

Press release

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Lead-acid batteries from Ghana successfully recycled

The first container of used lead-acid batteries from Africa has landed in Germany. The batteries were collected in Ghana through a unique cooperation and recycled in an environmentally-sound manner in Germany. Experts neutralized the battery acid and achieved a very high lead recycling rate.

The export was organized under a project of the German Federal Ministry of Education and Research (BMBF) entitled “Global circular economy of strategic metals: best-of-two-worlds approach (Bo2W)”. This aims to achieve sustainable improvements in cooperation between Africa and Europe on the recycling of batteries, end-of-life vehicles and electronic waste. The batteries were collected by Ghanaian recycling firm City Waste Recycling Ltd. and then packaged and shipped in accordance with international standards. The recycling was performed by Johnson Controls, a global leader in the manufacture and recycling of lead-acid batteries.

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Collection in Africa – recycling in Europe

Johann-Friedrich Dempwolff, Managing Director of Johnson Controls Power Solutions EMEA, confirmed that the shipped batteries fulfill Johnson Controls’ requirements: “We can recycle up to 99% of a used battery at our recycling center in Germany. Part of this process is to ensure that batteries are shipped to us intact and that the acid isn’t drained into the ground in Ghana, as it has often been the case before, causing environmental damage.”

With this initial success story, the partners are sending out a clear signal that lead-acid batteries used in Africa can be brought for recycling in a resource-efficient manner. Jürgen Meinel, General Manager of City Waste Recycling Ltd.: “We are delighted that we have been able to prove with this initial delivery of a good 20 tons that there is a feasible, environmentally-friendly recycling alternative for Ghana. Export to Germany is the best solution given the absence of local alternatives and there should be many more containers of lead batteries to follow in the years to come. Demand for such batteries is growing strongly in Ghana.”

Lead-acid battery recycling – a vital problem in Africa

Improper lead-acid battery recycling presents a significant environmental and health problem in Ghana and all of Africa. The discharge of the battery acid into the environment and remelting of the lead in open fires or recycling plants lacking up-to-date technology are common practice in Africa and few alternatives have been developed to date.

John Pwamang, Director of the Chemicals Management Center at the Environmental Protection Agency (EPA) in Ghana, has been aware of the problems for a long time and added: “Ghana is currently developing a legal

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framework for the proper disposal of used batteries and e-waste and is also interested in building up a recycling industry. International cooperation on lead-acid batteries is most welcome.”

West African companies are working closely with European counterparts on this. Due to a lack of environmentally-friendly recycling capacities, the partner in Ghana collected used starter batteries from passenger vehicles and trucks, packaged them properly and shipped them in a container via sea and land to the Johnson Controls facility in Krautscheid. Thanks to state-of-the-art recycling technology, harmful emissions can be avoided there and almost 100% of the lead recovered.

Environmentally-sound recycling is a must

To Andreas Manhart, the man responsible for project activities in Ghana at the Oeko-Institut, “this first environmentally-sound packaged, transported and recycled batch of lead-acid batteries is important evidence that the ‘Best of Two Worlds’ approach can work in practice. The current informal sector in Ghana can be involved in the collection as an economic partner, while people are no longer being put at risk from the battery acid and lead.”

Project manager Matthias Buchert (Oeko-Institut) emphasized that “this initial success has been made possible by the constructive cooperation with the EPA in Ghana. It helped all partners obtain the necessary export permits and put a stop to improper practices such as the transport by sea of lead-acid batteries that had already been opened.” Mr. Pwamang (EPA) confirmed this latest regulatory step and added that “Ghana will not approve any trade in used batteries in the future that does not meet the highest international environmental standards. This should ensure that serious, properly run companies are not subject to competition from unscrupulous profiteers.”

Information on the “Best of Two Worlds” project

New recycling structures are being set up in Ghana and Egypt and tested in pilot operations together with partners from industry, with the goal of increasing local value creation. The pilot schemes have to comply with international social, health and safety standards and should create jobs locally. Components that cannot be recycled in the region in an efficient and environmentally-sound manner are to be exported to specialized high-tech refineries in Europe. In this way, both countries will be better linked with recycling structures in industrialized countries. The project only addresses locally generated scrap and thereby clearly disassociates itself from the illegal trade in hazardous waste and e-waste.

The project partners: science and industry

The consortium working on the local implementation is made up of the Oeko-Institut, Johnson Controls, other industrial firms and competent partners in Egypt and Ghana. This cooperation combines the strengths of all involved, including leading competence in metal recycling and processing, environmental research, project management and a strong local presence. The project will run between June 2012 and May 2015 and is sponsored by



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the German Federal Ministry of Education and Research (BMBF) under the r3 program.

[Further information on the project is available on the resourcefever website](#)



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The Oeko-Institut is a leading independent European research and consultancy institute working for a sustainable future. Founded in 1977, the institute develops principles and strategies for ways in which the vision of sustainable development can be realized globally, nationally and locally. The institute has offices in Freiburg, Darmstadt and Berlin.

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