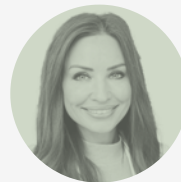
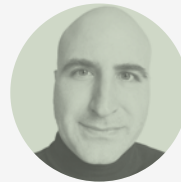


# HYB25

## Sustainability Tech Edition

Unlocking Smart & Sustainable Tech  
Solutions for Hospitality



**The Hotel Yearbook**

Foresight and innovation in the global hotel industry

HYB



# Smart Ways Technology Can Support Sustainable Operations in Your Hotel

Sustainable Operations

**Juliane Caillouette Noble**

*Managing Director at The Sustainable Restaurant Association (SRA)*



At The Sustainable Restaurant Association, our mission is to accelerate positive change across the global hospitality industry, building a sector that is environmentally restorative and socially just. In this article, we explore how technology can support hotels, restaurants and other foodservice businesses on this journey.

We won't sugar-coat it: 2025 will be a tough year for hospitality. With pressure coming from multiple angles — economic, legislative and staffing, on top of the myriad challenges presented throughout every shift — many operators will be tempted to abandon their ESG goals to focus on simply staying afloat. The surprising truth, however, is that embracing sustainability can actually support businesses through times of economic pressure, helping to reduce operational costs, boost reputation and customer loyalty, attract and retain staff, and reassure stakeholders. While resources and time are tight for many hotels and restaurants right now, there is a wealth of technological solutions available to support this journey, improving efficiency and reducing environmental impact while cutting costs in the process.

Restaurants are inherently social spaces that play vital roles within their communities, and the people working in the service industry are a key part of what makes meal experiences special and memorable — so we should be wary of using AI to replace the social and cultural elements of hospitality. We don't need our meals served by faceless robots; our goal should be to protect what is uniquely human about hospitality while making the best possible use of technological solutions in other areas — like driving sustainability forward.

Where technology really shines is in its capacity to facilitate data-driven change. Things like waste segregation, stock management and energy and water reductions can all be made vastly more efficient using AI, making sustainability more achievable for businesses overall — even through challenging times. As phrased in the [Guidebook](#) produced by RESTwithEU (a pilot project to support and drive the digitalisation of the European restaurant industry), *“consider it as venturing into a realm where improved efficiency, better customer experiences and heightened profitability await.”*

Let's dive into some of the ways technology can support sustainability in hospitality operations.

## FOOD WASTE

Wasted food is one of the industry's biggest problems, with a colossal [1.05 billion tonnes](#) of food waste generated in 2022, and foodservice responsible for 28% of that figure. Not only is this morally reprehensible while one-third of people worldwide live with food insecurity, but it's catastrophic for our climate. When food is wasted, all the energy, water, labour, transport emissions and other resources that have gone into producing it are also lost. Meanwhile, food loss and waste generate 8-10% of annual global greenhouse gas emissions, simultaneously making a significant contribution to biodiversity loss by wasting almost one-third of the world's agricultural land.

This needs a critical overhaul from an environmental perspective but, on a day-to-day basis, it's also crippling the industry. In an era of skyrocketing costs, food waste is a

completely unnecessary expense. By working with the right technology, your business can go a long way towards preventing food waste and lowering scope 3 emissions while also increasing efficiency and improving profitability.

Food waste management technology makes it simple to track and measure production and plate waste, revealing patterns you can then work to change. For example, if a particular menu item consistently generates a lot of plate waste, then either portion sizes should be adjusted or that dish should be removed from the menu. Over time, these systems can give accurate predictions for how much food is needed based on the number of covers expected, providing your kitchen with valuable information when it comes to prepping.

Meanwhile, smart stock management, inventory control and supply chain optimisation solutions can eliminate over-ordering and ensure that ingredients are used before they go bad, while providing valuable insights into consumer demand. With inventory tracking, businesses have an up-to-date view of what's in stock, allowing for more efficient ordering. Some of these solutions can integrate with POS systems to automate updates as dishes are sold, letting front-of-house staff know when to stop taking orders for a particular item. Conversely, these systems can also alert your team on which dishes need to be pushed to prevent stock going to waste.

## ENERGY USE

We always recommend that businesses make the switch to renewable, clean energy, which can dramatically slash scope 2 emissions. Eliminating gas and embracing a fully electric kitchen can feel like a big move, but the kit has now become so efficient that there has never been a quicker return on investment.

After this, the next step is to introduce solutions that will monitor and reduce the amount of energy used, lowering both bills and environmental impact. Installing smart meters is a great way to track energy use, helping you make targeted changes. Appliance-level energy monitoring is extremely effective; timers and sensors can be added to extractor fans, overdoor heaters and toilet cisterns, ensuring that they run at reduced levels during quiet periods and turn off overnight. These systems can also alert teams if equipment is left on outside trading hours, while remote management tools let you monitor and control equipment and fixtures systems from a distance, eliminating unnecessary consumption.

Taking care of staff is an important (and often overlooked) part of social sustainability, and some of these solutions bring additional benefits to kitchen teams. For example, Demand Control Kitchen Ventilation (DCKV) technology uses sensors to detect heat, smoke and steam, automatically adjusting motor speed to match. Not only does this save energy, but it also reduces kitchen noise and air pollutants, creating a better, safer working environment for kitchen staff. Similarly, switching to induction hobs keeps kitchens cooler and allows more precise heat control while also reducing emissions.

Many of these solutions also allow you to purchase clean energy at the most cost-effective times. Smart water heaters can heat water when electricity is at its cheapest, storing it for later; electric delivery vehicles with bidirectional charging can give stored energy back to your premises; and pairing battery storage systems with solar panels captures clean energy in cost-conscious ways. Creating a long-term strategy for stacking a number of these solutions together will provide the best outcomes.

## WATER USE

Smart water systems are designed to monitor and manage water use, giving operators both insights and control in real-time. Using IoT technology, smart water meters allow businesses to track how much water is being used in different areas and will alert you to anomalies like leaks before they can do real damage. Sensors connected to these systems can adjust water pressure or temperature as needed to conserve water and energy use. By monitoring the performance of water pipes, pumps and thirsty equipment like dishwashers, this technology can even forecast when a breakdown is on the horizon, alerting management ahead of time to avoid costly disruptions.

Invest in water-efficient appliances; over time, this can have a significant impact on the amount of water (and money!) you use. You don't have to replace them all at once, but when the time comes to buy new equipment, choose water-smart options. For example, many ice machines discard some of the water they take in, rather than freezing it all; choose a machine that converts as close as possible to 100% of its intake into ice. As a bonus, newer models often have a better energy efficiency rating, meaning you'll also cut your bills.

Because foodservice requires a lot of handwashing, installing low-flow taps — preferably with motion sensors — is a simple, inexpensive and effective way to decrease consumption. When it comes to dirty dishes, low-flow rinsing nozzles use significantly less water than older models. Hotel rooms can benefit from low-flow taps and shower heads and dual-flush toilets.

## MENU PLANNING

Digital menu management allows chefs more flexibility when it comes to updating their menu. This makes it easier to work directly with local suppliers and create dishes based on what they have to offer when it's in season and at its best, rather than ordering ingredients based on an already-designed menu. Integrating these systems with front-of-house POS systems can reduce or eliminate the use of paper in your business.

Carbon footprint calculators can also have a big impact on sustainable menu design, allowing chefs to create and tweak dishes based on their carbon footprints. Whether or not you choose to add carbon labelling to customer-facing communications like menus, this technology provides tangible information that can help chefs to better understand and control the impact of their choices.

## DATA IS KING

All these solutions have one thing in common: unprecedented and extremely helpful access to data. The value of this cannot be over-estimated; it allows hospitality businesses practical insights into long-term patterns, giving operators a greater degree of control than ever before. By making the most of these data, restaurants can see reduced costs and increased efficiency, reducing environmental impact while also supporting business success and building a more resilient, future-proof industry.

*Learn more about The Sustainable Restaurant Association and our sustainability certification designed for the hospitality industry, the Food Made Good Standard, at [www.thesra.org](http://www.thesra.org).*





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