5-STEP GUIDE

How to Valorise Your By-products

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At MBP Solutions, we specialise in turning by-products into valuable resources. We help companies improve profitability, create new revenue streams, reduce waste and act more sustainably.

From recycling to renewable energy, technical applications, animal feed or human food, our solutions are tailored to your specific needs.

Our partners outsource the management of their by-products to us, freeing up valuable internal resource to focus on core business activities, safe in the knowledge that their operational priorities are met and they are supporting the circular economy.

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Introduction

There is a huge opportunity available to businesses from optimising side streams.

By effectively managing by products, businesses can increase profits and support the circular economy, often with minimal or zero investment of resources.

Circular Economy

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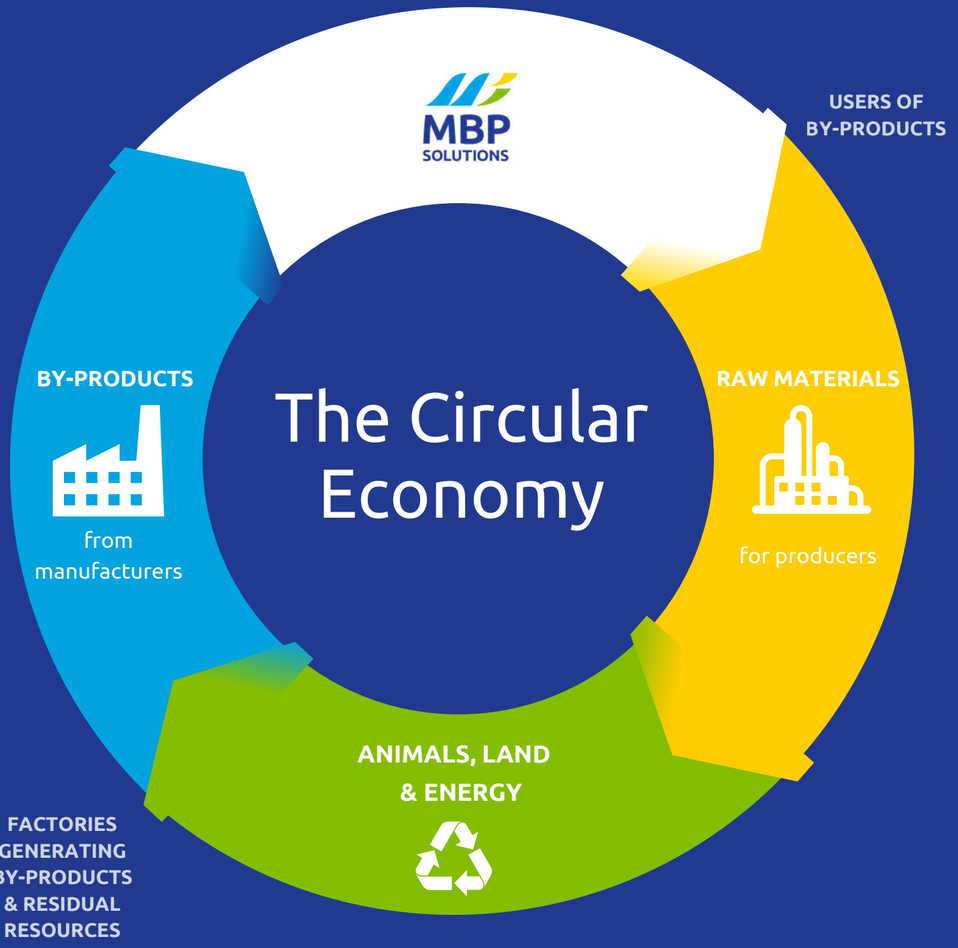
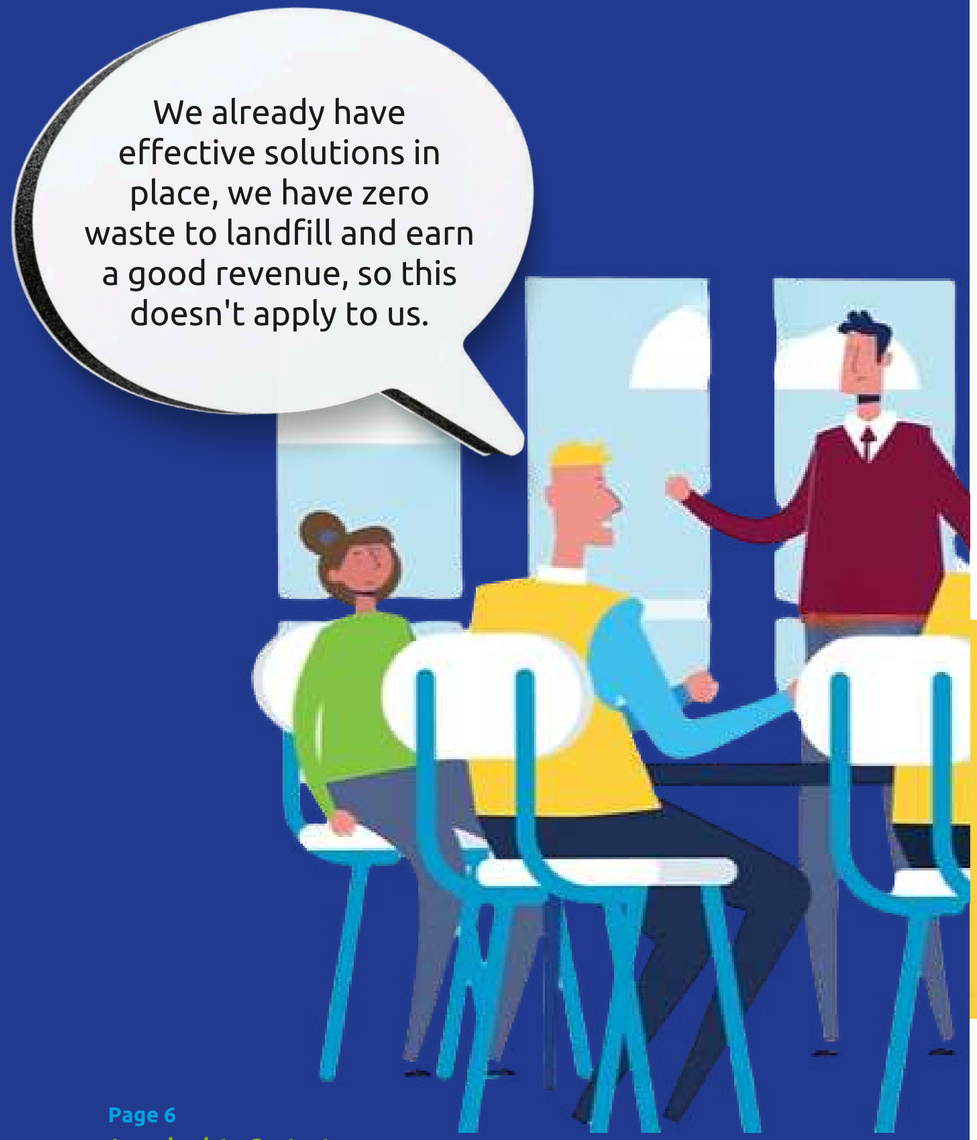


The **Circular Economy** is a concept of designing systems to minimize waste and maximize the value of resources. It is an economic model that aims to keep resources in use for as long as possible, extracting the maximum value from them and then recovering and regenerating materials at the end of their useful life. By doing so, it seeks to reduce environmental impacts while creating economic opportunities.

In the context of by-products, rather than treating them as waste, they are treated as resources that can be used to create new products or feed into other processes. By implementing circular economy principles, organizations can reduce their environmental impact, create new revenue streams, and increase their resilience to supply chain disruptions.

How to Get Started?

You may be thinking:



But often this is an area of the business that has been managed in the same way for years, with limited focus and as a relatively neglected area the business represents a bigger sales opportunity for short term impact.

It's time for companies and organizations to re-prioritize their approach to managing their by-products, whether they're looking to do so directly or via partnering with a specialist company such as MBP Solutions.

What Is a By-product?

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A by-product is the secondary output of a process, and often can be used as a raw material in another industry.

Examples of biological by-products that can occur from manufacturing processes:

- **Glycerine (or Glycerol):** Produced as a by-product of both oleochemical and vegetable oil refining processes.
- **Distillates:** The refining process may produce various distillates, such as fatty acid distillates or fatty acid methyl ester (FAME) distillates.
- **Soapstock:** A by-product of the vegetable oil refining process, soapstock consists of residual oils, gums and fatty acids.
- **Feather Meal:** Made from poultry feathers and is a by-product of the poultry industry.
- **Brewer's Spent Grain:** The residue left after brewing beer.

Industry Insights

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How do companies manage their by-products?

By-products from **Omega-3 industry** can be converted into many different products, with increasing levels of sustainability and economic value:

- **High-quality compost** for organic farming
- **Biogas** via anaerobic digestion
- Processed into **biofuels** and used as an alternative to fossil fuels
- Technical applications such as an ingredient for **ink** or **asphalt**
- Incorporated into **aquafeed** to enhance fish health

Glycerine a by-product from **biodiesel production** can be refined and sold as a high-quality skincare ingredient.

The by-products of **oil refining**, such as asphalt and lubricants, can be sold as separate products.

5 Step Guide

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Follow this simple 5 step programme to start better optimising the value of your by-products:

Click on The Icon to Jump to Section

Identify Your By-products

Evaluate Potential Uses

Map and Understand the Value Chain

Monitor Your Data

Implement a Management Plan

Step 1
Identify Your By-products

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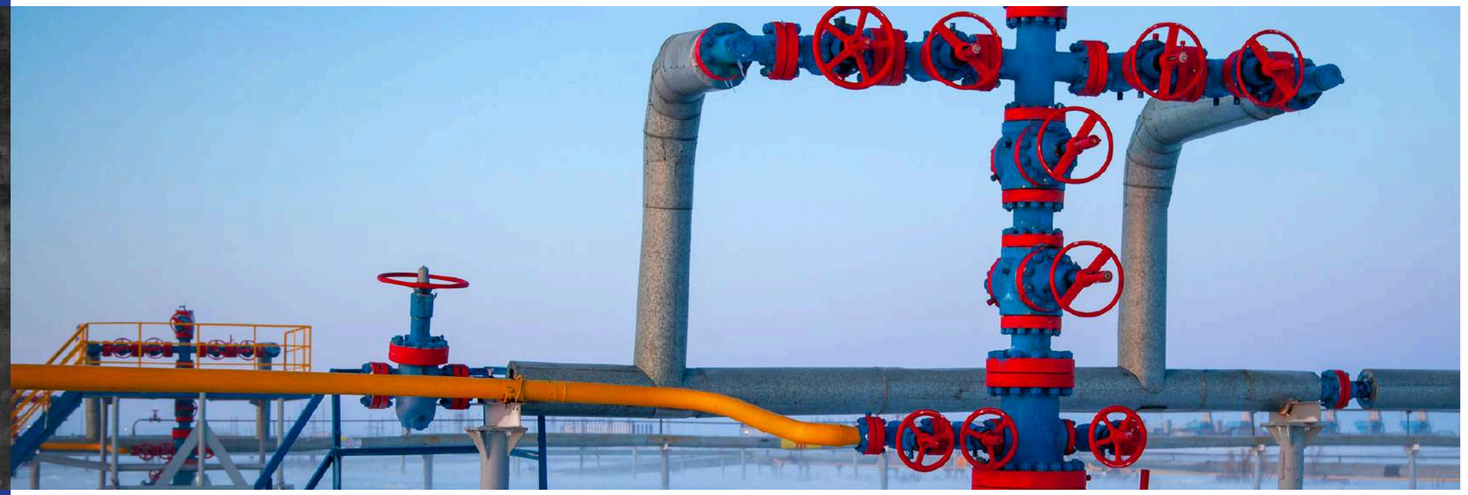
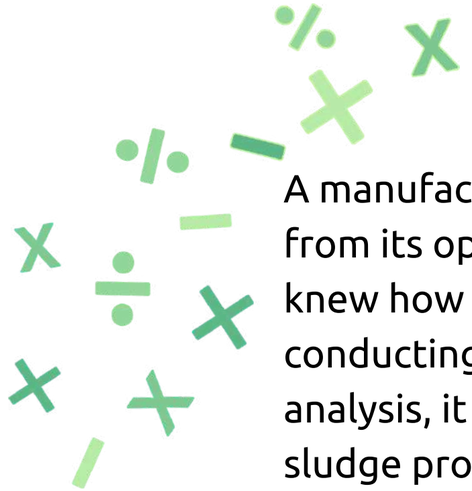
Speak to the team members who are working with these materials, they know these streams best.

Step 1: Identify your by-products

The first step to optimising the value of your by-products is to understand what streams you have. This can be done by reviewing the production process, visiting the factory and speaking with the production team; see how and where the streams are produced. What is the production cycle, how much volume is produced? Is the production seasonal etc?



Get ready for some surprises: many companies discover that there are more by-product streams than they anticipated--and that some of them are not being managed effectively at all!



For example:

A manufacturing facility had been disposing of oil sludge from its operations as hazardous waste because no one knew how much was being generated each month; after conducting an inventory count and performing an analysis, it turned out there were actually two types of sludge produced at different rates (one high volume/low value; one low volume/high value) due to seasonal variations in production levels; once this discovery was made the production teams separated the two streams into different storage containers, which allowed them to be sold as non-hazardous, generating revenue and diverting waste away from landfills.

Step 2

Evaluate Potential Uses

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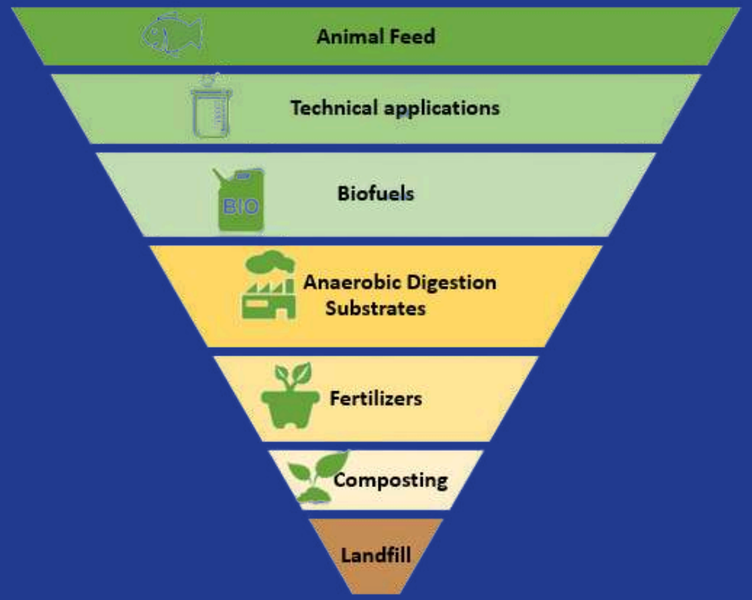
The waste management hierarchy is a useful framework for this process, as it helps you identify the most sustainable solutions for your by-products and waste produced during the manufacturing process.



The waste management hierarchy and food waste hierarchy set out the preferred order of handling practices, from most to least preferred, to achieve optimal environmental outcomes. See further: Global Waste Management Outlook (2015).

The waste hierarchy

The by-product management approach is aligned with the waste management hierarchy, an internationally recognized standard for sustainable waste management. Attending to technical, environmental, economic, and legal aspects, this hierarchy is to be applied when finding the most suitable applications and customers for the by-products collected and managed.

The best option is to avoid waste and aim to upcycle the by-products it as raw material for - from most to least sustainable - human food, animal food, technical products, biofuel or biogas.

Landfilling is the last option for dealing with residues, aim to divert waste to composting or anaerobic digestion where possible, as these applications mean gases can be captured and used for energy generation, and avoid GHG emissions from waste disposal.

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Some potential uses are obvious, for example, spent grain from brewing beer is usually sold as animal feed, others may be less obvious if you don’t know what the side stream is.

Test technical parameters

It is recommended to evaluate the technical parameters of each stream to determine the best application. For example, testing the chemical composition, moisture content, ash content, contaminants, heavy metals, nutritional value, protein content etc.

Completing this assessment, will also help when discussing the streams with potential buyers, who will want to understand the key parameters of value to them. It will therefore help you understand how valuable the stream is to another industry.

Step 3

Map and Understand the Value Chain

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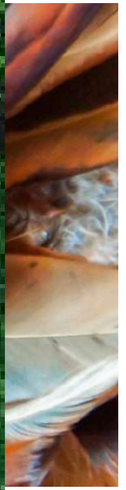

Step 4

Monitor Your Data

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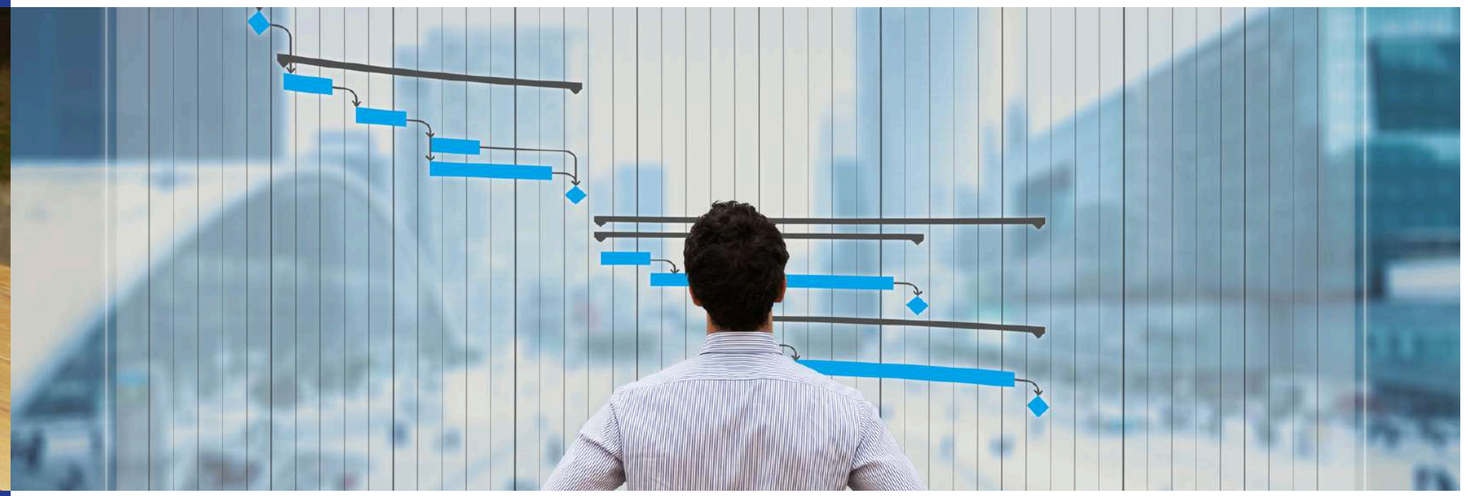
It is important to have a data management tool in place, so that the organization can monitor and track the progress of your management plan.

What gets measured, gets managed

Important data to track includes production volumes and production cycle, product quality parameters, collection schedules, transport payloads, end customer, etc.



Step 5
Implement a Management Plan

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Develop a management plan capturing the learnings, targets, actions and people responsible.
Make sure to record the value of your by-products and the constraints of managing them.

Keep track of potential uses, latest innovation, market trends and legislation relevant for your by-products.

Continue monitoring the value chain that your company is part of, which will help you identify additional opportunities to create new products or services from existing ones.

By-product management should be a process of continuous improvement.

Step 5: Implement a management plan

Once one solution is optimized, the company should be looking for new improvements/upgrades/new markets/end users etc so as to be as sustainable as possible.

This requires regular reviews and collaboration with all stakeholders across the value chain.

Collaboration Is Key

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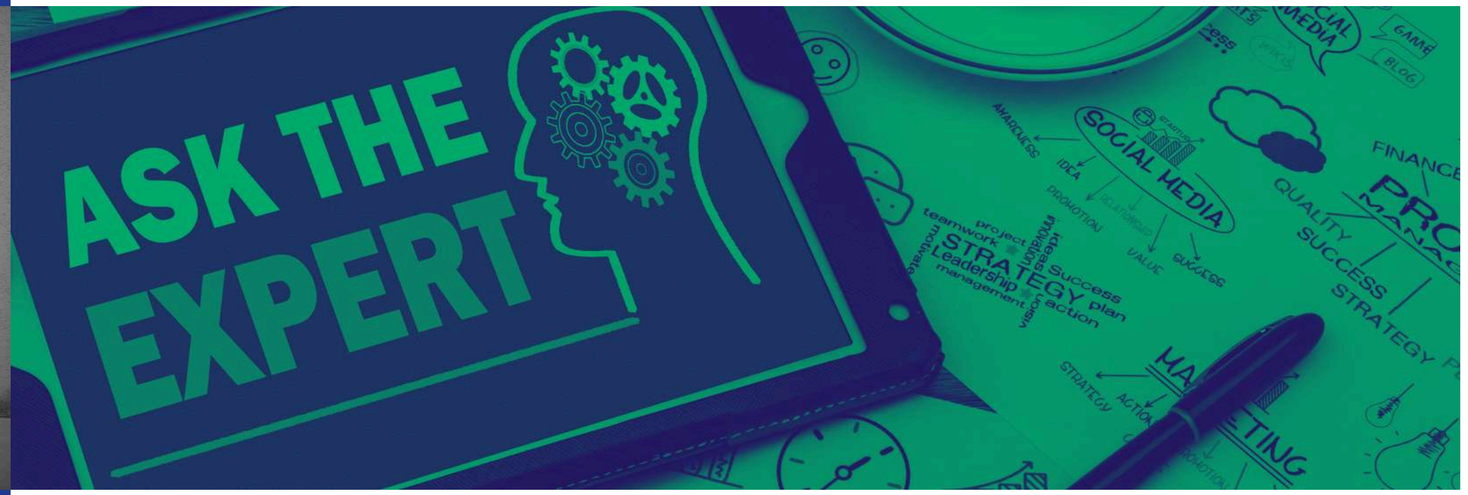
Collaboration is key. It's important to work with your suppliers and customers to share best practices, reduce costs and improve efficiency.

By-product management is a non-core business activity, so often it makes sense to outsource to the experts, who have the time, experience, and knowledge, available to dedicate to this complex but highly profitable area of the business.

The advantages of outsourcing to a partner organization, are that they have the experience and network to quickly identify improvements and a proven track record of delivery.

Now that you understand how to manage your by-products, you need to take a strategic decision: do you keep this in-house and self-manage, or do you partner with an experienced company that can take on this role, and therefore opens up internal resources to work on core business activities?



360 Solutions
Reducing risk
Increasing returns

Outsourced Management of By-products

MBP Solutions has by-product management expertise, partnering with factories globally to ensure continuous production and optimising the value of the side streams.

Click on the below video to learn more about outsourcing the management of by-products:

Looking for a trusted partner

or want to learn more?

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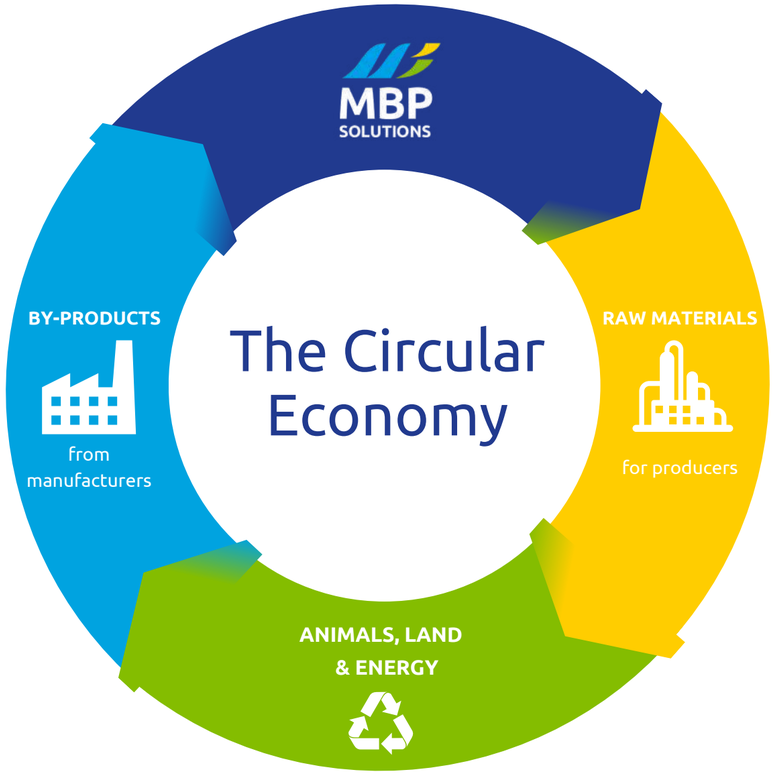

Biological by-products
for tomorrow's environment