

NET ZERO METHODOLOGY FOR HOTELS

2ND EDITION • JUNE 2023

PRACTICAL
GUIDE
TO GETTING
STARTED
FOR PROPERTIES


GREENVIEW



OVERVIEW

Net zero can be extremely daunting and the process itself challenging. But a hotel can achieve a successful investment of time and resources by providing all stakeholders with a proper orientation and a specific list of steps to undertake.

This guide is intended as a base to help hotel property teams use the Net Zero Methodology for Hotels and pursue net zero in practical terms by dividing it out into the work into a sequence of steps, using checklists to get started.

Ultimately, each hotel will have its own approach to sustainability and its own context within its destination, country, parent operator, and owner. Some aspects may be easier for hotels to prioritize than others depending on the context. Net Zero planning will evolve as individual teams dive into more granular aspects such as food and beverage, sourcing furniture, planning for donations and other reuse of materials. If the first steps can be taken within a year, the next year will be easier and show tangible results.

Finally, net zero is not easy, and for many of the sources of carbon emissions, full decarbonization is challenging or even unknown. Net zero will evolve over time, as will the resources, best practices, and expectations. But the earlier the hotel property can begin the net zero journey, the more prepared the hotel and its staff will be to succeed in the long term.



GETTING STARTED

ORIENTATION

1. Designate the people on property responsible for undertaking the net zero inventory, generally as part of the hotel sustainability committee or green team's overall responsibility, in these areas:
 - a. Energy sources and uses
 - b. Waste generation and disposal

Purchasing

 - c. Staff commuting
 - d. Building and FF&E inventory
2. Hold an orientation meeting with key property teams to provide a baseline understanding of net zero conceptually, key sources of carbon emissions and in particular Scope 3, and how decarbonizing plays out in practice at a hotel. Add in anecdotal examples of net zero stories in the industry, and relate how various activities in the hotel are already helping toward the net zero pathway.
3. For each of the areas, set up the initial tasks for getting started, and use checklists found at the back of this guide to undertake the activities, working toward their completion within the year.
4. Refer to the various sections and resources provided in the Hotel Net Zero Methodology to support the activities.

SEEKING HELP

Keep in mind that many companies are pursuing net zero activities within their organizations. Stakeholders may include the owner of the building, the parent operator/brand, peers and other groups within the destination, and service providers and vendors. Some basic engagement activities to undertake as part of the process include:

1. Work with the GM or executive committee to inquire with the owner, parent operator, and/or parent brand of the hotel regarding any existing net zero plans or resources available that can be utilized or adapted.
2. Inquire among peer hotels or with your local or national hotel association regarding any initiatives, events, or other collaboration opportunities for approaching net zero or efficiency.
3. Engage vendors and other service providers in discussions on carbon reduction opportunities as they arise.

FOCUSING ON THE PLAN

Much like a hotels' utility consumption, net zero conversations tend to gravitate first toward the performance metrics, but in practice, the important part is to understand the drivers of the performance and the actions that can be taken to improve it.

In the case of net zero, full quantification of Scope 3 emissions is extremely difficult, evolving, and time-consuming to calculate when time is better spent elsewhere. A few considerations to keep in mind:

1. Understand the sources of emissions even if they can't be accurately quantified at first. Areas such as waste, commuting, and the upstream embodied carbon of materials are a significant source of emissions that will need to be decarbonized. Relate the hotels' activities and purchases to carbon conceptually before determining specific amounts and percentages.
2. Discuss the actions to decarbonize. Each type of waste has a different emission factor for its disposal, and more importantly for its production and shipping. While it should be understood that some goods such as meat have higher footprints, the team can focus on actions to reduce consumption which will ultimately reduce carbon.
3. Hold off attempting to quantify the full Scope 3 footprint of the hotel. Further guidance and resources will be developed over time, and coefficients will vary and change drastically. Some of the items can be quantified now and should be, but do not lose focus down the rabbit hole of "what is my hotel's total carbon footprint," as time is better spent planning actions to reduce carbon.



STEP-BY-STEP FOR EACH AREA

ENERGY SOURCES AND USAGE

1. **Understand your performance and set your baseline emissions.**
 - a. Identify all the significant sources of energy usage and gather data using invoices from utilities and any other providers for each.
 - b. Use tools as available, such as the HCM Tool, to quantify the total energy usage from each source of emissions from the baseline year through the present, and convert the energy into carbon to arrive at the total carbon emissions from energy usage.
 - c. Set up a tracker or use a system to monitor the performance for each energy type each year from the baseline going forward.
 - d. Utilize the net zero methodology to identify the metrics and interim milestones for each yardstick year (see Section 3 of the methodology).
2. **Identify energy savings opportunities**
 - a. Conduct (or obtain the report from if already conducted) technical building assessments such as an ASHRAE audit or a commissioning study of HVAC.
 - b. Conduct (or obtain the report from if already conducted) a site audit of operational and low-hanging fruit to reduce usage.
 - c. Create an inventory of large capital equipment to identify the end-of-life or year of changeout.
3. **Benchmark energy performance and best practices** using internal company resources and industry tools such as the [Cornell Hotel Sustainability Benchmarking Index \(CHSB\)](#), [Green Lodging Trend Report \(GLTR\)](#) and others.
4. **Identify renewable energy opportunities**
 - a. Inquire within the utility regarding renewable energy tariffs or purchases.
 - b. Inquire with potential vendors regarding estimates for onsite installation of renewable energy such as solar.
 - c. Inquire for other market mechanisms available such as PPA, VPPA, or Renewable Electricity Certificates (RECs).
 - d. Arrive at the set of conclusions for initial renewable energy opportunities and add them to the carbon reduction plan and model.
 - e. Set a milestone for updating the analysis of opportunities in the next two to three years to obtain the latest available information.

5. **If your property outsources laundry offsite, engage with the vendor to obtain information.**
 - a. Request that the vendor provide the energy or carbon emissions from your hotel's laundry wash.
 - b. If the carbon emissions are not available but the energy data are, request figures on the percentage of the total laundry wash that your property represents, and convert to carbon emission using the coefficients in Appendix G of the Methodology.
 - c. If the laundry provider cannot provide energy or carbon data, obtain the records of the total amount of laundry washed, and use coefficients via available resources such as the HCM methodology.
 - d. Inquire on whether the vendor powers electricity with renewables (onsite, PPA, or REC/EAC purchase). Request that the vendor power the facilities with 100% renewable electricity by 2030.
 - e. Inquire on other energy efficiency measures the vendor already has in place, and inquire about any measures that will be put in place by 2030.
 - f. Review internally for programs such as linen-towel reuse, reduction in number of linens and towels provided to guests, and other ways for reducing the quantity of linens and towels sent to laundry wash.
 - g. Add the results of the exercise to the net zero plan for the "Outsource laundry services" category to mark specific milestones.
6. **Create a carbon reduction plan and model for the facility's Scope 1 & 2 emissions**
 - a. Based on the opportunities identified and the analysis of performance undertaken, create a plan and forecast for potential actions and resulting estimated savings.
 - b. Model the potential reduction in energy usage at each milestone year resulting from implementing the actions or upgrades, which can be structured in three scenarios (optimistic/aggressive, conservative, pessimistic/minimal action).
 - c. Create a tracker or utilize existing resources to track and forecast performance over time.
 - d. Socialize the plan with the hotel's executive committee, asset manager, owner's rep, and any other stakeholders.



WASTE GENERATION AND DISPOSAL

1. **Identify waste categories, sources and boundaries**
 - a. Define the boundaries of the waste and food waste dataset. Refer to the [waste measurement methodology](#) for more guidance on waste categories.
 - b. Assemble a team with representatives from each department.
 - c. Each representative should come up with a list of broad categories of waste produced by their department. This serves as a guide for areas of focus during the waste audit.
2. **Quantify waste and associated emissions**
 - a. Start by quantifying ongoing waste based on the disposal streams and the information provided by the hauler. Streams may be single-stream recycling, or specific items only such as glass or bottles and cans, etc.
 - i. Where waste is only available by number of pulls or other measurements of volume, refer to the [waste measurement methodology](#) for more guidance on waste categories for converting from volume-to-weight consistently.
 - ii. Calculate the waste diversion rate (total weight of recyclables/total weight of general waste and recyclables) x 100 as part of the waste tracking.
 - iii. Where quantification is challenging, work with the team, haulers, and other partners on ways to improve it.
 - b. Set up or utilize a waste tracker to quantify the monthly waste in each stream and evaluate any periodic variances, looking into reasons for why specific periods may be higher than others.
 - c. Calculate the emissions using the emissions quantification approach and coefficients sources found in Appendix G of the methodology.
 - d. Review the results to understand the relative emissions intensity of waste types and disposal methods to inform action planning.
3. **Conduct a waste stream audit to set baseline**
 - a. Select a week to conduct the audit. The chosen week should be representative of a typical business week (i.e., no meetings or events which may skew results).
 - b. Inform vendors and cleaning staff not to empty bins until after the audit.
 - c. Get into the waste to see what types of waste are going into the dumpster.
 - i. Department representatives can start with sorting general waste in the categories identified above into clearly labelled containers for their own departments. If necessary, identify new waste categories.
 - ii. While sorting general waste, identify items which could have been recycled. This represents the potential to increase waste diversion and can be used to set realistic targets.
 - iii. Once everything has been sorted by waste category and department, weigh each category. This forms the baseline for trash generated in a week.
 - iv. Repeat with recycled waste to identify opportunities to reduce waste generated in the first place, and to identify sources of contamination.
 - d. Based on the results, prepare a list of waste reduction opportunities.



4. Improve waste diversion by identifying recycling and other hauler diversion opportunities

- a. After analyzing the waste produced, identify what can be recycled.
- b. Improve recycling rates by having more bins which are clearly labelled and placed through public areas and guest rooms. They may need to be accompanied by explanatory notes to support guests to correctly sort and recycle waste.
- c. Research commercial hauling services available in your locale and review their feasibility. Where recycling may be expensive or if your hotel cannot meet the minimum amount, review the possibility of reducing the use of those items instead of dealing with them like general waste.
- d. Implement composting or research community efforts such as community composting that your hotel can participate in.

5. Identify F&B waste reduction opportunities It can be reduced with a three-pronged approach. Food waste is one of the most significant and expensive waste streams for hotels.

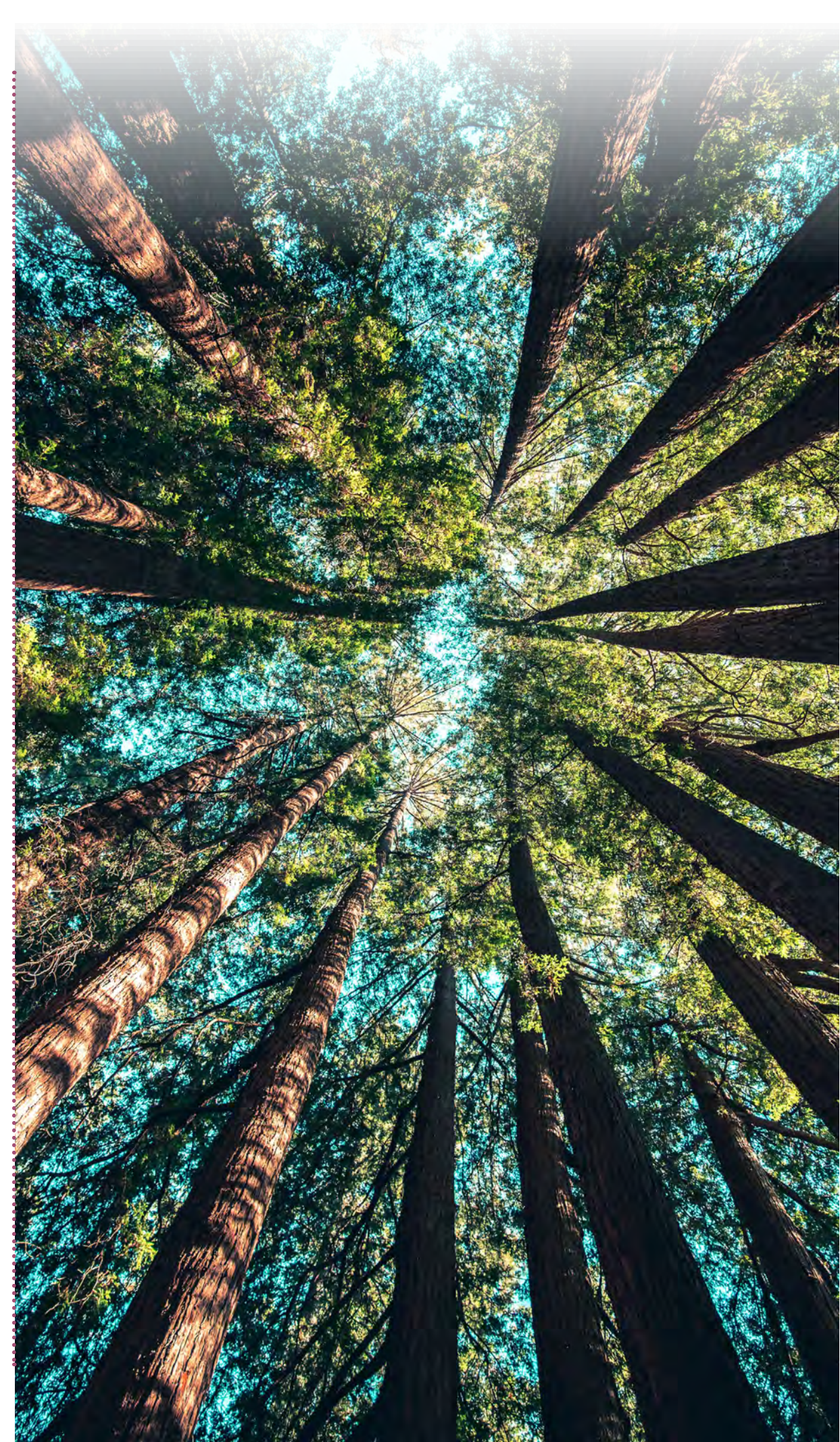
- a. Better planning: This includes meal planning to reduce the number of ingredients used across menus, contractually requiring guest headcount updates in the lead-up to events, and working with suppliers to give “ugly” food a second life.
- b. Better handling: Ensure food is prepped and stored safely to extend its shelf life. While food can be prepped in advance, it need not be served till the previous serving has run out. This ensures the food is still safe for donation.
- c. Better serving: Right-sizing serving dishes and cutlery and reviewing food displays can give the appearance of an abundant buffet line without creating food waste. Optimize communication between banquet staff and culinary staff about the supply status of buffets. After-service data analysis of what items went unused, overset or wasted on guest plates can also help reduce waste.
- d. More information is available at [hotelkitchen.org](https://www.hotelkitchen.org).

6. Identify other waste reduction opportunities

- a. Identify community partners who might be keen on in-kind donation of used hotel items, particularly after hotels undergo renovations.
- b. Collaborate with suppliers on a circular economy approach to reduce waste.
- c. Use cross-department collaboration to identify sources of waste generation and how to effectively reduce it. For example, the F&B team and events planning team can work together to reduce food waste through better estimates of guest headcounts.
- d. Invest in staff training on waste as staff need to be clear on how and why implementing such processes is important, and encourage staff to provide suggestions and ideas for waste reduction innovation.
- e. Implement industry-wide initiatives including the [global tourism plastics initiative](#), soap recycling and others.
- f. Benchmark performance and best practices using internal company resources and industry tools such as the GLTR and others.

7. Create a waste reduction and diversion plan

- a. Based on the opportunities identified and the analysis of performance undertaken, create a plan and forecast for potential actions and resulting estimated reduction.
- b. Model the potential reduction and diversion plan at each milestone year as a result from implementing the actions or upgrades, which can be structured in three scenarios (optimistic/aggressive, conservative, pessimistic/minimal action).
- c. Create a tracker or utilize existing resources to track and improve performance over time.
- d. Socialize the plan with the hotel’s executive committee, asset manager, owner’s rep, and any other stakeholders.



PURCHASING

1. Analyze your property's purchases

- a. Work with the purchasing department to understand the supply chain activities and obtain purchase records.
- b. Perform initial analysis by analyzing the purchase amount, nature of activities and categories, and sources of purchase.
- c. Identify top purchasing activities and categories based on the purchase amount.
- d. Seek resources to understand the relative carbon intensities of various commonly purchased items for a general understanding at high level (See appendix A of the methodology for further details).
- e. Identify the purchases that can be tracked by weight/ quantity of items, instead of amount such as the monetary price of F&B items.
- f. Arrive at a prioritized list of categories and items to pursue first in the plan.
- g. Identify key vendors at minimum for the top purchasing activities and categories.
- h. Obtain initial understanding of procurement process – centralized, decentralized or mixed, both of which may vary depending on the purchase types.

2. Set an initial reduction plan for purchases

- a. Before embarking on carbon calculation of your purchased items, focus on the plan to reduce associated emissions.
- b. Research and discuss among team members and contacts regarding ways to reduce emissions associated with each priority category or purchase item, such as purchasing locally, switching to less carbon-intensive choices such as plant-based meat, purchasing recycled or repurposed materials and products, or reducing amounts purchased to eliminate waste as well as upstream emissions.
- c. As available, document the approaches and set an initial plan of steps for trying to implement them over the next year and further actions to be undertaken once better consumption data and/or emission factors and coefficients become available.

3. Estimate and prioritize emissions based on purchased items

- a. Obtain general understanding of most common and significant sources of emissions for purchased goods and services as provided in Appendix A.
- b. Attempt to quantify the emissions from at least 75% of those purchases, using the emissions quantification approach and coefficients sources found in Appendix A.
- c. Based on quantification, further revise initial priority items.
- d. Identify additional items that may need to be quantified going forward.
- e. Set a plan to revisit the quantification of emissions annually to revise figures and priorities based on industry best practices.



STAFF COMMUTING

- 1. Gather data regarding the average commutes among property staff.**
 - Work with the HR department to identify available data regarding mode of transport and distance.
 - Based on the available data, fill the gaps by conducting a staff survey to identify for each employee in as large a sample size as possible:
 - Number of trips to/from work (when factoring in vacation days, remote work if applicable, and any other factors)
 - Estimated percentage of trips the employee takes by each mode of transportation per week.
 - Estimated distance from employee's home area to the property.
 - Compile the results and arrive at a representative data set, ideally of at least 50% of the staff across all job categories.
- 2. Estimate the emissions from employee commuting**
 - Extrapolate out the remainder using the figures of available data into figures of total distance per employee per transportation type per year.
 - Use transportation coefficients as found in Appendix G for arriving at the estimated emissions from employee commutes.
- 3. Develop an initial plan for reducing emissions from commutes**
 - Discuss figures with management and identify opportunities and initiatives for reducing emissions from transport such as encouraging alternative transportation, public transportation, low-emission vehicles, and carpooling, including any incentives of other opportunities offered by the city.
 - As part of the plan, include ways of building awareness among staff of the footprint of commuting.
 - Incorporate the results to the section of the net zero plan.

BUILDING AND FF&E

- 1. Review Appendix M of the methodology** to understand the sources of emissions for building and FF&E, and the current state of calculation in order to understand the footprint.
- 2. Take inventory**
 - Estimate key building amounts of concrete, steel, and other key items from the building envelope.
 - Estimate key FF&E items, seeking project specs from the design or renovation, and working with internal and external parties to estimate the quantities.
 - Identify renovation, equipment replacement, and upcoming FF&E replacement for the next few years, as available.
- 3. Quantify** at high level as a preliminary exercise, using tools and coefficients as found in Appendix M.
- 4. Develop an initial plan for reducing emissions**
 - Discuss internally among management and other departments, such as asset management, to identify opportunities and initiatives to reduce emissions.
 - Discuss and collaborate with vendors and other contractors or partners to create low-carbon solutions.
 - Incorporate the plan into the designated section of the net zero plan.



CHECKLISTS

ENERGY	ACTION	TEAM MEMBER(S) RESPONSIBLE	TARGET PERIOD	STATUS
Understand energy performance and set baseline	• Identify significant sources of energy emissions			
	• Collect energy data and measure the emissions			
	• Set energy baseline			
	• Monitor energy performance and metrics			
Identify energy saving opportunities	• Conduct a site audit			
	• Conduct technical building assessment			
	• Create and track useful life and/or replacement period for large capital equipment			
Benchmark performance	• Benchmark energy performance and best practices using industry tools including CHSB and GLTR			
Identify renewable energy opportunities	• Source for renewable energy through green energy tariffs			
	• Review potential for onsite renewable generation			
	• Source for renewable energy through other available mechanisms such as PPA, VPPA and RECs			
Outsource laundry services	• Engage vendors to obtain the emissions data			
	• Perform estimation if data is not available using the available tool			
	• Collaborate with vendors to identify emissions reduction opportunities including use of renewable energy			
	• Review internal process and practices for efficiency			
Create a decarbonization plan	• Create a plan and forecast for potential actions and initiatives			
	• Create a decarbonization modeling at each milestone year under optimistic, conservative, pessimistic scenarios			
	• Track progress and forecast performance over time			
	• Engage stakeholders including the hotel's executive committee, asset manager, owner's rep, and others			

WASTE	ACTION	TEAM MEMBER(S) RESPONSIBLE	TARGET PERIOD	STATUS
Understand waste sources	• Identify significant sources of waste generation			
	• Implement waste data collection process and system			
Quantify waste emissions	• Analyze waste generation. When data is limited, perform estimation and/or work with haulers and vendors			
	• Measure waste emissions			
	• Monitor waste generation and metrics			
Perform audit and set baseline	• Conduct a waste audit			
	• Set waste baseline			
Improve waste diversion	• Improve recycling rates through onsite recycling initiatives			
	• Collaborate with commercial hauling services and vendors			
	• Implement onsite composting and/or participate in community composting			
Identify F&B waste reduction opportunities	• Improvement of F&B operating process and procedure through better planning, better handling and better serving			
	• Track and monitor waste generation and metrics			
Identify other waste reduction opportunities	• Internal cross-departmental collaboration to effectively reduce waste generation			
	• Collaboration with other parties including haulers and vendors, community partners			
	• Invest in staff training and encourage suggestion and ideas for reduction			
	• Implement industry-wide initiatives			
	• Benchmark performance and best practices using industry tools including GLTR			
Create waste reduction and diversion plan	• Identify potential actions and initiatives for emissions reduction			
	• Create a decarbonization and diversion plan at each milestone year under optimistic, conservative, pessimistic scenarios			
	• Track progress, improve data collection and waste management over time			
	• Engage stakeholders including the hotel's executive committee, asset manager, owner's rep, and others			

PURCHASES	ACTION	TEAM MEMBER(S) RESPONSIBLE	TARGET PERIOD	STATUS
Analyze purchase records	• Obtain purchase records			
	• Perform initial analysis of purchase records			
	• Identify top purchase activities			
	• Identify purchase in weight and quantity			
	• Identify key vendors			
	• Obtain initial understanding of procurement process			
Create an initial plan for decarbonization	• Research and discuss internally on potential ways, opportunities, and actions for decarbonization			
	• Document initial approach and plan			
Prioritize and quantify emissions	• Obtain general understanding of sources of emissions			
	• Measure purchased goods and services emissions			
	• Improve approach, data collection process and data quality over time			

STAFF COMMUTING	ACTION	TEAM MEMBER(S) RESPONSIBLE	TARGET PERIOD	STATUS
Data gathering	• Gather headcount, vacation days, workplace arrangement and employment type (optional) data			
	• Conduct staff survey to collect mode of transportation and distance traveled data			
Quantify emissions	• Compile and analyze staff commute data. Perform extrapolation when a representative data set is used in view of data limitation			
	• Measure staff commute emissions			
Create an initial plan for decarbonization	• Identify potential actions and initiatives for emissions reduction			
	• Build staff awareness			
	• Track progress against initiatives and improve data collection over time			

BUILDING AND FF&E	ACTION	TEAM MEMBER(S) RESPONSIBLE	TARGET PERIOD	STATUS
Understand source of emissions	<ul style="list-style-type: none"> Obtain initial understanding of source of emissions 			
Take inventory	<ul style="list-style-type: none"> Estimate building materials and quantity 			
	<ul style="list-style-type: none"> Estimate FF&E items and quantity 			
	<ul style="list-style-type: none"> Identify renovation and FF&E replacement plan 			
Quantify emissions	<ul style="list-style-type: none"> Perform preliminary quantification using available tools and coefficient 			
Create an initial plan for decarbonization	<ul style="list-style-type: none"> Discuss internally on potential ways, opportunities, and actions for decarbonization 			
	<ul style="list-style-type: none"> Collaborate with vendors and other contractors/partners for low carbon solutions 			
	<ul style="list-style-type: none"> Document initial approach and plan 			

ABOUT US



Greenview is the world's leading provider of sustainability programs and data management for the hospitality and tourism sector. Greenview supports dozens of companies to design, implement, and monitor their corporate responsibility and sustainability platforms to drive profitability, streamline data, keep ahead of trends, and provide effective communication for stakeholders. Greenview has developed industry methodologies for carbon, waste, and plastics measurement.



Pacific Asia Tourism Association (PATA) is a not-for-profit membership-based association that acts as a catalyst for the responsible development of travel and tourism to, from and within the Asia Pacific region. By bringing together private and public sector members, PATA facilitates meaningful partnerships to enhance the value, quality, and sustainable growth of travel and tourism to, from and within the Asia Pacific region.



Sustainable Hospitality Alliance (the Alliance) brings together engaged hospitality companies and uses the collective power of the industry to deliver impact locally and on a global scale. They work with leading hospitality companies and strategic partners to address key challenges affecting our planet and its people, and develop practical resources and programmes to enable the wider industry to operate responsibly and grow sustainably.



World Travel & Tourism Council (WTTC) is the global authority on the economic and social contribution of Travel & Tourism. WTTC promotes sustainable growth for the Travel & Tourism sector, working with governments and international institutions to create jobs, to drive exports, and to generate prosperity. Council Members are the Chairs, Presidents and Chief Executives of the world's leading private sector Travel & Tourism businesses.

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