

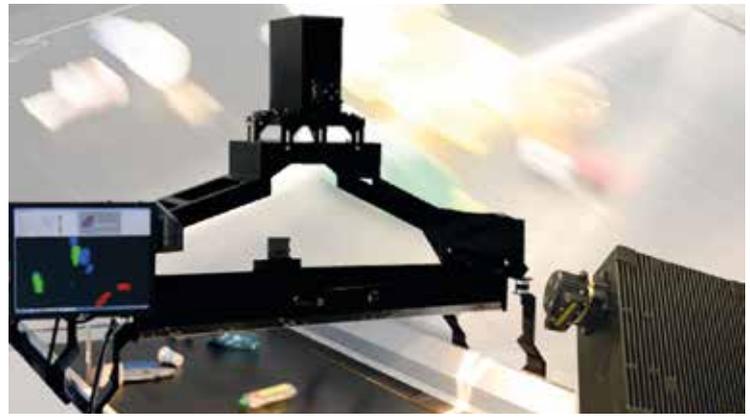


The Circular Economy in Berlin

Recycling, efficiency, resource management



ALBA sorting plant for light packaging and other recyclables in Berlin



LLA Instruments NIR hyperspectral camera to recognize materials in household waste

Companies

ABEG Abfallentsorgungsgesellschaft
 ALBA Group
 ALBA Electronics Recycling
 ARU Gesellschaft für Abfalltransporte, Recycling + Umweltschutz
 Bartscherer & Co. Recycling
 Berlin Recycling
 Berliner Stadtreinigung (BSR)
 Berliner Wasserbetriebe
 Born Entsorgung
 BRAL
 Brauco Rohr- und Umweltservice
 Dr. Böhme Elektronik-Recycling
 ECF Farmsystems
 EBK Kompostierung – Altholzrecycling – Erdbau
 Fritz Pennecke Söhne Abfallentsorgung u. Recycling
 GreenLab Berlin
 Karl Meyer Rohstoffverwertung
 LLA Instruments
 LTB Lasertechnik Berlin
 Otto-Rüdiger Schulze Altholzrecycling
 PAV Plasticaufbereitungs- und Verarbeitungsgesellschaft
 Reisolwof
 REMONDIS
 REMONDIS Electrorecycling
 Veolia Umweltservices
 Rhenus Data Office
 Schmidt + Kampshoff
 SECOPTA
 Siewert & Co Autorecycling
 Sperrmüll Berlin
 TerraCycle Germany
 Upcycling Deluxe

The circular economy will play a central role in ensuring the full integration of sustainability considerations. There is no shortage of resources on our planet. When a product is no longer needed and is disposed of, all the materials that were used to produce it are still available. The challenge is to re-use them.

To do so, we need concepts that plan for the future recovery as early as the design, construction and production phases as well as the technologies that will make recycling efficient.

As a smart city, it is important that Berlin has an efficient circular economy with sustainable resource management. Many creative people – scientists, engineers, entrepreneurs – are working to make that a reality.

With more than 400 companies and 8,500 employees, the circular economy is an important economic factor in the capital city. The spectrum ranges from traditional waste management companies and technology developers to innovative startups that use secondary raw materials to make original products for an environmentally conscious audience. The CleanTech Business Park in Marzahn-Hellersdorf is a new location with ideal conditions for the sector.

»PAV has been successfully recycling plastics in Berlin for more than 30 years. At the same time, we develop innovative products. Our current flagship project is a railroad tie made from plastic recyclates that has been tested and installed since 2014 throughout Germany and Europe. We see a lot of potential, including in natural fiber-filled recyclates and recyclates made of renewable raw materials, such as PLA.«

Dr. Frank Giesel
 CEO
 PAV GmbH



alternative drive systems and recovering energy from waste, to electronic invoicing for our customers.«

Andreas Thürmer
 Head of the office of the board of management
 Berliner Stadtreinigungsbetriebe

»BSR's strategy encompasses sustainability in all its dimensions. To conserve resources and use them as efficiently as possible is a natural part of that. Thus innovation and resource efficiency are part of all our processes – from our fleet with

Waste as a commodity

Berlin waste is a sought-after commodity. Large waste management companies such as Berliner Stadtreinigungsbetriebe BSR and ALBA as well as many specialized recyclers such as Bartscherer and PAV ensure a high recycling rate. Seven Berlin plants sort packaging, plastics and other mixed recyclables and commercial waste. The increasing number of old electronics are processed in ten disassembly and processing plants. Waste paper is mainly processed into pulp in three Brandenburg paper mills and then directly used to make paper. Commodities such as steel, iron, zinc and brass are recycled in the Berlin iron and steel industry. Bio waste is composted into valuable humus in more than 100 compost facilities in Brandenburg. Berliner Wasserbetriebe has developed a system to recover phosphorus from sewage sludge, earning it the 2015 Greentec Award.



Berliner Wasserbetriebe plant where magnesium ammonium phosphate (MAP) is recovered from sewage sludge



In the »BücherboXX« project, old telephone booths are converted into public street libraries.

Technologies for the circular economy

In the future, many more materials will be recycled in even greater quantities and more efficiently. This requires effective technologies. Sensor technology, analytics and automation technology play an important role. Companies such as SECOPTA, LLA Instruments and LTB Lasertechnik Berlin provide the appropriate technology and develop new methods.

Strong research

Berlin research institutes provide competent partners on virtually any subject. »Resource-efficient processes and products« is the guiding principle that drives close cooperation between the scientists from the fields of biotechnology, food chemistry and technology, energy and process technology, environmental science and technology, and materials science at the Process Sciences Faculty at TU Berlin. The aim of the UUpgrade project is to improve the valorization of select metals in the processing of waste electronic and electric equipment (WEEE) throughout all stages of the recycling chain via new and optimized processes and process chains to improve their recovery within existing recycling systems, minimize losses and close circuits.



Nicolas Leschke
CEO and Founder
ECF Farmsystems

»We operate integrated fish and vegetable farming on a large scale with maximum resource efficiency. In the middle of the city, Berlin is the first choice for such a project. As the next step, we want to sell our aquaponics systems worldwide.«



Karsten Schischke
Group manager Environmental Evaluation
and Optimization
Fraunhofer IZM

»For us, a sustainable circular economy starts with the development of products that are designed to have a long service life, be highly reliable, repairable and recyclable. We therefore bring together some of the most innovative companies in the electronics industry and develop new concepts for mobile information and communication technology with them.«

The circular economy is an important focal point at the Fraunhofer Institute for Reliability and Microintegration (IZM). In the cyclLED project, methods to recover critical raw materials such as indium, gallium and rare earth metals from LEDs are developed. The joint European project CloseWEEE focuses on the disassembly process of old electronic devices and develops, amongst other things, methods to recycle plastics, additives and metals. Recycling companies can consult an online database to obtain comprehensive information to disassemble devices more easily. IZM is also hosting the conference Electronics Goes Green 2016+, which will be held in Berlin in September 2016. Novel biopolymers as well as process technologies for their processing are among the developments being carried out at the Fraunhofer Institute for Production Systems and Design Technology.

Research

- BAM Federal Institute for Materials Research and Testing
- Beuth University of Applied Sciences Berlin
- Fraunhofer Institute for Production Systems and Design Technology IPK
- Fraunhofer Institute for Reliability and Microintegration IZM
- Leibniz-Institute of Freshwater Ecology and Inland Fisheries
- Technische Universität Berlin

Networks, associations

- BDE Federal Association of German Waste Disposal, Water and Raw Materials Management
- BUND (Friends of the Earth Germany)
- Bundesgütegemeinschaft Recycling-Baustoffe
- CRCLR – Circular Economy Network
- DGAW – Deutsche Gesellschaft für Abfallwirtschaft
- German Association of Local Public Utilities (VKU)
- German Recycling Technologies and Waste Management Partnership

Our aim: your success!

Today, Berlin is a business hub of international standing. The capital city is growing at a much faster rate than the rest of the country. More and more companies are seeing opportunities for themselves to become part of this success story.

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