

RIWALD RECYCLING IS THE

HIGH-TECH CIRCULAR HUB



Authors:

Ömer Avci

Green CPO
at Riwald Recycling



Ewald Huzink

Co-CEO and Founder
at Riwald Recycling



Gert Huzink

Co-CEO and Founder
at Riwald Recycling

“Imagine a world where almost no new raw material is needed.”

Today consumer society relies heavily on raw materials to satisfy increased production and consumption. Every major crisis in the world reflects on the raw material prices, and it's not only the global container shortage that is problematic for industries. It is the scarcity of raw materials in an ideal crisis-less world. Technological innovations combined with mass consumption and short product life contribute to these shortages, and population growth also plays a significant factor.

Imagine a world where almost no new raw material is needed. Policymakers in the European Union and Netherland already set the goals for such a future. The idea of a circular economy is not new, but the standards in front of industry are.

Companies should use at least 50% fewer minerals, fossil raw materials and metals by 2030 and become fully circular by 2050.

Europe is hungry for raw materials, and creating sustainable recycling industries will relieve some geopolitical issues. Moreover, access to

critical raw materials will be crucial to maintain Europe's high-tech lifestyle and safeguard the competitiveness of European companies.

Such ambitious goals are essential in tackling climate changes and would create an economy that would use recycled raw materials. However, a few technological steps are required to develop a circular economy, and Riwald Recycling is on the right track to creating the high-tech circular hub. This almost self-sufficient recycling company produces high-quality recycled raw materials.

High-end recycling equipment and green initiatives

Riwald Recycling has several businesses under the recycling umbrella. The company owns a state-of-the-art metal recycling plant. A granular, unique metal processing machine is capable of separating ferrous from non-ferrous materials. Waste separation technologies enable the separation of remaining waste from incoming metals. Extracted raw materials are suitable for 100% reuse.

Riwald Recycling has substantial container service and is specialises in demolition works and product destructions. How can these intensive works be sustainable and green at the same time? Riwald Recycling shared its vision on the sustainable recycling of raw materials.

The technology that allows 100% reuse of recycled metal

Riwald Recycling has a high-tech granulator that can sort ferrous from non-ferrous materials, and other machines in the production line can sort products by induction, colour, and weight. The recycling plant contributes heavily to the circular supply chain, and it invests heavily in green technologies.

Each year, Riwald Recycling process hundreds of thousands of tonnes of waste materials. The high-end machinery on-premises can deconstruct household electrical appliances, high-grade industrial residues all the way to aircraft. In addition, the company can recycle this wide range of waste into more than 150 types of sustainable raw materials. Here is what the company says about the underlying technology behind such granular capabilities:

Based on our business strategy, consisting of the combination of the Trias Energetica philosophy and the 3R philosophy, Riwald Recycling invests in the latest developments (separation and sorting) techniques, machines, and equipment with the aim of processing materials to the same high quality. Building upon the Trias Energetica, which is linked with our electrification policy, we invest in a green future by working with electric cranes, a sustainable fleet and transport over water - environmentally friendly, fuel-saving and noise-reducing. Our circular business philosophy considers the future. We believe that metal recycling can also be done differently: more focus on sustainable operations and reducing emissions/CO₂ footprint to become a professional and responsible organisation.



Thanks to our high-tech granulator combined with our high-tech equipment – double scrap shears, eddy currents, drum screens, wet separation tables, Infrared (NIR), X-Ray, metal sensors, NF fines processing and colour sortings - we enhance raw material efficiency. These technologies result in no ‘new’ raw materials being needed anymore, whereby materials are processed to the same high quality. The economy would then run on recovered raw materials, and no ‘new’ raw materials would be needed.

Where to get reusable green raw materials?

Recover, reuse, and recycle is the philosophy of 3R. In the case of Riwald Recycling, the 3R relates to valuable ferrous materials like steel, cast iron, and stainless steel, with iron as the main ingredient. However, recycling also applies to aluminium, copper, lead, zinc, bronze, and brass outside of iron-based raw materials.

Due to Riwald Recycling unique metal processing machine, the high-quality raw materials are 100% suitable for reuse. The final product can go directly to companies in the manufacturing industry, smelters, and end processors for reuse.

On one end, the innovative recycling company invests heavily in energy reduction and sustainability and produces raw materials crucial for the circular economy.

Dismantling of massive structures, vehicles, and vessels

Recycling must start somewhere. But, what if you have a huge installation, construction, infrastructure, or giant machines. Riwald Recycling can handle all types of dismantling with a fleet of well-equipped machinery and transport fleet.

Additionally, the company has expertise in dismantling vessels, vehicles, aircraft, locomotives, and bridges. The recycling plant can receive large demolition objects like lock gates, discarded windmills and other heavy constructions by water to the recycling locations.

How to remove huge discarded products

A complimentary part of Riwald Recycling company is the product-removal department. Industries that have discarded, damaged, secretive, or unsaleable overstock products, prototypes, or waste need help to remove such items from their premises.

The best way to handle discarded products is with destruction and removal. Riwald Recycling uses a team for high-tech physical destruction, and the whole process follows the strictest European Union guidelines.

The critical component for this process is innovative separation technology in the company's machinery. All products are transported and destroyed.

The customer will get a detailed destruction report and the accompanying documents. Simultaneously, due to the granular extraction of raw materials, all extracted parts are ready for 100% reuse.

The whole process contributes to the circular economy goals and maximum raw material efficiency.

How to safely collect scrap metal and complementary waste?

The best way to create a safe policy for discarding metal products is by having quality waste disposal containers. Riwald Recycling can place such containers, and you could use them for the collection of:

-  Scrap metal
-  Production waste
-  E-waste
-  Surplus stock
-  Machine & installations
-  End-of-life-cycle products

Riwald Recycling offers various types of containers ranging from 1 to 40m³. You can choose between open containers, containers with lids, lockable containers, and liquid-proof ones. The products come with an anti-theft lock for security. If you have specific container needs, Riwald Recycling can provide a custom product.

Once the container is filled, the emptying is done by professionals and according to the agreement. In addition, the company can provide mobile cranes with equipment for dismantling, cutting, and loading workloads.

Becoming a circular hub

High-tech granular machinery already contributes to the reuse of raw materials that are high in demand.

But did you know that almost 85% of scrap metal is recycled in the world? Why is that so important? Well, every tonne of scrap used for steel production avoids the emission of 2.0 tonnes of carbon dioxide and the consumption of 1.4 tonnes of iron ore.

If we know that global industry employs around 2 billion tonnes of iron ore and burn 1 billion tonnes of coal, the positive effect of metal recycling is apparent. With that in mind, Riwald Recycling shared its long term goals.

The long-term goal and mission of Riwald can be explained in threefold: being flexible, circular, and innovative. Due to our efficient operations,

in-house production process and geographic locations, Riwald Recycling occupies a prominent place in the metal recycling industry within the Netherlands and the rest of the world. On an annual basis, Riwald Recycling recycles several hundred thousand tonnages of waste materials - varying from complex E-waste to complete trains and aeroplanes. In addition, these materials will be recycled into more than 150 different types of sustainable raw materials.

To get on the right track towards ambitious future goals, the company will focus on several vital areas to create an extremely sustainable production and transport process and get the most out of recycled materials for the circular economy.

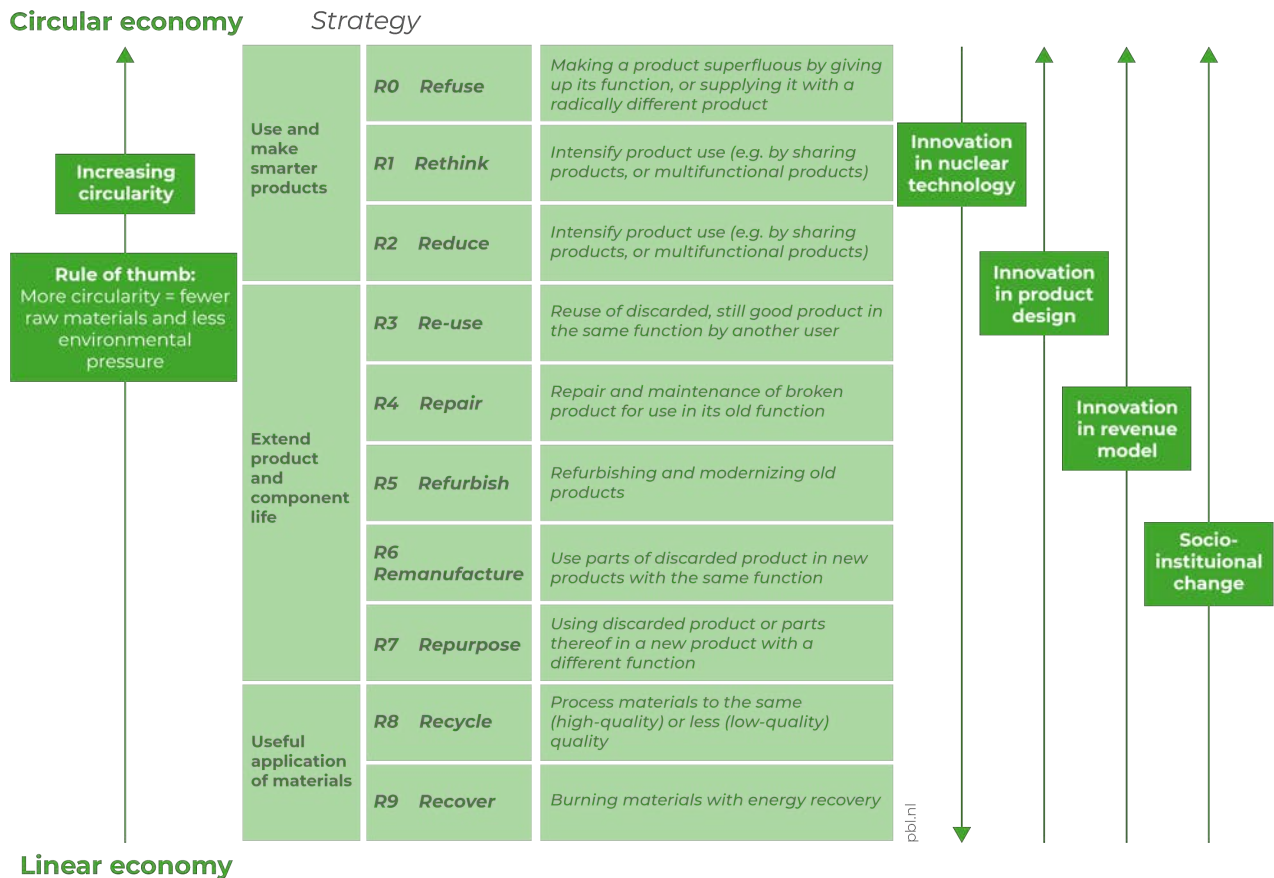
Our goal is to become a “circular hub” where all flows come together in our ecosystem - transforming complex products into pure raw materials and transporting these materials in a sustainable way to companies in the manufacturing industry. As a result, the economy would run on recovered raw materials, and ‘new’ raw materials would not be needed. Via this way, we are closing the chain/loop. The result will be that Riwald Recycling will become the new benchmark in metal recycling industry.

The company thinks outside of the Netherlands and can help in the global movement to the circular economy. The high-tech machinery and workflow are cogs in the big picture, and Riwald Recycling's mission coincides with the country's, European and global environmental plans.

Based on the position and expertise of Riwald Recycling, in combination with its high-tech separation technologies, Riwald Recycling plays a crucial role in finding solutions for global environmental issues.

Finally, Riwald Recycling aims to drastically lower the energy demand in the coming decades via innovations in IT. To realise our goals, we actively engage with societal and industrial partners, such as digital measures for green process optimisation and methods to assess the future environmental impact of new technologies reliably. Also, AI solutions for computing architectures and new materials for data storage plays a pivotal role, which we will apply via an interdisciplinary approach.





▲ **Our priority order of circularity strategies and role of innovation in production chains**

Hop on the circular economy bandwagon

If your company uses raw materials, the best way to cut global emissions of CO2 is to use recycled materials. Complying with the green initiatives is not easy, but luckily some companies can aid in the process. Riwald Recycling contributes to the ideal circular economy by sourcing raw materials from a wide range of waste and discarded items.

In ideal circular world all products would be remountable, but with so many unique designs and products, IP rights and consumer specific taste this is not the case. Until we reach utopian global standardisation, recycling will become more and more important. Riwald Recycling fit that picture with options to deliver new high quality materials from high quality products such as airplanes.

Reuse is the most visible part of high-tech raw material extraction, but all subjects must invest in sustainable production, including recycling companies. With Trias Energetica philosophy behind the complex recycling process, it is possible to achieve ambitious goals and set the standard for the Netherlands and globally in innovative metal recycling. Moreover, leading with technological initiatives can help other companies to hop on the circular economy bandwagon and the society to reach set goals, including cutting down carbon dioxide emissions, dependence on raw materials, and consequently creating a circular economy.

