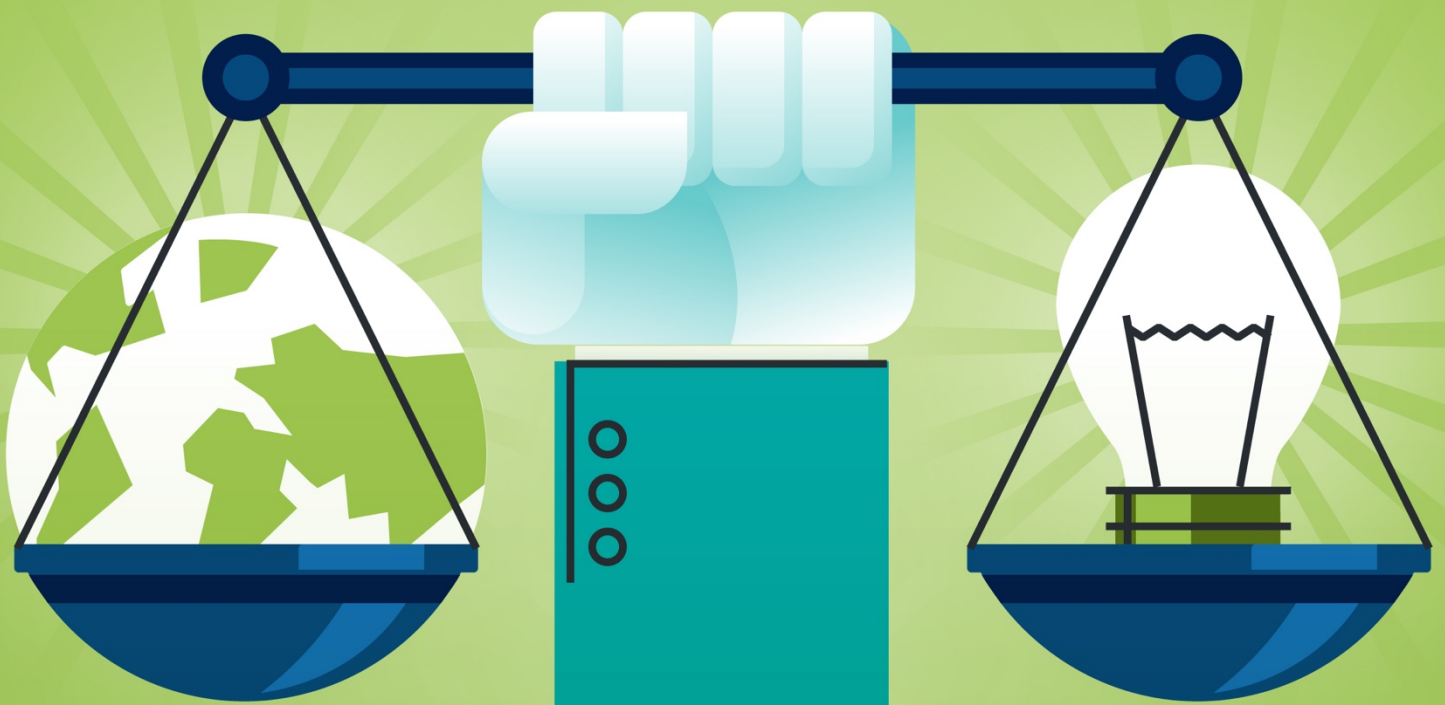


**NET
ZERO CARBON
EVENTS**



**Venue Energy
Guidance**

December 2023

Contents

INTRODUCTION	3
A WORD FROM THE WORKSTREAM	3
RECOMMENDATION 1: TRACK ENERGY USAGE	4
WHY SHOULD A VENUE TRACK ENERGY USAGE?	4
WHAT STEPS ARE NEEDED TO IMPLEMENT ENERGY TRACKING?	5
RECOMMENDATION 2: SWITCH TO LED LIGHTING	6
WHAT IS LED LIGHTING?	6
WHY SHOULD A VENUE SWITCH TO LED LIGHTING?	6
WHAT IS THE COST OF LED LIGHTING?	6
ENERGY EFFICACY COMPARISON	7
RECOMMENDATION 3: USE LIGHT SENSORS	8
WHAT IS A LIGHT SENSOR?	8
WHY SHOULD EVENT VENUES IMPLEMENT LIGHT SENSORS?	8
WHAT IS THE COST OF LIGHT SENSORS?	9
RECOMMENDATION 4: IMPLEMENT SUSTAINABLE IT STRATEGY	10
WHAT IS SUSTAINABLE IT?	10
WHY SHOULD A VENUE IMPLEMENT A SUSTAINABLE IT STRATEGY?	10
CHECKLIST FOR VENUES STARTING THE JOURNEY	11

INTRODUCTION

After [the NZCE Pledge](#) and [the NZCE Roadmap](#) were created and published in Phase 1 and 2 respectively, Phase 3 has been focused on the creation of practical guidance documents for the decarbonisation of the meetings and events industry. Five workstreams were created to discuss and ultimately provide guidance on the decarbonisation of the specific action areas defined in the NZCE Roadmap: Venue Energy; Food and Food Waste; Logistics; Smart Production and Waste Management; and Travel and Accommodation. In addition, three transversal workstreams were created to support the initiative and provide guidance on the issues that touch on all action areas: Measurement; Carbon Offsetting; and Reporting. This document provides the first version of the guidance document for the Action Area “Venue Energy”. To read the documents that the other workstreams have produced, please visit the [NZCE initiative’s resources page](#).

A WORD FROM THE WORKSTREAM

The Venue Energy workstream has both worked on the guidance document and engaged directly with the events industry. From the start, the goal was twofold: to create a set of straightforward best practices and to come up with a measurement mechanism allowing to demonstrate progress made. This document delivers an overview of best practices for use by the community, but more are still to come. Future versions of this document should focus on additional best practices that reduce energy usage, such as insulation, agreements with event organisers on acceptable temperatures or use of HVAC systems during build-up/tear-down, renewable energy solutions, green building norms, energy audits, and more.

In parallel to drafting this document, our workstream, under the leadership of AIPC, has started to roll out a venue energy reporting system, which is open to all venues interested, whether they are part of AIPC or not. The goal is to demonstrate progress made, using 2019 energy usage as a baseline. As with other measurement exercises, the lack of data remains a challenge which needs to be overcome either by putting in place the necessary equipment or by using models which allow to provide reliable proxy figures.

Investing in the reduction of energy usage is not only smart from a sustainability perspective but also from a cost perspective. While the diversity in local regulations and opportunities varies for each event industry stakeholder, energy reductions can be achieved through multiple solutions and the events community should work collaboratively to enable progress for everyone and continue on our path towards net zero.

RECOMMENDATION 1:

TRACK ENERGY USAGE

Tracking energy usage is the very start of any energy strategy of a venue. Overall, tracking energy usage in an event venue is crucial for cost management, environmental responsibility, and regulatory compliance, benchmarking, stakeholder communication, and driving continuous improvement toward energy efficiency goals. It enables venues to make data-driven decisions, reduce operational costs, minimise environmental impact, and enhance their overall sustainability performance. In addition, there is a growing demand from organisers to obtain detailed reporting of energy usage at event level. Specifically for this, apportionment of overall venue energy consumption is critical. This means that venues need to work towards increased submetering to provide accurate measurement in the case of multiple events happening at the same time.

WHY SHOULD A VENUE TRACK ENERGY USAGE?

Tracking energy usage in an event venue is important for several reasons:

Cost Management:

Energy costs can be a significant expense for event venues. By tracking energy usage, venues can identify areas of high consumption and implement strategies to reduce energy waste, leading to cost savings. It allows them to understand their energy expenditure patterns and make informed decisions regarding energy-efficient upgrades or changes in operational practices.

Environmental Impact:

Energy consumption contributes to carbon emissions and environmental impact. Tracking energy usage helps event venues understand their carbon footprint and identify opportunities for reducing their environmental impact. By monitoring energy consumption and implementing energy-saving initiatives, venues can contribute to sustainability goals and demonstrate their commitment to environmental responsibility.

Performance Benchmarking:

Tracking energy usage enables event venues to establish benchmarks and compare their energy efficiency against industry standards or similar venues. Benchmarking can identify areas where energy consumption is higher than average, allowing venues to set targets for improvement and implement energy-saving measures to enhance their performance.

Regulatory Compliance:

Many regions have regulations and energy efficiency standards in place. By tracking energy usage, event venues can ensure compliance with applicable regulations and take necessary actions to meet efficiency targets. Regular monitoring helps identify deviations and enables venues to make adjustments to align with regulatory requirements.

Energy Efficiency Improvements:

Tracking energy usage provides valuable data for identifying energy efficiency improvement opportunities. By analysing energy consumption patterns, venues can pinpoint areas where energy waste occurs, such as inefficient equipment, inefficient HVAC systems, or inadequate insulation. This information can guide decision-making when upgrading equipment or implementing energy-saving technologies and helps venues establish a culture of sustainability.

Stakeholder Communication:

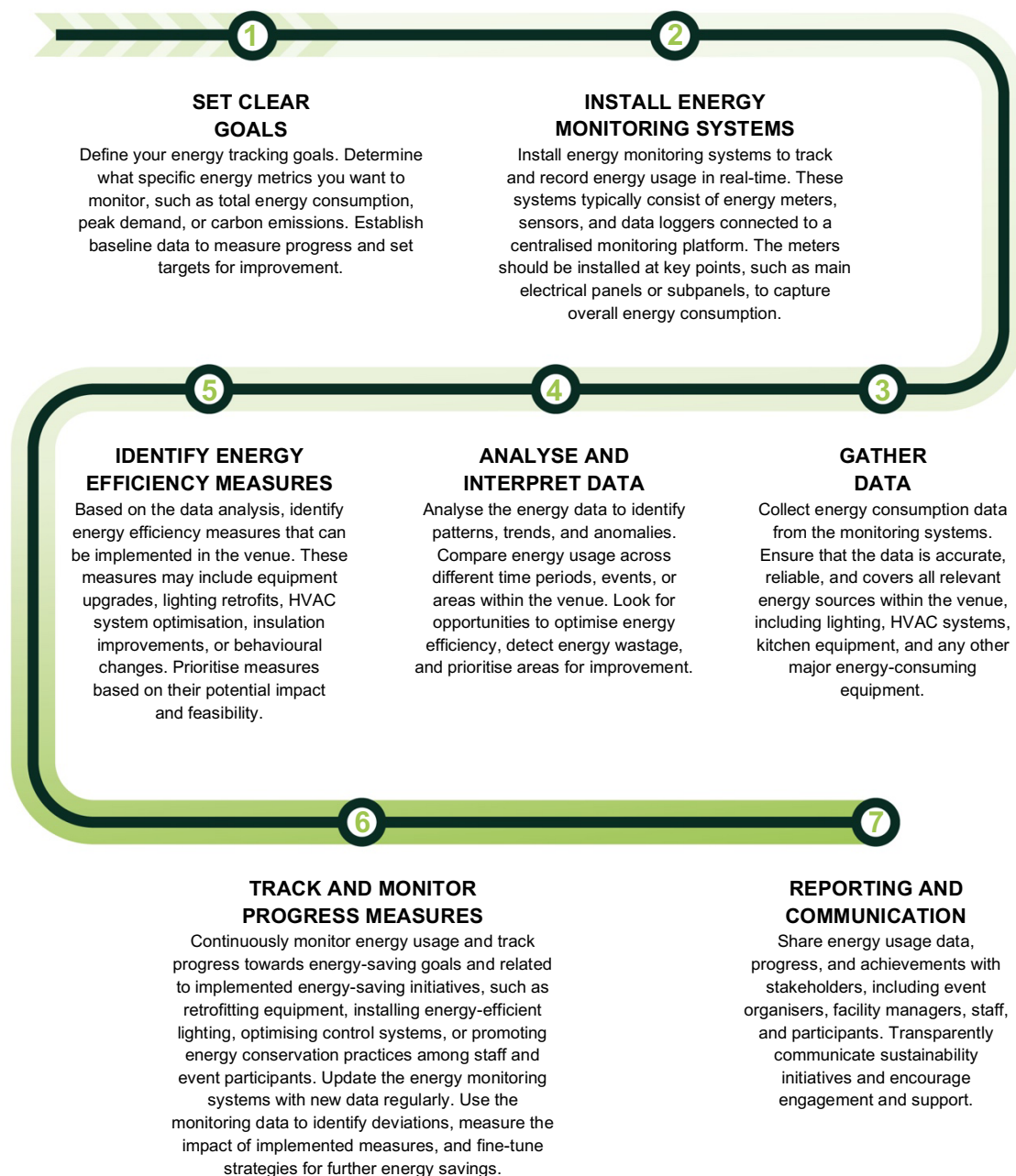
Tracking energy usage and demonstrating efforts to reduce consumption can enhance the venue's reputation and credibility with stakeholders, including clients, sponsors, and the community. Sharing energy efficiency initiatives and progress can showcase the venue's commitment to sustainability and attract environmentally conscious partners and customers.

Reporting to organisers:

A growing number of organisers request a report on energy usage at event level to be integrated with the overall footprint report of the event. Being able to offer this service requires advanced tracking applications and methodology.

WHAT STEPS ARE NEEDED TO IMPLEMENT ENERGY TRACKING?

The following steps provide an overall framework for venues wanting to implement energy tracking:



RECOMMENDATION 2: SWITCH TO LED LIGHTING

WHAT IS LED LIGHTING?

The light-emitting diode (LED) is today's most energy-efficient and rapidly developing lighting technology.

WHY SHOULD A VENUE SWITCH TO LED LIGHTING?

LED Lights Save Money:

LED lights use at least 75% less energy than incandescent lights. They also emit very little heat compared to incandescent bulbs, which release 90% of their energy as heat, and compact fluorescent lights (CFL), which release about 80% of their energy as heat. This heat created is not only an issue for energy efficiency for the actual lighting process but also creates additional heat that might increase the need for air conditioning. LED lighting products typically last much longer than other lighting types. A high-quality LED bulb can last 3 to 5 times longer than a CFL and 30 times longer than an incandescent bulb.

Higher-Quality Lighting:

LEDs emit light in a specific direction, reducing the need for reflectors and diffusers that can trap light. This feature also makes LED lighting more efficient.

Customer Experience:

LED lights allow for the use of different colours, allowing to create different atmospheres in different areas of the venue and even on the exhibition floor, creating different visitor experiences.

Workplace Performance:

Studies show that poor lighting reduces employee motivation making it harder to concentrate on a task and it also decreases workplace and event safety, specifically related to trips and falls. With LED Lighting, you don't have to worry about those factors.

WHAT IS THE COST OF LED LIGHTING?

LEDs cost around 0.7 US dollars per kilolumen in 2017 and are forecast to keep getting cheaper in the coming decades. In 2020, their price dropped to 0.4 US dollars per kilolumen and in 2050 it is projected to drop further to around 0.3 US dollars per kilolumen.¹

¹ <https://www.statista.com/statistics/1208360/led-lamps-price-forecast-in-the-united-states/>

ENERGY EFFICACY COMPARISON

LED lights used on stage offer an output equivalent to conventional lighting of 6kW capacity yet reduce energy consumption by more than 80 per cent. Listed below is a comparison of the luminous efficacy of different lighting technologies:

QTH:

Up to 35lm/W



CFL:

Up to 100lm/W



HMI:

Up to 115lm/W



LED:

Up to 150lm/W



RECOMMENDATION 3: USE LIGHT SENSORS

WHAT IS A LIGHT SENSOR?

A light sensor, also known as a photocell or photoresistor, is a device that detects the level of light or brightness in its surrounding environment. It converts the intensity of light into an electrical signal that can be used to control various lighting systems or trigger specific actions. In the context of venue energy, its main purpose is to save energy. Light sensors are also known as occupancy sensors or motion sensors.

WHY SHOULD EVENT VENUES IMPLEMENT LIGHT SENSORS?

Light sensors can be used as an effective energy saving measure by controlling lighting systems in various environments. Here are a few ways light sensors can help save energy:

Automatic Lighting Control:

Light sensors can detect the presence or absence of people in a room or area. When no activity is detected for a specified period, the sensors can automatically turn off or dim the lights. This prevents unnecessary energy consumption when spaces are unoccupied, such as in offices, conference rooms, restrooms, or storage areas.

Daylight Harvesting:

Light sensors can work in conjunction with natural light sources, such as windows or skylights, to optimise lighting levels. They can adjust artificial lighting based on the available natural light. When sufficient daylight is detected, the sensors can automatically dim or switch off the lights to maintain the desired illumination level. This avoids overlighting spaces and reduces energy usage during daylight hours.

Zoning and Personalised Control:

Light sensors can be used to create zones within a larger area. By dividing a space into zones, lights in unused or low-traffic zones can be automatically turned off or dimmed, while maintaining appropriate lighting in occupied areas. Additionally, personalised control systems can be integrated, allowing individuals to control their immediate lighting needs, further enhancing energy efficiency.

Task-Based Lighting:

Light sensors can be used to provide focused lighting based on specific tasks or activities. When someone occupies a particular area, the sensors can activate the lights in that zone. For example, in a large open office, only the lights in the occupied workstations will be turned on, saving energy by not illuminating the entire space.

Stairwells and Corridors:

Light sensors can be employed in stairwells and corridors to ensure lighting is only active when needed. By detecting motion, the sensors can activate the lights as someone enters the area and automatically switch them off when the area is unoccupied. This avoids lights being left on continuously in low-traffic areas.

Energy Monitoring and Reporting:

Light sensors can also be integrated with energy monitoring systems to track energy usage and provide data for analysis. This allows facility managers to identify patterns, optimise lighting schedules, and make informed decisions for further energy savings.

By utilising light sensors to control lighting systems, unnecessary energy consumption can be minimised, resulting in significant energy and cost savings. Additionally, the extended lifespan of light bulbs due to reduced usage further enhances the economic and environmental benefits of using light sensors.

WHAT IS THE COST OF LIGHT SENSORS?

While there are upfront costs associated with light sensors, the energy savings achieved through their implementation can lead to significant long-term cost savings, making them a cost-effective investment for improving energy efficiency and reducing operational expenses. Please find below a cost indication for the most common sensors:

- **Basic Occupancy Sensors:** Basic occupancy sensors, which detect motion to control lighting, typically range from 10 € to 30 € per sensor.
- **Advanced Occupancy Sensors:** Advanced occupancy sensors with additional features such as adjustable sensitivity, adjustable time delay, or dual-technology (motion and sound) detection can range from 30 € to 100 € per sensor. These sensors are commonly used in larger commercial buildings or areas where more precise control is required.
- **Daylight Harvesting Sensors:** Daylight harvesting sensors, which combine occupancy detection with daylight sensing capabilities, can range from 50 € to 150 € per sensor. These sensors are used to optimise lighting levels based on the available natural light and are commonly used in office spaces or areas with ample natural light.

RECOMMENDATION 4: IMPLEMENT SUSTAINABLE IT STRATEGY

WHAT IS SUSTAINABLE IT?

Sustainable IT, also known as Green IT or Green Computing, refers to the practice of using information technology (IT) resources and infrastructure in an environmentally responsible and energy-efficient manner. This can include solutions, such as using data centres that run on renewable energy or the in-house procedures for using IT equipment more sustainably, such as switching computers off fully when not in use, or regularly deleting unused data to reduce energy required for storage. It involves integrating principles of sustainability into the design, operation, and disposal of IT systems and equipment.

WHY SHOULD A VENUE IMPLEMENT A SUSTAINABLE IT STRATEGY?

Implementing a sustainable IT strategy in an event venue can have several important benefits, such as those listed below:

Environmental Impact Reduction:

Sustainable IT practices can significantly reduce the environmental impact of an event venue. By optimising energy consumption, implementing energy-efficient hardware, and using virtualisation techniques, venues can minimise their carbon footprint and contribute to a greener environment.

Cost Savings:

Adopting sustainable IT strategies can lead to cost savings in the long run. Energy efficient practices, such as using energy-saving hardware and optimising server utilisation, can result in reduced electricity bills. Additionally, implementing virtualisation techniques can lead to more efficient use of resources, minimising the need for additional hardware purchases.

Reputation and Brand Image:

Incorporating sustainable practices into an event venue's operations can enhance its reputation and brand image. In today's environmentally conscious society, customers and stakeholders appreciate organisations that prioritise sustainability. By showcasing a commitment to sustainable IT, venues can attract environmentally conscious clients, partners, and sponsors, differentiating themselves from competitors.

Regulatory Compliance:

Governments and regulatory bodies are increasingly implementing environmental regulations and standards. By implementing a sustainable IT strategy, event venues can ensure compliance with relevant existing and future regulations and avoid potential fines or penalties associated with non-compliance.

Resource Efficiency:

Sustainable IT strategies often involve optimising resource utilisation, such as server virtualisation and cloud computing. These practices can reduce the physical infrastructure required, leading to space savings and more efficient use of resources.

Employee Engagement and Morale:

Implementing sustainable practices can boost employee engagement and morale. Many employees value working for organisations that demonstrate environmental responsibility. By involving employees in sustainability initiatives and promoting green practices within the workplace, event venues can create a positive work environment and enhance employee satisfaction.

Overall, implementing a sustainable IT strategy in an event venue is beneficial from environmental, financial, reputational, and regulatory perspectives. It supports long-term viability, fosters a positive corporate image, and aligns with the expectations of stakeholders and customers who prioritise sustainability.

CHECKLIST FOR VENUES STARTING THE JOURNEY

This checklist aims to provide a starting point for implementation of a sustainable IT strategy. Organisations should tailor it to their specific needs and circumstances. Sustainable IT practices should align with the organisation's overall sustainability goals and be regularly reviewed and updated as technology and best practices evolve.

1	Energy Efficiency:	Use energy-efficient hardware, such as servers, desktops, laptops, and networking equipment.	<input type="checkbox"/>
		Enable power-saving features and implement power management settings on devices.	<input type="checkbox"/>
		Regularly maintain and clean hardware to optimise energy efficiency.	<input type="checkbox"/>
		Consider server virtualisation and consolidation to reduce the number of physical servers.	<input type="checkbox"/>
2	E-Waste Management:	Develop a policy for responsible disposal and recycling of IT equipment.	<input type="checkbox"/>
		Partner with certified e-waste recyclers to handle the proper disposal of hardware.	<input type="checkbox"/>
		Encourage equipment refurbishment or donation instead of disposal when appropriate.	<input type="checkbox"/>
		Educate employees on the importance of e-waste management and provide proper disposal channels.	<input type="checkbox"/>
3	Resource Conservation:	Implement server and storage virtualisation to optimise resource utilisation.	<input type="checkbox"/>
		Embrace cloud computing to reduce on-site hardware and maximise resource efficiency.	<input type="checkbox"/>
		Use data centre infrastructure management (DCIM) tools to monitor and optimise resource usage.	<input type="checkbox"/>
		Consider adopting thin clients or energy-efficient computing devices.	<input type="checkbox"/>

4 Sustainable Procurement:	Prioritise energy-efficient and environmentally friendly IT equipment during procurement.	<input type="checkbox"/>
	Choose vendors and suppliers with sustainable practices and certifications.	<input type="checkbox"/>
	Evaluate the lifecycle environmental impact of products, including packaging and manufacturing processes.	<input type="checkbox"/>
	Encourage vendors to provide take-back or recycling programs for IT equipment.	<input type="checkbox"/>
5 Telecommuting and Virtual Collaboration:	Promote remote work arrangements to reduce commuting and office space requirements.	<input type="checkbox"/>
	Invest in virtual meeting and collaboration tools to facilitate remote collaboration.	<input type="checkbox"/>
	Educate employees on effective remote work practices and the environmental benefits.	<input type="checkbox"/>
6 Data Centre Efficiency:	Optimise data centre cooling and airflow management for energy efficiency.	<input type="checkbox"/>
	Consolidate servers and equipment to maximise resource utilisation.	<input type="checkbox"/>
	Regularly monitor and maintain data centre infrastructure to identify and address inefficiencies.	<input type="checkbox"/>
	Explore renewable energy options for powering data centres.	<input type="checkbox"/>
7 Monitoring and Reporting:	Implement energy monitoring tools to track and analyse energy consumption.	<input type="checkbox"/>
	Measure and report on environmental indicators, such as carbon emissions and resource usage.	<input type="checkbox"/>
	Set sustainability goals and regularly assess progress towards achieving them.	<input type="checkbox"/>
	Communicate sustainability initiatives and progress to employees and stakeholders.	<input type="checkbox"/>