

Conclusion

The 'Zero Waste Power in HoReCa' project aims to address environmental challenges faced by hotel, restaurant and catering industries in Europe, and to promote the advantages and methods of a zero-waste strategy through the development of this curriculum. Focusing on business owners and managers, as well as vocational education participants, this curriculum has raised the awareness and understanding of zero waste practices. We have examined best practices changes in procedures that can be carried out across HoReCa businesses. We have also explored the benefits of implementing audit controls and performing regular monitoring, in addition to the impacts of green procurement. There were six areas of focus in this curriculum: kitchen organisation, menu planning and sustainable food, waste reduction and recycling, packaging, energy, and chemical and pollution reduction. The findings in each chapter are presented below.



Chapter 1: Kitchen Organisation in HoReCa

A zero-waste approach to kitchen operations in the HoReCa organisations requires an overall understanding of underlying practices. From a perspective of the industry as a whole, a turn in a more sustainable direction is not possible, unless businesses are aware of the mistakes that they make and opportunities available to them for improvements. **Food waste is one of the biggest challenges faced by hospitality, catering and restaurant businesses in their kitchen operations.** Not only does it contribute to a negative image of the sector in relation to the environmental impact of food waste, but it also results in high costs for individual businesses. Hence, reducing food waste can be considered as a key factor to greater implementation of the zero-waste approach in the HoReCa organisations.



Chapter 1: Kitchen Organisation in HoReCa

Measuring current food waste is the first step to introduce zero waste approach to a HoReCa business. A food waste audit tool was presented to support organisations and build awareness of the importance of regular monitoring activities. Conducting a food waste audit for a kitchen in a hotel, restaurant or catering business provides data and information on the type of waste generated, its volume, origin and cost associated.



Chapter 2: Menu Planning – Sustainable Food

Menu planning is the practice of researching and selecting meals, food and drink items that the catering or restaurant businesses are going to provide to guests. It is a complex process related to such aspects as meal quality, consumers expectations, products and ingredients availability, consumers needs and values as well as environmental impacts. The core aim of menu planning process is maximising business' profitability. In this a more modern world, where expectations of consumers in the face of climate change are shifting the general trends in the way that food is grown and prepared, HoReCa organisations need to adjust their menu planning strategies to new realities.



Chapter 2: Menu Planning – Sustainable Food

Sustainable food consumption has become a new standard, and as research has shown, sustainable practices will soon become key elements determining success on the market. However, it should be noted that a change towards more sustainable menu planning is equally motivated by the impacts that food related sectors have on the environment, accompanied by a clearer understanding of the positive impacts that hospitality and catering industries can have on consumption behaviours on a broader scale.



Chapter 3: Waste Reduction and Recycling

General operations in a HoReCa business generate great amounts of waste on daily basis. That waste impacts negatively on the social, economic and ecological environment. Hence it is extremely important for businesses, and the HoReCa sector in general, to undertake actions aiming to minimise those negative impacts. **Mapping, measuring and monitoring waste generation are best practice methods that should become a standard practice in hotel, restaurant and catering organisations.** The support in this process is provided by the circular economy model and recycling strategies. There are various methods available for organisations that will support them in increasing the waste reuse and recycling rate. However, **due to the amounts of waste generated, it is clear that recycling is not enough anymore. HoReCa facilities need to concentrate on reuse and waste reduction strategies.**



Chapter 3: Waste Reduction and Recycling

Waste generated in HoReCa organisations comes from all types of activities and operation areas. Organic waste, glass, paper, cardboard, plastic and metal are named among the main waste fractions. The HoReCa sector is considered as one of the key contributors to packaging waste in Europe. Additionally, waste in the HoReCa sector is also related to energy and water consumption.

An effective strategy for solving the waste problem in individual organisations needs to be based on recognising the main areas contributing to waste generation and identifying the main waste types produced. Once organisations build an understanding and a realisation of this data, there are multiple tools and resources available to support them in successful implementation of waste management and reduction strategies. Some of those tools were presented in the third chapter.



Chapter 4: Packaging

Packaging is defined as the material used to display, contain, protect or transport a product. The most common materials used in packaging are plastics, glass, paper and cardboard, wood, and aluminium. The types of packaging used depends on the following: transport methods, distance and duration of time travelling, the product type, any preservation required, marketing needs, shelf-life expectations and handling. The volume of packaging waste for Europe was measured at 86.4 million tonnes – that equals to an average of 169.7kg of packaging waste produced per resident of the EU 28 countries. The tourism industry contributes significantly to packaging waste in Europe. Tourists generate nearly twice as much solid waste per person as residents. The generation of packaging waste in the HoReCa sector can be traced to four main processes: transportation, production, disposal and cleaning.



Chapter 4: Packaging

Monitoring is an essential part of any waste management plan. An initial assessment is needed to see what the sources of packaging waste are. Once that has been done, a plan to regularly monitor packaging waste should be created. Continuous monitoring will help to manage the costs associated with waste disposal. It will also help to plan for future reduced packaging. A heavy reliance on landfills in the past has meant that landfill space is quickly diminishing with time. It is important that a strategy for the correct separation and disposal of waste is created. Materials should be sorted by type: paper/cardboard, glass, plastic, aluminium and metals, wood. Where possible, these materials can be further sorted by weight, for example with paper sort from light weight paper to heavy duty cardboard. Some packaging materials can be repurposed or returned to suppliers.



Chapter 5: Energy

Energy consumption is a significant part of all businesses in the HoReCa sector. Therefore, it follows that it should be given due consideration by business owners, senior management, employees, and to some extent guests/customers too. In this chapter, we examined the main areas of energy consumption in HoReCa companies – lighting, heating, and cooking. We discovered that simple changes in practices with little or no financial investment by the business can have an immediate result in reducing energy use. **Actions such as, switching off appliances, changing light bulbs, reducing the volume of laundry can all work to lower the energy consumed by an organisation. We also explored actions that require more of an investment like efficient appliances, regular maintenance of appliances, and improvements that can be made to the building's envelope.**



Chapter 5: Energy



Common across all research was the recommendation that an energy monitoring plan is needed. This will allow organisations to assess their current energy consumption and where it was come from, and to measure the reduction in energy from their change in practices and larger investments. It was also noted that the success of such initiatives can depend on having a dedicated energy manager or team, who will work to ensure energy policies are followed and regular monitoring occurs. Finally, this chapter briefly evaluated the employability of renewable energy resources in providing energy for HoReCa businesses – evaluating the adaptability of solar power, wind power or biomass energy. While these sources are beneficial to the environment, it is not always a plausible option for companies to establish a renewable energy source on-site. So, it was recommended that businesses investigate the opportunity to source ‘green electricity’ from local vendors.



Chapter 6: Chemical and Pollution Reduction

This chapter was divided into two sections. First, we examined the process of reducing chemical use in HoReCa industries. Chemical substances can be found in a range of products, from food to beverages, cleaning supplies to hygiene products, and textiles like linen and towels to toilet paper. While these chemicals are used to enhance products in various ways, they are hugely harmful to the environment and to health. For example, chemical run offs from factories, wastewater from cleaning, and air pollutants from fresheners all add to ongoing issues with water, air and land pollution. In addition to this, we saw that chemicals can cause issues with the skin, respiratory and immune systems, and in some cases include cancer forming cells



Chapter 6: Chemical and Pollution Reduction

It's clear that steps need to be taken to reduce chemical use, so in this chapter we explored the following options:

1. **Change of practice:** Modifying cleaning and laundry practices for reduced chemical use.
2. **Employee Training:** Train staff on efficient cleaning methods, health and safety of handling chemicals, and chemical management.
3. **Monitoring:** Establish a plan to monitor the use of chemicals in the business, examining the quantities of chemicals bought and used, and set targets for future use.
4. **Ecolabels:** Replace products with ecolabel alternatives, reducing the health risks and environmental impacts associated with traditional products.



Chapter 6: Chemical and Pollution Reduction

In the second part of this chapter, we looked at pollution. We defined the three main types of pollution: water, air and land. Direct behaviours, such as energy use, current practices and green procurement can all have a significant impact on pollution generation. However, it is important to note that there are also indirect processes that can impact pollution, for example: water waste management and the behaviours of third-party influencers. HoReCa businesses must also be aware of other types of pollution in the form of light and noise pollution. We outlined some of the key steps businesses can make to reduce pollution, to name a few: switching to green energy, green procurement of products, change of practice. Finally, we assessed the concept of carbon foot printing. Carbon foot printing can be very useful to HoReCa businesses in terms of creating an environmentally friendly brand. There are also potential cost savings for organisations. The two recommended methods for measuring the carbon footprint are:

1. Measuring the carbon footprint of the whole organisation
2. Measuring the carbon footprint of a specific product or service.



Chapter 6: Chemical and Pollution Reduction

Calculating Zero Waste

There is no quick and easy way to reach zero waste. Achieving zero waste in a HoReCa business will require the decision makers to follow the zero waste ethos and implement the practices outlined in this curriculum across all areas of the business. Every business in the HoReCa industry is different, even those that offer the same service will differ in their waste generation, energy consumption and levels of environmental impact. As a result of this, there is no set figure that can determine zero waste across the HoReCa sector.

The only way you can determine if your zero waste practices are taking effect is to measure and evaluate your waste and consumption at multiple stages. We have created useful tools to help you do this:

- Appendix 1.1 and 1.2 will help you to determine the volume and cost of the food wastage in your business.
- Appendix 2.1 offers a checklist to help you develop the sustainable plate
- Appendix 3.1 provides you with a check list of actions to follow to reduce food waste.
- Appendix 4.1, 4.2 and 4.3 will help you to evaluate the type and locale of your packaging waste and the cost this is incurring for your business.
- Appendix 5.1 provides a checklist to establish energy consumption in your business, and appendix 5.2 outlines the actions that will help you reduce your energy use.
- Appendix 6.1 give you a checklist to help ensure you are managing your chemicals correctly, and lastly appendix 6.2 is a tool developed to help you reduce your pollution generation.



Chapter 6: Chemical and Pollution Reduction

The key to using these tools for zero waste is to take an initial measurement, implement the best practices outlined in the corresponding chapters and monitor the results of your actions by taking further measurements. The aim of these tools is to reduce consumption, make your practices and resource usage more efficient, and to reduce waste.

Thank you for taking the time to read our Zero Waste Power in HoReCa curriculum handbook. If you have any questions, or would like to learn more about this project, please visit our website at <http://www.zerowastepower.eu> or contact us on Facebook @ZeroWasteProjectEU.





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