best-of-two-Worlds Approach (Bo2W)*

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## The Challenge

Many developing countries and emerging economies experienced rapid economic growth in recent years. This growth also stimulated changed consumption patterns of an increasing global middle class. While in many countries cars, computers and mobile phones were perceived as luxury goods until a few years ago, these products are more and more becoming standard equipment in many middle income households – and eventually enter their end-of-life stage. This development poses challenges for the existing waste management and recycling systems. In contrast to conventional wastes, end-of-life vehicles and electrical and electronic equipments contain complex materials with both hazardous and non-hazardous characteristics. Many recent studies document well the negative impacts of improper e-waste management on human health and the environment in developing countries. Besides these direct negative impacts, it is also known that these existing recycling systems are inappropriate for recovering specific materials such as platinum group metals, cobalt and rare earths. Due to constantly growing demand for these metals and the fact that primary deposits are mostly concentrated in few regions worldwide, the supply of these metals is widely regarded as a critical bottleneck for many high-tech industries. Thus, strategies to improve the working conditions and reduce environmental and health impacts of the existing recycling systems should simultaneously strive at closing global material cycles for critical metals. As an additional benefit, the recycling of metals is proven to generate significantly less greenhouse gas emissions than primary production (mining). Therefore, improved recycling can yield multiple benefits on a local and global scale.

## The Project



The Bo2W project aims at supporting and testing the establishment of environmentally sound collection and recycling systems in Egypt and Ghana. The project follows the “best-of-two-worlds approach”, which aims to combine the strengths of recycling systems in developing countries with those of industrialised countries. The approach is characterised by the following aspects:

- Local treatment capacities are used whenever appropriate;
- Fractions that cannot be treated locally are exported to state-of-the-art facilities;
- Sound solutions for all recyclable and hazardous fractions (valuable and non-valuable) are developed;
- Local recycling systems will take over as many parts of the value chain as possible from an environmental and economic perspective;
- Recycling systems have to provide decent jobs according to international labour and health and safety standards;
- Close co-operation with relevant authorities and stakeholders;
- Fair and transparent pricing of recycling fractions;
- No direct or indirect involvement in illegal waste trade.

By linking local recycling initiatives with international markets for specific recycling fractions, the project also aims to improve the recovery of critical metals from end-of-life vehicles and e-waste and to close global material cycles in a sustainable manner. All activities will be scientifically monitored in order to identify key success factors and to provide baseline information needed for replication in other countries.

Local

International/  
Regional

