

Green Perspectives in Food Production

**How to become more sustainable in the food sector,
tips for SMEs from operations to product development.**

1. Introduction

Ever had someone asked you if your company, product or service is 'green' or sustainable? Not sure how to 'do that'?

Entrepreneurs like you asked us this question, so we collected tips from SMEs like yours to give ideas on what they have successfully implemented. No need to re-invent the wheel, here are some useful and straightforward improvements that any small business in the food sector can deliver. Indeed, the coronavirus pandemic also showed us all that we need to be sustainable and resilient in all ways to keep our businesses running, the team employed and providing safe and enticing products and services to our customers.

When we gathered these tips, businesses said that as they implemented them, they did so to **1) reduce operating costs** (because of optimised resource/waste), **2) increase the productivity** of their business **3) access new customers** who had sustainability requirements, **4) increase the satisfaction of their employees** who wanted to see the company modernise for the future, **5) preserve the planet and act against climate change.**

So, whatever your reason, if you just want to 'do a bit more' for the environment, save some costs or increase your team's pride; we are grateful that you do! Luckily, some of the ideas need no or minimal investment. Every contribution to the EU Green Deal reducing emissions and waste is a genuine contribution to our beautiful home here in the EU.

Before getting started, always check the legislative and non-legislative context that you are operating and how this can influence the approach you take. Look for existing national/regional incentives to implement these actions!



2. Going green: general tips for small businesses

SMEs can go “green” by providing environmentally-friendly products or services or through introducing more sustainable processes into day-to-day operations. Thus you can save money and reduce your environmental impact.

Here are some simple ways through which your business can start going green:

- Use retrofit lighting: When replacing your lighting, look for energy-efficient bulbs or LED solutions, replace an older lighting system with a newer, and install automated light timers.
- Plan preventive machine maintenance to keep them in working order longer. Buy energy-efficient appliances, and try to repair before recycling.
- Turn off equipment or electronics when not in use – including computers in the office.
- Buy refurbished tech and machinery, and consider selling your second-hand fixtures and fittings.
- Identify a member of your team to actively look for good green ideas and implement them in the company (like an innovation scout!).
- Educate and engage all your employees for better water/waste/energy use and management.
- Green up your office and get green office supplies: reduce paper consumption – use digital options wherever possible, recycle printing paper, use refillable printer cartridges, buy office materials from recycled sources, reduce water bottles in the office and replace with jugs in meetings, clean with greener cleaning liquids.
- Offer employees the option for sustainable transportation (e.g. subsidise public transit). Reduce the standard car fleet with electric bike options whenever possible.
- Write into your tenders and supplier contracts that you want to see sustainable offers from them; you often need to inspire them!
- Consider carrying out an environmental audit of your business – it can enable you to gain benefits such as cutting costs, complying easier with legislation, and improving your reputation with your customers, employees, potential investors and the local community.



3. Specific tips to go green in the food sector

SMEs in the food sector are continuously improving the environmental performance of products and processes while meeting consumers' needs for food safety, balanced nutrition and health. Here are some good ideas to become even green-er! Try some tips from our list:

Waste – The resource you don't use profitably, becomes an expensive waste cost

As an entrepreneur, you know that to optimise profits, you want to use 100% of the resources you have, and reduce your waste. What new ideas can you create from taking this a step further?

- Reduce food waste by matching products to user needs (e.g. product design and portion size optimisation).
- Which part of your food waste can you sell to a different customer? Vegetable, fruit or animal product discards can be the ingredient for bio-animal feed, cosmetics or other product such as bio-energy.
- Where waste cannot be prevented, try to dispose of it in a green-er way:
 - **Reuse:** plastic, paper and packaging
 - **Recycle:** packaging waste and non-biodegradable industrial waste, compost bio-waste
 - **Recover:** discarded residues and use biomass for composting or energy production
- Check if all your machines are running optimally with limited energy/water/material waste.
- Sell your defect products with a discount to a reseller or social organisation.
- Remember, the waste regulations are continually changing, and by preventing waste, you can reduce waste management costs!

Water – Every drop counts!

Every drop either contributes to or erodes your businesses' profitability. Here are some good tips on how to save money and water resources in your food manufacturing business.

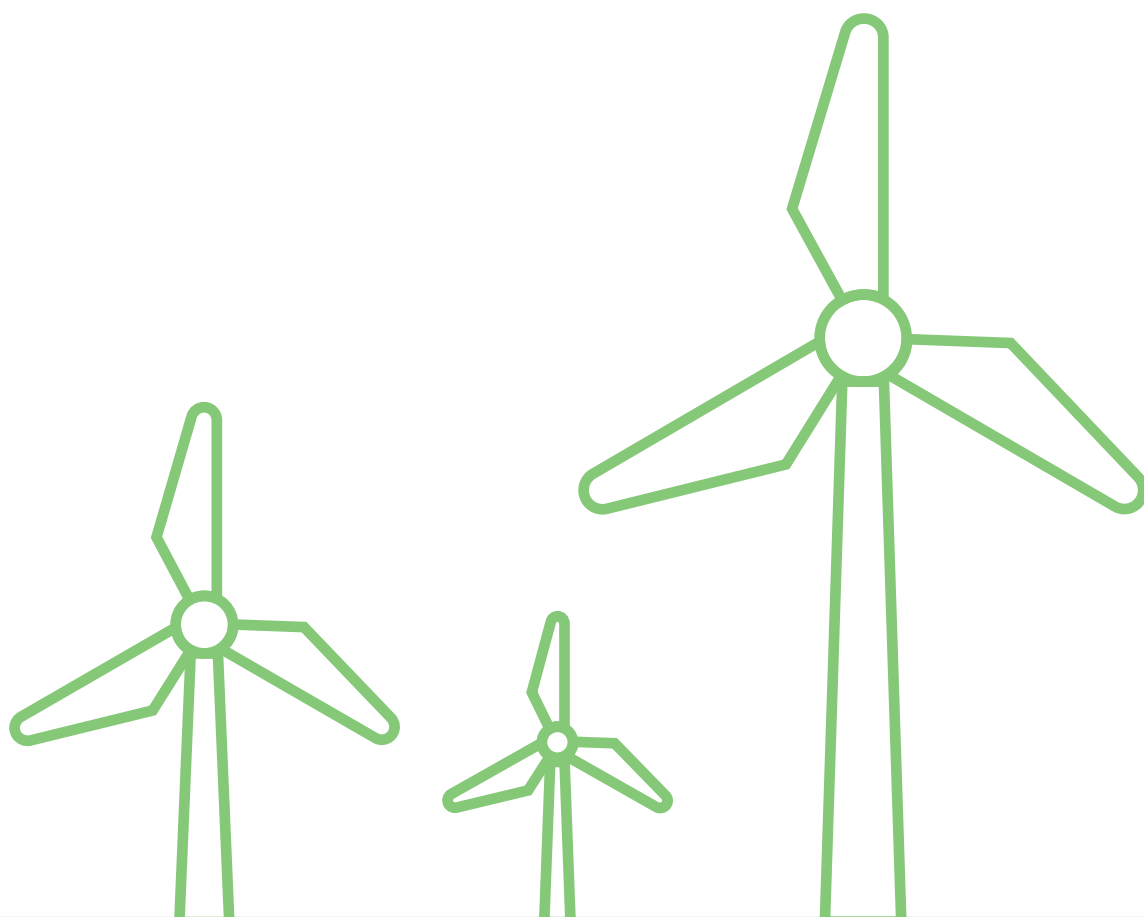
- Start with a water audit. It helps you assess how much water your business is using every day and identify saving opportunities, uncover costly leaks where budget-friendly repairs could help stop water loss and save you money. Your utility company may provide free water audit options or rebate reductions for water-saving programmes.
- Monitor your water consumption regularly and check that it is optimised – not just manufacturing process, but also in office and operations area. Look at flow restrictors, install flow meters or leak detection systems, add spring valves to hoses, introduce pressure controls and water re-cycle methods.
- Remember to optimise water in machine and production location cleaning. Apply practices to replace water, e.g. reuse cleaning water in cooling systems, cleaning with vacuum instead of water brooms, using eco-friendly cleaning products where possible.
- Check if faster processes use less water, for example, cleaning equipment as soon as possible after use to prevent waste hardening.
- Double-check you know the local and regional regulations on wastewater.
- Consider how you heat and cool your water; there are resource-efficient ways to do this too! For example, the renewable energy supply of the boilers, or energy-efficient devices.
- Explore options for acquiring affordable wastewater system that can help start a water reuse programme on a small scale and can be scaled-up as needed after proving the business case.



Energy – What watts do you really need?

Company owners like you have told us that energy is one of their highest costs in food processing, and we also see it as one of the most significant areas you can make great green gains!

- Get an energy audit, which suggests cost-efficient ways you can reduce your use (you will get a return on investment for that visit!).
- Check if you can get tax relief or be exempt from paying taxes if you invest in energy-efficient technology or sourcing, e.g. your electricity from solar panels or biogas.
- Look closer at your refrigeration and freezing and double-check that you have the correct temperature set on the needs of the product (communicate this also to your transport colleagues and your customer so they can save too!).
- Consider pre-cooling hot/warm products before placing them into the cooling equipment.
- Avoid temperature leakage – check if your office or production process is leaking warmth or coolness via seals on doors, garages and halls, and replace the leaking seals.
- Switch from fossil to sustainable and renewable energy sources.
- Consider how you can make power yourself with on-site bio-based generators, which can produce energy from your by-products and waste.
- Ensure that electrical cables and wires are sized efficiently for the energy requirement: undersized wiring can overheat and waste electricity.
- See what sustainable refrigerant gas options for your refrigerator and freezers are available in your area.



Packaging – Choose a packaging material that is better for you, and your customer's carbon footprint

You want to deliver your food hygienic and visually attractive, while not polluting the environment at the same time. It may be challenging to work out, and here are some ideas:

- Reduce the volume and weight of your packaging to the level necessary to maintain the required levels of safety and hygiene (thinner packaging materials and smaller package sizes).
- Redesign packaging to minimise the use of materials.
- Increase natural materials (compared to non-toxic materials).
- See what part of your packaging can use recyclable materials, bio-plastic, eco-friendly packaging or try to use returnable secondary and tertiary packaging (like in your delivery boxes, outer packs and branding wraps)
- Consider what you need to sell in packaging – what about selling in bulk and talking with your customer about their storage process? That way, you both save on packaging waste. Consider what part of your packaging can be simple materials easy to recycle or re-use for your customer, or their consumers. Discover the new "Zero Waste" Shops, which could be your future clients.

Ingredients and raw materials – Look closely and introduce environmental performance considerations across the whole supply chain.

Your unique ingredients and secret sauce are the place where your product really shines, have you checked what new green options you could use?

- Try to find and celebrate sustainable ingredients. Look for eco-friendly, sustainable, local, and organic.
- Adapt your product recipes to remove or reduce unsustainable ingredients such as monocropped palm oil, or commodities that are unethically sourced like cacao and coffee.
- Select suppliers that fulfil identified environmental performance criteria, and put this into your standard procurement process.



4. Good practices in the food sector

With this, we share with you some great ideas of food sector players who have built profitable new business streams by adopting green practices. They also got funding from the EU for it (so can you!).



Compostable Coffee Capsules

Italian SME Aroma System S.r.l. in Bologna has produced a fully compostable coffee capsule. Aroma System, in Bologna, Italy, spun out of a family business that combines cutting-edge technology with a passion for good coffee. Since 1988, Aroma System has been innovating machinery to keep each cup of brew flavourful and environmentally sustainable.

Because of the challenges of recycling the plastic-aluminium compounds in conventional coffee capsules, LIFE-PLA4COFFE project – co-financed by the [EU LIFE Programme](#) demonstrates a new, improved production process for coffee capsules to substitute PE, PET and aluminium. Aroma System engineered a compostable alternative made of polylactic acid (PLA), a bioplastic extracted from renewable sources such as starch and sugar.

Key actions:

- An industrial plant that can produce 20 kilograms of bioplastic/hour
- Produces over 400 compostable coffee capsules/ per minute in 6 different colours
- Reduced costs to under €0.025/each capsule
- Filed some 200 patents and launched collaborations with the University of Rome Tor Vergata

Find out more about the project:

<https://pla4coffee.com>

Reusing acid whey by-products

The Slovenian LIFE for Acid Whey project develops an innovative technology for extraction of high added-value proteins from acid whey. This project has succeeded to improve the value chain in the dairy industry by reusing acid whey by-product, which was formerly discharged into the sewage system. The new high-end protein products such as lactoferrin are met with growing demand with applications as nutritional supplement but also in pharmacology. The LIFE for Acid Whey project is co-funded by the EU LIFE Programme and its developed technology fulfills the necessary qualitative criteria whilst maintaining high flow rates.

Moreover – considering that 60 % of whey remains unprocessed in the EU – by extracting the proteins from the acid whey by-product the project has mitigated a heavy burden on the environment generated by the dairy sector.

Key actions:

- Brings innovative technology that is highly scalable and hence usable also by small and medium dairies
- Extracts various proteins with distinct applications in different markets in an economically-viable way compared to traditional sources
- Produces high-end proteins of excellent quality with over 98 % purity
- Considerably reduces environmental footprint of dairy industry

Find out more about the project:

<http://lifeforacidwhey.arhel.si/en>

5. Need more information and support?

So, you have implemented the quick wins, and you have more significant ideas for greening your SME?

For more in-depth information on further steps and/or access to funds at European, national, regional, or local level to finance your green transition, please ask your SME organisation or regional/local public authority.

How to apply for the LIFE Programme funding in the areas of environment and climate?

You can find information on the application guidelines and your national contact points here:

ec.europa.eu/life

Do you know of a best practice in this sector?

Then flag it up to EREK (European Resource Efficiency Energy Centre) – <https://www.resourceefficiency.eu/en>. EREK is the online platform to foster resource efficiency in SMEs. Your best practice will be showcased to all interested parties. The platform is set up by the European Commission and available in 17 languages.



About the LIFE Programme

The LIFE Programme is the EU's funding instrument for the environment and climate action created in 1992. The current funding period, 2014-2020 has a budget of €3.4 billion. The financial framework period of 2021-2027 foresees an increase to over €5.4 billion.



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